

Critical Scientific Realism, by Ilkka Niiniluoto. Oxford: Oxford University Press, 1999. Pp. xi + 341. H/b £40.00.

Right from the outset, *Critical Scientific Realism* distinguishes ‘the *critical* realists’, who subscribe to fallibilism, from ‘the *naïve* realists, who believe that certified truth is easily accessible’ (p. 13). I am not aware of any such ‘naïve’ realists, nor does Niiniluoto name any names. Of course, one might say that there could be such a philosophical position, even if no-one actually held it. But the issue isn’t merely academic. The ‘fallibilist tradition in epistemology’, though independent of realism as an ontological thesis, has always been its bedfellow. Realists cannot seriously afford to be ‘naïve’ since insofar as they engage in epistemic matters, they have to face squarely the sceptical injunction that certainty in knowledge is not possible, especially when it comes to matters unobservable or inaccessible. Hence, they have to base their epistemic optimism on epistemic theories which make knowledge possible while leaving certainty aside. In his significant book, Niiniluoto does discuss the prospects of fallibilism in epistemology (pp. 79–85) but, I think, does not give the attention they deserve to some epistemic theories (for example, naturalism, pp. 15–8) which aim to show how fallibilism can be grounded. Nor does he engage in a defence of his own theses against objections.

Although he repudiates the ‘foundationalist “first philosophy”’ (p. 17), he also wants to keep a place for normative judgements. He then dismisses naturalism too on the basis that it reduces the normative to the descriptive. But naturalism and normativity do mix (as many philosophers, including Quine, have pointed out). Niiniluoto downplays this and pledges a ‘mutual dialogue’ between philosophy of science and the special sciences (p. 18). To be sure, in his discussion of Laudan’s Normative Naturalism (pp. 170–4), he does accept that means-end norms (*aka* instrumental rationality) can be naturalized. And although he is quite right to point out (p. 174) that a truth-linked axiology should somehow be constitutive of science, he does not discuss in any detail the issue of how ‘constitutive rules’ (p. 172) are grounded. I take it that there has lately been a lot of interesting work on how these rules—and a concomitant substantive notion of normativity—can be analysed in terms of supervenience, so that they retain their normative force without being taken to be *sui generis*. A relevant discussion would do better justice to naturalism and would also help ground Niiniluoto’s truth-linked axiology.

When it comes to his own positive views in chapter four, he eloquently argues that ‘realism in epistemology should employ the fallibilist conceptions of probable, conjectural and truthlike knowledge’ (p. 85). These conceptions are distinct and different, as Niiniluoto himself makes clear. However, one of them (‘conjectural knowledge’, which Niiniluoto discusses briefly on pp. 83–4) seems to be a non-starter. For a proposition is either conjectured or known, but not both. (Popperians might think the opposite, but as D. C. Stove—*Popper and After: Four Modern Irrationalists*, Oxford: Pergamon Press, 1982—nicely argued, they are simply wrong). Let’s focus our attention on truthlike knowl-

edge. Ordinary theories of knowledge (both internalist and externalist; fallibilist and infallibilist) make knowledge a species of true belief. Niiniluoto's brand of fallibilism makes knowledge a species of truthlike belief (p. 84). Truthlike beliefs may be true beliefs (since, on Niiniluoto's view (p. 73) the most truthlike theory is the complete truth). But they are, typically, false beliefs. Hence, on Niiniluoto's view, knowledge does not imply true belief. In fact, in most typical cases of truthlike knowledge, knowledge would end up being a species of *false* belief. This sounds odd and, to say the least, requires some good defence. But even if it is granted that all we have are false beliefs (which is doubtful), what conditions should be met in order to say that some of our false beliefs count as knowledge whereas others do not? Searching for 'a sufficiently wide interval estimate which covers the truth value with high degree of certainty' (p. 84) leaves too much up in the air: our knowledge will vary with the width of the interval and with the degree of certainty with which the truth value is said to be in it. Besides, if, like Niiniluoto, we take as a third (justification) condition on a truthlike (that is, false) belief *h* to count as knowledge that 'X has a reason to claim that *h* is more truthlike than its rival on available evidence' (p. 84), we seem to end up with problems. For the knowledge of *X* is relativized to *X*'s state of information. If fresh evidence shows that there is a rival (incompatible) *h'* which is more truthlike than *h* and if *X* has now reason to claim that *h'* is more truthlike than *h* on the fresh evidence, can we say that *X* then *knew* that *h* and that he now *knows* that (incompatible) *h'*? Hardly. Standard theories of knowledge (both fallibilist and infallibilist) avoid the problems that Niiniluoto faces by making knowledge a species of *true* belief. But Niiniluoto's association of knowledge with false belief leaves him in need of more work in order to get his 'critical epistemological realism' off the ground.

