




# Fallibilism versus Relativism in the Philosophy of Science

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## Abstract

In response to a recent argument by David Bloor, I argue that denying absolutes does not necessarily lead to relativism, that one can be a fallibilist without being a relativist. At issue are the empirical natural sciences and what might be called “framework relativism”, that is, the idea that there is always a conceptual scheme or set of practices in use, and all observations are theory-laden relative to the framework. My strategy is to look at the elements that define a relativist stance and show where the pragmatic fallibilist disagrees. Defending the pragmatic notion of experience will be central, given that relativists reject the idea that experience can play a role in objectively justifying belief. We can reject all absolutes and start from the premise that everything is historical, contingent, and situated. One of the lessons of pragmatism is that universal and fixed principles are not necessary for objective knowledge.

**Keywords** Fallibilism · Relativism · Absolutes · David Bloor · Martin Kusch

## 1 Introduction

Debates about relativism have been present in the philosophy of science at least since Kuhn. At issue are the empirical natural sciences and what might be called “framework relativism”, that is the idea that there is always a conceptual scheme or set of practices in use, and all observations are theory-laden relative to the framework. I claim that even if this is true, it is still possible to evaluate claims as better or worse, or as more or less justified. Indeed, one can come to judge one framework to be better than another, something relativists in this context deny. A standard definition of relativism, due to Boghossian, has it comprise two claims. First, there is the claim that there are no absolutes. The second component, what he calls the Equal Validity Thesis, maintains that relativists claim that one opinion is as good as another and that we are unable to rank different opinions (Boghossian 2006). David Bloor has recently questioned the need for the second component, arguing that relativism should be defined simply as the claim that there are no absolutes (Bloor 2020, 389). He claims that the rejection of absolutes is both a necessary and sufficient condition for being a relativist and that there is no “middle ground” whereby one

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could be against absolutes and at the same time against relativism. Bloor is, of course, famous as one of the inventors of the strong program in the sociology of knowledge. He advocates for relativism and has often argued that it should be seen as the opposite of absolutism, rather than as the opposite of realism (Bloor 1999a, 102). Martin Kusch recently made a defense of Bloor's claim while discussing Bas van Fraassen's *The Empirical Stance* (2002; Kusch 2020). Both of their arguments ignore the pragmatist tradition, which firmly rejects absolutes while at the same time claiming that there is objective<sup>1</sup> knowledge and rejecting the Equal Validity Thesis. For my purposes here, pragmatism will stand for a view that adopts fallibilism, denies all absolutes and all foundations, and looks for practical or concrete effects of our theories and actions. Pragmatists also deny the existence of simple dichotomies, arguing instead that opposing concepts lie along a continuum. I will not take a stand on the pragmatist view of truth, where different positions are taken by Peirce, James, Dewey, and Rorty. Fallibilism, anti-absolutism and anti-foundationalism are common to all of the pragmatists mentioned, so they will form the basis of what I call pragmatism. If I had to pick a theory of truth, I would advocate for a deflationary account, although this is not relevant to the issues discussed here.

There must be something more to relativism than the simple denial of absolutes, I claim, otherwise, we could just call those who deny absolutes anti-absolutists, or given that a positive name is preferable, fallibilists. I have never thought that a commitment to fallibilism is a commitment to relativism and Peirce, who coined the term, was certainly not a relativist. Classical pragmatists are completely against absolutes, but they did not claim to be relativists. The fallibilism that the pragmatists advocated is, I contend, a middle ground between absolutism and relativism, but reading Bloor and Kusch's recent arguments made me see the need to specify the difference between fallibilism and relativism.<sup>2</sup> Given that both Bloor and Kusch insist that relativists (as they are using the term) do not say that all opinions are equally valid, there must be some other points at which a (mere) fallibilist and relativist disagree. In this paper I identify a central issue where fallibilists and relativists differ and defend what I take to be a non-relativist version of fallibilism. I believe this is compatible with classic pragmatism, although I will not try to defend the historical claim here, as others have recently taken up that challenge (Garrison 2019; Levine 2019).

