

Extra Topics and Readings:

**October 30: The Hole and Point Coincidence Arguments**

John Norton, "The Hole Argument" *Stanford Encyclopedia of Philosophy*.  
(<http://plato.stanford.edu/entries/spacetime-holearg/>)

**November 1: Preparing for Norton's Visit**

John Norton, "What Can We Learn about the Ontology of Space and Time from the Theory of Relativity"  
Philosophy of Science Archive, University of Pittsburgh.  
(<http://philsci-archive.pitt.edu/documents/disk0/00/00/01/38/index.html>)

Synopsis of the foregoing (<http://philsci-archive.pitt.edu/documents/disk0/00/00/02/25/index.html>)

**November 13: Perdurantism and Endurantism**

*Jeff Greene*

Michael Rea, "Temporal Parts Unmotivated" *Philosophical Review* 107 (1998), 225-246.

Yuri Balashov, "Enduring and Perduring Objects in Minkowski Space-Time" *Philosophical Studies* 99  
(2000), 129-166.

Yuri Balashov, "Relativistic Objects" *Nous* 33 (1999), 644-662.

**November 15: Helmholtz on the Foundations of Geometry**

*Mitch Stokes*

Herman von Helmholtz, "On the Origin and Significance of the Axioms of Geometry," in *Hermann von Helmholtz: Epistemological Writings* (the Paul Hertz/Moritz Schlick Centenary Edition of 1921 with Notes and Commentaries by the Editors), Robert S. Cohen and Yehuda Elkana, eds. (Dordrecht/Boston: D. Reidel, 1977), pp. 1-380.

**November 20: The Hole Argument and Substantivalism**

*Dan McKaughan*

John Earman and John Norton, "What Price Spacetime Substantivalism?" *British Journal for the Philosophy of Science* 38 (1987), 515-525.

John Norton, "Einstein, the Hole Argument, and the Reality of Space," in *Measurement, Realism, and Objectivity*, John Forge, ed. (Dordrecht and Boston: D. Reidel, 1987), pp. 153-188.

Tim Maudlin, "Substances and Spacetimes: What Aristotle Would Have Said to Einstein" *Studies in History and Philosophy of Science* 21 (1990), 531-561.

**November 27: Reichenbach and Friedman**

*Patrick Slaney*

Hans Reichenbach, "Two Meanings of 'A Priori' and Kant's Implicit Presupposition," Ch. 5 in, *The Theory of Relativity and A Priori Knowledge* (Berkeley: University of California Press, 1965), pp. 48-60.

Michael Friedman, “Historical Perspectives on the Stratification of Knowledge,” Ch. 2 in *The Dynamics of Reason* (Stanford: Stanford University Press, 2001), pp. 25-46.

Hans Reichenbach, Preface and “The Three Tasks of Epistemology,” §1 in *Experience and Prediction* (Chicago: University of Chicago Press, 1958), pp. v-viii, 3-16.

**November 29: Reichenbach, Einstein, Particle Indistinguishability, and Covariance**

*Justin Biddle*

Albert Einstein, “Ether and Relativity,” in *Sidelights on Relativity* (New York: E. P. Dutton, 1923), pp. 3-24.

Hans Reichenbach, *The Philosophy of Space and Time* (New York: Dover, 1958), pp. 269-273.

Don Howard, “Point Coincidences and Pointer Coincidences: Einstein on Invariant Structure in Spacetime Theories,” in *The History of General Relativity IV: The Expanding Worlds of General Relativity*, Hubert Goenner, Jürgen Renn, Jim Ritter, and Tilman Sauer, eds. (Boston: Birkhauser, 1999), pp. 463-500.

**December 6: Singularities in General Relativity**

*Brandon Fogel*

John Earman, *Bangs, Crunches, Whimpers, and Shrieks: Singularities and Acausalities in Relativistic Spacetimes* (New York: Oxford University Press, 1995).

**December 11: TBA**

*John Keller*