Overview of ontology
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Old King Quine sent for his wine, sent for his pipers three
Every piper piped so well, under the greenwood tree
Tweedle-tweedle-O went the pipers O, Tweedle-tweedle-O went the pipers O
We'll all feel fine if we take a little wine, and pipe with Old King Quine

<div align="right">(Midwestern folksong)</div>

1. Ontological questions

'What is there?' 'Are there any Fs?' 'Is there at least one F?' 'Is anything an F?'

- Which ones are philosophically interesting? Who cares?

Examples for today:

- Are there holes?
- Under what conditions do some things have a fusion? (Are there composite objects? Are there composite objects that are not alive? Are there scattered composite objects? Are there things that lack fusions?)

Are the question and its various answers clear enough that we can sensibly start using them and launching arguments about them?

Some ways in which they might not be:

(i) They are *meaningless*.
(ii) They are (in some relevant way) *ambiguous*, or perhaps *context-sensitive*—at any rate, capable of being used *literally* to express many different propositions. We must make sure we are using them in the same way.
(iii) They are *often used nonliterally*—so often that it takes work to make our interlocutors focus on the literal interpretation.

2. Some common forms of argument that crop up in ontology

(i) From the specific to the general

    a. Arguments that are valid according to ordinary logic

       'There are three holes in this piece of cheese, so there are holes. No holes are material objects. So there are things other than material objects.'

       'Spiders and insects share many properties, so there are properties'

       'Here is one hand and here is another; every hand is composite; so something is composite'

       'My copy of the Shorter Oxford English Dictionary is spatially scattered, so some things are spatially scattered'.

    b. Arguments that are not valid according to ordinary logic

       'Mars is red; so Mars has the property of being red; so Mars has a property; so there are properties'; 'I believe that there will be an election next week; so I believe the proposition that there will be an election next week; so I believe at least one proposition; so there is at least one proposition'.

(ii) Appeals to authority

    a. Of experts

       'If there are no classes, then our mathematics textbooks are works of fiction, full of false 'theorems'. Renouncing classes means rejecting mathematics. That will not do. Mathematics is an established, going concern. Philosophy is as shaky as can be. To reject mathematics for philosophical reasons would be absurd…. I'm moved to laughter at the thought of how *presumptuous* it would be to reject mathematics for philosophical reasons. How would *you* like the job of telling the mathematicians that they must change their ways, and abjure countless errors, now that *philosophy* has discovered that there are no classes?… If they challenge your credentials, will you boast of philosophy's other great discoveries: that motion is impossible, that a Being than which no greater can be conceived cannot be concevied not to exist, that it is unthinkable that anything exists outside the mind, that time is unreal….' (Lewis, *Parts of Classes*)

    b. Of the folk in general

       'The folk believe that there are chairs in my room; the folk are generally right about such matters; so there are chairs in my room'.

       • Van Inwagen rejects the first premise!

       • How does he intend us to figure out that *he* is not using 'There are no chairs in my room' to communicate what a member of the folk would normally use it to communicate?

       Such arguments can be buttressed by some version of the *principle of charity*

(iii) Epistemic ascent

    a. Ockham's Razor

       'There is no positive evidence that invisible goblins live in my fridge; so it is all things considered most reasonable to believe that no invisible goblins live in my fridge; so no invisible goblins live in my fridge'.

    b. Other appeals to general inductive considerations

    c. Appeals to epistemic conservatism

    d. Appeals to analyticity

       'It is analytic that there are no round squares; so there are no round squares'

       'Full grasp of the concept *hole* requires belief that whenever a piece of cheese is topologically a torus, there is a hole in it; so whenever a piece of cheese is topologically a torus, there is a hole in it'

    e. Appeals to the epistemology of perception, introspection, etc.

       'I am directly acquainted with myself; so I exist; so at least one person exists'

    f. Appeals to "intuitions"

       'I have the intuition that highly scattered objects don't have fusions…. So, highly scattered objects don't have fusions'

(iv) Semantic ascent

    a. Claims about what there needs to be for certain expressions to be *meaningful*

       McX and Wyman on 'Pegasus' and 'red'

b. "Tarskian" claims about what there needs to be for certain sentences to be *true* in English

c. Claims about the requirements for truth in English that involve semantic machinery that goes beyond the T-schema

'"Oxford is a city" is true in English; so the referent of 'Oxford' has the property expressed by 'is a city'; so there is a property expressed by 'is a city'; so there are properties'.

d. Claims about what there needs to be for certain sentences to be true in other languages

e. Claims about what there needs to be for certain *utterances* to be true/for speakers to be asserting truths/…

