# Constructing the World

## Lecture 6: Whither the *Aufbau?*

David Chalmers

# Plan

*1. Introduction

2. Definitional, Analytic, Primitive Scrutability

3. Narrow Scrutability

4. Acquaintance Scrutability

5. Fundamental Scrutability

6. Structural Scrutability

7. Whither the *Aufbau?*

# Whither the Aufbau?

- Carnap defends: definitional scrutability of all truths from a logical scrutability base

- Vindicates a construction of all truths about the world from a logical/structural base

- How close can we come to these Carnapian goals?

- What sort of principled scrutability bases are suggested?

# So Far

- I have argued: all truths scrutable from PQTI, and from some/all of:

  - spatiotemporal truths

  - nomic truths

  - phenomenal truths

  - quiddistic truths

  - indexicals, fundamentality, logic/math

# Plan

# Definitional Scrutability

- A Priori Scrutability does not entail Definitional Scrutability - but can we get close?

    - Context-dependent definitions

    - Infinitary (or long finite) definitions

    - Approximate definitions (converging?)

    - Revisionary definitions (explications)

- Suitable for some Carnapian purposes

# Analytic Scrutability

- Is an a priori scrutability base an analytic scrutability base?

- Not if there are synthetic a priori truths.

- But maybe if we expand the base:

  - add normative truths, mathematical truths, ...

  - pursued in further work on verbal disputes

# Primitive Scrutability

- Base involving only primitive concepts?

  - *I, now, this*

  - negation, conjunction, existence

  - spatiotemporal (given primitivism)

  - nomic (given non-Humean view)

  - phenomenal (given phenomenal realism)

  - quiddistic (given quidditist view)

  - *fundamental, in-virtue-of?*

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# Narrow Scrutability I

- An expression is *Twin-Earthable* when there are two possible twins that use it nondeferentially with different extensions

  - E.g. 'water', 'Godel'.

  - Extensions of predicates etc. are properties

- An expression is *narrow* if it is non-Twin-Earthable or a primitive indexical

  - E.g.: 'zero', 'believe', 'I'?

# Narrow Scrutability II

- Narrow Scrutability: All truths are scrutable from narrow truths (using only narrow expressions)

- Idea: Twin-Earthability goes along with scrutability from empirical truths about the environment.

  - E.g. 'water': reference depends on underlying external truths, and is correspondingly scrutable from those truths.

# Narrow Scrutability III

- Narrowness plausible for

  - logic/maths, indexicals

  - fundamentality

  - phenomenal (for a phenomenal realist)

  - law of nature (for a nonHumean)

  - spatiotemporal (for a primitivist)

  - quiddistic (for a conceptual quidditist)

# Narrow Scrutability IV

- Does narrow scrutability yield narrow content?

- Requires also narrowness of scrutability

  - If A is scrutable from B for S, counterpart A' is scrutable from B' for any twin S'.

- Grounded in narrowness of apriority

  - If a thought T constitutes a priori knowledge for S, a corresponding thought T' constitutes a priori knowledge for any twin S'.

# Narrow Scrutability IV

- Generalized narrow scrutability plus narrowness of scrutability entail narrow primary intensions.

- If a token of 'water is XYZ' is scrutable from a XYZ-scenario specification for Oscar, a corresponding token will be scrutable from the same specification for Twin Oscar

  - So primary intensions coincide

- More generally: if a thought T has a given primary intension, so will its counterpart T' for any twin.

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# Acquaintance Scrutability

- Russell's principle of acquaintance: All propositions are composed of constituents with which we are acquainted

- All expressions definable in terms of acquaintance expressions.

- Russell: these include 'I', 'now' (?), expressions for sense-data and certain universals.

# Acquaintance Scrutability II

- All truths scrutable from truths involving only acquaintance expressions?

- Members of our scrutability base are at least reminiscent of Russell's acquaintance concepts.

# Acquaintance Scrutability IV

- An *epistemically rigid* expression is one that has the same extension in every epistemically possible scenario (and every possible world)

  - No: 'water' (picks out $H_2O$ or XYZ), 'Godel'

  - Arguably yes: 'zero', 'conscious', 'philosopher'.

- Alternative: An epistemically rigid expression is one whose extension we can know a priori.

  - Epistemic rigidity entails non-Twin-Earthability?

  - A posteriori necessities requires epistemic nonrigidity?

# Acquaintance Scrutability V

- Epistemic rigidity is reminiscent of acquaintance

  - Acquaintance: One knows the referent merely by having the concept

  - Epistemic rigidity: One can know the referent a priori (by having the concept).

- Differences

  - More idealization (e.g. '43+59' is ER but not A?)

  - Apriority required (e.g. 'I' is A but not ER?)

# Acquaintance Scrutability VI

- Suggestion: two kinds of acquaintance

    - Acquaintance with concrete entities

        - Primitive indexicals

    - Acquaintance with abstract entities

        - Epistemic rigidity

- An acquaintance expression is either a primitive indexical or an epistemically rigid expression

# Acquaintance Scrutability VII

- Then: all expressions scrutable from acquaintance expressions?

    - 'I', 'now', 'this': primitive indexicals

    - phenomenal, nomic, fundamental: epistemically rigid

- A vindication of Russell?

- Acquaintance scrutability might then explain narrow scrutability, primitive scrutability, etc?

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# Fundamental Scrutability

- All truths are scrutable from metaphysically fundamental truths

  - Those in virtue of which all truths obtain

- Better: All truths are scrutable from metaphysically fundamental truths and indexical truths

# Fundamental Scrutability II

- Problem: There are many modes of presentation of fundamental properties.

