THE FATE OF MATHEMATICAL PLACE: ONTOLOGY, OBJECTIVITY, AND THE THEORY OF LIVED-SPACE FROM HUSSERL TO CASEY

EDWARD SLOWIK

This presentation will explore the ontology of space and spacetime in contemporary continental philosophy and the philosophy of the social sciences, a popular movement often dubbed the study of "place", or "lived-space", due to its emphasis on the human experience of space, both personal and social (as in dwelling, abode, local). Among analytic philosophers of science, it is not widely recognized that there have been many contributions to the debate on the ontology and epistemology of space from this diverse field, which includes: contemporary philosophers of place (e.g., Edward Casey), prominent continental philosophers from the second half of the twentieth century (e.g., Deleuze, Derrida), and many renowned phenomenological investigations in the first half of the twentieth century (e.g., Husserl, Heidegger, and Merleau-Ponty). Many of these studies sanction, often inadvertently, a form of relativism or social constructivism (Casey), or even metric conventionalism (Merleau-Ponty) as regards the ontology/epistemology of space; and, a few of these investigations even attempt to explain how the mathematics of spacetime theories actually supports their philosophical claims—most importantly, the long discussion on differential geometry advanced by Deleuze and Guattari in their influential, *A Thousand Plateaus*.

In brief, this presentation will explore these highly popular works in order to determine both the general content of their claims and the overall form of the ontology of space implicitly (or explicitly) advanced in their philosophies. As will be demonstrated, the theories of lived-space put forward by these philosophers, from the later Husserl to

Casey, bare a number of uncanny similarities with some of the recent work on the philosophy of space in the analytic tradition: specifically, an attempt to explain (1) the objectivity of space, and (2) an interest in structuralist forms of explanation regarding space.

Much of the examination will focus, however, on the role of mathematics within the continental approach to lived-space (or place), since a misunderstanding of the mathematics of spacetime theories, or a general mistrust or outright rejection of mathematics, has led to a great deal of confusion on the part of these place theorists, including Deleuze's utilization of differential geometry mentioned above. Moreover, this confused perspective on the role of mathematics within theories of space, which can be traced in part to the influence of the early phenomenologists (principally the later Husserl and Heidegger), has been a major contributing factor in the relativist dilemma that afflicts the lived-space movement. By incorporating various geometrical concepts within the analysis of place, however, it will be demonstrated that the lived-space theorists can gain a better insight into the objective spatial relationships among individuals and within groups—and, more importantly, this appeal to mathematical content need not be construed as undermining the basic tenants of the lived-space approach. Finally, it should be noted that one of the additional goals of this presentation is to open up a largely unexplored field for analytic researchers interested in the ontology of space, especially given the fact that this field, i.e., theories of place, has exhibited such a broad and popular appeal among present-day philosophers.

The presentation can be outlined as follows: (1) a discussion of the basic ideas of the lived-space movement; (2) an analysis of the relativist problem inherent in this

movement (i.e., that these theories license a proliferation of competing and contradictory spatial geometries and structures due to the subjectivist and social nature of the espoused spatial constructions); (3) a diagnosis of the possible sources for the lived-space's relativist dilemma in the work of the later Husserl (of the *Crisis of European Sciences*), Heidegger, and Merleau-Ponty's (largely unknown) espousal of metric conventionalism; (4) an examination of the philosophy of the contemporary place theorists, with special attention afforded to Casey and Deleuze (including Deleuze's mathematical discussion of spatial ontology); (5) and finally, various arguments will be developed that demonstrate that much of what the lived-space theorists seek—namely, an account of spatial objectivity that does not seek to entirely reduce the subjective component of spatial experience—was actually put forward and defended by a host of philosophers of science and physicists in the first half of the twentieth century who were striving to incorporate the lessons of General Relativity and its new geometric techniques (differential geometry, especially the concepts of a transformation group and a tensor): e.g., Weyl, Eddington, and Cassirer (who all advocated a structuralist form of explanation as regards theories of space). In this final section, the relevance of the philosophies of Weyl et al. for solving the relativist dilemma that confronts the lived-space theorists will be demonstrated, as well as the lessons for the ontology of space implicit in the lived-space movement.