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Stance relativism: empir	icism versus metaph	• PDF (76 K)	
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#### Abstract

In The empirical stance, Bas van Fraassen argues for a reconceptualization of empiricism, and a rejection of its traditional rival, speculative metaphysics, as part of a larger and provocative study in epistemology. Central to his account is the notion of voluntarism in epistemology, and a concomitant understanding of the nature of rationality. In this paper I give a critical assessment of these ideas, with the ultimate goal of clarifying the nature of debate between metaphysicians and empiricists, and more specifically, between scientific realists and empiricist antirealists. Despite van Fraassen's assertion to the contrary, voluntarism leads to a form of epistemic relativism. Rather than stifling debate, however, this 'stance' relativism places precise constraints on possibilities for constructive engagement between metaphysicians and empiricists, and thus distinguishes, in broad terms, paths along which this debate may usefully proceed from routes which offer no hope of progress.

Author Keywords: Author Keywords: Empiricism; Metaphysics; Scientific realism; Voluntarism; Rationality; Relativism

### Article Outline

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The debates [between realists and antirealists] persist . . . because the most sophisticated positions on either side now incorporate self-justifying conceptions of the aim of philosophy and of the standards of adequacy appropriate for judging philosophical theories of science. (A. Wylie)

Is there a future for debates between scientific realists and antirealists? During the first wave of the contemporary debate, <u>Alison Wylie (1986)</u> suggested that its seemingly perennial nature is explained by the fact that its rival positions have evolved to contain metaphilosophical principles. But it is unclear why this should promote longevity of debate. Why not a stalemate instead? If indeed the parties to the discussion adopt very different assumptions about such fundamental matters as the aims of philosophy, one might wonder why this should fuel debate rather than stifle it. With such different basic conceptions of the nature of their enterprise, realists and antirealists might well find that their debate has run its course, and that they are better off, finally, agreeing to disagree. If their starting assumptions are so divorced as to greatly limit the extent of constructive engagement, perhaps debate is better left to one side.

I believe that Wylie was right to highlight differences in metaphilosophical commitments, but the question of whether such differences should facilitate or hinder further conversation is a tricky one. The reason for the dialectical paralysis experienced by some, I suspect, is a certain amount of confusion about what issues can and cannot be helpfully engaged. In the following I hope to clarify, in broad terms, the ways in which this debate might usefully proceed, and the ways in which it cannot. The inspiration for this clarification comes from Bas van Fraassen's book, The empirical stance. Though I am unsure about whether the central themes of this wonderfully provocative work can be defended across the vast scope for which it is intended, I am excited by the prospects of particular applications. The book champions a reconceptualization of empiricism, and rejects its nemesis, metaphysics, en route to sketching a bold and challenging picture of the nature of epistemology. Van Fraassen is most famous for his antirealism, constructive empiricism. His antirealism is a form of empiricism, and

scientific realism is a form of metaphysics.<sup>1</sup> In what follows, I will attempt to apply some of the lessons of van Fraassen's study in epistemology to the more specific issue of the conflict between metaphysics and empiricism, and thus, ultimately, to debates between realists and antirealists.

### 1. Three levels of epistemic analysis

Van Fraassen provides a framework for thinking about epistemology, the heart of which consists in a tripartite distinction between what I will call 'levels' of epistemic analysis. At the ground level there are matters of putative fact, or claims about the nature of world; these are potential objects of belief. Consider, for example, the claim that diamond is harder than

quartz, or that electrons have charge, or that possible worlds exist, or that the only source of knowledge of the world is experience. These are claims about aspects of reality, and if we believe them we take them to describe such aspects correctly. But factual beliefs do not generate themselves. Knowing subjects must acquire them, and when we consider how this is done, we arrive at the second level of epistemic analysis: the level of stances.