Early on (p. viii), Niiniluoto draws our attention to a major conclusion of his book: '... different conceptual frameworks (*pace* Donald Davidson) may carve up the mind-independent world (*pace* Richard Rorty) in different ways into individuals, kinds, and facts. There is no a priori privileged or a posteriori ideal "Peirceish" framework for describing the world (*pace* Sellars); truth is relative to the conceptualization of reality.' He adds that all this does not make truth an epistemic notion. Rather, 'this conclusion ... gives grounds for a realism worth fighting for.' All this would give pause to some realists. But let's not dwell on it. For later on enters Kant. Where Critical Realism differs from Kant, we are told, is in its claim that 'an epistemological subject is *directly*, without a veil, in contact with reality' (p. 91). Hence, the Critical Realist affirms both the knowability of the things-in-themselves *and* their existence (cf. *ibid.*). But there is a 'veil' after all. For even if we exorcize (as we should) sense-data and the like, we are still left, on Niiniluoto's account, with our conceptual frameworks, each of which provides us with a 'perspective on objective reality' (p. 91). Perspectives may be direct (as when I see a house from an angle), but perspectives don't show an object as it is. And incompatible perspectives (see conceptual schemes) may suggest that different objects

might be present (or no object at all). These perspectival veils might be inevitable in our give-and-take with the world, but for a realist there must be a fact of the matter as to which is the correct one — especially when incompatible perspectives are in play: is there phlogiston or oxygen in the air we breathe? Which leaves Niiniluoto with a dilemma. Either he has to accept that there is a fact of the matter as to how the things-in-themselves *really* are or there is no fact of the matter. If the latter, why posit them in the first place? If the former, then there must be some conceptual framework (or perspective) which, at least in principle, resonates with the way things are. (This might well be Bernard Williams's 'absolute conception of the world'.) Niiniluoto tries to move between the horns of this dilemma by noting (a) that Kant unwarrantedly jumped from the 'inexhaustibility' of things-in-themselves (that is, that 'they cannot be completely known' (p. 93)) to their 'inaccessibility'; and (b) that 'a critical realist acknowledges "dirty" (partial, incomplete, inexact, conceptually relative etc. but truthlike) forms of knowledge'. He sounds right about Kant, but still there seems to be a tension in his views. Even if there can be 'dirty' knowledge (and note, *a propos*, that inexact etc. knowledge is quite different from conceptually relative knowledge), to say that this knowledge is knowledge of an objective reality is not enough to *posit* such an objective reality (the things-in-themselves). Nor is it enough to note, after the positing, that this reality is inexhaustible. (Who knows that?) Nor is it enough to adopt a correspondence theory of truth—since this can well be scheme-relative. You also need to show that what you say of this reality is correct (or sufficiently correct, or truthlike). But this last move presupposes that not all perspectives (or conceptual schemes) are equally good, and that, ultimately, what judges which is the correct, or the most correct, one is the objective reality—and its own inherent structure. In other words, you need to prioritize some conceptual scheme, especially if you are faced with incompatible ones. Hence, I feel that Niiniluoto pays only lip service to conceptual-scheme pluralism. (Compare: '(...) all structures W_i [that is, world versions, conceptual schemes] are fragments of the same WORLD—and therefore cannot be incompatible with each other'. p. 224) Right after all this, he endorses two well-known arguments in favour of the possibility of objective knowledge of reality: (a) that there is causal contact and interaction with this reality; and (b) that convergence-of-opinion in the description of this reality is a reliable sign of the correctness of this description (cf. pp. 93–4). Both of these point to ways in which judgements about priorities among conceptual schemes can be grounded.

