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The naturalism of the sciences

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ABSTRACT

The sciences are characterized by what is sometimes called a "methodological naturalism," which disregards talk of divine agency. In response to those who argue that this reflects a dogmatic materialism, a number of philosophers have offered a *pragmatic* defense. The naturalism of the sciences, they argue, is provisional and defeasible: it is justified by the fact that unsuccessful theistic explanations have been superseded by successful natural ones. But this defense is inconsistent with the history of the sciences. The sciences have always exhibited what we call a *domain* naturalism. They have never invoked divine agency, but have always focused on the causal structure of the natural world. It is not the case, therefore, that the sciences once employed theistic explanations and then abandoned them. The naturalism of the sciences is as old as science itself.

1. Debates regarding naturalism

Debates regarding naturalism in philosophy are hardly new. Their recent starting point has been the work of W. V. O. Quine (1908–2000), who defined naturalism as "the recognition that it is within science itself, and not in some prior philosophy, that reality is to be identified and described" (Quine, 1981, p. 21). His idea that there is no "first philosophy" – no foundational discipline distinct from the sciences that could justify or criticize their methods – has spurned a wide-ranging research program whose aim is to "naturalize" philosophy.

Quine's naturalism was first and foremost *methodological*, having to do with how we attain knowledge. It started from the idea that "the *most* we can reasonably seek in support of an inventory and description of reality is testability of observable consequences" (Quine, 1995, p. 252). If this is true, we would expect the sciences to be our most reliable sources of knowledge. But Quine also held that insofar as the sciences *are* a reliable source of knowledge, they lend support to an *ontological* naturalism. This involves a metaphysical claim, often characterized as the view that all that exists is identical with (or at least supervenient on) the physical (Papineau, 2015, sect. 1.1). Quine's version was a little more liberal. It admitted the existence not only of physical entities but also of the abstract objects of mathematics (in particular, sets), for these were (Quine believed) essential to the practice of science. This means that Quinean naturalism is an *a posteriori* view. It is not committed in advance to a certain ontology, but accepts all and only the kinds of entities required by our most successful sciences. It is also a provisional commitment, being open to revision if the sciences were to require radically new kinds of entities, forces, or relations (Quine, 1995, p. 252).

Within discussions of science and religion, the discussion of naturalism has taken a rather different turn (Papineau, 2015, sect. 2.1). It has been focused on the sciences themselves and (in particular) on the question of whether the sciences permit appeals to a supernatural agent. As a matter of fact, the scientific community would not take seriously a proposed explanation that invoked divine action. The question is whether this exclusion of the supernatural is essential to the practice of science. If it is not, then it could be set aside to allow for the admission of (successful) theistic explanations into our body of scientific theory. If, for instance, intelligent design theory turned out to be the best available explanation of the origin of living beings, then it could be admitted to the public school science curriculum.

While many scientists and philosophers have tried to defend the naturalism of the sciences, few of their defences withstand close scrutiny. It is not enough, for example, to claim that the sciences are naturalistic "by definition." Either there is a reason for defining scientific knowledge in this way or it is (as its critics allege) a merely dogmatic commitment (Johnson, 1995, p. 105; Plantinga, 2011, p. 311). Nor is it true that theistic hypotheses are necessarily untestable. The idea that God created the world in six days, beginning on October 22, 4004 BCE is eminently testable. Indeed it has been falsified. Other arguments can be countered by historical

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evidence. Take, for instance, the idea that admitting the possibility of divine action would undermine the idea that there are natural laws. Medieval Christians believed that God had chosen to act in predictable ways, even if he could occasionally work miracles. But the latter belief was not thought to threaten the former: natural philosophers focused on the predictable ways in which God works (see sect. 3.2). What about the idea that an appeal to divine action would be a "science stopper," discouraging further inquiry? Appeals to divine action have sometimes worked in this way, but rarely have they prevented scientific progress. In 1572, for instance, some Lutheran astronomers invoked a miracle to "explain away" the *nova*, the new star that had appeared in the heavens, rather than revising their physics to accommodate it (Methuen, 1999, p. 109). But others did not. Although equally devout, they began to revise the Aristotelian assumptions that rendered such phenomena naturally impossible (Methuen, 1999, pp. 109–10).

What seems (at first sight) a more promising line of argument has recently been offered by Maartin Boudry, Stefaan Blancke, and Johan Braeckman. Boudry and his colleagues defend what they call a "pragmatic or provisional methodological naturalism" (Boudry, Blancke, & Braeckman, 2010, p. 229). They do so by appealing to "the consistent success of naturalistic explanations and the lack of success of supernatural explanations in the history of science" (Boudry et al., 2010, p. 227). Methodological naturalism, they argue, is not intrinsic to science; it is a provisional but well-founded commitment that is justified by the track records of supernatural and natural explanations. "Appeals to the supernatural," they write, "have consistently proven to be premature, and science has never made any headway by pursuing them" (Boudry et al., 2010, p. 230). The past failure of proposed supernatural explanations warrants the policy of seeking only natural explanations. In principle, at least, this commitment is revocable, but it could be revised only on the basis of "extraordinary empirical evidence" (Boudry et al., 2010, p. 229).

