



Suspension of Belief and Epistemologies of Science

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Abstract

Epistemological disputes in the philosophy of science often focus on the question of how restrained or expansive one should be in interpreting our best scientific theories and models. For example, some empiricist philosophers countenance only belief in their observable content, while realists of different sorts extend belief (in incompatible ways, reflecting their different versions of realism) to strictly unobservable entities, structures, events, and processes. I analyze these disputes in terms of differences regarding where to draw a line between domains in which one has warrant for belief and those in which one should suspend belief and thus remain sceptical. I consider and defend the idea that the precise location of this line is subject to a form of epistemic voluntarism, and argue that a Pyrrhonian reading of the basis of such voluntaristic choice is both natural and transformative of our understanding of these debates.

Keywords

empiricism – scientific realism – doxastic voluntarism – stances – Pyrrhonian scepticism

1 Two Philosophical Projects

When philosophers are in a reflective mood it is sometimes possible to discern, in their discussions of the nature and scope of philosophy, a distinction between two different sorts of philosophical project. Though it has been described in a number of different ways, this meta-philosophical distinction appears *en passant* repeatedly in the history of philosophy, and thus it will, I suspect, seem immediately familiar to students of philosophy. Let me characterize it in terms of a contrast between “descriptive-explanatory” philosophy,

on the one hand, and “transformative” philosophy on the other.¹ The former project begins with some observations or data concerning real or imagined phenomena (thought experiments and the like), and proceeds to develop theories with which to account for those observations or data philosophically. Most discussions in metaphysics and epistemology are of this sort. In giving accounts of the nature of causation or the nature of knowledge, we begin with some observations or data regarding putative instances of causation and knowledge, and proceed to develop theories which aim to describe, explain, and analyze these things. That is the essence of the descriptive-explanatory project.

The transformative philosophical project has a rather different aim. Instances of it may well begin with observations or data, but then, instead of attempting to account for the relevant subject matter—though this may well be a stepping stone in the process of inquiry—the ultimate aim is to explore and develop philosophical insights that promote or enable some form of human flourishing, perhaps even by revealing strategies or cultivating habits of mind that facilitate such wellbeing. Famous and infamous examples of transformative proposals stand out in the history of philosophy. The later Wittgenstein, for example, is often associated with the aim of diagnosing pseudo-problems that are (putatively) the subject matters of so much mainstream philosophy. Once we achieve a certain degree of clarity regarding the misunderstandings that lead us to think that certain things are philosophically puzzling, so the claim goes, we will cast off our unhealthy, futile obsessions with such things and be better off for having done so. Another instance of the transformative approach to philosophy, to which I will return in some detail later, is that of Pyrrhonian scepticism, a version of scepticism associated with Pyrrho of Elis and developed into the form with which most of us are familiar by Sextus Empiricus (1933).

I will not say more here about the contrast just offered between descriptive-explanatory and transformative philosophical projects, but rather simply proceed with the hope that the distinction strikes an intuitive chord. My reason for rehearsing it is simply to motivate a consideration of the primary focus in what follows. One might wonder whether the philosophy of science is a transformative discipline and, undoubtedly, upon reflection, it seems that some branches of it are. Consider, for instance, the social epistemology of science and feminist critiques of science, to take just two examples. These projects,

¹ Gendler (2009) articulates a very similar distinction with a comparison between philosophy as “curve fitting” and philosophy as “life shaping”. For a historical perspective, see Cooper (2009).

inter alia, incorporate a number of attempts to grapple philosophically with the socio-political, economic, and other values that undoubtedly play a role in scientific practice, and that may thereby function to determine (in part) what ultimately comes to be accepted as scientific fact. Very often the agendas of this work are explicitly or at least implicitly transformative: we might learn something from such philosophical engagement about how the sciences could or should be transformed for the better.

On the other hand, large swathes of the philosophy of science appear to fit clearly into the descriptive-explanatory mould. Given the observations and data furnished by the sciences, what are our best philosophical accounts of scientific properties, causation, laws of nature, and natural kinds? Discussions of these and related issues are identified with what is now commonly referred to as the metaphysics of science. Given the observations and data furnished by the sciences, what sort of epistemic attitude should one take regarding their outputs (theories, models, etc.), from among the possibilities contested by (for example) scientific realists and antirealist empiricists? One might think, reasonably, that *these* sorts of debates are entirely concerned with descriptions and explanations of scientific phenomena. That is, one might describe their interlocutors as attempting to answer descriptive-explanatory questions: what sorts of ontologies are revealed by our best scientific theories and models, and how should one characterize the knowledge they codify? Is it defensible to believe only the observable consequences of our best theories, as some empiricist philosophers maintain, or should one extend belief further, as some realist philosophers contend, to their unobservable content as well—genes, electrons, and more?

In what follows I will argue that, surprisingly, what are generally thought of as traditional disputes in the descriptive-explanatory mode, regarding forms of realism and empiricism and the metaphysics of science, can also be viewed in transformative terms. Indeed, I believe that they should be viewed in precisely this way. The argument will turn on what I take to be an emergent theme in these disputes: namely, the idea of suspension of judgment, and thus belief, in certain “domains” of ontology—domains that are viewed by some as affording genuine explanations (of phenomena in other domains), but not by others.² I will suggest that these disputes are typified by a preoccupation with the issue

² I will use the term ‘suspension of belief’ synonymously with ‘suspension of judgement’. The latter is a more common translation in the ancient philosophical context; the former is more at home in contemporary epistemology of science. This conflation is reasonable, I hope, given that the immediate result of a suspension of judgement is a suspension of belief; perhaps they amount to the same thing.

of how far theoretical virtues (often referred to as epistemic and/or pragmatic virtues, such as simplicity, consistency, accuracy, etc.) can take us in making what I call ‘metaphysical inferences’, *viz.* inferences regarding the existence and nature of entities, structures, and processes that are beyond the abilities of our unaided sensory modalities to detect. In this technical usage, metaphysical inference concerns both things that are putatively detectable with the aid of instruments and things that are undetectable (in practice or in principle), whether described in the sciences or in metaphysics.