In some sense, we could end up with an argument over the mere usage of words. Bloor could simply define any position that denies absolutes as a relativist position. Doing so capitulates to the absolutists, I contend, accepting their standard that if we do not have absolutes, we do not have objective knowledge, we have something less. Boghossian and those who follow his lead could simply insist that one must hold the Equal Validity Thesis to be a relativist, perhaps leading one to wonder if any philosopher has ever held this position.<sup>3</sup> Even if the question comes down to how one defines one's terms, however, there is still an argument to be made against adopting the term 'relativism.' Much as one may insist that relativism is mischaracterized in the philosophy literature, the term 'relativism' has a lot of baggage attached to it. Of course, it is possible to resuscitate a label, to fight against

<sup>1</sup> Objectivity is itself, of course, a word with many meanings and about which much could be said. For a recent survey and approach with which I am sympathetic, see Koskinen (2020); also, the papers in Padovani, Richardson and Tsou (2015).

<sup>2</sup> Markus Seidel (2014, 40) made the point that fallibilism is not relativism, yet that has stopped neither Bloor nor Kusch from continuing to claim that there is no middle ground between absolutism and relativism and I am responding to their claims. Seidel's critique of the strong program is parallel to my own, but I make different arguments, focusing especially on the recently rehabilitated pragmatist notion of experience.

<sup>3</sup> Kusch argues this in several places e. g. (2017, 4696; 2020 and 2021).

the misconstruals, etc., but I believe that a more productive and practical approach is to aim at understanding the way that science works in practice. Fallibilism has much more popular appeal than relativism and fits scientific practice much better, while generally being thought of as harmless. In fact, I think when philosophers start digging deeper into the view and they realize that they have to give up their absolutes, we might see some push-back. Peirce predicted this years ago: “Indeed, most everybody will admit [to fallibilism] until he begins to see what is involved in the admission—and then most people will draw back” (1960, 60 (#148)). There is a deeper issue at stake in these debates, beyond the mere labeling of positions. The issues are what follows from the rejection of absolutes and what standards we have for objective knowledge.

## 2 What is Relativism?

In a recent paper on Feyerabend, Kusch very helpfully sets out some themes common to a variety of relativist views (Kusch 2016). I present here an abbreviated version of Kusch’s essential elements of relativism (the first five elements below) and positions with which relativists are generally sympathetic (the next four elements), with brief comments by me to be taken up more fully when it comes to describing key difference concerning experience:

“(1) Dependence: A belief has an epistemic status (as epistemically justified or unjustified) only relative to an epistemic system or practice” (Kusch 2016, 106).

The pragmatist here agrees in one sense but disagrees in another. On the one hand, a belief can only be formulated once the epistemic system or practice is in place and the standards of the epistemic practice will be used to evaluate the belief, but on the other hand, the epistemic system or practice does not typically in itself determine whether or not a belief is justified. The idea has to “work”, in William James’ famous phrase, that is, it has to be consistent with experience (James 1907). The fact that the answers are not built into the system of practices in advance is precisely what breaks the circularity that the relativist sees in the dependence of justification on a system of practices. You must go outside of the system of practices to do things in the world. There will be much more to say about this below.

“(2) Plurality: There are, have been, or could be, more than one such epistemic system or practice” (Kusch 2016, 106).

Pragmatists accept plurality. Indeed, as a committed fallibilist, you must think it is possible that your own system is wrong. It is a small step from thinking that you could be wrong to thinking that there could be an alternative to your way of doing things. Even a monist who also has a strong commitment to scientific realism, that is, even someone who holds that there is one world and that the ultimate aim of science is to establish a single, complete, and comprehensive account of the natural world, would be required to adopt a pluralist position if they were also a fallibilist. Given that we are unable to know the world with certainty, we are better off leaving multiple accounts of the world open to investigation so as to hedge our bets.

