

Semantics and the god's eye view

Hans Halvorson

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introduction

Ongoing series Unintended consequences of the semantic view of scientific theories

Today's episode How we were tricked into thinking that semantics moves us closer to the **god's eye view**

what is this god's eye view?

- ▶ The aspiration for scientific objectivity, transcending our parochial differences
- ▶ Not the French way of seeing things, or the German way, or a man's way, or a woman's way, or . . .

what is the god's eye view?

- ▶ Optimists: rationalists and metaphysical realists such as Leibniz and Hegel
- ▶ Pessimists: conventionalists and voluntarists such as Poincaré and Carnap

god's eye view in contemporary philosophy

- ▶ w.r.t. quantum theory, the phrase “completing the circle” expresses aspiration for a god's eye view
- ▶ w.r.t. metaphysics, the phrase “cutting nature at the joints” expresses aspiration for a god's eye view

what's a theory?

Syntactic view of theories: A theory T is a deductively closed sentence in some first-order signature Σ .

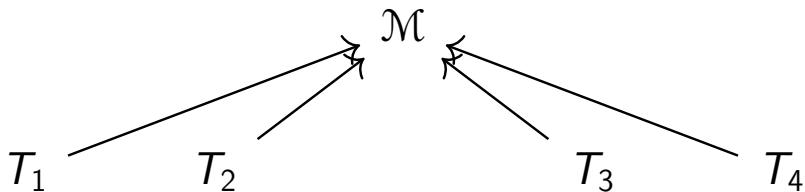
Complaint: The syntactic view makes theories *language-dependent*

is semantics divine?

Semantic view of theories: A theory T is a class of models.

Claim (van Fraassen): The semantic view liberates theories from language-dependence

is semantics divine?



is semantics divine?

different $\Sigma \Rightarrow$ different $\mathcal{M}$

Example: Groups can be formulated in signature $\Sigma_1 = \langle o, ^{-1}, e \rangle$, or in signature $\Sigma_2 = \langle \bullet \rangle$.

But then $\mathcal{M}_1 \neq \mathcal{M}_2$.

Upshot: A class of models is no less language-dependent than a syntactically specified theory.

We are suspended in language.
(Niels Bohr)

is semantics divine?

$$M = \langle \{a, b, \langle a, a \rangle\}, \{\langle a, a \rangle\} \rangle$$

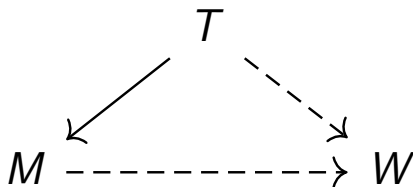
$$N = \langle \{a, b, \langle a, b \rangle\}, \{\langle a, b \rangle\} \rangle$$

is semantics divine?

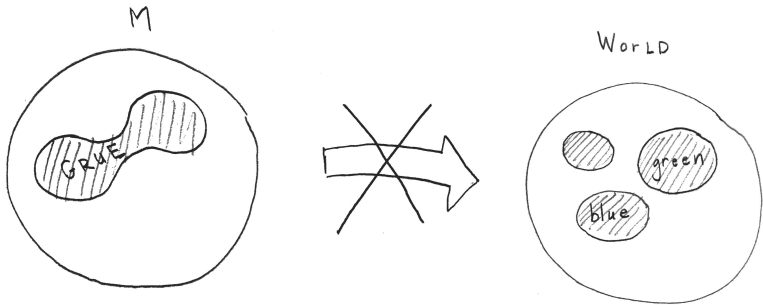
Claim (Nerlich, Suppe, van Fraassen, Sider, etc.): the semantic view liberates us from the need for correspondence rules

Putnam's paradox

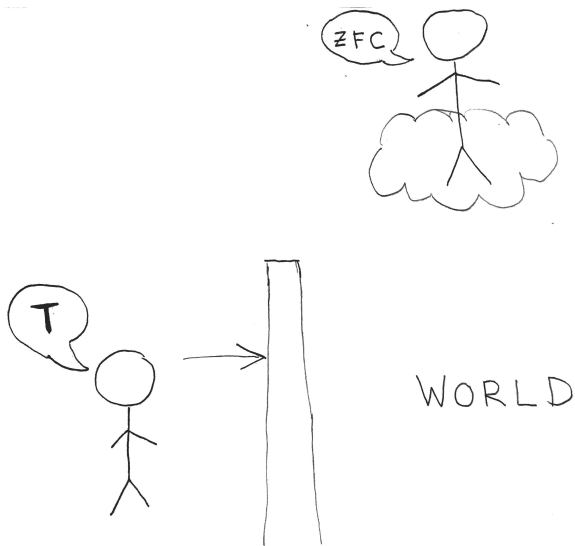
If T is consistent, then T is true



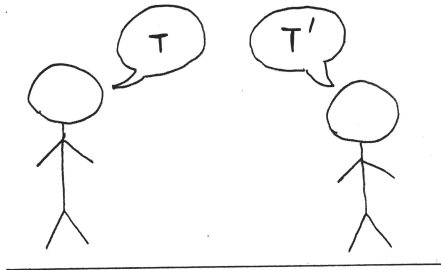
David Lewis' response



who made Putnam God?



Putnam is people too



WORLD

what Hilbert said to Frege

- ▶ Hilbert: all consistency proofs are relative consistency proofs
- ▶ To say that a theory T is consistent (in the precise technical sense) means that it has an interpretation into another theory ZFC

Cassirer against g-e-v

Popular view: accepting GTR amounts to believing that the WORLD is isomorphic to a Lorentzian manifold.

Cassirer's view: accepting GTR is more akin to choosing a pair of eyeglasses.

Kierkegaard against g-e-v

g-e-v excluded by the existence of *genuine* theoretical choices, i.e. choices *not* forced by Reason. e.g. a choice of language, formalism, perspective, research topic, experiment, etc.

Bohr against g-e-v

Describing the outcome of a measurement involves a genuine choice of how to apply the formalism