

FUNDAMENTALITY IN SCIENCE AND METAPHYSICS

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Spring 2024, Mon 12–3

Description

This will be a graduate seminar on fundamentality in the philosophy of science and metaphysics. After an initial survey of the notion of fundamentality, focusing on David Lewis's theory of natural properties, we will discuss an array of topics including: laws of nature, the structure of space, the relationship between scientific and metaphysical fundamentality, and the relationship between physics and the special sciences.

Requirements

If taking for research credit: either two short (roughly 10–12 pages) papers, due 4/1 and 5/13, or one term paper (roughly 20 pages), due 5/13. If not taking for research credit: two short expository papers (roughly 6–8 pages), due 4/1 and 5/13.

Readings

Readings will be available on the Canvas site for the course:

<https://rutgers.instructure.com/courses/270823>

(There you will also find Bennett and Gorovitz's "Improving Academic Writing", which Ted has found very useful.)

Tentative Schedule

("Background reading" and
"further reading" are optional)

1/22–1/29 *Introduction to fundamentality/naturalness* (TS)

REQUIRED READING: Lewis (1983, 1986, pp. 59–69)

BACKGROUND READING: Sider (2024)

FURTHER READING: Bennett (2017); Fine (2001, 2012); Lewis (1984); Putnam (1970); Quine (1969); Schaffer (2009); Sider (2011, chapters 1–3)

2/5 Laws of nature (BL)

2/12–2/26 *The package deal account of laws of nature* (TS)

REQUIRED READING: Cohen and Callender (2009); Loewer (2020)

FURTHER READING: Demarest (2017); Eddon and Meacham (2015); Loewer (1996, 2007, 2024b, chapters 5–7, 10)

3/4–3/18 Does the metaphysics needed by science require fundamental modality? (BL)

REQUIRED READING: Loewer (2024a); Maudlin (2024)

3/25–4/1 *The structure of space: symmetries, coordinate systems, fundamentality* (TS)

REQUIRED READING: Sider (2020, chapter 5); Wallace (2019, 2022)

BACKGROUND READING: Baker (MS, pp. ??)

FURTHER READING: Dewar (2019)

4/8–4/15 Are fundamental properties and relations unique and metaphysically prior to science, or are they a consequence of science and perhaps not unique? (BL)

4/22–4/29 What is the right way to think about the relation between fundamental physics and the facts, laws, causal relations, etc., of the special sciences? (BL)

References

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