The theme of suspension of belief runs through both of the traditional disputes I have given as examples above, and on which I will focus throughout. In very general terms and to a first approximation, scientific realism is the view that our best scientific theories and models yield true (or approximately true) descriptions of both observable and unobservable aspects of the world. This view is often opposed by forms of antirealist empiricism, which (in various ways, differing in the details) restrict belief to certain claims regarding observable phenomena, and suspend belief with respect to the unobservable. Likewise, the philosophy of science has recently witnessed a veritable renaissance in work attempting to shed light on the ontological categories and natures of entities, structures, and processes described by the sciences, and this too has met a wall of resistance constructed by those who suggest that our epistemic grasp does not extend quite so far, and that we should instead suspend belief regarding certain metaphysical issues. The implicit unifying principle of the resistance is that at a certain “distance” from the empirical details of scientific work, the sorts of evidential considerations and theoretical virtues brought to bear in theory choice lose their potency. Their epistemic efficacy is, on this view, in the relevant domain or domains, irreparably diminished.

Once these disputes are understood in terms of suspension of belief, two interesting themes emerge. The first, examined in Section 2, is that the sorts of considerations weighed in deciding where the line should be drawn between domains of theorizing in which belief is appropriate and domains in which one should suspend belief are properly understood in terms of the adoption of different epistemic “stances” by different parties. The second theme, examined in Section 3, is that the sorts of arguments typically employed in determining where to draw these lines are subject to a form of voluntarism and, consequently, a philosophical standoff reminiscent of Pyrrhonian diagnoses of philosophical disputes more generally, based on the apparent, intrinsic rationality of different and conflicting stances. The apposite conception of rationality is scrutinized more thoroughly in Section 4. In Section 5, I exploit the analogy to Pyrrhonian scepticism in a tendentious manner so as to draw a conclusion about the nature of the traditional disputes in the epistemology of science just

described. The voluntary and rational nature of commitments made on opposite sides of these disputes illuminate how they are, in fact, transformative after all.

2 Doxastic Voluntarism, Stance Voluntarism

My stated intention is to consider whether certain debates in the epistemology of science are properly characterized as subject to a kind of voluntarism, but that is a vague starting point. What kind of voluntarism, more precisely? The relevant conception of voluntarism here is entirely epistemic. That is, it is concerned with the exercise of some form of voluntary control over one's doxastic states—belief, disbelief, and the suspension of belief. Doxastic voluntarism is thus often described as the view that beliefs can be freely chosen and, by contrast, doxastic involuntarism is the view that, on the contrary, doxastic states are in some sense forced. The doxastic involuntarist holds that one does not *choose* one's doxastic states; rather, one simply believes, disbelieves, or suspends judgement in a way that follows as a matter of course, as it were, from the application of some appropriate reasoning to one's evidence. The notion of choice, however, is generally left as something of a black box. As we shall see, 'choice' in this context can mean different things, and resolving certain ambiguities in the use of the term will help to refine the ideas of voluntarism and involuntarism further.

The pedigree of doxastic voluntarism is often traced to William James's (1956/1987) contention that there is no rationally obligatory way to chart a path between the opposed excesses of believing too much, in hopes of believing truths, and believing too little, in hopes of avoiding falsehoods. The epistemic risks an agent is willing to take, says James, are simply a reflection of her temperament, and there can be no epistemic obligation to choose precisely one degree of risk, however that may be ascertained. In more contemporary discussion case studies take centre stage, in which shared evidence, combined with an absence of reasons to suspect the epistemic superiority or inferiority of any of the relevant interlocutors, is incapable of generating agreement with respect to various contingent propositions. Philosophers embroiled in this "epistemology of disagreement" often defend specific proposals for how agents in such cases should proceed regarding belief (stick to one's guns, lower one's credence by a specified amount, etc.) in ways that suggest that one might choose a given course. These discussions of the plausibility and implausibility of doxastic voluntarism, both old and new, are tantalizing, but I will not succumb to the temptation of considering them presently. Instead, let us focus

our attention more specifically on whether choice is a concept that can be plausibility attached to the traditional disputes in the epistemology of science mentioned above.

It is surely tempting to consider debates between scientific realists and empiricist antirealists (I will simply use the terms 'realist' and 'empiricist' henceforth), as well as debates concerning the epistemic potency of the metaphysics of science, as possible instances of clashes between interlocutors who adopt contrary beliefs in keeping with different, arguably voluntary choices. After all, in both cases, we have excellent reasoners, all with access to the same observations and data, who nonetheless come to conflicting beliefs about the relevant subject matters. These are precisely the sorts of conditions that typify case studies of doxastic voluntarism more generally. In debates between the realist and the empiricist, the former believes claims about electrons and the latter does not. In debates concerning the metaphysics of science, some argue that there are good reasons to think that electric charge is a dispositional property, but others feign no hypotheses about the properties of electrons one way or the other and feel no compulsion to do so. Thus, it may well appear that in these debates, we have excellent case studies for thinking about the plausibility or implausibility of doxastic voluntarism.

These case studies are more complicated than they may appear on the surface, however, and as a consequence, some care must be taken before attempting to assimilate them under the banner of an analysis of doxastic voluntarism or involuntarism. The complications here concern the precise nature of (putative) choice in these contexts. Commonly, discussions of doxastic voluntarism take as their subject matter scenarios exemplifying a specific form, in which a given disputant believes a proposition p , and her interlocutor believes its negation, $\sim p$.³ In traditional disputes in the epistemology of science, however, this seems an inapt description of the disagreement at issue. For these are not scenarios in which propositions like p and $\sim p$ are contested, but rather scenarios in which one agent believes p , and the other *suspends belief* with respect to propositions like p . Thus, for example, in response to the realist's endorsement of a description of the properties of electrons, the empiricist pointedly *does not* say things like 'it is not the case that electrons have negative charge'. That is, she does not assert $\sim p$, where p is the claim that electrons have negative charge. Instead, she is merely agnostic about the existence of electrons and

³ These scenarios are also often presented as ones in which interlocutors hold contrary beliefs, but this of course entails that they hold contradictory beliefs of the sort indicated here.

descriptions of their putative properties. She suspends or withholds belief in that domain of inquiry: the domain of the unobservable.

Similarly, the opponent of the metaphysics of science does not say 'it is not the case that charge is dispositional'. She is merely agnostic about possible answers to fine-grained metaphysical questions regarding the properties of things (putatively) catalogued by well-confirmed scientific theories or detected in scientific practice. (Interestingly, this particular opposition is indicative of a position held not only by empiricists, but also by many realists as well.) She suspends or withholds belief in a particular domain of inquiry: the domain of metaphysical theorizing as circumscribed by metaphysicians of science.