“(3) Exclusiveness: SPs [epistemic systems or practices] are exclusive of one another. This can take two forms:

- a) *Question-Centered Exclusiveness*: There are sets of yes/no questions to which SPs give opposite answers.

- b) *Practice-Centered Exclusiveness*: There are no yes/no questions to which SPs give opposite answers since their concepts and concerns are too different” (Kusch 2016, 106).

The pragmatist can accept that both kinds of exclusiveness can occur, in different contexts. However, exclusiveness does not by itself mean that one set of practices cannot be correct or better than another. Indeed, exclusiveness does not by itself rule out absolutes.

“(4) Notional Confrontation: It is not possible for a group G holding an epistemic system or practice SP1, to go over to an epistemic system or practice SP2 on the basis of a rational comparison between SP1 and SP2. But G might be converted to SP2 without losing its hold on reality” (Kusch 2016, 107).

Again, the pragmatist can accept that this may occur, but would reject the idea that it is always impossible to make a comparison. For example, two sets of practices may be comparable by checking whether or not they have the same concrete results over a given domain. However, there are of course practices that simply have nothing to do with each other, say literary criticism and quantum mechanics. Nothing follows from the existence of such cases, unless every two systems of practices were so disconnected. The relativist needs to show their claim in a particular domain, as Kusch notes under this section, and the pragmatist can only criticize the argument in a particular domain. Therefore, we need to look at individual cases and we will never justify the general claim that science is relative.

It is perfectly acceptable to the pragmatist that there are periods when two competing epistemic systems and practices exist in some area of scientific inquiry, as long as closure remains possible. Of course, we do not know whether or not closure is always possible. Perhaps the world is irreducibly plural, as John Dupré has argued (1993), or perhaps it is irreducibly plural in a given domain. It would appear to be a relativist position to accept plurality and a non-relativist position to expect that it is always possible to work out differences and eventually find a single answer. I advocate a piecemeal approach. In a given domain, we can either look for a single answer or accept pluralism. Which we do depends on our aims, the context and crucially, our experience.

“(5) *Symmetry*: Epistemic systems and practices must not be ranked” (Kusch 2016, 107). Kusch continues in a footnote:

But why couldn't the relativist deny that there is a uniquely best system or practice while at the same time allowing that there are better and worse social practices? [...] On the model of relativism suggested here, this position would not amount to a full-blown relativism. While the denial of the unique best system or practice is a relativistic element, the (presumably neutral) ranking of systems or practices into better and worse is not (Kusch 2016, 107).

It is clear that pragmatists are not full-blown relativists in Kusch's terms, because they would want to say precisely that while there is no absolute or final system, systems or practices can in fact be evaluated as doing a better or worse job in their particular domain. When there are competing sets of practices, they can be compared and evaluated in multiple ways, using the usual epistemic and non-epistemic virtues. As a bottom line, a set of practices has to be empirically adequate, that is, it has to make accurate predictions to be useful for creating products or phenomena. By the way, the idea that there is one unique best system or set of practices is anathema to my pragmatist, who would say that there is no single method in science and that it is indeed obvious that we need different sets of practices in different domains.

Kusch continues:

“Symmetry can take a number of different forms that are worth distinguishing.

- (a) **Methodological Symmetry:** All SPs are on a par vis-à-vis social-scientific investigations.
- (b) **Non-Neutrality:** There is no neutral way of evaluating different SPs.
- (c) **Equality:** All SPs are equally correct.
- (d) **Non-Appraisal:** For a reflective person the question of appraisal of (at least some other) SPs does not arise” (Kusch 2016, 107–108).

As Kusch notes, methodological symmetry is exemplified in the strong program with which Bloor is associated. I would argue that methodological symmetry is acceptable, as long as one does not overreach by claiming that science is non-objective, or irrational, or socially constructed. As for non-neutrality, the pragmatist would certainly agree that there is no “God’s eye” view or a “view from nowhere”, although that does not mean that it is impossible to evaluate systems or practices neutrally. Suppose that I adopt the current photon theory of light and I look back at the debate between the wave and particle theories of light. Is it impossible to be neutral between them? What is behind the idea of non-neutrality is that we always have an initial position from which we start, with presuppositions, a time and a place, etc. That is certainly right, but it does not make evaluation impossible, it just makes an unrealistic conception of neutrality impossible.