(v) The avoidance of arbitrariness

a. The facts about what there is are not arbitrary

'Pick up a lump of clay and knead it into some complicated and arbitrary shape. Call anything essentially of that shape a gollyswoggle. Did you bring a gollyswoggle into existence? I should think that if our sculptor brought a statue into existence, then you brought a gollyswoggle into existence. 'Satue-shaped' is a less definite shape predicate than 'gollyswoggle-shaped', and one we have a use for, and our sculptor intended to produce something statue-shaped while you, presumably did not intend to produce anything gollyswoggle-shaped. But these facts would seem to be irrelevant to any questions about the existence of the thing produced; if you can make a statue on purpose by kneading clay, then you can make a gollyswoggle by accident by kneading clay.' (van Inwagen, *Material Beings*, p. 126)

b. Anthropocentrism/chauvinism

'If we speak the truth when we say 'there are statues', then the Martians speak the truth in their language when they say 'there are gollyswoggles'. But for 'there are gollyswoggles' to be true in Martian, there must be gollyswoggles. So either there are no statues, or there are gollyswoggles.'

• Possible response: the Martians mean something different from us by 'there are'.

c. Appeals to theories of vagueness

'P1: If not every class has a fusion, then there must be a pair of cases connected by a continuous series such that in one, composition occurs, but in the other, composition does not occur.

P2: In no continuous series is there a sharp cutoff in whether composition occurs.

P3: In any case of composition, either composition definitely occurs, or composition definitely does not occur.

[Therefore every class has a fusion.]' (Sider, *Four-Dimensionalism*, 4.9.a)

• Possible response: 'have a fusion' is vague, presumably because the quantifiers are vague.

• According to the most prominent theories of vagueness, this can happen only if there are many different though similar *candidate meanings* for the quantifiers.

(vi) Causal arguments

a. Appeals to no-overdetermination

'If there are baseballs, then every time a baseball causes a window to break, the baseball's atoms also cause the window to break, so that the breaking of the window is overdetermined. But it is not the case that every time a baseball causes a window to

break, the breaking of the window is overdetermined. So there are no baseballs' (Merricks).

b. Appeals to no-epiphenomena

'If there are composite objects, they are causally inert. But there are not lots and lots of causally inert entities. So there are not (lots and lots of) composite objects.'

(vii)The challenge to provide paraphrases

…[w]hen we say that some zoölogical species are cross-fertile we are committing ourselves to recognizing as entities the several species themselves, abstract though they are. We remain so committed at least until we devise some way of so paraphrasing the statement as to show that the seeming reference to species on the part of our bound variable was an avoidable manner of speaking. ('On What There Is, 13)

• Interpretations of the challenge

a. An account of the (literal) meanings of the target claims

• Problem: either the account entails that certain obviously valid inferences, e.g. from 'there are several holes in this piece of Emmenthal' to 'there are holes', are not valid, or else it is inconsistent with the eliminativist claim which motivated the quest for paraphrases in the first place (Cf. Alston, 'Ontological Commitments').

b. An account of some widespread *nonliteral use* of the target claims

• Can one draw inferences according to standard logic while engaging in this nonliteral use? If so, 'there are holes' will also admit a nonliteral use, on which it is used to communicate something that could be true without therebeing any holes.

• If it is so common and systematic, what are our grounds for refusing to characterise the speech in question as 'literal'?

c. An challenge to explain *one's own* uses of the target claims 'outside the ontology room'

'*Argle.* When *I* say that there are holes in something, I mean nothing more nor less than that it is perforated. The synonymous shape-predicates '…is perforated' and 'there are holes in…'—just like any other shape-predicate, say '...is a dodecahedron'—may truly be predicated of pieces of cheese, without any implication that perforation is due to the presence of occult, immaterial entities. I am sorry my innocent predicate confuses you by sounding like an idiom of existential quantification, so that you think that inferences involving it are valid when they are not. But I have my reasons. You, given a perforated piece of cheese and believing as you do that it is perforated because it contains immaterial entities called holes, employ an idiom of existential quantification to say falsely 'There are holes in it.' Agreeable fellow that I am, I wish to have a sentence that sounds like yours and that is true exactly when you falsely suppose your existential quantification over immaterial things to be true.' ('Holes', 4)

d. 'Surely believers in Fs are *getting onto something true* when they make this claim—the claim has a true 'cash value' that can be disentangled from its false ontological presupposition.'

e. Any theory that involves the target claims can be replaced with a theory involving the paraphrases without making it explanatorily worse, in the sense relevant to inference to the best explanation.

- How hard is the challenge?
  - Lewis and Lewis: forbiddingly hard in almost all cases
    - Why not say that there are no holes, and deny that holes are hole-linings, while paraphrasing 'there are as many holes in the cheese as crackers on the plate' as 'there are as many hole-linings in the cheese as crackers on the plate' (or some such)?
  - 'Fictionalism' (Yablo?): easy

3. The special case of debate about whether all Fs are Gs: some common moves.

Examples of the kind of claim I have in mind: all holes are material objects; all material objects are spacetime regions; all clay statues are lumps of clay; all numbers are sets; all propositions are ordered n-tuples.

