

Book reviews

World without Design: The Ontological Consequences of Naturalism, by **Michael C. Rea**. Oxford: Clarendon Press, 2004, viii + 245 pp., \$24.95.

This is a splendid book. Its ideas are bold and highly original, and its arguments are clear and carefully crafted. It is, I believe, essential reading for any philosopher interested in naturalism. Rea's main goal in the book is to show that naturalism has ontological consequences that most naturalists will find unpalatable. His attempt to accomplish this goal is preceded by a detailed and provocative account of the nature of naturalism, and it is followed by an examination of alternatives to naturalism and in particular by a very powerful critique of intuitionism. The only unsatisfying part of the book comes in the very last chapter, when Rea suggests that supernaturalism offers our only hope of avoiding the problems faced by naturalism. Unfortunately, he makes that hope rest on taking certain selected religious experiences to be a reliable indicator of truth even though religious experiences are not generally reliable. I suspect that few naturalists will even be tempted to jump ship to swim in epistemological waters as dangerous as that.

The book has three parts. The first part is devoted to developing a historically informed and philosophically sophisticated characterization of naturalism. Rea begins by examining some of the 'pillars of the tradition,' with special emphasis on Dewey and Quine. Then he looks at a variety of contemporary characterizations of naturalism, various philosophical theses with names like 'epistemological naturalism,' 'metaphysical naturalism,' and 'methodological naturalism.' Rea maintains that the methodological dispositions that unite naturalists preclude the formulation of naturalism as a coherent, substantive philosophical thesis. Instead of concluding, however, that naturalism itself is incoherent, he concludes that naturalism just *is* a shared set of methodological dispositions.

This raises the question of what Rea means by a 'methodological disposition.' When he first introduces this notion, he includes as examples both dispositions to take certain kinds of experience (e.g. religious

experience) or certain kinds of argument (e.g. deductive arguments) to *be* evidence as well as dispositions to believe that certain cognitive faculties (e.g. memory) are reliable *sources* of evidence. While there are important differences between these two sorts of dispositions, both are dispositions to trust (or distrust) various methods of inquiry, that is, various methods that might be used to revise our beliefs in the pursuit of epistemic goals like acquiring true beliefs or avoiding false beliefs. These methods include using one's senses to make observations about the world, relying on memory, constructing arguments, and testing theories by experiment (to mention just a few).

While some methodological dispositions are derivative — they exist only because of inquiry and other methodological dispositions — others must exist prior to all inquiry because inquiry in the absence of any disposition to regard something as evidence is impossible. Rea emphasizes this point because he believes (incorrectly as I explain below) that none of the methodological dispositions that define naturalism are derivative. He concludes from this that naturalism cannot be adopted on the basis of inquiry and hence its status as orthodoxy is in at least one important sense without rational foundation.

Assuming we are now clear about Rea's notion of a 'methodological disposition,' the next question is what, exactly, he takes the defining methodological dispositions of naturalism to be. Rea's short answer is that a naturalist is someone who is disposed to take the methods of science, *and those methods alone*, as basic sources of evidence. By a 'basic' source of evidence, he means a source that is trusted even in the absence of positive evidence in favor of its reliability. Of course, any definition of naturalism that appeals to the 'methods of science' without specifying what those methods are is not terribly informative. It is, after all, notoriously controversial what the methods of science are. Rea does offer a partial list. Included on that list are reliance on reasoning, reliance on sense-perception, reliance on memory, and reliance on testimony. Also included is reliance, not on the appearance of necessity in general (that would be intuitionism), but on the appearance of necessity in the specific cases of mathematical truths, logical truths, and conceptual truths. Rea does not, however, intend this list to be exhaustive. For he says that the methods of science include all and only those methods that are regularly employed and respected in physics, chemistry, and biology departments. And this presumably includes, not just the methods mentioned, but also methods like testing theories by experiment and

using mathematics in theory construction. Instead of trying to specify all of the methods used and respected by natural scientists, Rea seems satisfied to point out that his characterization of naturalism clearly rules out methods that no self-respecting naturalist would trust, such as the special methods employed by astrologers and phrenologists.

In the second part of the book, Rea directly defends the central thesis of the book, which is that naturalists cannot, by their own lights, be justified in accepting either realism about material objects or materialism. His defense of the first half of this thesis begins with an attempt to show that the 'Discovery Problem' cannot be solved: scientific methods are insufficient for discovering intrinsic modal properties. Thus, since naturalists are committed to the existence of material objects and to the sufficiency of scientific methods for discovering their properties, it follows that naturalists must affirm that the modal properties of material objects are extrinsic — specifically, they depend on our conceptual scheme. This is of great importance, according to Rea, because having persistence conditions and hence having modal properties is a part of our concept of a material object; thus, naturalists who recognize the force of his arguments must accept that the existence of material objects depends on our conceptual scheme. In other words, they must accept constructivism instead of realism about material objects.

The second half of Rea's main thesis is that naturalists must reject materialism, which he defines as the thesis that 'nothing exists except for spacetime, material objects and events in spacetime, and the properties exemplified by spacetime and the objects and events therein' (162). This thesis implies that no mind can exist unless some material object exists. But this is incompatible with constructivism, because constructivism implies that no material object can exist unless some mind thinks of matter in terms of a sortal concept and such thinking requires a great deal of *prior* mental activity (in a mind). Therefore, if naturalists are committed to constructivism, then they are also committed to rejecting materialism. Rea adds that this in turn puts realism about other minds at risk, but his arguments here are not as developed as his arguments concerning realism about material objects and materialism.

