Laws of Nature II

Preliminary Remarks

- Last week: Regularity account

- Regularity account faces various problems.

- This week: Alternative accounts, viz. Necessitarian account and sophisticated Regularity accounts.

Regularity Account – Problems

- Not all Regularities are Laws
  - Laws vs. Accidental Generalisations (general case, single instance)
  - Vacuous laws
  - Co-extensionality objection
  - Counterfactuals
  - Uninstantiated values
  - Explanatory failure
- Not all Laws are Regularities ???

Necessitarian Account - Intro

- Laws ≠ mere regularities
- Law statements imply true universal generalisations, not vice-versa.
- There is a necessary connection between *objects* OR *properties* in laws.
- N.B.: Metaphysics welcome here!!!
- Prominent Necessitarians:

  D.M. Armstrong, F. Dretske, M. Tooley.

Necessitarian Account – Dretske

- There is a necessary connection between *properties* (read: universals) in laws.
- The presence of F-ness necessitates the presence of G-ness.
- A law statement is a singular statement that expresses a relationship between properties, not between the extensions of those properties.

Necessitarian Account

- Presumably avoids Regularity account objections

  - Laws vs. Accidental Generalisations
  - Vacuous laws
  - Co-extensionality
  - Counterfactuals
  - Uninstantiated values
  - Explanatory Failure

Necessitarian Account - Problems

- What is this necessary connection? How are we meant to understand it?

  Hume's objection: We can't experience it…

  What is it then?

- Can we really distinguish between confirmed regularities and laws? On what basis?

- Occam's razor: Can we make do without necessity, causality and universals?

Revised Regularity Account (1)

- If being a regularity is a necessary but not a sufficient condition for being a law, what other conditions, if any, can be added to reach sufficiency?

Revised Regularity Account (2)

- Laws are more than regularities

- law = universal truth + X

  where X is *one* or *more* of the following:

  (1) predicates must not be gerrymandered (must be natural kind terms)
  (2) high degree of confirmation
  (3) wide acceptance
  (4) explanatory potential
  (5) deductive integration
  (6) predictive use

Problems w/the Revised Account

- Natural kind terms: Difficult to tell which of them, if any, are genuine natural kind properties.
- High degree of confirmation AND wide acceptance: These are epistemic notions and as such irrelevant.
- Explanatory potential: Universal generalisations can't explain.
- Deductive integration: Doesn't solve the problem but postpones it.
- Predictive use: How's that going to make a difference?

MRL/Systematic Account

- 'MRL' (after Mill, Ramsey and Lewis) *or* 'Systematic Account'
- Species of the Revised Regularity Account
- According to MRL:

  A regularity is a law of nature *if and only if* it appears as a theorem or axiom in that true deductive system which achieves a best combination of simplicity and strength.

MRL Account - Problems

- Notions of *simplicity* and *strength* notoriously difficult to pin down.
- Even if we put this problem aside, how do we decide how much weight to assign to each?
- Different systems will specify different laws, some of which will be inconsistent!!!
- Why should there be one system that optimally combines simplicity and strength?

Food for Thought

- The impasse seems to depend on the *demands* we place on the correct account of laws.
  - Modality for Necessitarians
  - No Metaphysics for Regularity theorist

How do we decide which are the right demands?

Reading

- Bird, A. ‘Natural Kinds’, ch. 1, pp. 34-54.
- Dretske, F. (1977) ‘Laws of Nature’, in Curd and Cover, pp. 826-845.