

Michael J. Futch, *Leibniz's Metaphysics of Time and Space*. Springer, 2008. Pp. x + 222. US\$ 219 HC.

Michael Futch's new book on Leibniz's philosophy of space and time is a welcome addition to the growing literature on this important series of topics in Early Modern natural philosophy. Like De Risi's *Geometry and Monadology* (Basel: Birkhäuser, 2007), Futch's book delves into a number of thorny issues that have long perplexed Leibnizian scholars, generally clustered around the relationship between monads, material bodies, and their idealizations, that is, space and time. Unlike De Risi's tome, however, Futch directs his attention exclusively to the traditional metaphysical issues linked to the analysis of space and time (whereas much in De Risi's study tackles the mathematical topics related to Leibniz's *analysis situs*, his novel geometric theory). Some of the content in Futch's book is based on articles published in a number of journals known for their special attention to the history and philosophy of science, such as the *British Journal for the History of Philosophy*, *International Studies in the Philosophy of Science*, and *International Philosophical Quarterly*. Overall, the arguments and discussions that comprise the book are excellent, with a host of interesting lines of development concerning Leibniz's system from which the reader can draw fruitful reflection. It should be noted, however, that Futch's main concerns, and philosophical interests, are largely devoted to Leibnizian time, with the various topics related to Leibnizian space receiving much less attention in this work. Indeed, one could argue that Futch's line of investigation and approach follows in the path laid down by the important contributions of Richard Arthur and Jan Cover in the study of Leibniz's hypotheses of time (as noted in the Preface); yet, that being said, Futch reaches his own conclusions and provides his own assessments, thereby continuing the debate of these venerable themes in an original manner. Besides drawing upon recent commentaries, Futch's book also engages many of the critics of Leibniz's natural philosophy during his own day, such as Clarke's arguments in the Leibniz-Clarke correspondence, or earlier figures whose views may anticipate Leibniz's, such as Aquinas.

The synopsis of the book is as follows. Whereas chapter 1 provides a concise history, leading up to Leibniz's era, of many of the themes that will occupy the book, chapter 2 examines "reductionism" in Leibniz's philosophy of space and time, which can be seen as a slightly different (but probably more accurate) description of his views than the term, "relationism", that is usually offered by contemporary commentators. Futch introduces, here, a number of issues that inevitably must come up given the subject matter of his book: e.g., the Principle of Sufficient Reason, and the Principle of the Identity of the Indiscernibles. But, he also ties these concepts into a nice discussion of the Aristotelian framework from which Leibniz draws, with time and change, substance and accident, and continuous magnitudes factored into the analysis. Chapter 3 explores a fascinating subject that is often overlooked in a treatment of Leibniz's natural philosophy, namely, the unity of time, which concerns the possibility that there could be multiple time streams, or disconnected spaces, etc. After a detailed study of the notion of "compossibility", i.e., different arrangements of co-existingly possible substances, Futch's ultimate conclusion comes down on the side of the unity of time, such that there are no multiple or branching time streams. Chapter 4 concerns the bounded or unbounded nature of time and space,

with the eternity and infinite plenitude of the world being the main subject, and which prompts an assessment of Leibniz as a kind of skeptic with regard to the topology of time: “Leibniz disavows a priori, purely rational attempts to show what the world’s history *must* be like, opting only to enumerate possible temporal structures that *can*, as a contingent matter of fact, be instantiated in a world” (p. 103) Some of the main arguments in Futch’s investigation would seem to occur in the next few chapters, with the causal and temporal asymmetry of Leibniz’s system being the main objective in chapter 5, and an examination of the A-theory of time as regards Leibniz in chapter 6. Futch presents much evidence in defense of a causal theory of time for Leibniz’s system, but also presents many interesting arguments to contrast his conclusions from the versions of the causal theory adopted by Arthur and Cover. In developing his view, Futch resorts to a sort of spatio-causal theory of time, since spatial position is required to rescue the definition of the causal order from an ensuing circularity due to “illicitly import[ing] temporal notions in the specification of the causal order grounding them” (p. 124). Many readers may find this the most intriguing, and potentially controversial, aspect of the book, but it is an enjoyable discussion that has many merits. Afterwards, whether or not “presentism”, or the A-theory of time, can be ascribed to Leibniz is given a thorough examination, with the results being decidedly mixed (some evidence in favor, but much against, too). As Futch ultimately concludes (justifiably, it would seem), attributing a view to Leibniz that upholds the reality of the present moment alone, over the B-theory’s equality of the past, present, and future, is hard to square with “the reductionistic fervor of Leibniz’s approach to time”; i.e., the reduction of time to the causal order (p. 142). In chapter 7, the topic is the vexed question as to how Leibniz’s monads relate to space and time, as well as the harmony of phenomena and substances. Futch reasons that monads have second-order spatial and temporal properties, in particular, “they are spatial in virtue of representing themselves as being embodied in spatial phenomena” and the same is true of their temporal ordering (p. 144). Finally, in chapter 8, a much needed discussion of the important function that Leibniz’s God serves in securing the grounds of space and time is offered, a topic that is far too often overlooked in the contemporary investigations of his natural philosophy.

Of course, many philosophers may take issue with various arguments and positions that Futch advances. For instance, drawing upon the work of Robert Adams and Donald Rutherford in chapter 7, Futch strives to blunt the force of the arguments put forward by Cover and Hartz against ascribing spatial position to monads (“Are Leibnizian Monads Spatial?”, *History of Philosophy Quarterly*, 1994). But, the position that Futch advocates does not much advance the case for making sense of the alleged spatial order of the monads (or so it seems to this reviewer). After laying out his case for the derived spatial features of monads (“If a monad has a body with a spatial position P1, then, derivatively, the monad will have the second-order spatial position P1” (p. 155)), Futch explains the circularity argument by Cover and Hartz: “There are no aggregates [i.e., bodies as aggregates of monads] to have spatial positions without already having monads with spatial positions, but monads cannot have spatial positions except by being associated with an aggregate with a spatial position” (p. 159). The intended solution relies on contrasting the perceptual/intentional aspect of the monads from the ontological. Futch argues that “[t]he existence of the body as represented (and it having a position in the order of space) does not depend on the prior existence of monads that already have

spatial positions”, or, “[p]ut differently, having an aggregate with a spatial position is not an essential part of the story about what it takes to have spatially located monads, even though representing an intentional object with a spatial position is” (p. 160). Yet, the sketchy nature of this reply leaves many questions unanswered, such as how it compares with the defenses provided by Adams or Rutherford, and whether or not it is even compatible with Cover and Hartz more critical line. In short, how does the ontological component of Leibniz’s monadological system resolve these difficulties, even granting Futch’s point about the perceptual aspect of spatial position? Likewise, in chapter 2, Futch offers a spirited defense of the impossibility of a spatial vacuum in order to establish a non-modal reductivist account of space, and he marshals a lot of textual evidence in support of this interpretation. Nevertheless, there is substantial body of textual evidence that uphold the opposite conclusion, namely, that a vacuum is a possible, but not actual state-of-affairs (many of these claims are contained in the *New Essays*). Futch admits the force of these countervailing passages (pp. 48-52), but this does not seem to call into question his commitment to the reductivist account (as maybe it should). Nevertheless, given the inherent difficulties in coming to grips with the complexity of Leibniz’s thought, critical objections are to be expected in any detailed investigation, such as Futch’s book, which attempts to forthrightly meet these challenges. On the whole, the Early Modern community is well served by Futch’s impressive work, and it will serve as a basis for much future discussion.

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