In the third and final part of the book, Rea discusses two alternatives to naturalism, namely, intuitionism and supernaturalism. Like naturalism, intuitionism and supernaturalism are characterized as sets of methodological dispositions. Also like naturalism, they include the

disposition to trust the methods of science in the basic way — that is, in the absence of any evidence for their reliability. But while the naturalist is also disposed to trust nothing besides the methods of science in that way, the intuitionist treats intuition (but nothing else) as an additional basic source of evidence and the supernaturalist treats religious experience as basic (and possibly other non-scientific methods as well). Rea defines religious experience very narrowly, as apparent direct awareness either of a divine mind or of the fact that something (like a message contained in the Bible) is divinely inspired. Rea believes that the latter is important partly because the Bible teaches (or so it seems to many theists) that God made various familiar material objects before there were human beings to conceive of those objects; and if God did that, then constructivism is false. Rea suggests that religious experience can provide support for realism about material objects in other ways as well, but it is not clear what exactly he has in mind.

For those philosophers who dislike theological solutions to metaphysical problems, intuitionism may seem to provide a promising way of rescuing both realism about material objects and materialism. For if we can simply rationally intuit intrinsic modal properties, then Rea's arguments in the second part of his book cannot get off the ground. Rea maintains, however, that intuitionism is self-defeating. In order to argue for this position, he first modifies (and in my opinion strengthens) Alvin Plantinga's evolutionary argument against (metaphysical) naturalism and then narrows its focus from cognitive faculties generally to rational intuitions in particular. The resulting argument proceeds as follows. Considered in light of evolutionary theory and assuming no evidence for a cosmic designer guiding evolutionary processes, it is unlikely that we would have reliable rational intuitions. Further, in the absence of bizarre intuitions, nothing else the intuitionist believes can be added to evolution to make it likely that our rational intuitions can be trusted. Indeed, excluding the areas of logic, mathematics, and conceptual truths, the very poor track record of rational intuition just makes matters worse. Thus, it appears that intuitionism itself generates a good reason *not* to take rational intuition as a basic source of evidence.

Now that I have described the book, I would like to make three critical comments about Rea's characterizations of naturalism and supernaturalism. All three of my comments concern his position that both naturalists and supernaturalists take *all* of the methods of science

as *basic* sources of evidence. One problem with this position is that scientists have many goals besides truth and the avoidance of error, and as a result not all of the methods they use to accomplish their goals are best understood as methods of *inquiry*. A second, more serious problem is that not all scientific methods or even all scientific methods of inquiry are *basic* sources of evidence. Methods like using mathematics in theory construction and testing theories by experiment are trusted only because other more basic sources of evidence have proven them to be reliable. Thus, Rea is mistaken in thinking that naturalism as he construes it is completely without rational foundations. A third problem with Rea's position that naturalists and supernaturalists take all of the methods of science as basic sources of evidence is that it commits naturalists and supernaturalists to a very undesirable form of scientism, not in the sense of believing that all knowledge is scientific, but in the sense of *uncritically* buying (and attempting to replicate) whatever methods scientists are peddling. For example, many Bayesians do not trust statistical significance testing, even though it is widely used and respected by scientists. On Rea's view, this implies that such Bayesians are neither naturalists nor supernaturalists.

It is far from obvious, however, that naturalists can use such problems with Rea's characterization of naturalism as a means of avoiding the arguments in the second part of the book. My own view is that those arguments can best be challenged by arguing, first, that sense-perception justifies believing that material objects exist, and second, that considerations of simplicity support the position that the modal properties of those objects are intrinsic rather than extrinsic.

Concerning the first part of this challenge, reliance on sense-perception is, according to Rea, one of the methods of inquiry of science. Rea maintains, however, that such reliance delivers justified beliefs, not about material objects, but rather about metaphysically less robust entities (like 'regions of space containing matter arranged cat-wise'). Suppose, however, that Rea is wrong about this, but right both that naturalists can rely on judgments about conceptual truths and that having persistence conditions and hence modal properties is a part of the concept of a material object. Then naturalists can justifiably believe, not only that material objects exist, but also that they have modal properties. Of course, this does not yet solve the Discovery Problem because, even if scientific methods suffice for discovering that material objects exist, it does not follow that they

suffice for discovering that material objects *really* exist in the metaphysically loaded sense of 'really.' In other words, it does not follow that they suffice for discovering that material objects have *intrinsic* modal properties.

This brings me to the second part of my challenge. What Goodman's paradox and other similar riddles show is that scientists must rely, at least implicitly, on judgments of simplicity in the selection of hypotheses. When more than one incompatible hypothesis of equal content fits or predicts or explains a set of data (and our background knowledge) equally well, scientists choose the simplest of the competing hypotheses, not for pragmatic reasons, but rather because simplicity is a sign of truth. Indeed, reliance on judgments of simplicity is essential to all non-deductive reasoning, not just to the methods of theory choice in science. This means that naturalists are entitled to rely on this method in choosing between the view that the modal properties of material objects are intrinsic and the view that they are extrinsic. I contend that the hypothesis that they are intrinsic is much simpler and thus much more likely to be true than the hypothesis that they are extrinsic, because the latter hypothesis is ultimately committed to the existence of multiple mind-dependent worlds rather than to the existence of a single shared world of experience. If this is correct, then naturalists are entitled to believe that the modal properties of material objects are intrinsic and hence are entitled to be realists about material objects.

Notice, however, that in order for this challenge to Rea's main arguments to succeed, naturalism must part company with empiricism in its purest form. Notice also that fully developing and adequately defending this challenge is far too great a challenge for me to meet here. Instead, I will close by strongly recommending Rea's book to naturalists and supernaturalists alike. Those who study it carefully will be richly rewarded.

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