Now, one might understandably harbour a nagging suspicion that traditional debates in the epistemology of science, which feature contrasts between believing and suspending belief in certain propositions, are not so different after all from debates about doxastic (in)voluntarism—and certainly debates about cases in the epistemology of disagreement—which concern believing a proposition or its negation. There are, I think, two reasons for this, both of which are instructive. The first is that the former case clearly points to an instance of the latter: a contrast between believing *p* and suspending belief about *p* points to a further contrast between believing that *p* is belief-apt and believing that it is not. That is to say, a straightforward disagreement *about whether to suspend belief* in a proposition *p* is clearly implicit in the contrast between believing *p* and suspending belief regarding *p*. An agent who believes *p* is also committed to believing that *p* is belief-apt, whereas an agent who suspends belief in *p* clearly believes that it is not. This further disagreement is clearly one that takes the form of an opposition between believing a proposition ('*p* is belief-apt') and its negation ('it is not the case that *p* is belief-apt'), and thus it exemplifies the scenario so commonly considered in discussions of doxastic (in)voluntarism.

A second reason for thinking that my examples from the epistemology of science are not interestingly different from the common scenario in which beliefs are contrasted with their negations is this: one might argue that the distinction between believing the negation of a proposition, on the one hand, and suspending belief in a proposition, on the other, is not by itself epistemologically interesting *qua* doxastic (in)voluntarism. That is to say, in both the epistemology of science cases and the common scenario, what we have is simply a difference in doxastic attitude regarding *p* and, arguably, mere difference in doxastic attitude is all that matters to a discussion of whether or not doxastic voluntarism is a compelling view.

There is certainly something to these foregoing reasons for thinking that traditional disputes in the epistemology of science do not mark out any

distinctive territory for a consideration of doxastic voluntarism. Nevertheless, it seems to me that they do; let us consider them in turn. Regarding the first reason, it is certainly correct to note that the contrast between belief in p and agnosticism regarding p points in the direction of another contrast between believing a further proposition about whether p is belief-apt and believing the negation of this further proposition. In saying this, however, note that the discussion has been shifted, and the original contrast remains to be considered as a putative instance of voluntarism on its own merits. The original contrast is distinct from and irreducible to the second. The original contrast is *not* one in which a belief that p (such as ‘electrons have negative charge’) is opposed to its negation (‘it is not the case that electrons have negative charge’). Rather, it is one in which a belief that p is opposed by believing neither p nor $\sim p$, and believing neither p nor $\sim p$ is a very different sort of thing than believing $\sim p$, quite independently of any further claims regarding whether p is belief-apt.

This brings us to the second worry about the distinctiveness of the epistemology of science cases, which suggests that there may be nothing especially interesting *qua* doxastic (in)voluntarism in the distinction between belief and suspension of belief. This seems clearly mistaken. The interesting dispute in cases from the epistemology of science is about whether propositions like p are the sorts of things that are even properly *candidates* for belief in the first place, and this surely points to a rather deeper sort of disagreement than the one between interlocutors who favour p and $\sim p$, respectively. That this is a deeper disagreement is evidenced by the fact that a shared commitment to the idea that p is belief-apt *underlies* the disagreement between those arguing over p and $\sim p$. One who contends that p and $\sim p$ are not even within the realm of appropriate belief clearly has a significantly deeper disagreement with both the advocates of p and $\sim p$ than either of these latter agents has with one another. It is this deeper disagreement that is at issue in debates between realists and empiricists, and in debates about the epistemic worth of the metaphysics of science.

What I have identified as “deeper disagreement” here pertains directly to what a number of authors in recent work (many in response to Van Fraassen 2002) have called “stances.”⁴ Let me use the term ‘stance voluntarism’ to distinguish cases of putative voluntarism in which the fulcrum of disagreement between epistemic agents in conflict is the question of whether a particular

⁴ The technical term ‘stance’ has entered a number of recent discussions in reply to van Fraassen’s (2002) contention that contrary to popular conception, empiricism should not be understood as a doctrine *per se* (such as the view that the only source of knowledge of the world is experience), but rather as a stance.

domain of inquiry is properly subject to belief. I will leave as an open question the matter of whether to regard stance voluntarism as simply a species of doxastic voluntarism, or as a different sort of epistemic voluntarism altogether—this may be simply a matter of legislating the use of these terms. More importantly, the distinctive and central point of interest in cases of putative stance voluntarism is the fact that the relevant notion of choice does not apply to belief in the first instance, but rather to stances, which are the sorts of things that determine whether or not propositions like *p* are candidates for belief within the epistemic framework of a given agent. By ‘stance’ here I will intend very specifically the notion of an epistemic stance, by which I mean to refer to a stance concerned with the generation of knowledge.

So, what is a stance? It is a cluster of commitments and strategies which together determine how someone goes about generating factual beliefs. A stance is not itself identifiable (for the most part, if at all) with a set of factual propositions, though the adoption of a stance may yield factual beliefs by way of application. Stances are perhaps best thought of as combinations of epistemic “policies” regarding the methodologies thinking subjects employ so as to generate their beliefs. For instance, many realists are apt to weigh the explanatory power of a hypothesis concerning unobservable entities or processes significantly in determining what degree of belief to associate with it; but the putative explanatory power of hypotheses concerning unobservables carries no weight with many empiricists. These differing attitudes manifest themselves as policy differences concerning how to weigh the evidential import of explanatory power where hypotheses regarding the unobservable are concerned. Propositions regarding such entities and processes may be true or false, but the policies whereby one reasons to the truth or falsity of such hypotheses, or suspends belief altogether, are not themselves true or false. Stances are not believed, but adopted. They are not (primarily or essentially) propositional, but rather comprise guidelines for epistemic behaviour.

The disputes of interest presently, between realists and empiricists and about the metaphysics of science, are typified by a contrast between two conflicting stances that we might label the ‘empiricist stance’ and the ‘metaphysical stance’. The metaphysical stance is adopted, in some form and to some degree or other, by those inclined to make metaphysical inferences. Recall (from Section 1) that what I am calling metaphysical inferences include reasoning both about scientific unobservables (whether putatively detectable using instruments or not) and further putatively unobservable phenomena discussed within the philosophical discipline of metaphysics. Conversely, as one would expect, the empiricist is keen to resist metaphysical inferences wherever they occur. Any attempt to describe a stance must be qualified by

the observation that they are likely, in practice, rather complex webs of commitments and attitudes, but let us leave the complexities aside here to identify the very core of the empiricist and metaphysical stances, which are no doubt incorporated into particular agents' epistemic lives in innumerable idiosyncratic ways. The central conflict between these stances can be described in terms of a contrast between the following epistemic policies, summarized by E1 and E2 on one hand, and M1 and M2 on the other:

E1: Reject demands for explanation in terms of things underlying the observable.

