

# STRUCTURALISM IN THE METAPHYSICS OF SCIENCE

Ted Sider, Spring 2018  
Tuesdays 1:10-4:10

Revised 3/28

## Description

A number of people have started to conceptualize metaphysical issues in terms of concepts like fundamentality, essence, and ground, rather than in terms of modality. We will examine how this shift affects various first-order issues in the metaphysics of science, especially those concerning “structuralist” positions.

I am writing a book on this topic (Sider, 2018), and some of the course readings will be draft chapters of that book. The first chapter gives an overview of the theme of the course.

## Requirements

Either two short (roughly 10–12 pages) papers, due 3/20 and 5/9, or one term paper (roughly 20 pages), due 5/9.

## Readings

Most readings will be available on the Sakai site for the course. (In addition to the course readings, I highly recommend Bennett and Gorovitz’s “Improving Academic Writing”.) In addition to the required reading, the schedule includes a lot of further reading (“background” and “further background”), which is all optional, to varying degrees.

## Tentative schedule

1/16–1/23 “Postmodal” metaphysics—*naturalness, essence, ground*: Sider (2018, chapter 1); Lewis (1986, pp. 59–69); Fine (1994a, pp. 1–10); Rosen (2010, sections 1–7, 14); Schaffer (2009, sections 2.1, 2.2, 3.1, 3.2)

BACKGROUND: Lewis (1983); Sider (2011, chapters 1, 6–8); Fine (2012); Rosen (2010); Schaffer (2009); Wilson (2014)

FURTHER BACKGROUND: Fine (1994b, 2001); Quine (1948)

- 1/30–2/6 *Causal/nomic essentialism*: Sider (2018, chapter 2)  
 BACKGROUND: “Crash course on natural necessity” (Sider); Shoemaker (1980); Hawthorne (2001).  
 FURTHER BACKGROUND: Swoyer (1982); Ellis and Lierse (1994); Blackburn (1990); Cross (2013); Bird (2007a)
- 2/13 *More on causal/nomic essentialism*: Bird (2007b, section on “The Individuative Regress”)  
 BACKGROUND: Lowe (2010); Cross (2012)
- 2/20–2/27 *Quantities*: Sider (2018, chapter 3)  
 BACKGROUND: “Crash course on quantities and measurement theory” (Sider); Eddon (2013)  
 FURTHER BACKGROUND: Dasgupta (2013); Field (1985); Mundy (1987)
- 3/6–3/20 *Comparativism and determinism*: Baker (2014)  
 FURTHER READING: Dasgupta (2017)
- 3/27–4/3 *Structuralism about entities*: Sider (2018, chapter 4)  
 BACKGROUND: Ladyman (1998); Paul (2017); Dasgupta (2009); Horsten (2017, sections 4.1, 4.2)  
 FURTHER BACKGROUND: Benacerraf (1965); Dorr (2010); Greaves (2011); Hawthorne and Sider (2002); Linnebo (2008); Pooley (2006); Sider (2006)
- 4/10 *Theoretical equivalence*: Sider (2018, chapter 5)  
 BACKGROUND: Ismael and van Fraassen (2003); Sider (2011, section 10.2); Barrett and Halvorson (2016)
- 4/17 *Individuals and quantum statistics?*: French and Redhead (1988); Redhead and Teller (1992); Albert (2000, pp. 35–48); Huggett (1999); Huggett and Norton (2014)...?? [I’ll cut down on these readings.]  
 BACKGROUND: Huggett (1997); Saunders (2006)
- 4/24 *Category theory and structuralism about entities?*: Bain (2013); Landry (2018); Hellman (2003); Lam and Wüthrich (2015); Awodey (2004); Landry (2006)...??  
 BACKGROUND: Hellman (2006); Linnebo and Pettigrew (2011)

*Equivalence in physics?:* Barrett and Halvorson (2017); Weatherall (2016); de Haro (2017); Dieks et al. (2015)...??

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