

WHAT IS A LAW OF NATURE?

Edward Feser

I. Introduction

A. The notion of a law of nature is central to modern science but often left ill-defined

B. Five main philosophical accounts of what a law is:

1. The theological account
2. Regularity theory
3. Platonic view
4. Instrumentalist view
5. Aristotelian view (this is the one I will be defending)

C. Implications of the issue for the debate over scientism

II. The theological account of laws of nature

A. Original conception of laws in modern science (Descartes, Newton)

B. Tends toward occasionalism, which implicitly undermines the very idea of a natural order

III. The regularity theory of laws

A. Origins in modern empiricism (Hume)

B. Regularity is not *sufficient* for something's being a law of nature

1. Counterexamples (gold versus uranium-235 example)
2. Artificial predicates (Goodman's "All emeralds are grue" example)

C. Regularity is not *necessary* for something's being a law of nature

1. Probabilistic laws
2. Other counterexamples (e.g. laws governing artificially produced elements)

D. Laws and counterfactuals

E. David Lewis's emendation to the regularity theory

F. Main problem: Laws qua regularities would lack explanatory power

IV. Excursus on laws and explanation

A. Sean Carroll on laws and regularities

1. Carroll's rejection of the principle of sufficient reason (PSR)
2. In defense of PSR

B. Lee Smolin on the evolution of laws

1. The “meta-laws dilemma”
2. Failure of Smolin’s proposed solution

V. The Platonic view of laws

- A. Laws as necessary connections between properties (conceived of e.g. as Platonic Forms)
- B. Entails either a vicious regress or a collapse into one of the other accounts of laws

VI. The instrumentalist view of laws

- A. Scientific realism vs. instrumentalism
- B. “No miracles” objection

VII. The Aristotelian view of laws of nature

- A. Laws as a reflection of essences and causal powers
- C. Molière’s “dormitive power” objection
- D. If universal, not true; if true, not universal (Nancy Cartwright)
- E. Laws and ultimate explanation: contra scientism

RECOMMENDED READING:

Alexander Bird, *Philosophy of Science* (McGill-Queen's University Press, 1998)

Nancy Cartwright, *How the Laws of Physics Lie* (Oxford University Press, 1983)

Nancy Cartwright, *The Dappled World: A Study of the Boundaries of Science* (Cambridge University Press, 1999)

Stephen Mumford, *Laws in Nature* (Routledge, 2004)

Walter Ott, *Causation and Laws of Nature in Early Modern Philosophy* (Oxford University Press, 2009)