E2: *A fortiori*, reject attempts to answer such demands by theorizing about the unobservable.

M1: Accept demands for explanation in terms of things underlying the observable.

M2: Attempt to answer such demands by theorizing about the unobservable.

The opposition summarized in terms of these epistemic policies is easily recognizable, I suspect, in numerous struggles between empiricist and metaphysically-inclined thinkers throughout the history of philosophy. Where those adopting the metaphysical stance seek deeper explanations of the observable phenomena, those adopting the empiricist stance are commonly found to reject the *explanantia* proposed as rather more mysterious than the *explananda* they are intended to illuminate, which (it is sometimes added) require no explanation to begin with. The empiricist's austerity, conversely, is viewed by the metaphysically inclined as furnishing highly impoverished understandings of the phenomena. An amelioration of this situation, one hears, can be achieved only by accepting certain kinds of explanatory power as a guide to theorizing about the nature of the world. Herein lies a familiar dialectic.

Having elaborated a shift in thinking from the common scenario familiar from discussions of doxastic (in)voluntarism to the idea of stance voluntarism, questions that were earlier forestalled now rise up with some force. What is the case for stance voluntarism in connection with traditional disputes in the epistemology of science? The observation that some agents suspend belief in domains of inquiry where others believe factual propositions instead, in keeping with their respective stances, does not by itself entail that these stances are adopted voluntarily. The notion of stance voluntarism shifts our thinking about choice from the context of belief to the context of policies regarding how one *comes to believe*, and these two contexts seem logically independent

of one another with respect to the plausibility of voluntarism.⁵ Leaving aside the question of whether beliefs can be freely chosen, let us turn now to the more pressing issue here of whether domains of admissible belief, corresponding to certain domains of ontology, are the sorts of things that can be freely chosen. That is, let us consider whether the dividing line between domains suitable for belief and those suitable only for suspension of belief is something that admits of some kind of choice.

3 “Choosing” an Epistemic Stance

The question of whether ‘voluntarism’ is an appropriate label for the uptake of different stances by realists and empiricists, as well as by those who contest the epistemic standing of the metaphysics of science, ultimately turns on the question of how agents come to adopt the stances to which they are committed. How does this come about? At least one plausible route to the uptake of stances seems clearly involuntary, *viz.* the route of passive acculturation. Presumably, even the most cursory observations in cultural or social anthropology or sociology would reveal that agents who are immersed in a setting in which a particular worldview is widespread are likely to perpetuate commitments to certain stances, whether epistemic, social, cultural, political, or what have you. And it is perhaps uncontroversial to suggest, even in the absence of systematic anthropological or sociological data, that this not uncommon phenomenon is at least partly explained by what one might regard as *passive* or unreflective absorption. To the extent that human beings sometimes acquire their stances (and, for that matter, their beliefs) passively, without any reflective deliberation or thought *per se*, choice seems an unlikely way to characterize such acquisition.

In the context of philosophical theorizing, however, merely passive absorption seems neither here nor there. In this context, and more specifically in thinking about the sorts of epistemic stances that philosophers propose, discuss, defend, and attack in the course of their work, committing to a stance is clearly a highly reflective exercise. This is not to suggest that epistemic cultures have no influence here, but in a field in which iconoclasm is hardly rare, and where conflicting stances are commonly championed across its breadth, passive absorption is an unpromising explanation of the adoption of stances.

5 Cf. Clarke (1986), which argues that although beliefs are not chosen, attitudes concerning belief acquisition procedures, relevant evidence and its assessment, etc. are indeed chosen. His “attitude voluntarism” thus appears to resemble what I have called stance voluntarism.

It is certainly unpromising all by itself, for in asserting the explanatory completeness of passive absorption one would thereby assert that reflective consideration is utterly impotent, which seems implausible. The age of schools in philosophy, in which the students of one's academy would uniformly toe the line of its preceding luminaries, is dead. But this, of course, still leaves entirely open the question of what it might mean to choose on the basis of grounds that include critical reflection or conscious deliberation. The relevant notion of choice here is still far from obvious.

In his seminal work on stances, Bas van Fraassen (2002) identifies two criteria that he takes to be relevant to the adoption of a stance. The first criterion is rationality; only rational stances are acceptable choices. His conception of rationality is famously thin, or permissive. On this conception, any stance or body of beliefs is rational if it is consistent, probabilistically coherent (in the sense that one would not be led to accept Dutch books on the basis of it), and passes the broadly pragmatic test that its adoption would not, *eo ipso*, sabotage the epistemic aspirations of the agent concerned. Let us use the generic term 'coherence' to refer to this combination of markers of rationality. The first two of these markers, consistency and not running foul of the probability calculus, are concerned with logical coherence as it applies most obviously to sets of propositions or beliefs. Given that stances are not primarily or essentially propositional, however, the third marker—no "self-sabotage by one's own lights" (Van Fraassen 2004: 184)—is especially important presently. It is also the least amenable to rigorous definition; indeed, it seems impossible to characterize in anything other than intuitive terms. Nevertheless, the general idea is straightforward: if, in the light of one's own standards of success, one's stance is likely or perhaps even guaranteed to disappoint, it is irrational.

A permissive account of rationality would seem to favour the prospects of voluntarism. In general, the stricter the canons of rationality one accepts, the smaller the leeway they will permit with respect to rationally sanctioned stances and beliefs. In the limit, if our conception of rationality were so strict as to sanction only one approach (stance or set of compatible stances) to a given body of evidence and only one set of beliefs upon considering it, the possibility of choice would be ruled out entirely, so long as one hopes to be rational. To put it another way, if the requirement of rationality were so strict as to *compel* certain stances (or beliefs), then any notion of choice would become illusory—one would not have a choice as such, on pain of epistemic incompetence. Thus, some significant degree of permissiveness in our conception of rationality appears crucial to the prospects of stance voluntarism. It is only fair to note, however, that permissive accounts have attracted a fair share of criticism. In Section 4, I will argue that these criticisms miss their mark.

