# Metaphysical preliminaries

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Properties seminar

Our questions about properties affect and are affected by the choice of *metaphysical tools*—certain key concepts that frame the debate.

## 1. Ontology

Ontic approach: metaphysics is about what there is. But our questions are orthogonal to ontic questions.

## 2. Ordinary meaning

Ordinary meaning approach: metaphysics is about what's true—as stated in ordinary language—concerning the subject matter. But (I'm going to assume) what "underlies" an ordinary truth can look quite unlike that truth.

## 3. Modality

Modal approach: metaphysics tries to discover the necessary truths in various domains. What is necessarily true about persons? about persistence? Does the mental supervene on the physical? And: Would it be possible for the same properties to obey different laws of nature? Would it be possible for everything to double in size?

### 3.1 Fine on essence

Fine (1994): during modality's heyday, it was common to say: $x$ is essentially $F$ iff $x$ is necessarily $F$. But consider: Socrates is necessarily such that he is a member of {Socrates}; and {Socrates} is necessarily such that it contains Socrates as a member. Given the modal account: Socrates essentially is a member of {Socrates}, and {Socrates} essentially contains Socrates. But only the second judgment seems right. *Part of what it is to be {Socrates}* is to contain Socrates; but being a member of {Socrates} is not part of what it is to be Socrates. We should not define essence in terms of modality; modality is "insensitive to source". (Indeed, we should define modality in terms of essence.)

## 4. Modality too coarse-grained

Suppose we understand physicalism modally: "all facts supervene on the physical facts".

- If God exists necessarily, then God's existence won't violate physicalism

- A platonist view of mathematics won't violate physicalism

- If Spinoza is right that all true propositions are necessary then *nothing* would violate physicalism

## 5.  Ground

> We say that one class of facts *depends upon* or is *grounded in* another. We say that a thing possesses one property *in virtue of* possessing another, or that one proposition *makes* another true. (Rosen, 2010, p. 109)

> … in addition to scientific or causal explanation, there may be a distinctive kind of metaphysical explanation, in which explanans and explanandum are connected, not though some sort of causal mechanism, but through some form of constitutive determination. (Fine, 2012, p. 1)

> These idioms ['ground', 'in-virtue-of', etc.] are common, as we shall see, but they are not part of anyone's official vocabulary. The general tendency is to admit them for heuristic purposes, where the aim is to point the reader's nose in the direction of some philosophical thesis, but then to suppress them in favor of other, allegedly more hygienic formulations when the time comes to say exactly what we mean. The thought is apparently widespread that while these ubiquitous idioms are sometimes convenient, they are ultimately too 'unclear', or too 'confused', or perhaps simply too exotic to figure in our first-class philosophical vocabulary. (Rosen, 2010, p. 109)

A typical argument for invoking ground: to be a naturalist in ethics, it's not enough to hold that moral facts supervene on nonmoral facts, since most nonnaturalists also think this. According to Fine and Rosen, what you really need to say, in order to be a naturalist, is that the moral facts are grounded in the nonmoral facts.

Example from Fine illustrating that ground is finer-grained than modality. "Either it's raining or it's not raining" is necessitated both by "It is raining" and "It is snowing"; but only the former can ground it.

## 6.  Fundamentality

Intuitively a strictly weaker notion than ground (since, it's natural to think, the fundamental facts are those that ground all others).

Fundamentality of propositions vs proposition-parts.

# 7. Natural properties

> Sharing of [the perfectly natural properties] makes for qualitative similarity, they carve at the joints, they are intrinsic, they are highly specific, the sets of their instances are *ipso facto* not entirely miscellaneous, there are only just enough of them to characterise things completely and without redundancy.

> Physics has its short list of 'fundamental physical properties': the charges and masses of particles, also their so-called 'spins' and 'colours' and 'flavours', and maybe a few more that have yet to be discovered… What physics has undertaken…is an inventory of the [perfectly natural properties] of this-worldly things. (Lewis, 1986, p. 60).

