Against Pointillisme about Geometry

Butterfield, Jeremy (2005) Against Pointillisme about Geometry.

Full text available as:
PDF - Requires a viewer, such as Adobe Acrobat Reader or other PDF viewer.

Abstract

This paper forms part of a wider campaign: to deny pointillisme. That is the doctrine that a physical theory's fundamental quantities are defined at points of space or of spacetime, and represent intrinsic properties of such points or point-sized objects located there; so that properties of spatial or spatiotemporal regions and their material contents are determined by the point-by-point facts.

More specifically, this paper argues against pointillisme about the structure of space and-or spacetime itself, especially a paper by Bricker (1993). A companion paper argues against pointillisme in mechanics, especially about velocity; it focusses on Tooley, Robinson and Lewis.

To avoid technicalities, I conduct the argument almost entirely in the context of ``Newtonian'' ideas about space and time. But both the debate and my arguments carry over to relativistic, and even quantum, physics.

Keywords:	Intrinsic properties, extrinsic properties, geometry, Humean supervenience, spacetime points, Bricker.
Subjects:	Specific Sciences: Physics: Classical Physics Specific Sciences: Mathematics
ID Code:	2552
Deposited By:	Butterfield, Jeremy
Deposited On:	09 December 2005
Additional Information:	A shorter version is forthcoming in Proceedings of the 28th Ludwig Wittgenstein Symposium, ed. F. Stadler and M. Stoeltzner.