- Solution: require that fundamental truths are specified using only epistemically rigid terms

  - Problem: no e-rigid specification of fundamental properties on some quiddistic views

  - Handle via Ramsey-sentence specification of fundamental truths, with e-rigid O-terms

- Key property: fundamental truths necessitate all (epistemically rigid) truths.

# Fundamental Scrutability III

1. All epistemically rigid truths are necessitated by (epistemically rigid) fundamental truths.

2. When S is epistemically rigid, S is necessary iff S is a priori.

_____

3. All epistemically rigid truths are a priori scrutable from fundamental truths.

# Fundamental Scrutability IV

3. All epistemically rigid truths are a priori scrutable from fundamental truths.

4. All truths are a priori scrutable from epistemically rigid truths and indexical truths.

_____

5. All truths are a priori scrutable from fundamental truths and indexical truths.

# Fundamental Scrutability V

- Most non-indexical truths in our base look fundamental

  - Nomic, spatiotemporal, quiddities, that's-all

    - Correspond to fundamental physical truths about world (depending on Humeanism, spatiotemporal primitivism, quidditism).

# Fundamental Scrutability VI

- What about phenomenal truths?

    - Fundamental for dualist, not in scrutability base for type-A materialist

- Type-B materialists hold that phenomenal truths aren't scrutable from fundamental truths plus indexicals, so deny Fundamental Scrutability.

- But if Fundamental Scrutability is plausible in all other cases (and motivated by argument), then it yields a good reason to reject type-B materialism.

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# Structural Scrutability

- Carnap: All concepts are definable in terms of structural concepts

    - Weakly structural concepts: relational and logical concepts

    - Strongly structural concepts: logical concepts

- Motivation: only structural concepts are objective, communicable, and suitable for science

    - Non-structural concepts rely on subjective ostension

# Structural Scrutability II

- All truths are scrutable from structural truths

- From strongly structural truths?

  - Corresponds to a "structure description"

  - Refuted by Newman's problem.

- From weakly structural truths?

  - Corresponds to a "relation description".

  - Look for objective relation descriptions?

# Spatiotemporal Structuralism

- All truths are scrutable from spatiotemporal (and indexical) truths

  - Base: There exist entities and properties distributed in such-and-such way over spacetime

  - Spatiotemporal concepts are primitive, defines nomic, phenomenal, etc from there.

  - Lewis's Humean scrutability

- Spatiotemporal truths can be specified using

  - basic spatiotemporal relations, or mathematical spaces with certain dimensions designated as spatiotemporal

# Nomic Structuralism

- All truths are scrutable from nomic truths (and indexicals)

    - Base: There exist entities and properties connected by such-and-such nomic relations

    - Nomic concepts are primitive, others defined from there

    - Epistemological analog of Shoemaker's metaphysical causal/nomic structuralism?

- Nomic truths specified using

    - a single nomic relation N, or a single nomic operator, plus mathematics etc?

# Phenomenal Structuralism

- All truths are scrutable from phenomenal truths (and indexicals)

    - Base: There exist experiences that stand in certain structural relations

    - Requires phenomenalism or panpsychism

- Phenomenal truths specifiable using similarity/difference relations or mathematically.

    - Dilemma: either incomplete (if knowable in black-and-white room) or non-objective (if not).

# Combined Versions

- There are also combined versions

    - Nomic/Phenomenal/Spatiotemporal Structuralism, etc

    - Quiddistic Structuralism?

- My view: any "objective" form of structuralism is undermined by phenomenal knowledge (and indexicals?).

    - But these leaves open structuralism about the nonphenomenal domain -- cf. structural realism.

# Fundamentality Structuralism

- All truths are scrutable from truths about fundamentality (and logic, math, indexicals)

  - There exist such and such fundamental objects, properties, and relations, distributed in such-and-such way with respect to each other

  - A purely mathematical specification of fundamental physics, with certain axes labeled as fundamental

- Spatial and temporal dimensions analyzed mathematically as spacelike and timelike dimensions.

- Nomic, phenomenal, etc analyzed from there.

- Cf. Carnap's final system in the *Aufbau*.

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# Whither the *Aufbau*?

- I have not constructed the world, or even written an *Aufbau*.

- But I have suggested ways in which various *Aufbaus* might be written.

# The Carnap/Lewis *Aufbau*

- The scrutability base contains only logical, mathematical, and indexical expressions, and "fundamental".

  - The basic truths specify the existence and distribution of fundamental objects, properties, relations, and one's relation to that space.

  - Spacetime defined mathematically.

  - Laws and causation defined in terms of regularities

  - Mentality defined in terms of causation and behavior

  - Everything else definable from there.

# My view

- The Carnap/Lewis *Aufbau* is beautiful, but fails

  - The definitions it needs may not be available.

  - It cannot adequately account for the nomic or the phenomenal

# My *Aufbau*

- The scrutability base contains only logical, mathematical, and indexical expressions, plus phenomenal expressions, 'fundamental', and 'law'.

  - The basic truths specify the existence, distribution, and nomic relations of fundamental objects, properties, and relations, with some specified as phenomenal properties (and some as quiddities?), and relation to oneself.

  - Spacetime scrutable from laws and experience.

  - Causation scrutable from laws and properties

  - Mental states scrutable from causation and phenomenology

  - Everything else scrutable from there.

# Conclusion

- The project of the *Aufbau* is alive and well.