- can take "carve at the joints" in terms of similarity

- connection to laws of nature

- Lewis (1983) argues that we need naturalness to understand various things in philosophy

# 8. Structure

# 9. Fundamentality and the semantic view of theories

> <div align="center">Mereology 1: 'part' primitive</div>
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> Axioms:
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> Transitivity: if $x$ is part of $y$ and $y$ is part of $z$ then $x$ is part of $z$
>
> Reflexivity: $x$ is part of $x$
>
> Antisymmetry: if $x$ is part of $y$ and $y$ is part of $x$ then $x = y$
>
> Supplementation: if $x$ is not part of $y$, then $x$ has a part that shares no part in common with $y$
>
> etc.
>
> Definitions:
>
> - $x$ *overlaps* $y$ iff some $z$ is part of $x$ and also part of $y$
>
> - $x$ and $y$ are *disjoint* iff $x$ does not overlap $y$
>
> - $x$ *fuses* $y$ and $z$ iff $y$ is part of $x$, $z$ is part of $x$, and anything that overlaps $x$ overlaps either $y$ or $z$

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Mereology 2: 'fuses' primitive

Axioms:

  Fusions principle: for any $x$ and $y$, some $z$ fuses $x$ and $y$

  Reflexivity: $x$ fuses $x$ and $x$

  Uniqueness: if $x_1$ fuses $y$ and $z$, and $x_2$ also fuses $y$ and $z$, then $x_1 = x_2$

      etc.

Definitions:

  - $x$ is part of $y$ iff either $x = y$, or $y$ fuses $x$ and some $z$

  - $x$ and $y$ are disjoint iff $x$ does not overlap $y$

      etc.

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Mereology 3: 'overlap' primitive

Axioms: [some suitable axioms]

Definitions:

  - $x$ is part of $y$ iff anything that overlaps $x$ also overlaps $y$

      etc.

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- "Which of these theories is the right fundamental one? Is the basic mereological relation that of parthood, or overlap, or fusion?"—the question strikes some people as absurd. (Compare: are the basic truth functions negation and conjunction, or negation and disjunction?)

- Idea: instead of taking a theory to be a set of axioms, instead take it to be a class of models. We thereby cut down on spurious differences between theories, since multiple axiomatic theories can correspond to a single class of models.

- We can't say that a fact is fundamental when it's true in all the models that comprise the theory, since the theory might not say everything fundamental there is to say about the subject matter. Instead, we might say that fundamental facts are those that never differ between "equivalent" models, where equivalent models are those that, intuitively, represent the same objective facts.

But a class of models, and the right relation of equivalence, is not an appropriate explanatory stopping point. [More things to think about, in the vicinity of Russell (2011).]

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## 10. Humeanism about modality

(Defended in Sider (2011, chapter 12).)

- Modality is not a fundamental feature of reality.

- Modality is given by a *list* of types of propositions: logical truth, mathematical truth, etc.. Necessity = i) true, and ii) of a type that's on the list.

- Nothing deep unifies the list.

- One of the members of the list is the type "law of metaphysics". Thus in certain areas of fundamental metaphysics, the truth is noncontingent. These truths can be synthetic necessities, or "necessary connections between distinct existences".

## 11. Intrinsicality

- A kind of "constitutive locality"

- Intrinsic properties, facts intrinsic *to* areas, etc.

- relational properties versus relations

Lewis's (1986) definitions:

**Duplication** Objects $x$ and $y$ are *duplicates* iff some one-one function maps $x$'s parts onto $y$'s parts, preserves the part-whole relation, and preserves perfectly natural properties and relations. 'Tuples $\langle x_1 \ldots x_n \rangle$ and $\langle y_1 \ldots y_n \rangle$ are duplicates iff some one-one function maps the parts of the fusion of the $x_i$s onto the parts of the fusion of the $y_i$s, maps each $x_i$ onto the corresponding $y_i$, preserves the part-whole relation, and preserves perfectly natural properties and relations

**Intrinsicality** A property is *intrinsic* iff it never differs between duplicates (including duplicates from different worlds)

**Internality** A relation is internal iff it never differs between 'tuples of duplicate entities. E.g. a binary relation $R$ is internal iff whenever $x$ is a duplicate of $a$ and $y$ is a duplicate of $b$, $Rxy$ iff $Rab$

**Externality** A relation is external iff it is not internal and never differs between duplicate 'tuples. E.g. a binary relation $R$ is external iff whenever $\langle x, y \rangle$ and $\langle a, b \rangle$ are duplicate pairs, $Rxy$ iff $Rab$.

(Definitions assume world-bound individuals.)

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