In the meantime, let us consider Van Fraassen's second criterion for choosing stances. Ultimately, one chooses stances that best fit with one's epistemic and other *values*. It is these values that determine which stances are most appropriate for any given individual, and since values are things that often vary from person to person, different stances are chosen by different people. Everyone is properly constrained by the demands of rationality but, beyond that, it is the agent relativity of values that produces the various options that one finds in familiar philosophical disputes, including the disputes in the epistemology of science that are my focus here. For example, when a realist believes claims about the chemical composition of DNA molecules, she is not behaving irrationally even from the point of view of a voluntarist empiricist, so long as there is nothing incoherent about the realist stance that licenses belief in such claims. A realist believes things in this context in such a way as to go beyond an empiricist's beliefs, but this is merely a reflection of the fact that empiricists do not value the sorts of explanations given in terms of strictly unobservable biochemical entities that realists do—at least not in the same way, as indicative of true propositions.

Let us assume for the moment that both realism and empiricism embody rational stances, such as the metaphysical and empiricist stances described earlier. What follows? If different agents adopt contrary but nonetheless rational stances, a form of relativism immediately results. For if rationality is the only stance-transcendent criterion by means of which to evaluate them, and if at least some contrary stances are rational, then there is no way to adjudicate further with respect to the adoption of stances except in terms of values that are agent relative; but different values point toward different stances. Thus, so long as one meets the test of rationality, one cannot be convicted of any epistemic fault in one's choice of stance merely on the basis that one's values differ from one's interlocutor's. This exemplifies the classic relativist state of affairs: one's choice of stance, from among rational options, is relative to one's values. In debates in the epistemology of science, all parties make ampliative inferences from observations and data, but the answer to the question of just how ampliative an inference one should accept—leading to claims about observable phenomena, or DNA molecules, or causal connections, or mathematical entities, or possible worlds—is precisely what is determined by one's stance.

It is no secret that while there are card-carrying relativists in some quarters, the very idea is an anathema in many philosophical circles. There are relativisms, however, and then there are relativisms. Stance voluntarism entails a particular form, and it seems to me that this form is not hostage to many of the features that typically give rise to worries about relativism in other areas. For example, relativism is often held to foreclose debate, whereas many view the

possibility of serious engagement to be a laudable feature of epistemological theorizing. In the case of stance voluntarism, however, there is no question of *ruling out* debate in principle; indeed, engagement can take one of two substantive forms. First, one might contest whether a given stance is, in fact, sufficiently coherent to meet the standard of rationality.⁶ Furthermore, it is always possible to exhibit the virtues of one's own values and to expose the putative deficiencies of others in hopes of helping one's interlocutors to see things differently. Admittedly, such arguments are generally question begging, since they depend for their cogency on stance-relative commitments. Nonetheless, values can change, and people have been known to change their minds.

Perhaps the most widely held generic worry about relativism is the idea that it sanctions contradictory beliefs, which leads to charges of incoherence. I will not take sides here on whether these arguments are successful, for it suffices presently simply to note that they concern the relativity of *belief*. It is one thing for Claudius to believe that the earth is at the centre of the universe and for Nicolaus to deny this proposition, but it is the idea that both claims may be true relative to different frameworks, or worldviews, or paradigms that generates the most heat in disputes between relativists and non-relativists. The relativism inherent in the cases of stance voluntarism with which I am concerned in the epistemology of science has a very different structure, however. As we have seen, in these cases it is not propositions and their negations that are contested, but rather beliefs and the *suspension of belief*. This is a very different sort of opposition, producing a very specific, nested structure of beliefs across interlocutors. A more conservative realist believes all the same facts about the world as the empiricist, but then adds more where the empiricist is agnostic. A more liberal realist, with a greater appetite for metaphysical theorizing, believes all the same facts about the world as her less adventurous cousin, but adds more, about which her cousin is agnostic. In none of these disputes do we find interlocutors asserting *p* and $\sim p$, respectively.⁷

Of course, the realization that stance relativism, in the context that is our present focus, avoids some of the most obvious and serious challenges facing relativism more generally does nothing to diminish the prospect of a dialectical impasse here between those who are secure in their conflicting epistemic

6 For example, see Chakravarthy (2007: 20–26), which considers and ultimately rejects van Fraassen's contention that the metaphysical stance is irrational.

7 For a defense of belief relativism tied directly to something resembling stance relativism, see Schoenfeld (2014), which links the idea that it is sometimes rational to believe *p* and also to believe $\sim p$ to the fact that different agents can have different “epistemic standards” (which sound much like stances (2014: 199): “function[s] from bodies of evidence to doxastic states which the agent takes to be *truth conducive*”).

values and, consequently, the conflicting stances they favour. This is one consequence of relativism that cannot be finessed, even in the case of debates between realists and empiricists and about the value of the metaphysics of science. It is difficult to see how this sort of deadlock can be broken, on pain of begging the question about what turn out to be fundamental epistemic policies, about which there can be no productive debate, where by ‘productive’ I mean: debate that produces or is likely to produce a definitive resolution that is acceptable to all of those concerned.

This sort of stalemate is a product, I believe, of what Gurpreet Rattan (ms) has called “deep disagreement,” which he describes in terms of three features. The first is fundamentality. Deep disagreement “concerns fundamental principles, norms, or rules” regarding, for example, how evidence bears on a theory and how to understand key concepts (such as evidence) in the first place. Crucially, in the present context, this includes fundamental norms regarding the evidential weight of explanation and the relative efficacy of employing theoretical virtues as criteria for theory choice in different domains of theorizing. A second feature of deep disagreement is intractability, indicating a problem with respect to common ground—there is insufficient common ground to serve as a base from which attempts to break the deadlock can be initiated. A third feature is trenchancy: the disagreement “does not lead to conciliation but remains uncompromising and committed and can be, or can be expected to be, longstanding.” Stance voluntarism and the relativism it produces are exemplifications of deep disagreement.

In the previous section, I set out to show how traditional disputes in the epistemology of science can be understood in terms of the adoption of different stances, which then differentially determine where lines are drawn between domains of theorizing in which belief is appropriate and domains in which one should suspend belief. In this section I have extended this understanding to incorporate the ideas of stance voluntarism, relativism, and dialectical impasse (a theme to which I will return in Section 5). Having come this far, what have we learned about the relevant notion of choice where stances are concerned? Though the distinction between choosing beliefs—the common scenario discussed in debates about doxastic voluntarism—and choosing stances is helpful, it is worth noting just how ambiguous the notion of choice here remains. Rather than speak of stances being freely chosen I have emphasized the idea that different stances are rationally permissible. If different stances are rationally permissible it seems only natural to speak of choosing among them, but how precisely are such choices made? The mere fact that options are rationally permissible does not by itself entail or even suggest any very specific account what it means to make a free choice in accord with one’s values.

