

“Spatiotemporal Continuity in Ernst Mach’s Economy of Science”

Lydia Patton,

Ernst Mach’s analysis of the economy of science, and his views on space and time, are central to his influence on philosophy and on the history and philosophy of science. These two elements of his thought usually are discussed separately. However, recent work by Erik Banks and Margaret Schabas, among others, encourages a novel assessment of Mach’s analysis of the economy of thought. In my view, such an assessment allows for a broader perspective, which reveals deep connections to Mach’s views on space and time. In *Die Mechanik in ihrer Entwicklung*, Mach describes the contribution the the requirement of continuity of experience makes to the economy of thought and to the experimental method. In a paper for *The Monist* of 1903, “Space and Geometry from the Point of View of Physical Inquiry,” Mach argues for the “locative qualities” of objects as a “fixed and permanent system or register” of sensations. I argue for a unified reading of these texts, according to which the fixed system of location contributes to the continuity and the resulting transparency of experience, and thus to the economy of thought and to the discovery of the laws of mechanics. Central to the account is my reading of *Die Mechanik* as providing a method for, not just an explanation of, the economy of thought and of science.