

## Review

*Science et épistémologie selon Berkeley*. Sébastien Charles, ed.  
Sainte-Foy, Quebec: Presses de l'Université Laval, 2004. 177 pp.

Sébastien Charles has gathered together ten papers devoted to Berkeley's philosophy of science. The book is divided into three parts: the first is general ("Thinking: Philosophy of Science and Science according to Berkeley"), and the next two are more specific ("Understanding: Immaterialist Physics and Metaphysics"; and "Perceiving: Berkeley's Theory of Vision").

In the first essay, "Natural Philosophy and Religion: the Cases of Newton, Boyle and Berkeley," José Antonio Roblés indicates how Berkeley's thought, like that of Newton and Boyle, should be understood in the context of their apologetic aims. Although this argument is not new, it focuses our attention on the ways in which the religious interests of these three thinkers guide their scientific works (11). Roblés may not shed any new light on the authors considered individually, but his essay reminds us about the historical context in which their scientific activities were pursued.

The second essay ("Did Berkeley Anticipate the Problem of Induction?" by Atis Zakatistovs) proves that the empiricist tradition is not as consistent as might be expected concerning corpuscular science. Berkeley's anti-abstractionism leads him to an instrumentalist position opposed to Locke's realism. According to Zakatistovs, Berkeley considers a scientific concept only as a sign standing for a collection of sensations. To give a sense to the concept, one has to suppose that the sensations are regular. Such a concept has a signification only for *our* purposes. It is, in short, a "law of inferences" (32), not (as in the case of Locke's real essences) the real ground of our sensations. For Berkeley science is thus not deductive, and so his empiricist position necessarily gives rise to the problem of induction. Unlike Hume, though, Berkeley did not take it fully into account.

George Pappas's essay ("Abstract Ideas and *The New Theory of Vision*") ends the first part of the book. He shows that Berkeley's criticism of abstraction plays a central role in his thought from the beginning of his philosophical career. For example, "the thesis of the existence of abstract ideas, if it could be confirmed, would refute the essential positive ideas of NTV" (45). In that case, a general abstract idea would be common to several senses, which would contradict Berkeley's heterogeneity thesis. Furthermore, as Pappas plausibly argues, the existence of abstract ideas would be a proof of the distinction between primary and secondary qualities. By refuting the existence of abstract ideas, Berkeley deprives his opponents of an argument and thus strengthens his position.

Jean-Michel Vienne's essay ("Metaphysical Notions, Physical Notions") opens the second part of the volume. His aim is to show that Berkeley's use of the term "notion" is coherent. According to Vienne, the term is used to designate a mediate knowledge, a

knowledge attained either by effects or by the function of that term in a discourse. That is, it is a knowledge of the essence of something, but not of “the principle of the essence”—either because there is nothing else to know than the notion itself (i.e., what has been defined) or because activity cannot be represented. Notions are ultimately useful either theoretically or practically. But the convergence of their theoretical and practical functions should not hide a crucial distinction between the two kinds of notions, for theoretical notions denote, and practical notions do not. This distinction is central, because it allows Berkeley to maintain a substantialist ontology. One could wonder, however, whether this distinction is not more important than the convergence on which Vienne insists. And even if there were a real distinction between these two kinds of notions, it would not necessarily help us understand the specific issues addressed by each.

In the sixth essay, “Berkeley an Occasionalist in Spite of Himself? Of Causality in Malebranche and Berkeley,” Sébastien Charles studies Berkeley’s theory of causality in light of the *non sequitur* he attributes to Malebranchean occasionalism in the *Notebooks*. The problem here is that, according to Charles, Berkeley’s ontology leads him to a form of occasionalism (in which bodies are inactive); but at the same time, he maintains that all spirits are truly active (i.e., they are free). When attributed to finite spirits, though, such an activity remains mysterious. In particular, how is it possible for a finite spirit to cause ideas in another mind?—something that is implied by the fact that we supposedly move our legs ourselves. This suggests that Berkeley is not completely coherent here, but it is this important point that separates Berkeley from Malebranche. In Charles’ view, what distinguishes Berkeley and Malebranche is thus not only “a theoretical opposition concerning the nature of causality [but also] an anthropology and a theology” (86).

