

Class 22 - Why Be a Humean?

I. Humean Supervenience, decomposed

Last week, I distinguished four responses to the question of what laws are.

1. The MRL/systems account of laws
2. Relations among universals (Armstrong)
3. The autonomy view
4. Eliminativism (no laws)

Our goal is to look at the MRL approach, which is the standard account.

We are going to ignore the universals approach.

I'm happy to believe that there are universals, and that we have knowledge of them, but we don't have time to engage that question.

We are also going to ignore (for the most part) the eliminativist position.

Some of the criticisms of the MRL account come from the autonomy group, some come from defenders of the universals view.

MRL is not the only possible Humean position, but it is the most dominant.

We will see a little bit of a Humean alternative to MRL, Skyrms' appeals to epistemic invariance, but we will focus on MRL.

MRL says that the laws are the theorems of the simplest and most powerful consistent system that fits the facts.

It relies on what I called the metaphysical interpretation of Hume's work.

The most direct interpretation of Hume's work on laws of nature would be called naive regularity

On naive regularity, the laws are just generalizations over particular, loose and separate events or objects.

These objects are independent and unconnected, as Hume says they appear.

All properties of these objects are thus taken to be local properties.

Naive regularity, though, has trouble distinguishing laws from accidental generalizations.

In order to specify the laws, out of all the generalizations, Lewis appeals to Ramsey's systems approach.

Thus, MRL is a refinement of naive regularity, the dominant instantiation of the more general claim of HS.

Maudlin argues that HS decomposes into two doctrines:

1. Separability, and
2. Physical Statism, p 51.

Separability means that we can divide the world into discrete, independent pieces.

Maudlin cites Einstein (pp 53-4) in defense of separability.

But, he criticizes separability from considerations in quantum mechanics.

Classical (Newtonian) mechanics is separable, but quantum mechanics posits irreducibly relational properties.

Consider two pairs of electrons, one in the Singlet and the other in the  $m=0$  Triplet State such

that the spatio-temporal relations within each pair are identical... Can one analyze the global physical state of each pair into local physical states of each part taken individually plus the spatio-temporal relations Evidently not. For what is the local physical state of each electron? If only pure states are allowed as possible physical states, then none of the electrons has any local state, i.e. a state that can be specified without reference to the other member of the pair (61).

The other element of HS, physical statism, says that the little separable pieces are all there is to the world.

In particular, physical statism carries with it a non-circularity condition:

The intrinsic physical state of the world can be specified without mentioning the laws (or chances, or possibilities) that obtain in the world (52).

One could endorse physical statism without separability, but that would entail accepting that there are multiple objects or events which are connected in some way.

Hume, of course, denied that we can have any knowledge of connections among events.

Lewis maintains the metaphysical thesis that such connections are not part of the furniture of the universe.

Maudlin criticizes physical statism, while defending a weaker doctrine of physicalism.

The physicalist can consider laws to be physical: basic, irreducible elements of the universe.

In contrast, the physical statist must eliminate laws, or reduce them to basic elements.

In his defense, Maudlin argues that physicists never try to reduce physical laws, p 67-8.

## II. Reasons to be Humean, Part I (Metaphysics)

The most important reason to be a Humean, to adopt both separability and physical statism, is the parsimony of the position.

We need the objects to which the Humean commits, anyway.

Also, if one opposes reliance on facts about possible worlds, or about causes, the Humean position is attractive.

Appeals to modality (if there were any) or causes would have to be based on facts about the actual world.

Some contemporary naturalists and empiricists are extremely wary of modality.

Even the supervenience thesis for modality that I mentioned when we discussed Kripke doesn't ameliorate all worries about modality.

The strictest naturalists, like Quine, reject all modality.

Similarly, causes might be interpreted in terms of the related concept of counterfactuals.

The paradigm such analysis of a 'A caused B' is: If A had not occurred, B would not have occurred.

Lewis, independently of his work on laws, reduced the above counterfactual analysis, of course, to one in terms of possible worlds.

Maudlin, in contrast, points out that appeals to modality are accepted scientific practice, as long as the conditions are precisely stated.

He cites a discussion of the way in which the world would be different if there were no moon, including an account of how the moon was formed and could have not been formed, p 65.

So, the Humean rejects both modality and causes on grounds of parsimony.

Maudlin also criticizes parsimony, or Ockham's razor, pp 76-7, on the basis of scientific practice. He uses the example of relational theories of space.

One might be an absolutist about space, or a relationalist.

The absolutist says that there is space, in addition to the things in space.

The relationalist says that there are only objects, and their spatial relations.

[Newton's famous bucket experiment](#) is a defense of absolutist space.

The relationalist has a more parsimonious theory, since she avoids commitments to absolute space.

But, Maudlin points out, physicists just don't care.

Physical theory is more elegantly presented in absolute space.

The relationalist theory might be more parsimonious, but it is just too complicated.

### III. Reasons to Be Humean, Part II (Epistemology)

The other significant motivation for being a Humean is epistemological.

Maudlin cites Earman in explicating his objection.

There are epistemological arguments and threatenings, the most widely used being the threat of unknowability, based on two premises: we can in principle know directly or non-inferentially only (some subset) of occurrent fact, what is underdetermined by everything we can know in principle is unknowable in principle...The argument connects back to the ontological if we add the further premise that what isn't in principle isn't in principle (Earman, quoted in Maudlin, p 71)

Note that the motivation Earman cites is very close to Hume's original reasoning.

Also note that the last sentence makes a leap from epistemic considerations to ontological ones.

The proponent of HS may claim that Hume made such a leap.

I claimed that taking Hume as doing so may not be the best interpretation of Hume.