The remaining four elements are not essential to relativism according to Kusch, but they frequently occur along with the first five:

“(6) **Contingency:** Which epistemic system or practice a group G or individual finds itself holding is a question of historical contingency” (Kusch 2016, 108).

My pragmatist will certainly agree that everything is historically contingent.

“(7) **Groundlessness:** There can be no non-circular epistemic justification of one’s own epistemic system or practice” (Kusch 2016, 108).

One will start with a point of view, namely that of one’s own epistemic system or practice, but one has to interact with the world and systems and practices can be better or worse at doing so. We are back to the issue of experience about which I will say more below. Insofar as groundlessness means antifoundationalism, the pragmatist wholeheartedly agrees.

“(8) **Underdetermination:** Epistemic systems and practices are not determined by facts of nature. Underdetermination is not to be confused with the thesis that the world has no causal impact on SPs at all. The relativist is not or need not be committed to the view that SPs are completely arbitrary. His point is rather that (many) more than one SP is compatible with the given causal impact of the world” (Kusch 2016, 108).

Since we can always make up a theory that fits all the empirical data, underdetermination is trivially true, but we cannot automatically make up a theory that will account for all the data and be a good theory in any of the usual senses of the term. I will argue that if we look at scientific practice, we will find that theories are accepted despite there being possible alternatives. The issue turns on how robust the alternatives are, and again on recovering a pragmatic notion of experience.

“(9) **Tolerance:** Epistemic systems or practices other than one’s own, must be tolerated” (Kusch 2016, 108).

The pragmatist agrees, but there are limits to tolerance. For example, Anti-Vaxers are wrong and they are creating a situation where many people die needlessly. Of course, no

vaccine is one hundred percent safe and effective, but many types of vaccines are overwhelmingly better taken than not. Presumably, both those against vaccines and those in favor of them share the aim of staying healthy, so this can then be a starting point of dialogue. One can then point to the usual evidence that vaccines are safe and effective. Frequently those arguing against vaccines are doing so on the basis of misinformation, such as the debunked link between the MMR vaccine and autism. Misinformation can be very hard to fight against, because people continue to believe it even after it has been debunked. Furthermore, some just distrust science, period. The vaccine case is also complicated by the fact that it would indeed be the safest for an individual if that one person could convince everyone else to get vaccinated, while remaining unvaccinated themselves. Of course, that strategy only works if a very small number of people opt for it. Once there is a population of unvaccinated people, they are at high risk, and the strategy fails to protect them.

### 3 The Key Difference Between Pragmatic Fallibilism and Relativism

The main issue to focus on here is what Kusch called dependence. A belief is only justified (or not) relative to an epistemic system or practice. There is no neutral or absolute way to justify belief, only ways that will seem correct to those working from a particular viewpoint or practice. This argument is related to the ancient problem of the criterion (Sankey 2012), which can be stated as follows: In order to justify my belief, I must use some method or criterion. But I can only use a method or criterion that has itself been somehow justified. If I use a further method or criterion to justify the first one, I seem to set up an infinite regress. On the other hand, if I justify the criterion on the basis of the original belief (as a method that picks out beliefs that I think are true), I am then arguing in a circle. Foundationalists tend to respond to this argument by saying that there is something that is absolute and “self-justifying”, either a criterion or an empirical observation. While this move does block the regress or break the circle, it is of course not open to the pragmatic fallibilist who thinks that nothing is absolute.