I will use the term 'stance' to refer to epistemic stances in particular, leaving aside the possibility of other kinds. A stance is a strategy, or a combination of strategies, for generating factual beliefs. A stance makes no claim about reality, at least not directly. It is rather a sort of epistemic 'policy' concerning which methodologies should be adopted in the generation of factual beliefs.' <sup>2</sup> Consider, for example, the idea that one should deem explanatory virtue an important desideratum in determining what to believe, or that the methods of the sciences should be privileged over others. These are policies regarding the generation of factual beliefs, and policies are not themselves true or false. Of course, it may be true or false that adopting a particular stance is likely to produce facts as opposed to likely falsehoods, but stances are not themselves propositional; they are guidelines for ways of acting. One does not believe a stance in the way that one believes a fact. Rather, one commits to a stance, or adopts it. The distinction may be difficult to see, given that one generally adopts a stance because one believes that it is a sensible thing to do. But believing that a given stance is sensible amounts to thinking that the claims it generates are likely to be true, and thus worthy of belief. Stances are not themselves factual—they are possible means to realms of possible facts.

The distinction between adopting a stance and having a factual belief is I think tenable, but easily lost. This is not only because one may have a factual belief about a stance (e.g. that it is truth-conducive or not), which we are tempted to conflate with the idea of holding it, but also because it may be difficult to grasp what is entailed by holding a stance unless one has some appreciation of the sorts of beliefs it may produce. But even if stances are hardly conceivable otherwise, van Fraassen insists that they are not exclusively identifiable with any one set of factual beliefs, and that they may survive changes in the beliefs with which they are associated at any given time (van Fraassen, 2002, p. 62). Indeed, his most striking move is to argue that many of what are generally considered positions on factual matters are rather, in fact, stances. Physicalism, for example, is not so much a factual thesis, but a deference to the claims of basic science, both in terms of their truth and completeness, concerning the constitution of the contents of the universe. As we shall see, empiricism and metaphysics are also stances, and it is this contention that forms the basis of my discussion. Crucially, holding a stance is a function of one's values as opposed to one's factual beliefs. Values may be well or ill-advised, but not true or false. Facts and values may be intimately linked in the production of knowledge, but they are nonetheless distinguishable.  $\frac{3}{2}$ 

The final analytical tool that van Fraassen introduces is not one that he explicitly names. I will refer to it as the level of meta-stances. Here we find various attitudes toward the nature of stances, and thus ultimately toward the putative facts they generate. It is here that metaphilosophical commitments are exposed most clearly. Van Fraassen is concerned with one issue in particular at the level of meta-stances: the question of what may be considered rational. Extending his earlier work in Laws and symmetry, he advocates a view according to which it is rationally permissible to hold any stance and believe any set of facts that meet certain minimal constraints; viz., that harbour no logical inconsistency or probabilistic incoherence (van Fraassen, 1989). This account of rationality, which he calls 'voluntarism', is opposed to the idea that any one stance (and resultant set of beliefs) may be rationally compelled. We will return to the idea of voluntarism later, but let us now take a first step toward clarifying the nature of the realism–antirealism debate, by considering the conflict between metaphysics and empiricism.

## 2. Doctrine versus stance empiricism and the case against metaphysics

To say that there is a conflict between metaphysics and empiricism requires clarification. Perhaps certain kinds of metaphysics are ruled out by certain forms of empiricism, but to say that there is a conflict simpliciter is too strong, for generally empiricists like all philosophers do metaphysics in some form or other. The particular brand of metaphysics at issue here is what is sometimes called 'speculative' metaphysics, and in van Fraassen's estimation this includes the sort of thing that logical positivists disparaged when they used 'metaphysics' to label speculations about the unobservable. Speculative metaphysics comprises one general, and one more specific target for van Fraassen. The general target is analytic metaphysics

typified by a tradition stretching from 17<sup>th</sup>-century philosophers such as Descartes and Leibniz to contemporary ones such as Lewis and Armstrong, 'characterized by the attempted construction of a theory of the world, of the same form as a fundamental science and continuous with (as extension or foundation of) the natural sciences' (van Fraassen, 2002, p. 231 n. 1). The second, more specific target is scientific realism.