Finer grained questions about the precise nature of choice are very much open in this context, and I will not resolve them here. In an analogous consideration of the debate between mathematical realists and nominalists, Gideon Rosen (2001: 88) reaches an analogously relativistic conclusion, characterizing choice in terms of an answer to a question an agent must ask herself about what makes “most sense” to her, an answer which in part simply “depends on how things strike you.” Is there more to be said by way of analysis of how one acts in accordance with one’s values, and how things strike us? Some may see a way forward in phenomenology. Matthew Ratcliffe (2011: 122, 126), for example, draws on Van Fraassen’s description of stances as (or as connected to) “existential orientations,” and cites James on the role of affective states as facilitators of philosophical inquiry, constituting “all-encompassing ways of experiencing the world and one’s relationship with it, such as feelings of strangeness, mystery, tranquillity, unreality, limitation, contingency, coherence, anxiety, satisfaction, frustration, mystery, meaninglessness, significance, separateness, homeliness, completeness and so on.”

I suspect that attempts to spell out the metaphor of choice yet further will not take us far, simply because it is doubtful that there is anywhere left to go. It is very unclear, for instance, whether questions about whether the adoption of stances is active, in the sense of requiring some deliberate action on the part of the will, or rather passive, simply following somehow automatically as an optimization of one’s values in epistemic practice, can be made philosophically or otherwise tractable. And in either case, the relevant processes may be largely or wholly unconscious and not amenable to conscious articulation. The central terms involved in drawing these distinctions are insufficiently transparent, I believe, to afford any real traction.⁸ Nevertheless, I hope I have done enough in this section, at least, to defuse a number of common concerns over the appeal to “choice” in discussions of voluntarism.

4 Digression: Permissive Rationality

Before proceeding to draw some Pyrrhonian inspiration from the idea of stance voluntarism, let us discharge an assumption. In the previous section, in elaborating how a dialectical standoff can arise in the confrontation between

⁸ For a more detailed consideration of the general problematic, see Chakravarty (2011). Cf. Shah (2002), which decouples doxastic voluntarism from the idea of “decisional control” (2002: 436), arguing instead for a Kantian approach to voluntarism in which the mere “capacity to be moved” (2002: 442) in the face of evidence is sufficient.

advocates of different and conflicting stances, I assumed that such stances can be rational options. As noted, however, a number of authors hold such permissiveness to be incompatible with any acceptable account of rationality. In this section, I will contend that this reaction to permissiveness is ill-founded. No compelling arguments support it, and even if one were to grant the specific objections raised for the sake of argument, they would still fail to apply to the traditional disputes in the epistemology of science that are my present concern.

A common reaction to the notion of voluntarism in epistemology very generally is well summarized by Paul Dicken (2010: 79): it “is too wildly divorced from our intuitive understanding of rationality to be credible.” But appeals to intuition here are by themselves ineffectual, because intuitions like these are hardly universal and, indeed, the relevant intuitions in this arena are *contested*. Thus, any appeal to the unintuitiveness *simpliciter* of stance voluntarism can only serve to beg the question against voluntarism as a philosophical proposal. As Dicken himself acknowledges (2010: 86), “provided one is willing to swallow a degree of epistemic anarchy at the meta-philosophical level, there is nothing straightforwardly inconsistent with being an epistemic voluntarist.” Of course, it is the apparent threat of “anarchy” that fuels the reactions of those who intuitively balk at permissiveness. But one philosopher’s ‘anarchy’ is another’s ‘pluralism’, and shorn of the pejorative or cheerful connotations that such terms may evoke, they are all merely indicative of the relativism inherent in stance voluntarism, not indictments or defences of it. If one is to reject stance voluntarism, a more substantive rationale is required.

Substantive complaints about the account of rationality underlying stance voluntarism generally take one of two closely connected forms. The first is the charge that permissive rationality licenses too much—it counts as rational stances that are clearly not. Consider, for example, Marc Alspector-Kelly’s (2012: 189) suggestion that “the most trenchant criticism is the easiest to state: voluntarism is so wildly permissive that it countenances as rational belief-sets that are obviously completely crazy, including belief-sets which completely disregard all empirical evidence.” The second complaint is that the permissive account of rationality is incomplete, in that it fails to include obvious criteria of rationality (of the sort that would, one might add, rule out clearly irrational stances that would be permitted otherwise, as per the first complaint). Let us consider these worries in turn.

If rationality is understood in terms of coherence, broadly construed so as to include both the formal injunctions to avoid inconsistency and violations of the probability calculus, as well as the pragmatic injunction not to adopt a stance that would sabotage one’s epistemic aspirations, will clearly irrational

stances count as rational? James Ladyman (2004: 142) suggests that permissivism “entails that someone who capriciously disregards all the evidence and counter-inducts cannot be impugned so long as their synchronic degrees of belief remain consistent.” It is difficult, however, to follow the alleged entailment. Given that evidence is, by definition, relevant to determining whether a proposition is true, disregarding the evidence would court the sabotage of *anyone’s* epistemic aspirations. This would count as epistemological lunacy for the permissivist and non-permissivist alike (cf. Van Fraassen 2007: 354). The question of whether counter-inductivism would count as rational is more subtle, for one might like to know more precisely what is intended here by ‘induction’. But even in the absence of clarification, the entailment is doomed again, because if reasoning counter-inductively is demonstrably undermining of one’s epistemic project, then it is clearly irrational even for the permissivist. Lacking a compelling illustration, the case for the idea that permissive rationality admits seemingly irrational stances has not been made.

The second major worry about the permissive account of rationality is driven by the absence of any explicit mention of the concept of evidence. Stathis Psillos (2007: 158) argues that any acceptable view of rationality must include a “principle of evidential support”: “A rational agent should regard *all* evidence that bears on a certain belief (or hypothesis) judiciously, try to take it into account in coming to adopt a belief (or a hypothesis) and then form her judgement in its light.” Permissivism is defective in virtue of making no mention of this principle. The complaint, however, much like the previous one, pays too much attention to the purely formal constraints on rationality accepted by the stance voluntarist and too little to the pragmatic constraint. Again, it seems uncontroversial that one disregards evidence at one’s peril, and this is no less true for the voluntarist.⁹ The injunction to pay due attention to evidence is *built in* to the pragmatic injunction to avoid self-sabotage. Very much the same thing can be said of the further suggestion by Psillos of yet another criterion of rationality, that “beliefs should be formed by reliable means or methods” (2007: 162). Anyone who adopts methods that are, so far as she can tell, unreliable, is consciously undermining her own epistemic project. Consequently, such a person is irrational according to permissivism.

