

BOOK REVIEWS

PLATONISM AND THE OBJECTS OF SCIENCE. By Scott Berman. London: Bloomsbury Academic Press, 2021. Pp 164. Soft Cover \$35.00, ISBN: 978-1-3502-7606-2.

When one thinks of philosophers of science, the first thought is not usually about Plato. Nevertheless, in his clear and informative study, *Platonism and the Objects of Science*, Scott Berman advances Platonism as the best explanation of the phenomena encountered by the natural sciences. The book has a straightforward structure. First, Berman argues that nominalism, contemporary Aristotelianism, constructivism, and classical Aristotelianism are inadequate to account for the objects of scientific study. Then, he introduces his view of Platonism and explains how it is capable of dealing with the objects studied by science.

Nominalism is the view that universals do not exist. There is no common kind to which two or more objects belong, only a plurality of individuals (27). To this Berman provides a counterexample. Suppose a machine that cuts keys for locks cuts multiple keys that have exactly the same dimensions. If the dimensions of the keys are identical (surely this is at least possible), then the keys seem to share something in common (41, 44). Some nominalists argue that the resemblance between the keys is a brute fact, in other words, no explanation is needed for this resemblance and none can be given. All explanations must regard something as foundational

and the nominalist chooses to stop his explanation at the resemblance between objects (46). Berman objects that the nominalist cannot end the debate before it gets started merely by stipulating that resemblances are brute. From our experience, we have reason to think that like objects truly have something in common. So, before there are grounds to endorse nominalism, we must first see that reasonable attempts to positively explain this resemblance fail (49–50).

Contemporary Aristotelianism is the view that spatiotemporal universals exist. Spatiotemporal universals are distinct in that they can be wholly located in multiple places at the same time (54) and that they are “1) literally ‘in’ things but 2) not capable of ‘separate’ or ‘independent’ existence” (58). Contra this, Berman notes that the claim that something can be wholly located in multiple places at the same time is difficult to grasp, and often left unmotivated (56). Further, Berman thinks that there must exist universals that are not instantiated within space and time to account for things that could happen but never happen. He gives the example of elements 95 to 118 on the periodic table. Scientists inferred that these elements were possible via the periodic table and then made them; they do not occur naturally (67). What were the scientists thinking

about when they discovered but had not yet created element 95? Not anything in space and time because element 95 does not exist naturally. But they were thinking about something. Berman takes this as evidence that nonspatiotemporal universals do exist (68).

Constructivism is the view that nonspatiotemporal universals exist but that they depend for their existence on the mind(s) of some conscious being(s) (81). Universals are not merely discovered by our minds but created by them (82). In criticism, Berman points out that if constructivism "is able to get off the ground and explain the truth of anything in any domain, it has to be mind independently true that someone's thinking something is true makes what they think to be true . . . since constructivists deny that there are any mind-independent truths or argument-independent truths, then they will not be able to get their view off the ground" (100). In other words, constructivism is self-defeating.

Classical Aristotelianism is the view that mind-independent nonspatiotemporal universals exist, but that the concept of being is not univocal (105). In his words, "spatiotemporal things and nonspatiotemporal things are . . . things in different senses of 'thing' such that they belong to different categories" (106). We can say that nonspatiotemporal universals exist "but in a 'lesser' or 'diminished' sense" (106) than spatiotemporal substances. Berman objects that the truth of this view would render the view meaningless (116). Here is how: "The classical Aristotelian's core claim is that the different types of existence are not different types of anything. They have nothing in common at all. There is 'no genus of being' such that the different categories or types of beings could be

its species. But if that is true . . . [then] there is nothing in virtue of which we could meaningfully say that one type or category of existence is more fundamental or less fundamental than another type or category of existence" (118, see also 119). Like constructivism, classical Aristotelianism is self-defeating.

Finally, Berman's position is Platonism, the view that mind-independent nonspatiotemporal universals exist, but that being is univocal. First, physical things are "spatiotemporally extended complex dynamical systems" (135). Each spatiotemporal system has scale relative parameters that can be expressed by differential equations. For example, the "whole spacetime continuum is a spatiotemporally extended complex dynamical system. It exists at the largest scale of measurement we have . . . at a more detailed or more fine-grained scale of measurement, other spatiotemporally extended complex dynamical systems are isolable from their larger environment . . . And again, those systems are best explained by differential equations" (126–7). He expresses the relation between the spatiotemporal and the nonspatiotemporal when he says that "the scale relative parameters [or nonspatiotemporal things] . . . are the identities of particular quantities, that is, the spatiotemporal things. . . . The physical structure of the particular quantities exemplifies the abstract structure of the kinds of quantities. The explanatory relation between them is that the complex abstract structure explains the identity (or nature) of the complex physical structure" (139–40).

Berman's use of concrete examples and the care he takes to base his reasoning solidly upon human experience are to his credit. The book is a succinct and

enjoyable read. But at times, his position diverges more from human experience than some of the views he criticizes. First, however, it is worth noting that this is not an essay on the history of ancient philosophy. Berman believes that his account of Platonism and classical Aristotelianism is compatible with their original authors (2–5), but it is not his goal to defend this claim here.

One primary concern with Berman's view of Platonism is that it appears to lose sight of individual objects. He says that spatiotemporal things are, "not to be analyzed or decomposed or broken down into or explained away in terms of a thing, namely, Scott, and some property, namely, sitting" (124). Rather, they are "spatiotemporally extended complex dynamical system[s]" (124) that are best thought of as "relations between different kinds of quantities" (135). But it is one thing to say that complex dynamical systems are spatiotemporally extended and quite another to show how this spatiotemporal extension is possible. Surely spatiotemporal systems themselves must be made up of discrete entities? After all, how can there be "relations" and a "system" if there are no things that are related to one another; how is it possible to mathematically model the behavior of a system if there are no individuals that make it up?

On this note, Berman's position is subject to the very method of criticism he uses against other views. For example,

against nominalism, he seems to argue like this. If nominalism is true, then it can adequately explain our experience of "kinds." But nominalism cannot do this and therefore is not true. Berman seems to endorse this proposition: if Platonism is true, then substance ontology is false (124). Berman then endorses Platonism. But if we appeal to ordinary experience like Berman did with nominalism, then it is much more reasonable to think that substance ontology is true because we experience discrete objects all the time.

Finally, Berman seems to think that Platonism and the univocal concept of being can avoid the following problem for classical Aristotelianism. If classical Aristotelian categories have nothing in common (non-univocal concept of being), "then there is nothing in virtue of which we could say they are different" (118). However, he does not explain how his univocal view of being gets him around the same dilemma. After all, if things are alike in virtue of being (univocal concept of being), and to differ by "non-being" is not to differ at all, "then there is nothing in virtue of which we could say they [spatiotemporally extended complex dynamical systems] are different" (118). How Platonism evades Parmenidean monism is left unaddressed.

In conclusion, while this reader did not walk away from the book a Platonist, Berman's book is refreshingly direct and his criticisms highly intuitive.

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