The claims of speculative metaphysics (I will simply use the term 'metaphysics' henceforth) annoy the empiricist, but this annoyance is most economically understood at the level of stances. Rather than list all of the factual claims made by metaphysicians of which empiricists disapprove, we may instead observe that metaphysics itself is a stance of which empiricists disapprove, generating factual claims that fare no better. I will summarize van Fraassen's characterization of this stance as the conjunction of the following epistemic policies:

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

M2 Attempt to answer such demands for explanation by postulation.

Why should these policies meet with disapproval? The empiricist holds that via M1, metaphysicians often seek to explain things that we already understand! Furthermore, via M2, metaphysicians often generate explanantia that are less comprehensible then the explananda with which they begin!

Note that these complaints are not new; they are familiar responses of empiricist philosophers to metaphysics throughout the ages. For the empiricist, here in nominalist guise, there is no need to accept the demand for a deeper explanation of why and how red things can be grouped together—as we already know, they are red. And postulating the existence of universals such as redness and mysterious relations such as instantiation is no improvement on, and certainly more obscure than, the fact that some things are red. So argues the empiricist. Following M1 and M2, the metaphysician develops accounts of mere, unimportant, often unintelligible simulacra of otherwise genuine objects of interest, concerning things like the nature of God and the world.

But these are not arguments, per se. In their polemical mode,'  $\frac{4}{2}$  empiricists disregard the fact that the 'simulacra' of metaphysics are important to metaphysicians because they take them to be similar in important respects to their objects of inquiry. Models, in both the sciences and metaphysics, are interesting to at least some modelers because they can be interpreted as partial reflections of the things they model. In complaining about M1 and M2, empiricists are not so much arguing as asserting a distaste for the metaphysical stance, and thereby a preference for another: the empirical stance, the natural stance of the empiricist. It is important to van Fraassen that empiricism be identified with a stance, for if we were to find the answer to the question 'what is empiricism?' on the level of factual belief, it might well be

dismissed as just another metaphysical claim. Let us see if we can shed some light on this worry, and the putative help of reconceiving empiricism as a stance.

Van Fraassen offers a few, intertwined arguments for the appropriateness of thinking of empiricism as a stance as opposed to a factual belief. The first is that there is, he suggests, no substantive factual claim that is shared across the various philosophical projects which together, over time, fall under the banner of empiricism. We might for example think of early modern empiricism as an opposition to rationalism and its doctrine of innate ideas, but logical empiricists were interested in systematizing scientific knowledge about phenomena, not psychologistic debates. Furthermore, anything that might plausibly serve as a factual thesis defining empiricism, such as 'the only source of knowledge of the world is experience', would seem to offer a foundation for knowledge, but foundationalist epistemologies engender problems of circularity and regress in attempts to demonstrate the firmness of their foundations. Both of these arguments merit careful discussion, but I will not explore them here. Given that empiricism, or at least what van Fraassen is interested to identify as empiricism, is not to be understood as a factual doctrine, what is it?

On van Fraassen's view, empiricism is a stance shared by many historical positions, a stance opposed to the excesses of metaphysics. We might summarize this stance in terms of the following epistemic policies:

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

E2 A fortiori, reject attempts to answer such demands for explanation by postulation.

E3 Follow, as a model of inquiry, the methods of the sciences.

While E1 and E2 are directly opposed to the metaphysical stance,  $\frac{5}{2}$  it is not entirely clear what work E3 does for the empiricist. Van Fraassen does suggest that one aspect of the sciences of which empiricists approve is a certain tolerance for different beliefs; not all scientists agree, but conflicting scientific beliefs are tolerated and respected as rivals worthy of consideration (no factual claim is true a priori, after all). It is not obvious to me that this is indeed a general principle governing the sciences in practice, nor that tolerance is a distinctive feature of the empirical stance, but let us accept E3 for the moment, and consider what follows.