⁹ There is a further issue here which I will not consider, regarding how evidence is handled. Psillos also argues that some agents are irrational because they assess evidence incorrectly, but will count as rational for the permissivist so long as their beliefs are formally coherent overall. For a response which draws a distinction between attributing error and attributing irrationality, see Van Fraassen (2007: 354).

Having argued that concerns about the permissive account of rationality are misplaced, let me end this digression with a final thought about their lack of purchase in the specific context of debates between realists and empiricists and regarding the metaphysics of science. *Even if* one thought that permissiveness sanctions some stances that fail the test of some intuition or other concerning what is rational, it is difficult to see how this worry gets any traction in connection with traditional debates in the epistemology of science. Recall that these disputes are engaged by interlocutors who draw the line between domains in which belief is appropriate and domains in which one should suspend belief in different places. There is no question here of anyone proposing to adopt a methodology of counter-inductivism, or proposing to disregard evidence. In these cases, the most general principles of reasoning as they pertain to the importance of evidence and acceptable patterns of inference are broadly shared. The relevant differences here concern judgements regarding the epistemic potency of such evidence and reasoning, and how far it can take us. In this context, I suggest, any attempt to convict any one stance of irrationality is implausible on its face, and refusals to accept this conclusion are bound to beg the question.

Peter Lipton (2004: 153) cites Kuhn's treatment of how theoretical virtues appraised by scientists (accuracy, consistency, scope, simplicity, fruitfulness) are rationally but nevertheless differently interpreted and weighed, leading to differential theory choice, as a "constructive proof of voluntarism." Whatever one makes of Kuhn's particular description of scientific discourse and knowledge, his picture is suggestive of a more generally tenable moral: it is implausible that scientific observation and data should themselves prescribe any uniquely determinate choice of stance and resulting beliefs or suspensions of belief. Philosophers and scientists alike are often far from unanimous in such judgements, and these disagreements cannot be explained in terms of all but one stance being rationally permissible. If one is to insist that there is a privileged stance, the immediate question must be: on what basis? Any answer to this question will be diagnosable as indicative of commitments that are simply constitutive of the stance itself—commitments which need not be shared. This fate awaits anyone who might think her stance uniquely rational and, in the absence of stance-transcendent reasons for favoring her own, no amount of table thumping will help.

5 Ancient Scepticism and Transformative Philosophy of Science

I have presented traditional disputes in the epistemology of science as ones in which commitments to regard certain kinds of propositions as true (or false)

and others as more fitting for agnosticism are properly understood in terms of voluntary choices among rationally acceptable epistemic stances, and have defended this view against some objections. It is time now to redeem my promise *ab initio* to parlay the preceding discussion into some insight concerning the nature of these traditional disputes that reveals them to be components of a larger transformative philosophical project. This demonstration turns on the idea that the dialectical impasse generated by stance voluntarism, between interlocutors committed to different stances, is analogous in certain ways to the deadlock recognized by Pyrrhonian sceptics in philosophical disputes more broadly. There are disanalogies here too, and I will take care to identify them.

The analogy to Pyrrhonism with respect to suspension of belief on which I will rely stems from a consideration of the sorts of arguments that are commonly employed, from the perspective of a stance, to justify drawing the line between domains fit for belief and agnosticism in the particular places that different agents draw them. It will come as no surprise to learn that that these arguments are often, perhaps typically, sceptical arguments. That is, they aim to justify drawing the line demarcating the domains in which one should believe and suspend belief by appeal to sceptical considerations: domains appropriate for suspension are ones in which one cannot have knowledge, or fails to have knowledge, or has insufficiently compelling reasons to commit to the idea that one has knowledge. Accordingly, let us begin by reviewing the Pyrrhonian conception of suspending belief with an eye to illuminating the dialectical context of traditional epistemologies of science.

To the extent that Pyrrho is an interesting figure here, it is in virtue of an epistemological as opposed to a metaphysical reading of the tradition that emanates from him. I will thus leave aside one possible interpretation of Pyrrhonism, according to which the very natures of things in themselves are indefinite or indeterminate, in that they have no definite or differentiating features, and invoke instead the common epistemological reading of Pyrrho according to which we are simply unable to determine or differentiate these features, whatever they may be. Even more accurately, I will advert in what follows to the less committal understanding of Pyrrhonism suggested by Sextus Empiricus: we have not succeeded in acquiring such knowledge. Insofar as one focuses (for the moment) specifically on the *sceptical* nature of these arguments, Academic scepticism—by which I mean to refer to the view that we can have no knowledge of the world, as opposed to the Pyrrhonian suggestion that we suspend belief with respect to all such claims—is no less relevant. In both cases one finds forms of argument routinely associated with scepticism very generally.

For example, consider the forms of argument associated with the Modes of Agrippa, often presented in effect as a trilemma. In response to a challenge to justify one's belief in a proposition p , one can of course provide reasons for one's belief, but these will be subject to the same challenge in turn. One might provide yet further reasons, and further reasons, leading ultimately to a regress of justifications *ad infinitum*. Or one might simply dig in one's heels at some point, thereby inviting the charge of dogmatism (familiar from discussions of foundationalist epistemologies). Or one might appeal in such a chain of reasoning to a proposition cited earlier, thereby inviting the charge of circularity (often levelled against coherentism). The general form of this sceptical attack is widespread and, as it happens, no less common in contemporary disputes in the epistemology of science, *mutatis mutandis*, than in the realm of ancient philosophy.

As an illustration, consider a generic example applicable to both the debate between realists and empiricists and debates concerning the epistemic valuation of the metaphysics of science. This comes by way of the problem of underdetermination, which functions as something of a master argument in a number of places. Imagine that one has acquired observations and data sufficient to lead one to infer the existence of neutrinos. But wait, says the empiricist—what about the problem of underdetermination? There is always more than one theory regarding the ontology underlying the observed phenomena that might account for them; surely this undermines the inference to the existence of neutrinos. A response to this challenge often comes in the form of an appeal to inference to the best explanation: let us infer that theory which, if true, would provide the best explanation of the phenomena. But wait, says the empiricist—what about the assumptions and principles (background knowledge, views concerning theoretical virtues, methods of ranking, etc.) on the basis of which one assesses possible explanations? How is this background, according to which the existence of neutrinos *is* in fact the best explanation, defended? Now, apply Agrippa's trilemma.