Maudlin's main worry about the supposed epistemological advantage of the Humean position is that knowability is unconnected to existence.

One may or may not know something that either exists or does not exist.

The fact that we do not know whether a claim is true is irrelevant to the truth of that claim.

The leap in the last sentence of the Earman quote is thus unjustifiable.

Maudlin considers the account of Socrates' blood type.

Someone who thinks that the truth of a claim or the existence of an object depends on whether we know the claim or the object might claim that there is no fact of the matter about Socrates' blood type.

But, we think that the connection between our inability to know Socrates' blood type and facts about his blood type is unjustified.

In fact, Maudlin calls someone who doubts that Socrates had a blood type a "lunatic" (74).

He had a blood type whether we know what it was or not.

The defender of the connection between knowability and truth might respond that Socrates' blood type is knowable, even if not known.

Such a person could agree that Socrates had a blood type, but still maintain that there are no laws.

To be consistent, that person could distinguish between Socrates' blood type, which is knowable in principle, and the laws, which are unknowable, in principle.

Maudlin claims that the real problem with the Socrates example is not resolved by appealing to the knowability of Socrates' blood type, which is why he calls that response, "utterly bizarre" (74).

The real problem is the connection between knowability and truth.

There are facts, whether we know them or not.

Some of those facts concern objects that may forever be beyond our ken, like Socrates' blood type, or any event outside of my space-time cone.

So, the supposed epistemological advantage of Humeanism is deflated by its lack of relevance to ontological questions.

We are looking now at objections to HS, in general, and MRL, in specific.

In last week's notes, I covered a few objections which we did not discuss in class.

Here they are, again: 1. The Kripke/Armstrong spinning disk/sphere; 2. Tooley's 10-particle world; 3. Chance.

#### IV. The Kripke/Armstrong disk/sphere objection

In the Kripke/Armstrong spinning disk/sphere example, we are asked to consider two possible worlds that contain only a completely homogeneous and continuous disk, or sphere.

There is no difference discernible among the parts of the sphere, even at the most fundamental level.

In one of these worlds, the sphere is spinning.

In one of these worlds, the sphere is stationary.

We can see that there are differences between the two worlds.

But there are no differences in the facts within in the world.

There are no distinct parts to discern, since the sphere is homogeneous.

So, there are no differences between any two specific points or regions in the two worlds at any point.

The local qualities are all the same in both worlds.

In order to distinguish the two spheres, we must pick out two arbitrary regions, one on each sphere, and an arbitrary reference frame for each world, and identify the two regions.

At one moment, these regions will be (by stipulation) in the same place.

At another moment, keeping the reference frame constant, the two regions will be in different places.

This procedure will allow us to differentiate the worlds.

But, notice, it requires that we be able to identify one region in one world over time.

It requires us to be able to differentiate parts of the sphere over time.

This sort of persistence through time is unavailable to the defender of HS.

For, there are no local qualities that support persistence.

Even to formulate, say, the velocity of one region, is to talk about the change in position over time.

Only a temporally persistent object can change location over time.

We need some way to identify the object that is changing over time.

And, ex hypothesi, there are no differences among any of the parts or regions in either of the worlds!

A person with a little bit of physics and calculus might suppose that one could try to differentiate between the parts of the rotating sphere and the parts of the stationary sphere using instantaneous velocity.

Or, we could use the Lorentz transformations to note that one world is contracting a bit.

Those replies would be smart, but they would not help us to differentiate between worlds with spheres rotating in opposite directions.

Leibniz might help, here, since he would claim that two such worlds, with no discernible difference, could not possibly exist.

To use the Leibniz strategy, though, one would have to defend the principle of sufficient reason, which no one really believes.

Lewis's response to the spinning sphere: "No worries for HS, so I thought: I believe that ours is a temporal-parts-world, therefore neither of the worlds in the story is a world like ours" (HSD 475). Compare: "I concede that HS is at best a contingent truth. Two worlds might indeed differ only in un-Humean ways, if one or both of them is a world where HS fails" (et seq.) (Intro, x).

#### V. The Tooley objection

Michael Tooley, who defends the universals interpretation of laws, asks us to consider a world of ten particles.

Among ten particles, there are 55 possible interactions.

Imagine that we have studied 54 of them, and we know the laws which govern these 54.

But, suppose conditions are such that the last pair, X and Y, never interact.

Still, if X and Y did interact, there would be some result.

There is nothing in the world to determine the nature of this interaction.

Still, it does seem like there would be some result.

Intuitively, there are laws governing their interaction.

But nothing non-nomic will suit the bill.

Lewis's considerations of unobtainium<sup>349</sup> lead to similar conclusions.

The laws seem not to reduce to facts about the world.

#### VI. The chance objection

The objection that Lewis calls the "big bad bug" involves chance.

Consider the discussion of symmetry and frequency, in HSD §2.

An obvious candidate for actual chance in nature is the chance of decay of a radioactive isotope.

Lewis considers tritium, with its half-life of about 12.3 years.

Given one particle of tritium, there is a fifty percent chance that it will decay in 12.3 years.

There is no obvious deductive theorem to govern this decay.

It might decay, it might not.

On what local quantity might this probabilistic property depend?

Lewis considers two possibilities: symmetry and frequency.

Symmetry (the drunk) seems promising, until we notice that frequencies defeat symmetries.

That is, we do not know whether the world is actually balanced in the way that symmetry demands.

"The symmetry of T-junctions would no longer require 50-50 division of credence if we also knew that, despite this symmetry, the drunkards turn right nine times out of ten" (HSD 476).

But, again, there seem to be laws governing phenomena about which we have no frequency data, as in the unobtainium case.