The response to the issue of the dependence of a belief to an epistemic system or practice should be rather to point out that not everything is built into such a system. In the empirical sciences, we have to test our theories in the physical world. We need to build things, create stable phenomena in the lab, synthesize chemicals, etc. The epistemic system or practice gives us tools to accomplish these tasks, but there is no guarantee that they will work. We can find things that are unexpected when experimenting as well, new phenomena that need to be incorporated into our epistemic system or practice.

Ian Hacking makes this point in relation to his styles of reasoning, which is his term for epistemic systems and practices. He emphasizes that in empirical science, setting out the basic laws and definitions does not determine what is true. You have to go out and do things—experiment, build things, intervene in nature—in order to find out what is true. A style of reasoning sets up problems to be addressed, gives you a vocabulary with which to discuss them, but it does not by itself answer the questions. Hacking says that in the empirical sciences all that the style of reason tells you is what is a possible candidate for truth or falsity, not what is true or false. Instead, our experience answers the questions that are set out in the style of reasoning:

when the question is a live one, and there is a context in which there are ways of addressing the question, or even methods of verification for possible answers, then

aspects of the world determine what the answer is, even though only people in a scientific society find out the answer. (Hacking 2000, S69)

Kusch rejects Hacking's argument and claims that relativism is unavoidable (Kusch 2010, 166 ff.):

in work not directly focused on styles of reasoning, Hacking has proposed a more general argument against relativistic social constructivism: while different communities might differ in the kinds of questions they ask and regard as 'live', once their respective questions are 'well-asked', the actual answers are fixed, and not socially constructed (Hacking, 2000, p. S69). I agree to the extent that of course it makes sense to say that different (scientific) traditions often seek to answer different questions, and that the questions of one tradition need not make sense to the members of other traditions. We might also go further and say that the members of scientific traditions usually assume that their 'real' questions have determinate answers. But this is where my agreement ends. These correct and trivial observations do not license the further claim that such questions really do have determinate answers as such, and that these answers are outside the realm of negotiations, interests, contingency and history (Kusch 2010, 168).

Individuals at a particular time and place will have the experience that answers their questions. They cannot step outside the realm of negotiations, interests, contingency and history, but still, the answer to the question posed does not come from the style of reasoning itself, rather it comes from the world. The relativist would have us believe that the answer is somehow built into the scientific practice and determined solely by it, that any answer can only have a circular justification from the practice itself, but experience in the world breaks out of the circle. We can be surprised by scientific results, finding things that are new and unexpected. William James makes this point by saying that "experience has ways of boiling over" and exceeding our expectations (1907, 106). Of course, we must use some set of practices to study the world and those practices are necessarily contingent and limited to a specific place and time, but this is not social construction or relativism unless the answers are built in from the beginning, which is clearly not the case in the empirical sciences.

Am I relying on some form of empirical "given" that is an absolute? And if so, does it not fall prey to the arguments given by Wilfrid Sellars concerning the *Myth of the Given* (Sellars 1956)? The answer to both questions is no, but it will take some argument to show why. Fortunately, Steven Levine just published a book on this issue, and Jim Garrison an article, so I refer to their work concerning the details relating to classical and to neo-pragmatism rather than rehearse all of those arguments (Levine 2019; Garrison 2019). In brief, Levine and Garrison both argue that Rorty and Brandom were wrong to take Sellars's argument as undermining the concept of experience that we get in William James and John Dewey. Rorty claimed that empiricism is a dead end and that we have no choice but to take the linguistic turn to mean that truth depends on agreement. Most importantly, Levine argues compellingly that we can recover a notion of experience that does not leave us in the linguistic realm, so we can get away from the idea that everything ultimately depends on agreement. Experience can settle issues without any claim that it is absolute. Garrison makes a parallel argument, focusing on Dewey.

My own argument is, first, the negative argument already given: The results are not built into a system. In the empirical sciences we must interact with the world to see



whether or not our theories are correct. Second, as I will argue below, the history of science shows a different image of science than that given by relativism.