One of the reasons that van Fraassen is concerned to reconceive empiricism as a stance is that he is wary of the charge that empiricism, understood as a factual claim, may be self-defeating. If empiricism is understood as a factual thesis—one that is contrary to other, non-empiricist, perhaps metaphysical theses—empiricists are in a bind. For although any statement of empiricism would be inconsistent with statements of other views, the principle of tolerance, employed so as to emulate the putative methods of the sciences, demands that other factual claims be respected as rivals worthy of consideration. So much for the rejection of metaphysics by empiricists! By ascending to the level of stances, van Fraassen hopes to rid empiricism of any worry of incoherence in its radical critique of metaphysics. It is unclear, however, that ascent is of any help here. The principle of tolerance applies at the level of factual belief, but there seems no obvious reason to think that it should not also apply at the level of stances. Having adopted the empirical stance, it is doubtful that the empiricist is any safer from the prospect of rivals than she might be on the level of factual belief.<sup>6</sup>

There is, I think, a better argument for van Fraassen's position, but it does not turn on E3. I suspect that E3 is a red herring. Deciding whether to accept or reject a factual hypothesis about the world, whether by a posteriori or a priori means, may require detailed

investigation, and in either case, investigations may prove inconclusive. Respect for contrary hypotheses may thus be a desideratum of rational inquiry quite independently of whether one is an empiricist. Leaving E3 aside, let us instead focus on E1 and E2. A better reason for the empiricist to refrain from defining her position in factual terms is that any plausible candidate definition is likely to be a claim about the world that reaches beyond that which can be learned by experience. When she defines empiricism as a doctrine (e.g. 'the only source of knowledge of the world is experience'), the empiricist commits the same sin as the metaphysician: she postulates something about the world that reaches beyond the phenomena. But this is to engage in metaphysics, and that is why empiricism, or at least van Fraassen's empiricism, should not be understood as a factual thesis, on pain of defeating itself. One can hardly oppose metaphysics by adopting a metaphysical thesis.

The empirical stance, conversely, is not part of the metaphysical stance, and to adopt the empirical stance is not to do metaphysics in disguise. Reconceiving empiricism at the level of stances thus offers a means of formulating the position in a way that is not obviously self-defeating; it is to understand empiricism not as a factual belief, but as a commitment to certain epistemic policies. So far so good, but having come this far, a natural question presents itself. One might ask why anyone should adopt the empirical stance rather than its metaphysical counterpart. The reasons had better not make recourse to arguments employing metaphysical premises, or the empiricist will land in the soup once more. Appreciating this constraint, we find ourselves with two stances, the empirical and the metaphysical, but no argument for why the former is preferable to the latter. So what, then, is the case against metaphysics?

# 3. Voluntarism and relativism (or: we have ways of making you an empiricist)

It seems to me that there can be no case against metaphysics, at least not one that any fair-minded metaphysician should address. To understand why this is so, let us consider what van Fraassen says about taking a stance. Here we have a specific concern at the level of meta-stances: identifying an appropriate criterion or criteria with which to facilitate choosing a stance. Van Fraassen suggests two criteria, one that is uniformly applicable to anyone's choice of stance, and another whose application varies across stance holders. The uniform criterion is rationality; one should adopt a stance that is rational, and reject those that are not. The variable criterion is the set of values that leads an agent to adopt one stance over another. We will return to the issue of values shortly. In the meantime, let us focus on van Fraassen's conception of rationality, which is surprisingly thin. In keeping with earlier work, he embraces an account according to which it is rationally permissible to hold any stance or believe any set of facts that is logically consistent and probabilistically coherent; incoherence is understood in terms of holding combinations of beliefs that are exploitable by Dutch books to the detriment of the belief holder. On this account, different and mutually incompatible stances may be rational-no one stance and resultant set of beliefs is compelled. Van Fraassen calls this meta-stance 'voluntarism'.

There is an immediate difficulty here in specifying the proper objects of voluntarism. Van Fraassen wants his account to apply to stances in addition to factual beliefs, but this is awkward, given that stances are non-propositional, and that rationality is to be understood in terms of logical consistency and probabilistic coherence. It is tempting to view voluntarism as applicable to stances insofar as the factual beliefs they generate are consistent and coherent, but this too is problematic. Recall that a given stance is not to be identified with any one set of factual beliefs. Stances underdetermine the factual beliefs they produce. It is thus a simple matter to imagine cases in which a given stance could either count as rational or irrational, depending on the factual claims with which it happens to be associated at a given time. This would imply that stances are themselves neither intrinsically rational nor irrational, but factual beliefs make them so. On this view, there would be no definitive answer to the question of whether a stance is rationally permissible.

