# Constructing the World

## Lecture 2: The Cosmoscope Argument

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# Plan

*1. Scrutability Theses

2. The Cosmoscope Argument

3. Empirical and Conditional Scrutability

4. The Argument from Knowability

5. Objections from Idealization

# Scrutability Theses

- There is a compact class C of truths such that all truths are scrutable from C.

# Varieties of Scrutability (Propositional)

- p is empirically scrutable from C iff: if a Laplacean intellect knew all members of C, it would be in a position to know p.

- p is conditionally scrutable from C iff: a Laplacean intellect would be in a position to know that if all members of C obtain, then p.

- p is a priori scrutable from C iff: a Laplacean intellect could know a priori that if all members of C obtain, then p.

# Varieties of Scrutability (Sentential)

- S is empirically scrutable from C iff: if the speaker knew all members of C, they would be in a position to know S.

- S is conditionally scrutable from C iff: the speaker is in a position to know that if all members of C obtain, then S obtains.

- S is a priori scrutable from C iff: the speaker is in a position to know a priori that if all members of C obtain, then S obtains.

# Scrutability of Ordinary Truths

- Aim: argue that there is a compact class C of truths such that all ordinary truths are scrutable from C.

- Ordinary truths: macroscopic truths such as 'Water is $H_2O$', 'Life on our planet is based on DNA', 'Platypi are mammals', uttered by normal human speakers.

- Hard cases (math, mental, moral, modal, social, metaphysical, vague, names, deference, …) later.

- Focus on conditional and empirical scrutability. Issues specifically about a priori scrutability next week.

# Base Truths

- Compact class of base truths: PQTI. Includes

    - P: microphysical and macrophysical truths, in (final plus classical) physical vocabulary

    - Q: phenomenal truths, in pure phenomenal vocabulary [optional: intentional truths, secondary-quality truths]

    - T: a that's-all sentence.

    - I: indexical truths: 'I am ...', 'Now is ...'.

    - Laws and counterfactuals in the vocabulary of P and Q.

# Positive Truths

- To avoid issues about characterizing T (in terms of apriority), I'll argue: all ordinary positive truths are scrutable from PQI.

- Positive truth: one such that if it holds in a scenario, it holds in all outstripping scenarios [can't conceivably be falsified by adding to a world]

  - E.g. 'There are more than five particles'

  - Not: 'There is no ectoplasm', 'Everything alive is made of DNA'.

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# The Cosmoscope

- A virtual reality device that stores the information in PQI and makes it usable. It contains

  (i) a supercomputer to store and calculate

  (ii) holographic tools that zoom and display information about matter in regions

  (iii) virtual reality for knowledge of experience

  (iv) a "you are here" marker

  (v) a simulation mechanism for knowledge of counterfactuals

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# Empirical and Conditional Mode

- Cosmoscope in empirical mode: Tells one about the character of one's own world.

  - Relevant to Empirical Scrutability

- Cosmoscope in conditional mode: Tells one about a scenario that may or may not be one's own world, to enable conditional conclusions.

  - Relevant to Conditional and A Priori Scrutability

# Using a Cosmoscope

- Say a subject utters S. They could then in principle use a Cosmoscope to investigate the truth of S.

  - In empirical mode: determine the truth of S.

  - In conditional mode: determine whether, if things are as the Cosmoscope describes, S is true.

- Concepts in S are possessed by the subject.

- Subject has ordinary human background knowledge.

# Knowledge via the Cosmoscope

- The Cosmoscope delivers multiple views of the world:

    - phenomenological views, geometrical views, counterfactual views, microphysical views

    - at all locations and scales of space and time

- One could use this to come to know very many ordinary truths: who shot Kennedy, did a comet kill the dinosaurs, is there life on other planets?

# The Cosmoscope Argument

1. All ordinary truths are scrutable from a Cosmoscope.

2. If a truth is scrutable from a Cosmoscope, it is scrutable from PQI.

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3. All ordinary truths are scrutable from PQI.

# Case for Premise 2

- The Cosmoscope is simply providing information in PQI along with tools for reasoning with this information.

- Anything that can be known with the aid of a Cosmoscope can be known by an ideal reasoner given PQI, without the aid of a Cosmoscope.

- So: Any truth scrutable from a Cosmoscope is scrutable from PQI.

# Case for Premise 1

- P enables knowledge of geometrical structure and dynamics at all levels. Q enables knowledge of experience and appearance.

- Together, PQI enables knowledge of (actual and counterfactual) appearance, behavior, composition, distribution of all bodies of matter in one's environment.

- It also enables one to rule out arbitrary skeptical hypotheses.

- Knowing this enables one to know all ordinary truths.

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# Empirical Scrutability

- For all ordinary truths S, if the speaker knew all members of PQI, they would be in a position to know S.

- Fitchian truths: truths that are unknowable [by a given method] because properly investigating their truth-value [by that method] would change their truth-value.

  - q and no-one knows q

  - P, Q, PQI

  - There is no Cosmoscope (unknowable using a Cosmoscope)

# Solutions

- Move to conditional scrutability.