#### 4 Science and Experience

Let us first consider my standard of “being consistent with experience”. It may seem that this standard is my new absolute, given that I would content that as a matter of fact, everyone uses experience to get around in the world. Imagine a religious fundamentalist who claims to believe only what the bible says, nothing more. How does such a person walk across the street? They cannot look to the bible to tell them when to cross. On the other hand, I accept that all observations take place from a point of view, at a given time, and are theory laden. In that sense, they are not absolute, certainly not in the sense that a traditional philosopher envisioned. They are also certainly not “given” in the sense of the myth of the given, rather, our experience must be interpreted by us from a particular point of view. So, while the injunction to look to experience seems universal, it does not have any specific content. This issue comes up in Kuhn as well. In a passage that sometimes gets overlooked (Nola 2003, 49), Kuhn says that empirical adequacy is a standard, “without which no man is a scientist” (Kuhn 1962, 42). Seeming to contradict other passages in *The Structure of Scientific Revolutions*, this standard would appear to apply across all paradigms and to be a demarcation principle for what counts as science. Kuhn takes this issue up (1977; 2000), leading to a debate in the literature over whether or not he changed his views or whether he was consistent throughout his work. In any case, the point here is that the injunction to look to experience is very general and therefore will not distinguish between many sets of practices. It cannot be used as a demarcation principle, but it does set some limits on what we mean by science. In a parallel way, saying that our theories and ideas have to work sets some limits on what we can believe. What I mean by saying that our judgments can be objective is simply that results are not built into our sets of practices. As I mentioned above, this is a negative argument that science is not relative because the results are not built into the system.

If we look at current and historical scientific practice, I claim that we will not find the kind of stalemates that those advocating relativism claim to find in the history of science, especially not in the long term. Of course, there may be periods of time in which a particular area of inquiry is split between two or more teams of researchers, although only temporarily. For example, in his 1987 study Peter Galison showed how a major dispute in particle physics was settled when one side admitted that they could not keep reinterpreting the data, that the negative results would not go away (Galison 1987). My point from this example is that while it is logically possible to keep a dispute open (fallibilism again, and underdetermination) in fact, if one looks at the history of science, disputes are resolved. There are actually three possibilities. First, one side of the dispute may give in and accept the other side, as in Galison’s example. Second, those resisting might become marginalized and unable to sustain a viable position. We might consider, for example, Herbert Dingle’s resistance to Einstein’s theory of relativity and what it did to his career (Chang 1993). Science frequently does not live up to the ideal of pluralism. Third, the dispute could remain open, with active research programs on both sides of the dispute. Only in the third case do we have an argument for the description of science advocated by the relativist.

Let us consider the chemical revolution as an example of the third situation, an open dispute. I can accept that for a period of time the scientific facts underdetermined a choice



between Lavoisier's oxygen theory and the phlogiston accounts. Hasok Chang and Martin Kusch seem to be in agreement about this point, but about little else (Chang 2012; 2015; Kusch 2015). Of course, this is far from accepting on my part that science is relative, given that it is only one case and is limited in duration. Scientists did not continue to use the phlogiston theory, it died out, even if Chang is correct in arguing that the chemists gave up on phlogiston too early. The fact is, chemists did renounce phlogiston, successfully developing the field of modern chemistry. It is possible that our current chemical theory is radically wrong, which is what fallibilism implies. It is also possible to try to revive phlogiston theory (going further than Chang) but it would take a tremendous amount of work. All the phenomena of chemistry would have to be explained in a new way (or rather an old way, in the case of phlogiston). More than two centuries of chemical innovation would need to be redescribed.

