The Problem of Temporary Intrinsics

Whither Leibniz's Law?

Endurance and Perdurance

- Let us say that something *persists* iff, somehow or other, it exists at various times; this is the neutral word.

- Something *perdures* iff it persists by having different temporal parts, or stages, at different times, though no one part of it is wholly present at more than one time; whereas it *endures* iff it persists by being wholly present at more than one time.

- Perdurance corresponds to the way a road persists through space; part of it is here and part of it is there, and no part is wholly present at two different places.

- Endurance corresponds to the way a universal, if there are such things, would be wholly present wherever and whenever it is instantiated. Endurance involves overlap: the content of two different times has the enduring thing as a common part. (Lewis, 1986, 202)

Temporary Intrinsics

The principal and decisive objection against endurance, as an account of the persistence of ordinary things such as people or puddles, is the problem of temporary intrinsics. Persisting things change their intrinsic properties. For instance shape: when I sit, I have a bent shape; when I stand, I have a straightened shape. Both shapes are temporary intrinsic properties; I have them only some of the time. How is such change possible? I know of only three solutions. (Lewis, 1986, 202)

Intrinsic *vs*. Extrinsic

- φ is an intrinsic property of *o iff* (i) φ is a property of *o*; and (ii) possibly *o* is φ in a world in which *o* alone exists.

- φ is an extrinsic property of *o iff* (i) φ is a property of *o*; and (ii) φ is not an intrinsic property of *o*

The Three Solutions

- First Solution: Perhaps shapes are not intrinsic properties.

    - Lewis: 'This is simply incredible.'

- Second Solution: Presentism.

    - Lewis: This 'is even less credible than the first solution.'

- Third Solution: Perdurance

The Argument

(1) If some object o is φ at t_1 and not-φ at t_2 (when φ is an intrinsic property of o), then either o perdures or endures.

(2) If o endures, then o is both φ and not-φ.

(3) LL: $\forall x \forall y[x=y \rightarrow \forall F(Fx \rightarrow Fy)]$

(4) Hence, o does not endure.

(5) Hence, o perdures.

Ordinary Language Parts

- A button is a part of a jacket.

- The foyer is a part of the house.

- An engine is part of a motorcycle.

- My elbow is part of me.

- Slightly less clear:

  - A martini is made with two parts gin.

  - She's always morose. It's just part of who she is.

Some Principles of Mereology

- Everything is part of itself.

  - Reflexivity: Pxx

- Any part of any part of a thing is itself part of that thing.

  - Transitivity: $(Pxy \land Pyz) \Rightarrow Pxz$

- Two distinct things cannot be part of each other.

  - Anti-symmetry: $(Pxy \land Pyx) \Rightarrow x = y$

First Pass

- Three-Dimensionalism

  - Diachronic objects (DOs) are 'wholly present' at each moment of their existence

  - DOs are not aggregates of temporal parts

- Four-Dimensionalism

  - DOs mirror the structure of space-time

  - DOs are aggregates of temporal no less than spatial parts

Space-Time

- Space-time (ST) is a multi-dimensional object

  - ST has as its ultimate constituents ST *points*

    - *Pointiness*: every region is composed of ST points

  - Any collection of ST points makes up a space-time *region*

    - *Universality*: Every collection of ST points composes a region

  - Different regions require different sets of ST points

    - *Uniqueness*: Every collection of ST points is such that there is exactly one thing composed by the points in that collection.

Fundamentality

- One domain D_1 is more *fundamental* than another domain D_2 if D_2 exists in virtue of D_1 (or truths about items in D_2 are true in virtue of truths about items in D_1).

    - Pointy Object Fundamentality

        - Points are ontologically more fundamental than extended regions

    - Pointy Fact Fundamentality

        - Facts about points and their relations are more fundamental than facts about extended regions

Hard-Core 4-D

- Every material object is *identical* with an ST region.

  - It follows (from universality) that every region is identical with an object

  - It follows (from uniqueness) that there is exactly one object in every region

4-D and Time

- Consider: necessarily, if S is constituted by parts $p_1 . . . p_n$, then $p_1 . . . p_n$ exist; so, if I am composed *inter alia* of my past and future parts as well as my present (temporal) part, then my past and future parts exist no less than my present temporal part.