- Allow impossible antecedents, or "knew enough members of PQI" in the antecedent?

- Change consequent to 'know whether S'?

- Change antecedent to 'For all ordinary non-Fitchian truths'.

# Complete and Incomplete Cosmoscopes

- To minimize Fitchian truths, suppose that the Cosmoscope is a nonphysical device that only affects a local piece of spacetime, then erases all traces.

- Complete Cosmoscope: Delivers PQI*, true in world of use (not the original world).

- Incomplete Cosmoscope: Delivers PQI-, truths common to original world and world of use.

    - "Local" truths, those about the Cosmoscope area, are excluded.

# The Incomplete Cosmoscope

- Empirical Scrutability: All nonlocal truths are scrutable from PQI-.

  - This thesis avoids worries about Fitchian truths.

# Conditional Scrutability

- For all ordinary truths S, the speaker is in a position to know that if PQI', then S

  - PQI' = conjunction of truths in PQI

- Conditional knowledge understood by analogy with conditional belief

- Self-doubt cases require special treatment.

# Argument for Conditional Scrutability

- Direct: All ordinary truths are conditionally scrutable from a Cosmoscope, so from PQI.

# From Empirical to Conditional Scrutability

(i) For all nonlocal ordinary truths M, knowledge of PQI- suffices for knowledge of M [empirical scrutability].

(ii) For all nonlocal ordinary truths M, (before knowing PQI-) one is in a position to know that if PQI-, then M [conditionalization].

(iii) If (ii), then ditto for nonlocal ordinary truths M [locality/ Fitch poses no special obstacle for Conditional Scrutability].

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(iv) For all ordinary truths M, one is in a position to know that if PQI-, then M [conditional scrutability].

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# The Argument from Knowability

1. All knowable ordinary truths are scrutable from PQI

2. If all knowable ordinary truths are scrutable from PQI, all unknowable ordinary truths are scrutable from PQI.

3. All ordinary truths are knowable or unknowable.

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4. All ordinary truths are scrutable from PQI.

# Case for Premise 1

5. All knowable ordinary truths are knowable through perception, introspection, and reasoning

6. Any truth knowable through perception, introspection, and reasoning is scrutable from PQI.

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7. All knowable ordinary truths are scrutable from PQI.

# Case for Premise 2

8. All unknowable ordinary truths are either Fitchian truths or remote truths.

9. If all knowable ordinary truths are scrutable from PQI, all remote ordinary truths are scrutable from PQI.

10. If all knowable ordinary truths are scrutable from PQI, all Fitchian ordinary truths are conditionally scrutable from PQI.

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11. If all knowable ordinary truths are scrutable from PQI, all unknowable ordinary truths are conditionally scrutable from PQI [and all non-Fitchian unknowable ordinary truths are empirically scrutable from PQI].

# Conclusions of Argument

12. All ordinary truths are conditionally scrutable from PQI.

13. All non-Fitchian ordinary truths are empirically scrutable from PQI.

# Premise 1 Revisited

- Perceptual knowability: All knowable truths are knowable through perception, introspection, and reasoning.

- More precisely: through reasoning from introspective beliefs and perceptual beliefs (those that take experience at face value)

- Then: contents of introspective and perceptual beliefs are built into or scrutable from PQI.

# Objection from Alternative Routes

- Some truths are knowable through testimony, memory, blindsight, chicken-sexing, ...

- Response: Everything knowable this way is also knowable in principle through reasoning from perceptual and introspective beliefs.

# Objection from High-Level Perception

- Perception doesn't just represent core properties: primary and secondary qualities

- It also represents noncore properties: being a peach, being Obama, being alive.

- Some perceptual beliefs concern these properties.

- Truths knowable using these beliefs needn't be scrutable from PQI.

# Response

- Core Knowability Thesis: All knowable truths are knowable by reasoning from phenomenal beliefs and core perceptual beliefs

- Key Claim: Everything knowable using high-level perception is also knowable without using high-level perception.

# Argument for Key Claim

1. For all noncore p, all perceptual experience and perceptual knowledge of p is produced by transitions from core representations.

2. For all noncore p, if perceptual knowledge of p is produced by transitions from core representations, knowledge of p can also be produced by inference from core (perceptual) beliefs.

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3. For all noncore p, if perceptual knowledge of p is possible, knowledge of p can be produced by inference from core perceptual beliefs.

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# The Objection from Idealization

- Arguments for Scrutability require a strong idealization of reasoning, memory, etc.

  - Infinite capacity, infinitary reasoning!

- The Cosmoscope offloads some but not all of the idealization.

# Three Objections from Idealization

- Conceptual objection: The idealization isn't well-defined.

  - Infinitary reasoners are presumably possible, and there are facts about what they could know.

- Epistemological objection: We can't know what these reasoners could know.

  - We can know some such truths, albeit fallibly. And the argument doesn't require that we know them.

- Objection from applicability:

  - Depends on the application.