Alternatively, one might hold that given their non-propositional character, stances are not the sorts of things that can be convicted of irrationality, and are thus rationally permissible by default. But this would be to say that all possible stances are rational, which trivializes the notion of rationality. Even so, and despite these difficulties, perhaps the goal of connecting voluntarism to stances might yet be achieved by means of an appropriately reworded statement of the conditions of rationality. After all, it does seem intuitive to say that a stance would be irrational if, for example, it led one to both accept and reject demands for explanation in terms of things underlying the phenomena. This is not quite a logical inconsistency, but it is some sort of inconsistency in policy nonetheless.

Leaving aside the details of how best to understand the rationality of stances, I suspect that most people will find that logical consistency and probabilistic coherence alone furnish too low a threshold for the concept of rationality in general. In particular, the fact that inductive inferences cannot be justified in deductive terms (it is not logically inconsistent to eschew induction) seems to exclude the use of induction as a constraint on van Fraassen's conception of rationality. This allows the possibility that deviant forms of inference such as counter-induction may qualify as rational, so long as counter-inducing agents have, at all

times, consistent and coherent beliefs. For many this will seem a reductio.<sup>7</sup> It is worth noting, however, that it may be possible to preserve the spirit of voluntarism on a less austere conception of rationality. Both empiricists and metaphysicians, for example, generally accept the use of induction in scientific practice. Including this in one's conception of rationality, one might yet hold that neither stance is rationally compelled. Those who question whether van Fraassen offers a tenable, general account of rationality may thus consider a modified version of voluntarism according to which it is rational to adopt any stance and resulting beliefs that are consistent and coherent, incorporating such ampliative inferential practices (shared by empiricists and metaphysicians) as are minimally required for the generation of acceptable beliefs.<sup>8</sup>

With this flexibility in mind, let us once again attempt to construct the case against metaphysics. If one is a voluntarist, then one cannot rule metaphysics out entirely so long as it is rationally permissible, which it is. But the empirical stance contains an antipathy toward the metaphysical stance; E1 and E2 are directly opposed to M1 and M2. Recall that in addition to rationality, an agent's values furnish a criterion for her choice of stance. If one's values promote a commitment to the empirical stance, one will reject metaphysics. Unlike the doctrine empiricist, one does not reject metaphysics by making a metaphysical claim, which would be self-defeating. Rather, one rejects metaphysics by committing to epistemic policies that are incompatible with those of metaphysics.

But what sort of case does this offer against metaphysics? I suggest that it offers no case at all. If rationality is the only constraint that applies uniformly to all agents adopting stances, and different, mutually incompatible stances are rational, the framework for debate on the level of stances is a relativistic one. Crucially, relativism is premised on the idea that there is no view from nowhere, no view that cuts across perspectives so as to serve as a sufficient common ground from which to debate. From the perspective of the empiricist, metaphysics is not irrational, but nevertheless wrong-headed. The qualifying phrase 'from the perspective of' is inseparable from any statement of the correctness of a stance. That is why van Fraassen is moved to describe the adoption of different stances in terms of having different values. From within the perspective of a stance, one may talk about correctness and incorrectness, but the sophisticated relativist uses terms like 'values' to accommodate what she views as the mistaken habit of attempting to speak from nowhere: saying that different communities have

different values is shorthand for saying that correctness and incorrectness are relativized to perspectives, and have no meaning otherwise.

