

# NATURAL PROPERTIES

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Metaphysical Structure

## 1. Duplication

- Exactly alike intrinsically.
- Given abundant properties, even duplicates differ in their properties

## 2. Intrinsic properties

A property instantiated just by virtue of the way its instances are in themselves.

**Modal definition of intrinsicity (Kim, Chisholm):** a property is intrinsic iff it could have been instantiated by a *lonely* object (something that was the only contingent object other than its parts)

Counterexample: the property of *being a lonely object*

**Patched modal definition:** a property is intrinsic iff it could have been instantiated by a lonely object, and also could have been instantiated by an accompanied (nonlonely) object

Counterexample: *being either lonely and square, or accompanied and circular.*

## 3. A circle

**Lewis's definition of intrinsicity** A property is intrinsic iff it can never differ between possible duplicates—iff for any possible objects  $x$  and  $y$  (perhaps in different possible worlds), if  $x$  and  $y$  are duplicates then  $x$  has the property iff  $y$  does

(Needs cross-world comparisons to work.)

**Definition of duplication in terms of intrinsicity** objects are duplicates iff they have exactly the same intrinsic properties

## 4. Natural properties

Background: modal realism. A property is a set of possible individuals. This is an “abundant” conception of properties (his term).

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)

### 4.1 Status of naturalness

Lewis was neutral (at one point) between defining naturalness in terms of universals or tropes and “taking it as primitive”. On the latter conception, regard the introduction of ‘natural’ as an “ideological posit”.

### 4.2 Degrees of naturalness

Probably it would be best to say that the distinction between natural properties and others admits of degree. Some few properties are *perfectly* natural. Others, even though they may be somewhat disjunctive or extrinsic, are at least somewhat natural in a derivative way, to the extent that they can be reached by not-too-complicated chains of definability from the perfectly natural properties. (Lewis, 1986, p. 61)

Alternatively, one might take “as-or-more natural” as primitive.

## 5. Defining duplication and intrinsicity

**Lewis’s definition of duplication** Duplicates are objects whose parts have the same perfectly natural properties and stand in the same perfectly natural relations.<sup>1</sup>

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<sup>1</sup>That is,  $x$  and  $y$  are duplicates iff there is some one-to-one function  $f$  from  $x$ ’s parts onto  $y$ ’s parts such that i)  $u$  is part of  $v$  iff  $f(u)$  is part of  $f(v)$ , and ii) for any  $n$ -place perfectly

## 6. Similarity

## 7. Laws of nature

**Regularity theory** A law is a true regularity. A regularity is a sentence of the form “All  $F$ s are  $G$ s”, where  $F$  and  $G$  are suitable predicates.

**Lewis/Ramsey theory of laws** A law is any regularity that is implied by the best system. The best system is a set  $\Gamma$  of sentences in some language  $L$  in which all predicates stand for perfectly natural properties or relations, where no other set does better than  $\Gamma$  at balancing *strength* and *simplicity in  $L$* . Strength is a measure of how informative a set is. Simplicity in  $L$  is a measure of the simplest axiomatization in  $L$  for the set.

Whether you have a real need for naturalness here depends on how much failure of “objectivity” you’re willing to have in laws, similarity, duplication, etc.

$x$  is *grue* iff  $x$  is green and first observed before 100 A.B., or blue and not first observed before 100 A.B.

## 8. Reference magnetism

What attaches our words to the world? What is the semantic glue?

### 8.1 Languages, using

**A language:** a function that recursively assigns meanings—certain appropriate abstract entities—to words. (The assigned meanings needn’t match anyone’s use of the words.)

**Using relation:** the relation that holds between a linguistic population and a language iff that language correctly “matches” or “models” the population’s language use.

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natural relation  $R$ ,  $Ru_1 \dots u_n$  iff  $Rf(u_1) \dots f(u_n)$ .

## 8.2 The challenge

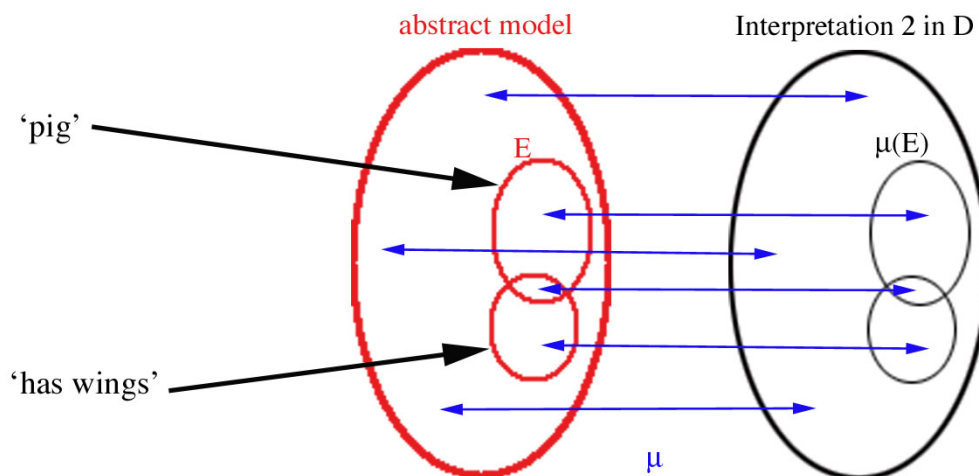
In broadest outline the skeptical challenge is this.

1. Consider various hypotheses  $H$  about the nature of the using relation.
2. Argue that given each hypothesis, very many languages are used by our linguistic population (including languages that, intuitively, badly misrepresent the semantic facts.)
3. Conclude that radical semantic skepticism is true. Let  $L_N$  be the kind of language we normally think gives the semantic facts. For many intuitively bizarre languages  $L_B$ , *it's not the case that: we use  $L_N$  and we don't use  $L_B$*

## 8.3 Descriptivism

**Simple descriptivism** There is a set,  $S$ , of sentences, such that for any language,  $L$ , we use  $L$  iff every member of  $S$  comes out true under  $L$ .

$S$  might contain “definitional” sentences like: “all bachelors are unmarried”, or it might contain other things we’d say to convey meaning, like “dogs are large pets that bark and can be used to herd sheep”.



What's the right way to continue the series:

1, 2, 3, 4, ...

? Depends on which rule generates the  $n^{\text{th}}$  member of the series:

$n^{\text{th}}$  member is:  $n$

$n^{\text{th}}$  member is:  $n + 37(n - 1)(n - 2)(n - 3)(n - 4)$

Intuitively: no matter what we pack into  $S$ , there will always be bizarre rules whose bizarreness emerges only when we get to sentences outside of  $S$ . And, it might be thought, anything we could say to fix meaning would just be further members of  $S$ .

#### 8.4 Eligibility

**Lewisian descriptivism** The using relation is determined both by us and by “eligibility”. For some set of sentences,  $S$ , we use language  $L$  iff  $L$  maximizes the following two virtues: i) the number (and perhaps importance) of sentences in  $S$  that come out true under  $L$ ; ii) the degree to which the meanings assigned by  $L$  are natural properties and relations

#### 8.5 Occult? (Williams)

Good theories in general must be cast in joint-carving terms.

#### 8.6 My twist

The thing that must carve at the joints is not (in the first instance) semantic values; it is the word-world relation (using).

#### 8.7 Causal theories

### References

Lewis, David (1986). *On the Plurality of Worlds*. Oxford: Basil Blackwell.