In the seventh essay (“Berkeley and the Theory of *Minima Sensibilia*”), David Raynor argues (contrary to most interpreters) that Berkeley’s *minima visibilia* are extended. He does not really give new and positive evidence for this claim (after all, Berkeley addresses the problem mainly in his *Notebooks*). But Raynor highlights some difficulties encountered by those who maintain that *minima visibilia* are unextended, particularly when evidence for that view was not necessarily endorsed by Berkeley. Moreover, Raynor makes his position more plausible by stressing the fact that Berkeley would not have been alone in holding such a doctrine, since Hume and Leibniz did so as well. Of course, Raynor’s position is not as sound as he thinks (which is again not surprising, considering how this is a problem that Berkeley does not explicitly address). But his criticisms are valuable, and they deserve to be answered in ways that are more sensitive to how arguments that are not clearly Berkeleian are often used.

In the eighth essay (“Microscopes and Visual *Minima*: Berkeley Critic of Instrumental Autopsy”), Philippe Hamou examines Berkeley’s position about microscopes in the context of a doctrine established toward the end of the seventeenth century (which Hamou calls the autoptical scheme). Berkeley criticizes the idea that microscopes would make vision “more perfect” (114) by pointing out that microscopes cannot modify visual acuity. As he puts it, it is not possible to see beyond the visual minimum, which defines the limit of perceptive consciousness. Instead, microscopes show another world. But that does not mean that microscopes are instruments that are any less scientific, for (in

Berkeley's account) science consists in linking ideas in ways that disclose natural regularities. Berkeley's conception of science is thus "operationalist" (123), because, for him, science consists in active engagement rather than in seeing passively.

In the ninth essay, Margaret Atherton aims to show "How Berkeley Can Sustain that Snow is White." She notes that there is nothing contradictory about saying that the real color of things is the color seen. To prove this point, she emphasizes (contra Margaret Wilson) Berkeley's arguments concerning color in the first part of *Dialogues between Hylas and Philonous*. According to Atherton, Berkeley wants to show that the perception of color does not have any objective counterpart. But this does not imply that there is no true color unless, like Hylas, one supposes that the true color of something is in the object perceived. Instead, Berkeley defines true color as the color which "varies regularly and in a predictable way" (139). Thus Atherton and Hamou agree on the interpretation of Berkeley's conception of science and truth: science does not reveal a world beyond appearances; rather, it allows us to associate more ideas.

In the tenth essay ("Vision and Geometry in Berkeley"), Dominique Berlioz examines Berkeley's position about the object of geometry, which is tangible and not visible. Indeed, as Berlioz acknowledges, visible objects are not organized in a Euclidean way; they are fleeting and heterogeneous. The sense of touch provides us with "the tactile experience of some objects in accordance with some definitions of Euclid's *Elements*" (151), but it still requires the imagination to create a geometrical space using diverse sensible data. At best, the visible shape is a sign for the tangible one; but it is a sign without reference, since the geometrical tangible object retains only some features of real objects. Geometry is thus not a copy of the world; it is rather a structuration of the world. But a question remains: what is the origin of the non-empirical parts of geometry? In answer to this, Berlioz suggests that geometry is a way of giving a form to sensible data that makes them intelligible and renders action easier.

Stephen Daniel ends the book with an afterward ("The Limits of Berkeley's Natural Philosophy"). He notes the "convergences" of the essays as a sign of the structure of the Berkeley's thought. According to Daniel, one of the main themes of Berkeley's enterprise is the setting of the limits of the diverse sciences. Such an operation requires a concept of limit, which, at the same time, articulates these domains of knowledge. By means of this process of grounding the sciences, each science is understood as legitimate in its domain because it is limited and linked to other sciences, particularly to the science that sets the limit. That is why the structure of Berkeley's thought should itself be seen as semiotic, in that the sciences themselves refer one to another.

This book gives a good and useful view of the state of interpretation rather than original research. Several elements contribute to provide this impression. First, the bibliography mentions only the works quoted in the essays, nothing more. It is impossible to consider it as a tool for research: it does not cover the whole field of the studies devoted to this aspect of Berkeley's thought. Secondly, many of its authors seem to admit that Berkeley had an instrumentalist conception of science. That deserves a more explicit discussion, particularly considering the volume's numerous affirmations concerning the truth of the

sciences. Lastly, and most surprisingly, there is not a word about *Siris*. Berkeley's last work is essential to understanding his position about the sciences; and it would have been interesting if contributors had discussed the book, half of which is devoted to medicine, chemistry, and philosophical reflection about the sciences. My criticisms, however, do not diminish the value of the collection, whose final merit is to present to the French reader studies that are generally available only in English.

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