Perhaps this is too quick. Surely there is more to debates between those holding different stances than repeated collisions of incompatible values. Many, however, take precisely this form. Candidate arguments in such debates often take epistemic policies comprising the relevant stances as premises. As a consequence, the arguments are inevitably question-begging—not really arguments at all. Of course this does not preclude discussion, animation, and passionate intervention. But such interventions are not arguments, in the philosophical sense; they are merely 'arguments' in the everyday sense, and this latter sense is too weak to require a philosophical response. The everyday or colloquial sense, for example, is broad enough to include mere name-calling, as when logical empiricists use 'metaphysics' as a term of abuse. It is not a philosophical principle, however, that one may as well respond to a name as to an argument. Comparing M1 and M2 to E1 and E2, we find different assumptions supported by different intuitions (values) concerning two things: what needs explaining; and what counts as obscure or unilluminating. Many criticisms of stances that meet the constraint of rationality are cogent only from within the confines of some other stance, and this cogency is not preserved 'outside'.

Van Fraassen is not unaware of the limitations that stance relativism would place on prospects for worthwhile debate. While he admits that adopting or being convinced of a stance will 'be similar or analogous to conversion to a cause, a religion, an ideology . . .' (van Fraassen, 2002, p. 61), he is adamant that values should not be thought of as 'dismissably relative'. After all, ethical and political discourses teach us that rational debate about values is possible. The analogy to ethical and political debate, however, though suggestive, does not serve van Fraassen's purpose, for it breaks down in the case of epistemic stances. Consider the nature of philosophical debate about values in these other spheres: they generally take the form of reductio ad absurdum arguments. Assuming the correctness of utilitarianism, claims the deontologist, we may derive prescriptions for morally sanctioned actions that not even the utilitarian can accept. On a capitalist model, says the socialist, society is doomed to manifest social and economic inequities that even the capitalist must decry. But now it is obvious that there can be no analogous debate in the case of epistemic stances. The burden of the empiricist, for example, would be to show that if one adopts the epistemic policies of metaphysics, there are derivable consequences of which even metaphysicians would disapprove. But how could there be? Metaphysics is, ex hypothesi, rational; it harbours no inconsistency or probabilistic incoherence.

The disanalogy between prospects for constructive philosophical debate in the cases of epistemic and other stances presents van Fraassen with a dilemma. On the assumption that both empiricism and metaphysics are rational, the empiricist critique of metaphysics is ineffectual, because the correctness of rejecting metaphysics by appealing to empiricism is inescapably relative. On the other hand, one might embrace relativism and argue as sophisticated relativists do. The sophisticated relativist attempts to argue that her opponent's position is inconsistent or incoherent by his own lights, and thus untenable. But this is precisely what van Fraassen cannot do, for he thinks that metaphysics is indeed a rationally permissible stance. Something has to give, here: either the radical critique of metaphysics, or the view that metaphysics is consistent and coherent. The former is central to van Fraassen's antirealist program in the philosophy of science, the latter to his voluntarist program in epistemology; but he cannot have both.

### 4. Concluding morals

In the context of debates about scientific realism, it is clear which horn of this dilemma most

antirealists prefer. Most attempt to show that by its own lights, scientific realism is inconsistent or incoherent. They say that we cannot both believe that our best scientific theories are approximately true and yet believe that they change substantially over time, for example. Realists of course dispute these arguments, and fashion reciprocal ones, mutatis mutandis, regarding instrumentalism, constructive empiricism, and so on. If we are to understand empiricism and metaphysics as stances, I believe that this is the only form that constructive debate can take. That is, realists and antirealists can hope to make progress by arguing that by their own lights, their stances and factual beliefs are consistent and coherent, and that other stances and beliefs lead to contradictions or other epistemic difficulties. Challenges such as the pessimistic induction, underdetermination, and spelling out the notion of approximate truth provide general frameworks for this sort of argument. In their absence, we may dispute values promoting contrary stances, concerning such things as demands for certain kinds of explanation. But these disputes, I suggest, hold little promise. To the extent that values cannot be rationally compelled or discredited, there is no point in arguing about them.