Chang uses this case to motivate his pluralism, not relativism. I accept pluralism and therefore have no problem with his use of the case of the chemical revolution. On the face of it, Kusch's position on the chemical revolution seems surprising. One might expect that he would want to use the case to show not only pluralism, but also relativism. However, Kusch thinks that he can give a social explanation for why Lavoisier's position won over phlogiston, so he rejects it as a case for pluralism. *A fortiori*, since pluralism is an essential element of relativism, he must also be rejecting it as a case for relativism. Of course, Kusch is privileging one kind of explanation. Social factors explain why scientists reached closure in the chemical revolution, Kusch claims, while any other kinds of explanations, what he calls narrow explanations (scientific ones, presumably) are undercut by the usual relativistic arguments. Kusch is therefore giving the kind of explanation that we find in the classic strong program. Scientists made a judgment in favor of Lavoisier which Kusch argues he can explain on social grounds. The problem is that the strong program claims that the only explanations that work are social (Bloor likes to call these causal explanations).

The point of the symmetry postulate is to enjoin sociologists to draw back from making first-order judgements. The point is to make such judgements the objects of enquiry. It is precisely judgements of this kind which are to be explained. Such a position is 'relativist' because there are no absolute proofs to be had that one scientific theory is superior to another: there are only locally credible reasons. Of course, the phenomenon of differential credibility is real. The aim of a relativist sociology of knowledge is not to ignore or deny such variation, but to explain it. Latour's idea that Strong Program symmetry means saying that all beliefs are equally credible is wrong. The claim is that all theories and beliefs equally face the problem of credibility, and hence that all differences in, and degrees of, credibility are equally in need of causal explanation (Bloor 1999a, 102).

First-order judgments (those of scientists) are relative, we are told, but they can be explained by the second-order judgments of sociologists. Thus, Kusch can be against pluralism while claiming that social explanations (and only social explanations) explain the victory of Lavoisier's chemistry.

Quite to the contrary, I would argue that social explanation are at least as underdetermined as scientific ones and that sometimes scientific consensus can be explained on the basis of experience.<sup>4</sup> Scientists give up theories that no longer seem to be working and adopt

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<sup>4</sup> Given the contingency in the development of science, it is not clear that a full explanation of the development of science is possible at all. For more on this issue of the strong program and explanations of the development of science, see the debate between Bruno Latour (1999) and David Bloor (1999a, b).

theories that are more successful. It is beyond the scope of this paper to make a full evaluation of the strong program or of the chemical revolution, but besides criticizing social explanation as the only possible kind of explanation, I will criticize the general argument against the role that experience plays in science, usually under the guise of “the experimenter’s regress” (Collins 1985). Sometimes the experimental apparatus can be validated by a theory that is epistemic independent of the theory being tested. A simple example is the use of a microscope in biology. How do you know that what you see in the microscope is accurate? You know from physics (optics, in particular), independently of the biology you are studying. That is not an absolute, but it does provide non-circular evidence. This example shows that there can be independent constraints on theory choice even if we accept the view that all observation is theory laden or built into an epistemic system or practice (Hacking 1983, 183; Galison 1987; 1988; 1989; Kosso 1988; 1989). These constraints result in objective choice because the theories that are presupposed can be epistemically independent of those under examination. Thus, reliance on independent constraints opens a path to a nonfoundational account of objective knowledge and again underscores the idea that while scientists set up a practice that is situated in a particular time and place, is communicated with a particular vocabulary and relies on various presuppositions, the results are not built in when they interact with nature. Furthermore, while results are always open to interpretation and they can be questioned, there are limits to these processes.

## 5 Conclusion

We should not try to claim that there are absolutes in order to block relativism. Living without absolutes does not lead to relativism or social construction, but it does define the human condition where we live at a particular time and place and with a given set of conceptual tools and knowledge. Relativists are making a mistake in denying the role of experience in the fixation of belief, and in ignoring the material culture of the sciences. Science is not just theory. One has to build things, synthesize chemicals, create stable phenomena in the laboratory, and these cannot be reduced to ideas and beliefs.

