

PHIL 332: Philosophy of Language
Class 24: Extensions and Intensions

1. We can define the *extension* of an expression:
 - a. The extension of a singular term is the *particular* to which it refers. So the extension of 'London' is London, and the extension of 'The best town in Australia' is Wagga Wagga.

Note: some singular terms have no extension.

- b. The extension of a predicate is the *set of particulars* of which it is true. So the extension of 'is red' is $\{x: \text{'is red' is true of } x\}$; that is, $\{x: x \text{ is red}\}$.
 - c. The extension of a sentence is its *truth value*. So the extension of 'Ithaca is gorges' is True.

Are there predicates with no extension? What about sentences?

Note: these really should be relativised to various things: 'John', 'is a bank', 'Mary was seen with binoculars', 'is sleeping', etc. Maybe we can do it all in one blow by relativizing to a *use*. That will also help with indexicals – 'I', 'here', 'now', etc.

2. Can we take the meaning of an expression to be its extension?

Only if we can generate extensions compositionally, and there are some problems for that.

We have seen problems for this idea in the case of names: empty names, corefering names. They carry over to other kinds of expressions as well.

Also, extensions seem to be too coarse-grained to be meanings: 'is renate' and 'is cordate', 'grass is green' and 'snow is white' (But maybe appeal to modes of presentation will help here.)

Also, how do we get the extension of 'It is necessary that S' compositionally? '2 + 2 = 4' and 'grass is green' have the same extension but 'It is necessary that 2 + 2 = 4' and 'It is necessary that grass is green' do not.

3. We can relativise extensions to possible worlds:

- a. The extension of a singular term at a world w is the particular to which it refers at w . So the extension of 'London' at a world w is London (if names are (strongly) rigid designators)), and the extension of 'the best town in Australia' is the best town in Australia in w (on its non-referential reading).

- b. The extension of a predicate at a world w is the set of particulars of which it is true at w .
- c. The extension of a sentence at a world w is its truth value at w .

Note: the expression is used in the actual world, not in w .

Note: an expression may have an extension at some worlds but not at others.

Note: this assume no particular view about what possible worlds are – it just assumes that there are such things. Possible views: Lewis, Stalnaker.

- 4. Then we can define the *intension* of an expression e to be the function f from possible worlds to extensions such that $f(w)$ is the extension of e at w .
- 5. The intension of a sentence is a function from possible worlds to truth values. Such a function determines a set of possible worlds: the set of worlds at which the function takes the value True, or the set of worlds at which the sentence is true. Sometimes the function and the set are taken to be the same thing.
- 6. Propositions are often taken to be either functions from possible worlds to truth values, or sets of possible worlds. In that case, the intension of a sentence is a proposition (or at least determines one).
- 7. Truth conditions are sometimes taken to be propositions. If the meaning of a sentence is its truth conditions, then the meaning of a sentence is a proposition.
- 8. Can we take the meaning of an expression to be its intension?
 - a. They are more fine-grained: ‘is renate’ and ‘is cordate’ have different intensions, as do ‘grass is green’ and ‘snow is white’.
 - b. And we can show how the intension of ‘It is necessary that S ’ is determined by the intension of S : ‘It is necessary that S ’ is true at world w iff S is true at all worlds. (Note: do we take the meaning of ‘It is necessary that’ to be an intension, or a function from intensions to intensions?)
 - c. But ‘is a triangle’ and ‘is a trilateral’ have the same intension, as do ‘ $2 + 2 = 4$ ’ and ‘ $3 + 5 = 8$ ’, so maybe intensions are still too coarse-grained.

This suggests that *structured* intensions might be better candidates for meanings.

- d. We still have the problem of empty names, and of corefering names.