So on van Fraassen's conception of epistemology, despite the desires of empiricists, there can be no philosophical critique of metaphysics. It is important to note, however, that this is a two-way street; there can be no philosophical critique of empiricism either. Motivated by the fear of dialectical paralysis, many will thus be inclined to reject van Fraassen's account of the nature of epistemology. But it is not voluntarism itself that threatens a stalemate, it is voluntarism plus the assumption that both empiricism and metaphysics meet the constraints of rationality. By accepting the spirit of voluntarism—the idea that we have no a priori reason to think that any one stance is compelled—but critically examining the assumption that realist and antirealist stances and the beliefs they promote are internally consistent and coherent, stalemate is averted.

Speaking from within the empirical stance, van Fraassen suggests that metaphysicians make assumptions that are in some sense alien to what is important in our lives. From the perspective of other stances, however, we might likewise indict all of philosophy including empiricism, which is itself familiar only in the context of assumptions that empiricists make, explicitly or implicitly, about matters such as how best to understand what is given in experience, and what sorts of explanations are acceptable. And as for what is important in our lives, there can be no stance-transcendent legislation. When Aristotle defended the study of first causes and being qua being as knowledge for its own sake, there can be no doubt as to what he took to be important.

It may turn out that both realism and antirealism are rational after all, a conclusion that many participants in the controversy will find unpalatable. To say that we have good reason to believe something, they will say, is surely stronger than saying that it is not irrational to believe it, and that it otherwise accords with our values. But I am sanguine about the possibility of voluntarism. The idea that different and incompatible collections of epistemic values might yield consistent and coherent accounts of reality should not seem so terrible. Even the most diehard antirelativist should admit that there may be more than one way to skin reality. So long as we are working on the various possibilities, there is still a future for debates between realists and antirealists.

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<sup>1</sup> <u>Van Fraassen (forthcoming)</u> actually states that scientific realism is not a form of metaphysics, but this is puzzling, for realists appear to adopt and apply the epistemic principles of (what he calls) metaphysics in the context of the sciences. For this reason, I here identify realism as a species of metaphysics, but none of the arguments to follow depend on this taxonomy.

 $\frac{2}{10}$  For a detailed description of how stances can be understood as epistemic policies, see <u>Teller</u> (forthcoming).

 $\frac{3}{2}$  Although commitment to a stance is here couched in terms of a fact–value distinction, it may be possible to describe it in other terms. For those who are sceptical of the fact–value distinction, it may be possible simply to speak in terms of different sorts of beliefs.

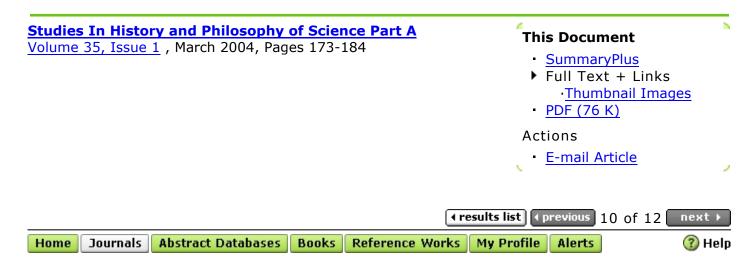
 $\frac{4}{1}$  I describe these considerations as polemical, because they are premised on empiricist sensibilities. We shall see in the next section, however, that van Fraassen does not view these sensibilities as rationally compelled.

 $\frac{5}{2}$  Though he does not mention it, I suspect that van Fraassen intends his characterization of the empirical stance to be understood in a qualified way so as to be consistent with earlier work: E1 and E2 apply to taking such explanations as true. Perhaps, on occasion, there may pragmatic reasons for pursuing metaphysics. E.g. speculating about unobservables may in some circumstances facilitate the construction of more empirically adequate theories. Without the qualification, there is an apparent tension between E1/E2 and E3, since the methods of the sciences generally favour M1/M2, not E1/E2.

<sup> $\circ$ </sup> For further discussion of this point, see <u>Lipton (forthcoming)</u>. I will return to the issue in <u>3</u> and <u>4</u>.

 $\frac{7}{10}$  For further discussion of this point, see <u>Ladyman (forthcoming)</u>.

 $\frac{8}{2}$  Presumably acceptable ultimately means something like rational. There is a worrying circularity here.



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