

Preface

I was pleased and flattered when Larry Sklar and Mike Friedman chose to mention me in the acknowledgments to their respective books *Space, Time, and Space-Time* and *Foundations of Space-Time Theories*. I return the compliment by stating that these are still the best available texts on a wide range of topics in the philosophy of space and time. My work may also be seen as a more substantive compliment. Sklar's and Friedman's books were especially notable for the insights and the much-needed rigor and precision they brought to the never ending struggle between absolute and relational conceptions of space and time. Now the time is ripe for achieving a fuller understanding of the dimensions and ramifications of the issues framed by Sklar and Friedman. Building on their contributions, I hope to make philosophical progress of various kinds: some of the issues can be settled; others can be sharpened; still others can be pushed aside as irrelevant; and some can be shown to break down or dissolve into the metaphysical ether. Regardless of the specifics of particular issues, the overarching goal here is to foster a better appreciation of how the absolute-relational controversy connects to problems in mathematics, physics, metaphysics, and the philosophy of scientific methodology. Foundation problems in physics, especially the general theory of relativity, are used both to advance the discussion of philosophical problems and to demonstrate that the absolute-relational controversy is not merely philosophical: it cannot be confined to the back pages of philosophy journals.

Although the treatment of some topics is necessarily technical, the organization and level of presentation of this work make it appropriate for use in an upper-level undergraduate or beginning graduate course in the philosophy of science. The bibliography, while making no pretense at completeness, is extensive enough to guide the reader into both the classic and the more up-to-date literature.

I have made no attempt to disguise my own predilections and prejudices, but at important junctions I have tried to indicate the alternative paths and the arguments pro and con for each. To some extent this may be a mistake, for philosophy might be better served if we chose simply to ignore various positions. I harbor no illusion that the considerations I marshal here achieve anything approaching closure. Indeed, I hope that this work will be judged by one of the most reliable yardsticks of fruitful philosophizing, namely, How many discussions does it engender? How many dissertation topics does it spin off?

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Section 5.1 relies on "Remarks on Relational Theories of Motion," *Canadian Journal of Philosophy* 19 (1989): 83–87. Section 8.1 relies on "Locality, Non-locality, and Action at a Distance: A Skeptical Review of Some Philosophical Dogmas," in *Kelvin's Baltimore Lectures and Modern Theoretical Physics*, edited by P. Achinstein and R. Kargon (Cambridge: MIT Press, 1987). Chapter 9 relies on "What Price Space-Time Substantivalism? The Hole Story," *British Journal for the Philosophy of Science* 38 (1987): 515–525; and "Why Space Is Not a Substance (at Least Not to First Degree)," *Pacific Philosophical Quarterly* 67 (1986): 225–244. I am grateful to the editors and publishers concerned for their permissions to reuse the material here.