Niiniluoto returns to these issues when he discusses Putnam's Internal Realism in chapter seven. Here he makes clear that he wants to defend a position which is centred around the correspondence theory of truth (impeccably defended in chapter three) but also endorses conceptual pluralism ('There is more than one "true" description of the world', pp. 211 and 218) and 'minimal ontological realism' (p. 218). It is a serious, and I think still

open, philosophical issue whether realism implies that there is ‘exactly one true and complete description of “the way the world is”’, as Putnam has put it. What is of interest here is how Niiniluoto tries to avoid this commitment. Already in chapter one, he defended the view that physical objects are ‘bundles of tropes’, where the tropes have ‘natural relations of similarity’ (p. 30). Properties (for example, the property of being red), on his account, are human-made classes of ‘similar tropes’, where the class is created by ‘abstraction’. He calls this view ‘tropic realism’. One may wonder what these natural relations of similarity are and what the method of abstraction involved in the making of properties is. But let’s leave aside some natural worries about the viability of this metaphysical picture. Niiniluoto puts this picture to work in chapter seven. If, he says, the furniture of the world is tropes (‘property-individuals’), and if the properties are human constructions out of this material, then given that the predicates of the language refer to properties, there can be many ways to construct these properties and hence many different languages (conceptual schemes) to structure the world (cf. pp. 214–5). So, on tropic realism there is just not one true description of the world. Still, this is questionable. There may be more than one ways to group together, for instance, red-tropes and orange-tropes based on their similarity. But (a) it is objective (‘natural’, Niiniluoto says) similarities that guide this constructions; and (b) it is objective dissimilarities (for example, between brown-tropes and electron-tropes) that constrain this construction. So, even if we don’t get one uniquely correct description of the world, if the chosen descriptions are constrained by objective similarities and differences in the world, we can still dispense with many of them as wrong. And in any case, whether or not there can be such a uniquely correct description will depend on how loosely or tightly we understand the required similarity relations. Niiniluoto’s metaphysical picture is completed by bringing in (again) the Kantian things-in-themselves. He calls them ‘UFOs’ (p. 221). (Given his overall ontological landscape, UFOs should be particularized tropes. But Niiniluoto (p. 221) takes objects-before-their-identification, for example, dinosaurs, to be UFOs.) He then takes our cognitive give-and-take with UFOs to produce ‘IFOs (Identified Flying Objects)’, viz. UFOs under a description, which exist ‘only relative to a conceptual scheme’ (p. 221). As such (that is, human-made constructions), IFOs inhabit the Popperian ‘World 3’ (p. 222). This is minimal ontological realism indeed! But all is not lost, since Niiniluoto assures us that ‘the existence and the properties of IFOs depend on the reality, and knowledge about IFOs gives truthlike information about UFOs’ (p. 233). How exactly this is done might need some more work to be substantiated.

A reason perhaps for the book’s brisk treatment of many important issues is its breadth. *Critical Scientific Realism* is impressively wide-ranging. Apart from the metaphysics, semantic and epistemology of realism, it also discusses the debate between realists and instrumentalists as well as particular instances of this debate in quantum mechanics, economics and other areas

(Ch. 5), the role of truth in the scientific realism debate, the argument from the underdetermination of theories by evidence and the explanations of the success of science (Ch. 6), the different varieties of relativism, including moral relativism and feminist philosophy (Ch. 8), social constructivism (Ch. 9) and the role of science in a modern democracy (Ch. 10). Being a master technician, Niiniluoto is at his best in formalizing philosophical notions, such as truthlikeness, approximate truth, success, idealization, etc. His formulation and discussion of a precise theory reference for theoretical terms (pp. 120–32 and 189–92) is also a step forward in the relevant debate.

Yet one might have liked to see a more detailed discussion of constructive empiricism and of arguments such as the pessimistic induction—although Niiniluoto and the underdetermination of theories by evidence. Be that as it may, *Critical Scientific Realism* is a very rich book.

I have been mostly critical in my comments partly because there is so much I agree with in this book. In fact, I think that it is admirable that Niiniluoto tries to deal with the metaphysics of realism, an area that has been relatively neglected. *Critical Scientific Realism* is an important contribution to the realism debate and will be very useful to all philosophers working in this area.

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