

## The Best System analysis of lawhood

To be a law is to be a theorem [?that is a “regularity”?] of all the true deductive systems with the best combination of simplicity and strength.

- Simplicity and the notion of a natural property.
- Note that this generates a pretty weak logic for ‘it is a law that’. That it’s a law that P doesn’t entail that it’s a law that it’s a law that P. That it’s not a law that P doesn’t entail that it’s a law that it’s not a law that P.
  - People sometimes suggest other definitions of ‘nomological necessity’: e.g. they take nomological necessities to be truths that follow from the collection of truths of the form ‘it is a law that P’, or from the collection of truths of that form and of the form ‘it is not a law that P’.

## Objections to the Best System analysis

- (1) Doesn’t do justice to the ‘modal’ character of laws.
- (2) Which deductive systems are simple and strong depends on us.
  - Lewis’s apparent response: accept the premise and substitute ‘simple and strong by our actual standards’.
    - Carroll’s objection to this: ‘It commits Lewis to a kind of actual-world chauvinism for there is no reason to suppose that it is our world’s standards of simplicity and strength out of all the possible standards of simplicity and strength which are the standards conceptually tied to laws’.
  - A more straightforward response: deny the premise. What depends on us is just what we mean by ‘simple’ and ‘strong’.
- (3) Requires that the nomic facts about an object (or pair of objects, etc.) supervene on the non-nomic facts about them, and thus rules out the possibility of analysing, e.g., *spacelike separation* in terms of ‘law’.
- (4) Van Fraassen’s gold spheres world.
- (5) Van Fraassen: There is no reason to believe that even idealised science tends to discover truths that are laws.
  - Hard to disentangle this from van Fraassen’s skepticism about whether even idealised science tends to discover truths *at all*.
  - The clearest worry has to do with the role of natural properties. Given that we have discovered that a theory is true on some interpretation or other, what reason is there for being confident that it is true on some reasonably natural interpretation?
- (6) Explanation.
  - a. Do [fundamental] *laws* on Lewis’s account turn out to be the kinds of truths that provide satisfying explanations of other truths (e.g. of things they entail)?
  - b. Do *truths about what the laws are* on Lewis’s account turn out to be the kinds of truths that can provide satisfying explanations of other truths—e.g. could we explain why P by pointing to the fact that it’s a law that P?

## **Humean Supervenience**

The idea: 'all there is to the world is a vast mosaic of particular fact, just one little thing and then another'.

Lewis's attempt to make this precise:

Any two possible worlds that are alike as regards spacetime geometry and the pattern of instantiation of perfectly natural properties by point-sized entities, at which the only perfectly natural properties and relations that are instantiated are those that are instantiated at the actual world, are alike in all respects.

As stated, this is the sort of claim that must be necessary if true (like 'actually P'), but this is a very shallow sort of necessity; the underlying contingent truth we can state as follows:

(HS) The instantiated perfectly natural properties and relations are such that: any two worlds that are alike as regards spacetime geometry and the pattern of instantiation of perfectly natural properties by point-sized entities, at which they are the only instantiated perfectly natural properties and relations, are alike in all respects.

In thinking about whether HS is an acceptable gloss on the initial idea, it's instructive to note that HS follows from three other theses:

- (i) **The Supervenience of Truth on Being.** Any two worlds that are alike in the pattern of instantiation of perfectly natural properties and relations are alike in all respects.
- (ii) The only instantiated perfectly natural properties and relations are geometric properties and relations (including the 'location' relation) and properties that are necessarily instantiated only by point-sized objects.
- (iii) Necessarily, everything there is has some perfectly natural property or stands in some perfectly natural relation to something.

Even given (i) and (iii), HS is weaker than (ii): it's consistent with the existence of extra perfectly natural properties and relations that necessarily supervene on geometry + point-qualities.

- Does this sort of possibility actually make sense? Not if any sort of combinatorialism about possibility is correct.

### **Evidence against Humean Supervenience from physics?**

Classical point-particle mechanics: enduring particles?

Classical electromagnetism: vector fields?

Quantum mechanics: ???

### **Is Humean Supervenience even possible?**

One style of argument: for any collection of possibly-instantiated perfectly natural properties and relations, the facts about laws / causation / thoughts / souls / God fail to supervene on geometry + facts about perfectly natural properties of point-sized things within the set of worlds where those are the only instantiated perfectly natural properties and relations.

- Not all 'anti-Humeans' would want to maintain this. For example, Armstrong may well agree that HS is true at worlds where N is not instantiated; he just thinks that we have good reason to think that the actual world isn't like this.
- So Lewis isn't *just* defending the possibility of HS; he's also defending its tenability in the light of philosophical arguments.

Another style of argument appeals to some sort of combinatorial principle about possibility.

- One might argue that no matter what perfectly natural properties or relations were instantiated, it would always be possible for there to be any number of extra 'characterless' entities that don't stand in any of them. If so, worlds that are Humeanly alike will differ as regards how many characterless things they have.
- One might also ask how it could be essential to any perfectly natural property or relation that only point-sized things instantiate it?

**What thesis is really driving the quest for analyses of lawhood, etc.?**

- (i) The supervenience of truth on being? Not enough: Armstrong could accept that.
- (ii) The supervenience of the modal on the non-modal? Or of the 'hypothetical' on the 'categorical'? Or strengthen to reducibility?
  - Hard to find a construal of this on which it would rule out analysing lawhood in terms of a primitive relation of nomological accessibility holding between Lewisian worlds.
- (iii) For any collection of perfectly natural properties and relations, there could be laws, etc., even if those were the only instantiated perfectly natural properties and relations?

**Purported counterexamples to analyses of lawhood in Humean terms**

- (i) Carroll's simple worlds.
- (ii) Tooley's X and Y particles.
- (iii) Carroll's argument from counterfactuals (not in our readings)

**What weight should we accord to our intuitions about cases like these?**