- So, if 4-D, then presentism is false.

  - Presentism =df only items existing in the present exist.

    - Dinosaurs *did* exist, but do not; colonies on the moon *will* exist (let us say), but do not

Initial Concerns about 4-D

- Seems to require mereological essentialism; yet some objects are modally ductile

  - Possibly I might have moved to Vienna; but this ST region could not have done so

- Seems categorially unsuitable

  - Cora is currently practicing the violin; this ST region does not seem to be a practicer.

Motivating 3-D

- Suppose we drop *uniqueness*, but retain *pointiness* and *universality*

  - . . .though note that we might retain universality while reserving the right (the metaphysical right?) to treat some regions as constituting privileged beings.

    - Recall that getting universal mereological aggregation on the cheap doesn't really win us very much.

- Then, everything is made up of ST points, and every set of ST points makes up something.

    - Yet, again, some things, from a categorial point of view, might be privileged things.

- But it becomes possible for two objects to occupy the same ST region

Two Immediate Benefits

- The worry about mereological essentialism disappears

    - JFK might have lived longer

- The worry about categorial suitability disappears

    - We are not constrained to say, e.g. 'The region practiced well today', since the girl occupying the region need not be identical with the points constituting it.

    - A statue might be essentially neo-classical in style, even though the clay is nothing of the sort.

Being Wholly Present (1)

- Space and time seem disanalogous, at least in these respects:

  - I am *currently,* now spread out in space; all of my spatial parts exist currently, now

  - My past and future parts do not currently exist, now

  - I am no more temporally extended than I am modally extended; my extension is spatial only

Being Wholly Present (2)

- Let us take Lewis' comparison to universals seriously:

  - S is wholly present at $t_1 \ldots t_n$ *iff* (i) S is present at $t_1 \ldots t_n$; (ii) no part of S is present at any time which is not also present at any other time; and (iii) S is always *essentially* S

An Unlikely Source of Assistance?

- Where in the body is the soul?

  - 'All of the soul's powers are grounded in the soul's very essence. Therefore, if the soul is whole in each part of the body, it follows that all of the soul's powers exist in each part of the body. As a result, there will be sight in the ear and hearing in the eye, which is absurd' (Aquinas, *ST* 1a 76.8 obj. 4; cf. I *Sent*. 8.5.3; *SCG* II 72; ST 1a 76.8; *QDSC* 4; *InDA* I.14).

Symmetry Refigured

- Let us revisit the thought that space and time are not, as the uninitiated suppose, differentiated by the fact that directionally speaking time is asymmetric whereas space is symmetric.

  - Let us agree that this is false and that space and time, or space-time, is symmetric.

- Then we might answer the question of where in time S is just as Aquinas answers the question of where in (bodily) space the soul is: everywhere, all at once.

  - This would give content to Lewis's suggestion that one can speak of being wholly present just as one speaks of universals: a person S is always wholly present where all of S's parts are, be they spatial, temporal, or spatio-temporal.

An Argument against 4D

- Let this version of 4D hold *inter alia* that every person is an aggregate of ST-slices, identical, then, with an ST region. Call it 4D Personhood (4DP).

    1. 4DP is true only if the ST-slices of S are identifiable as ST-slices of S independently of the aggregate which S is.

    2. The ST-slices of S are parasitic for their identity conditions on S.

    3. If (2), then the ST-slices of S are not identifiable as ST-slices of S independently of the aggregate with S is.

    4. So, not 4DP.

Paraphrase Tests Revisited

- So far we know that a paraphrase is successful when and only when a paraphrase is:

    - truth-preserving;

    - meaning-preserving; and

    - of the same modal profile as its targeted sentence.

- To that we may add: capturing the same truth conditions is not sufficient for successful paraphrase.

    - From Mellor: token reflexive sentences have different truth conditions than tenseless statements.

Tense, Belief, and Action

1. If tensed statements cannot be translated into non-tensed statements, tense is indispensable.

2. Tensed statements can be translated into non-tensed statements only if (broadly speaking) *agency* can proceed without token-reflexive beliefs.

3. Agency cannot proceed without token-reflexive beliefs.

4. So, tensed statements cannot be translated into non-tensed statements.

5. So, tense is indispensable.