Given that this form of opposition is bread and butter to sceptics very generally, there is nothing here yet to suggest that traditional disputes in the epistemology of science have any transformative potential. For all I have said thus far it may seem that realism and empiricism, for instance, simply furnish two different ways of describing the epistemic upshot of scientific theories and models. It is at this juncture, however, that I believe the Pyrrhonian tradition proves instructive. The identification of domains of theorizing in which one should suspend belief is immediately suggestive of Sextus's notion of *aphasia*, or speechlessness: the inability to say anything further. Once one has identified such a domain, driven by one's epistemic stance, one refrains from asserting

propositions regarding the entities, structures, and processes that are its putative subject matter. One makes no commitments; one is speechless with respect to the truth or falsity of such propositions. Arguably—this is certainly a theme among pragmatist philosophers—this should bring along with it something analogous to what Sextus calls *ataraxia*: tranquillity, or freedom from worry. Once one identifies a domain in which belief should be suspended, one then ceases to worry about the truth or falsity of propositions associated with it. A sense of calm or peacefulness follows.

Granted, this tranquillity is a highly intellectual sort, the sort that follows from coming to understand that certain theoretical puzzles, previously thought vexing, concern matters about which knowledge *per se* is unavailable; perhaps the relevant questions have been ill-formed, or incorrectly understood, or have generated pseudo-problems. For the philosopher whose calling it would otherwise be to worry precisely about such matters, this is significant. If the empiricist has nothing invested in beliefs about the nature of the quantum world, its otherwise very troubling conceptual challenges should hardly keep her awake at night. If a scientific realist has nothing invested in the precise ontology of properties like charge, then the question of whether seemingly fundamental dispositions have categorical bases (which a number of authors have debated in considering properties like charge) is of no great concern.

Let us take one step further. I have suggested that suspension of belief in the epistemology of science may well produce a kind of Pyrrhonian tranquillity in those having the sorts of epistemic stances that promote suspension. But now, having explicated the nature of stance voluntarism, I submit that a genuine understanding of these issues should bring with it a state of meta-level *aphasia* and subsequent *ataraxia* concerning the very nature of disputes between traditional epistemologies of science, like realism and empiricism. Once one understands that the values that promote different epistemic stances, though conflicting, are nonetheless rationally permissible, there is simply nothing more to say about the resolution of these disputes, and this should, according to the Pyrrhonist, produce in us a sort of calm or peacefulness. This brings to mind Sextus's notion of *isostheneia*, the idea that considerations on opposite sides of a question have "equal strength," the experience of which engenders a form of tranquillity in those who have examined them.

Some care is required in drawing this parallel. The Pyrrhonian problematic maps onto contemporary epistemology of science in some ways but not in others. It is important to note, for example, that a thoroughgoing Pyrrhonist affirms nothing, withdrawing belief from all matters of fact, whereas the empiricist, the realist, and various metaphysically inclined folk who recognize propositions about causation, modality, mathematical entities, and possible

worlds (to pick just a few topics) as true, literally construed, are clearly willing to affirm various things. It is only with respect to domains in which these agents suspend belief that the analogy to Pyrrhonism applies. Furthermore, for Sextus, considerations relevant to the suspension of belief seem to be somewhat narrowly conceived in terms of arguments very directly concerned with whether the relevant beliefs are true or false, whereas for the stance voluntarist, broader and more indirect considerations seem relevant to determining when agnosticism is appropriate, such as one's valuation of the evidential force of various kinds of explanation, and the methodological commitments one may adopt as a result.

There may appear to be a discrepancy at the meta-level as well, but again, this appearance must be handled with care. Where the Pyrrhonist affirms nothing, the stance voluntarist affirms that different and contrary stances are rational. Here the comparison breaks down, however, because Pyrrhonism is all about withholding belief from propositions regarding matters of fact concerning the nature of the world, whereas the judgement that different stances are rational involves an assessment of something rather different: the coherence of epistemic policies brought to bear in assessing observations and data relevant to considering matters of fact. A more fruitful comparison here is one between the Pyrrhonist conception of *isostheneia* with respect to arguments regarding matters of fact, and the stance voluntarist's analogous conception of parity of rationality with respect to stances meeting the tests of coherence. The Pyrrhonian sceptic's assessment that no one belief is more compelling than its rivals *qua* truth maps nicely onto the stance voluntarist's assessment that no one coherent epistemic stance is more compelling than its rivals *qua* rationality.

Of course, it is only fair to note that the Pyrrhonist and the stance voluntarist draw different morals from their respective standoffs. Pyrrhonism suggests that in the presence of a stalemate, one will withdraw from epistemic preoccupations as such, whereas the stance voluntarist allows that different agents with different stances will engage in their epistemic preoccupations in different ways.¹⁰ But just as the Pyrrhonian sceptic offers no ultimately telling argument for suspending belief as the "correct" epistemic attitude, the stance voluntarist offers no coercion to preclude debate between those holding different stances. Rather, she simply offers to reveal the true nature of these

¹⁰ This allows that scientists with different epistemic stances may nonetheless engage in one and the same scientific *practice*, for practice and epistemic assessments of the outputs of such practice (theories, models, etc.) are separable. The history of science would seem to furnish ample evidence of differences in interpretation across shared research programs.

debates as effectively irresolvable, because they are ultimately reducible to differences between values that constitute a person's epistemic outlook, both affective and otherwise. These values determine how putative evidence strikes one and what force it carries, and the differences here are *deep*: fundamental; intractable; trenchant. In the realization that one has no non-question-begging arguments with which to proceed, one might well feel the force of something like *isostheneia*.

I began this paper by asking whether the philosophy of science is the sort of discipline that explores insights or cultivates habits of mind that facilitate human flourishing. Indeed, it had always seemed to me that traditional disputes in the epistemology of science are not at all transformative in this sense. If the foregoing discussion has been compelling, however, it would seem that there is transformative potential here after all. Thinking about suspension of belief in this arena leads to an interesting combination of what might otherwise appear conflicting positions: relativism and scepticism. The initial appearance of conflict here stems from the association of scepticism with the view that there *are no* ultimately compelling justifications, and the association of relativism with the view that there *are* justifications, but only (in this context) relative to stances, which draw lines between domains of theorizing that are amenable to belief and those in which belief is suspended. This appearance of conflict is superable. It is resolved by understanding stance relativism in terms of collections of policies regarding where to draw the line, and by taking scepticism, in its Pyrronian form, as a guide to how to live with the inevitably diverging results.¹¹

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