While Boudry and his colleagues refer to this as a "pragmatic or provisional" argument, we find it more helpful to think of it as a "supersessionist" one. Its assumption is that successful natural explanations have superseded unsuccessful (or less successful) theistic ones. Note that if their argument is sound, we need hardly speak of "scientific naturalism" at all. The position being advocated amounts to nothing more than accepting the results of our most successful sciences, which (as it happens) posit only natural entities. If this *is* a kind of naturalism, it is a deflationary naturalism (Ritchie, 2008, pp. 106–7). But we shall leave that point aside. The point we want to make is that this supersessionist argument is inconsistent with the history of the sciences. It is not the case that scientists tried out theistic explanations before eventually abandoning them. They never employed such explanations at all. Whatever one makes of the naturalism of the sciences, it is as old as science itself.

2. Preliminary comments

We shall begin with five preliminary comments, in order to make clear the nature of our argument.

2.1. A revision of previous views

The first is that we are both revising earlier positions. One of us previously defended scientific naturalism with a supersessionist argument resembling that of Boudry and his colleagues (Dawes, 2011). He now believes this argument to be misleading, for the reasons to be discussed here. The other has recently argued that the naturalism of the sciences is an *epistemological* naturalism. It rejects methods of inquiry that are not public, in the sense of generally leading to intersubjective agreement. In particular, science has always relied on what medievals called "natural reasons" rather than faith (Smith, 2017). The present paper offers further evidence in support of this view. But it argues that historically the naturalism of the sciences has had another dimension. It is not merely an *epistemological* naturalism; it is also a *domain* naturalism. It is the latter that excludes appeals to the actions of God, even when an epistemological naturalism would not.

2.2. A particular kind of naturalism

A second matter to note is that what we are discussing here is a very particular kind of naturalism. It has to do with the exclusion from science of appeals to divine agency. We are assuming that the divine agent in question is a *super*natural agent, in the strict sense of that term: a being who transcends the natural order (Saler, 1977, pp. 46–47). It may be that the sciences are characterized by a broader kind of naturalism, which would exclude appeals to not just to divine action, but to any causally efficacious disembodied minds or immaterial agents (such as ghosts or demons). But a broader naturalism of this kind lies outside the scope of our discussion.

Does this make our thesis too narrow to be of interest? We believe not. Practically all who protest against the naturalism of the sciences do so because they have a religious agenda (Forrest, 2009, p. 456). They wish to replace natural explanations of some phenomena with explanations that appeal to divine action. This is very clear when it comes to young-earth creationism, whose advocates follow a literal reading of the biblical account of the world's origins (Whitcomb & Morris, 1961, p. xxi). Proponents of "intelligent design" (ID) are more subtle, claiming that their argument does not require a theistic conclusion (Behe, 1996, pp. 196–97). Nor does it rely on biblical authority. It is for these reasons, they argue, that it should be admitted to the science curriculum. But ID advocates insist that the "irreducible" or "specified" complexity of living things makes an entirely natural explanation of their development inconceivable (Dembski, 2002, pp. 325–28). A supernatural agent is required, and there can be no doubt that the supernatural agent they have in mind is the Christian God (Monton, 2009, p. 7; Dembski, 1999, p. 84). In this context – in which religious thinkers are trying to replace natural explanations with theistic ones – our argument is far from trivial. It does not prove the opponents of scientific naturalism to be wrong (see sect. 4.3). But it does show that their view entails a radical revision of the traditional aims of scientific inquiry.

2.3. The aim of our argument

A third comment has to do with the intended aim of our argument. We are not, in this context, *defending* the naturalism of the sciences. As will be evident, we are sympathetic to a naturalistic view of scientific inquiry and would like to defend it. But the present paper is, at best, preliminary to such a defense. All we aim to do here is to show how the sciences have operated, from the very inception of scientific inquiry, and to spell out the implications of this stance. As we have just suggested, the evidence we shall produce does not, in itself, rule out a different understanding of science. There would be nothing self-contradictory in a view that said, "Yes, scientists, as scientists, have always avoided invoking divine action, but they should now be permitted to do so." All we want to make clear is that the naturalism of the sciences did not develop at a particular point in their history, taking the place of appeals to divine agency. On the contrary, the exclusion of divine agency dates from the very beginnings of scientific inquiry.

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