In closing I would like to set out the position of my pragmatic fallibilist on a couple of contentious issues: Is there a best (epistemological) method? While realists say yes and relativists say no, pragmatic fallibilists say the question does not have a simple yes-or-no answer. We should know by now that there is no such thing as “the scientific method”, i. e. no universal single method in science. The methods that are used in science are multifaceted and complex and do not apply everywhere. Methods used in ordinary life can only be more nebulous, multifaceted and complex. What I suggest is that the best response to the question is to look locally for techniques that work in a particular context. There may be, in a comparison of two methodologies or practices, some areas where one is clearly better and other areas that are not so clear. Consider western medicine and traditional Chinese medicine, for example. Is one better than the other? In some areas, western medicine is very effective, but in some areas, not so effective. For chronic pain for example, Chinese medicine may be better than Western medicine. There is no simple single answer as to which is better.

Can pragmatic fallibilism defeat a persistent skeptic? No one can defeat a persistent skeptic, so an absolutist is no better off in a debate with a persistent skeptic than the pragmatic fallibilist. Sure, the absolutist can boast that “my ideas correspond with reality” or “my methods lead to the truth” but why would any persistent skeptic accept those claims? The pragmatic fallibilist can present evidence for their claims, show that

their methods work, etc. No, that will not necessarily convince a persistent skeptic, but the absolutist is in the same position. Of course, the arguments against the persistent skeptic are frequently meant simply to justify our own position, rather than convince the skeptic. Someone who believes that we need absolutes may think that only absolutes can justify our beliefs. However, such a position simply begs the question against the pragmatic fallibilist who can be satisfied with non-absolute justifications of our beliefs.

Both relativists and atheists deny absolutes and Bloor presents both their positions as depending on simple dichotomies—knowledge is either absolute or relative, God either exists or He does not. Although the analogy between relativism and atheism may not seem to be very strong, Bloor uses it to argue that there is no middle ground, no way to reject absolutes and also reject relativism (2020, 394). In doing so, he makes a puzzling claim that there is no middle way between theism and atheism, that the only options are to proclaim that God exists or that God does not exist. Bloor has certainly heard of agnosticism, which is clearly a middle way between theism and atheism, so it is hard to see why he is ignoring agnosticism at this stage. Furthermore, given that agnosticism and fallibilism both withhold belief, the analogy between them can be seen as supporting the idea that there is a middle ground in the relativism debate. Notice that the parallel to agnosticism would be for the fallibilists to say that they do not know whether or not there are absolutes, just as the agnostics say that they do not know whether or not God exists. This is exactly what a consistent fallibilist should say, that is, that as far as we can tell, there are no absolutes, yet it is possible that we are wrong and that something is absolute. Just as the Pyrrhonian skeptic does not claim to know that nothing is known (Frede 1984), the fallibilist does not claim to be certain that nothing is certain. Instead, the fallibilist has a critical attitude towards belief, claiming that it may be wrong, no matter how well-justified our belief seems to be.

The question of the existence of God cannot be settled by the empirical methods that Bloor favors; to make the bold ontological claim that God does not exist is a metaphysical stance, not an empirical conclusion, given that one cannot prove a negative empirically. Indeed, the typical arguments for and against the existence of God are a priori and involve necessity and possibility, with actuality (or not) just coming as the conclusion. For example, the ontological argument says that God exists because He necessarily exists, as a perfect being. An atheist could counter that there is no possible being with God's attributes, and so the debate is joined. A reasonable middle ground is to hold that we have no rational justification to believe in the existence of God, if we were to hold that all of the standard arguments in favor of His existence fail, but we cannot thereby say that we have proven that God does not exist, rather we can say merely that we do not have any evidence. Withholding judgment, as the agnostic does, resonates very well with fallibilism in the case of our knowledge of science.

Moving back to the issue of relativism, it is possible to reject all absolutes while at the same time maintaining that one can rank methods and practices as better or worse, hence denying the Equal Validity Thesis. Is it possible to give an explanation of the belief formation other than a social explanation? Yes, it is possible to explain belief formation as resulting from experience. We can find evidence that is not built into our epistemic practice, but rather is independent of it. Our experience in the world tests our ideas, despite the fact that we must be testing our ideas from a particular perspective. We can be fallibilists who reject all absolutes without embracing relativism.

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