(i) 'Some F is H; no G is H; so not all Fs are Gs'

    a. H is a modal property

    Some statue could not survive squashing; every lump could survive squashing; therefore...

    Some material object could have been in a different location; no spacetime region could have been in a different location; therefore…

    b. H is a

(ii) Appeals to arbitrariness (Benacerraf, 'What Numbers Cannot Be')

(iii) There are more Fs than Gs; so not all Fs are G

4. Murky themes from Quine

(i) The notion of a sentence or theory or person 'carrying an ontological commitment to Fs'.

    How do we want such a notion to work? Should 'there are bachelors' carry commitment to men? Should 'there are parents' carry commitment to children? Should 'there are water molecules' carry commitment to H_2O molecules? Should 'there is a barber who shaves every man who doesn't shave himself' carry commitment to barbers who aren't men?

(ii) 'Quine's criterion for ontological commitment' (for sentences in the notation of quantification theory)

    Entities of a given sort are assumed by a theory if and only if some of them must be counted among the values of the variables in order that the statement affirmed in the theory be true. ('Logic and the Reification of Universals', 103).

- How do we interpret the 'must' here?
- It doesn't look like '∃x Parent(x)' is going to carry commitment to children, anyhow.
- What then is the interest of the consequence emphasised by Quine, that 'Some dogs are white' does not carry commitment to doghood or whiteness?

(iii) Translation into the notation of quantification theory

    What then, is "Quine's criterion of ontological commitment"? [T]hese words are a name for a certain thesis about strategy. More exactly, they are a name for the most profitable

strategy to follow in order to get people to make their ontological commitments… clear. The strategy is this: one takes sentences that the other party to the conversation accepts, and by whatever dialectical devices one can muster, one gets him to introduce more and more quantifiers and variables into those sentences…. If, at a certain point in this procedure, it emerges that the existential generalization on a certain open sentence F can be formally deduced from the sentences he accepts, one has shown that the sentences that he accepts, and the ways of introducing quantifiers and variables into those sentences that he has endorsed, formally commit him to there being things that satisfy F. (van Inwagen, 'Meta-Ontology', 246)

(iv) Does Quine think that quantifiers are 'univocal'?

The quality of myth, however, is relative; relative, in this case, to the epistemological point of view. This point of view is one among various, corresponding to one among our various interests and purposes. ('On What There Is', 19)

Consider the question whether to countenance classes as entities…. Carnap has maintained that this is a question not of matters of fact but of choosing a convenient language form, a convenient conceptual scheme or framework for science. With this I agree, but only on the proviso that the same be conceded regarding scientific hypotheses generally.

"Weak Holistic Verificationism": 'The meaning of a theory T_1 in the language of someone who accepts T_1 = the meaning of a theory T_2 in the language of someone who accepts T_2 iff T_1 and T_2 fit the same class of possible observations.' (Soames, *Philosophical Analysis in the Twentieth Century vol. 1: The Dawn of Analysis*, 395).

- A historical puzzle: how did we get from Quine to post-1970 ontology, with its blithe dismissal of worries about apparent disagreements being merely verbal?

1. Overview of ontology. This section is non-normative. This ontology is designed to enable publication of information on organizations and organizational structures including governmental organizations. The ontology then supports the notion of organizations being composed of other organizations in some hierarchy. The relations org:subOrganizationOf and org:hasSubOrganization establish these hierarchical links. Ontology is a major branch of philosophy and a central part of metaphysics that studies questions of being or existence. The questions include a wide range of issues concerning being or existence such as: the meaning of being or what it means "to be" for each of such beings as physical entities, souls, God, values, numbers, time, space, imaginary objects, and others; what is real existence; why something exists rather than nothing. Overview of Ontology Technology. from "Handbook on Ontologies" by Steffen Staab, Rudi Studer (editors). Buzzwords. An ontology is a formal explicit specification of a shared conceptualization for a domain of interest. Dictionary.com. â— the metaphysical study of the nature of being and existence. â— (AI) An explicit formal specification of how to represent the objects, concepts and other entities that are assumed to exist in some area of interest and the relationships that hold among them. The Common Core Ontologies (CCO) comprise eleven ontologies that aim to represent and integrate taxonomies of generic classes and relations across all domains of interest. Accompanying these ontologies is a rule-based method for representing the content of any data source whatsoever through constructing domain ontologies as extensions of CCO. (See "Best Practices of Ontology Development".) INFORMATION CONTENT ENTITY describes ENTITY. An Overview of the Common Core Ontologies 12 February 2019. 10. This document provides an overview of the Web Ontology Language by providing. a brief introduction to why one might need a Web ontology language and how. OWL fits in with related W3C languages. It also provides a brief description of the. three OWL sublanguages: OWL Lite, OWL DL, and OWL Full along with a feature. synopsis for each of the languages. This document is an update to the Feature.