From Nature to Grounding

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Main thesis: Understanding an entity's nature + an account of how logically complex entities are grounded provides all we need to understand how that entity is grounded.

1 Grounding and Nature

- In limited cases, there is a clear connection between grounding and nature. E.g.: conjunction and disjunction.

- *Problem:* Such 'easy' cases are few and far between. What of all the interesting 'hard' cases?

- *Claim:* In a hard case, the entity's nature allows us to reduce to easy cases.

Target view: For each nonfundamental x, there is a logically complex entity $\textsc{nat}(x)$ which (i) specifies the nature of x and (ii) provides grounding-conditions for x.

Nature/essence of x: What it is for x to be the very thing it is (*individual essence*); or to be the very kind of thing it is (*kind essence*).

Grounding conditions for x: Conditions specifying all the possible grounds for x's existence and, when x is a property, also specifying all the possible grounds for something's possessing x.

2 Real Definition

- Specifies *what the object is* (Fine 1994; Lowe 2012)

- Specifies the *essence* of x.

- Constitutive notion of essence: 'is directly definitive of the object' (Fine 1995, 57)

3 Formal Constitution

Thesis: Entities have both a *material constitution* and a *formal constitution*.

Material constitution: The matter (plus its arrangement) which makes up the entity. (Applies only to material entities. Contingent.)

Formal constitution: The nature/essence of the entity. A logically complex entity. (Applies to all entities. Necessary.)

- Distinct but spatiotemporally coincident material objects: same material constitution, different formal constitution. (Statue/clay.)

- Sortal/modal/persistence facts do not reduce to microphysical facts (i.e. about x's material constitution). Statue & clay differ modally, but not microphysically.

4 A Puzzle about Parthood

- Mereological summation $x \sqcup y$ defined as that thing which has x and y (and all their parts), and nothing else, as parts.

- This is the real definition of $x \sqcup y$. Consequence: of the nature of $x \sqcup y$ to have x as a part.

- Tables do not have their material parts essentially.

- So, tables are not mereological sums of their material parts.

Material part of x: (mereological) part of x's material constituton.

Formal part of x: (mereological) part of x's formal constitution (= nature).

- Matter (e.g. that mass of clay) has its parts essentially. (Else, it would be some other mass of clay.)

- But statues don't have material parts essentially: the statue could have had some other material constitution.

Formal Part:

- *Being unmarried* is a (formal) part of *being a bachelor*

- $\langle A \rangle$ is a (formal) part of $\langle A \wedge B \rangle$

- $\langle A \rangle$'s truth is a (formal) part of $\langle A \wedge B \rangle$'s truth.

- F is a (formal) part of $\langle Fa \rangle$

- $\langle A \rangle$ is *about* x iff x is a formal part of $\langle A \rangle$ (??)

5   The Language of Reality

- Formal constitution of x = essence of x = a logically complex entity. (Nb: logical constructions, but *not* in a purely linguistic sense.)

- *Q*: what is a logically complex entity? How do logical modes on construction work?

- I accept logically complex states of affairs (Barker and Jago 2012).

- Complex properties as abstractions from complex states (Jago 2011)

- States as worldly closed sentences; properties as worldly open sentences.

- *Q:* must there be primitive non-logical vocab? A 'fundamental level'? This theory doesn't require it.

6   Natures as Constructions

- Natures = definitions written in the worldly language.

- Natures, not material entities, are constituents of other natures.

- Natures are necessary beings, whereas material entities are not.

Mathematical structuralism: defining abstract entities via a relational open sentence, qua *pure structure* (i.e., minus the defined entities).

Lowe's Objection: "if the essence of an entity were just some further entity, then it in turn would have to have an essence of its own and we would be faced with an infinite regress" (Lowe 2006, 8–9)

- For immaterial entities x, $\text{NAT}(x) = x$.

- For material entities x, $\text{NAT}(x) \neq x$.

- But if x is material, $\text{NAT}(x)$ is immaterial, hence $\text{NAT}(\text{NAT}(x)) = \text{NAT}(x)$. Either way, no regress.

Partial Ground

- When $x_1, x_2, \ldots$ together ground y, each x_i is a *partial ground* of y.

- Notation: $x_i \preceq y$.

- *Analysis:* consider y's real def in *negation normal form*. Then $x \preceq y$ when x has a *+ve* occurrence; $(\neg x) \preceq y$ when x has a *−ve* occurrence.

7   Causal & Functional Roles

- Suppose *pain* = causal role R, typically taking bodily damage to certain types of behaviour.

- Causal roles are nonfundamental entities: open sentences in the worldly language.

- What makes it a *causal* role?

- One answer: realism about *dispositional tendency*.

- This is what α_1*'s tending to* β_1 and α_2*'s tending to* β_2 have in common.

- Provides worldly language with causal vocab.

8   The Shape of Grounding

- On this theory, grounding is *irreflexive*, *asymmetrical*, & *transitive*.

- Open Q whether it is well-founded.

Argument from Real Definition

- Real definitions cannot be circular, so defined entities cannot be involved in grounding-loops.

- Non-circularity is a metaphysical, not an epistemic, condition on definition.

Argument from Construction

- If $x \preceq x$ then $x \sqsubset \text{NAT}(x)$, hence x is nonmaterial.

- But then $\text{NAT}(x) = x$ and hence $x \sqsubset x$, which is impossible.

Conclusion

Material objects have a formal & a material constitution: their nature & their matter. Non-material entities are identical to their natures. Natures are worldly real definitions specifying possible grounds. Grounding is irreflexive, asymmetrical, and transitive; but it need not be well-founded.

References

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