Lexical Semantics – Synonymy, Ambiguity, Vagueness

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Philosophy of Language » Lecture 3

Contents

Plan for this lecture

- This time we look at some features of the semantics of words, or **lexical semantics**, with an eye on whether they help adjudicate the debate between internalists and referentialists.
  1. We look first at the notion of synonymy (sameness of meaning), and look at a famous case (Putnam's 'Twin Earth') in which sameness of concept seems not to ensure synonymy, providing a *prima facie* argument against internalism.
  2. We then turn to ambiguity, distinguishing two varieties and attempting to discern whether considerations of ambiguity provide grounds to favour internalism.
  3. Finally we look at vagueness, and explore a difficulty it seems to pose for the referentialist who provides precise extensions as referents for vague expressions.

Synonymy and Twin Earth

Synonymy

- Two words are **synonyms** iff they mean the same thing or have the same meaning. E.g., *furze* and *gorse* (plants of the genus *Ulex*).
- Referentialists have no difficulty with the notion, theoretically: words are synonymous iff they **share a referent**.
  - Which, if any, pairs of words are synonymous remains a tricky and contingent issue.
- Internalists, identifying meanings with concepts inside the head, have more *prima facie* difficulty with synonymy.
  - Frege in effect raised the objection that no pairs or words of any language will have the same meaning for any speakers with distinct minds or brains; no single word is even synonymous **with itself** across speakers!
- Internalists respond (as we've seen): concepts are **qualitatively similar** across individuals, and speakers thus share meanings that are 'the same' (in the sense that identical twins are the same).
- One natural way for this qualitative similarity to be secured is that the same **classificatory system** is embodied in both concepts: e.g., they involve duplicate prototypes, or the same internal rule.

Synonymy and Extension

- But is this qualitative similarity of concepts sufficient for synonymy?
- Another aspect of the internalist package is that the ability of language to be about the external world is because concepts apply to things; things fall under concepts.
- It seems there is a test for internalist synonymy here:

  Conceptual Non-Synonymy If w means C, and w' means C', and different things fall under C and C', then w and w' are not synonymous.
- (Putnam 1973) challenges the coherence of this internalist theory, noting that it is possible for qualitative duplicate concepts to turn out non-synonymous according to the test.
  - He observes that sameness of **internal mental state**, and hence qualitative duplication of concepts, doesn't guarantee sameness of conceptual extension.

The Twin Earth Scenario

> Twin Earth is very much like Earth… One of the peculiarities of Twin Earth is that the liquid called 'water' is not H_2O but a different liquid whose chemical formula is very long and complicated. I shall abbreviate this chemical formula simply as XYZ. I shall suppose that XYZ is indistinguishable from water at normal temperatures and pressures. Also, I shall suppose that the oceans and lakes and seas of Twin Earth contain XYZ and not water, that it rains XYZ on Twin Earth and not water, etc.
>
> If a space ship from Earth ever visits Twin Earth, then the supposition at first will be that 'water' has the same meaning on Earth and on Twin Earth. This supposition will be corrected when it is discovered that 'water' on Twin Earth is XYZ, and the Earthian space ship will report somewhat as follows.
>
> > *On Twin Earth the word 'water' means XYZ.* (Putnam 1973: 700–701)

The extension of *water*

- The concept WATER is something like *the clear drinkable liquid that flows in the rivers and streams, falls from the sky as rain, etc.*
  - This, let's suppose, is the concept we **actually** deploy when deciding whether to use the term *water*; it is the internal rule or prototype, dispositions to follow which constitutes possessing the concept WATER.
  - H_2O actually, on actual Earth, falls under this concept.
- Now consider Twin Earth: the Twin Earthers are just like Earthlings. They even have the same concept WATER, which they express just as above, and they even use a word of the Twin Earth dialect of English which is phonologically just like our *water* and which is associated with the same concept.
  - That such 'sameness of concept' makes sense is an essential part of the internalist's account of synonymy.
- But on Twin Earth, XYZ rather than H_2O, falls under this concept.
- Hence, by Conceptual Non-Synonymy, *water* in Earth English, and *water* in Twin Earth English, are not synonyms.

Non-Supervenience of Meaning on Psychology…

- Even though the concepts expressed on Earth by our English word *water* and on Twin Earth by the orthographically indistinguishable word *water* are themselves qualitatively indistinguishable, the different **environments** in which they are applied mean that those concepts apply to different things.
  - E.g., if a concept is a prototype, both H_2O and XYZ resemble the prototype in virtue of their **functions** on Earth/Twin Earth, even though XYZ is distinct from H_2O.
- If the internal concept was all that mattered, this would pose no difficulty; those two substances are functionally alike and so, from the perspective of the speaker, they are interchangeable.
- But since we use words to talk about the world – as represented by the internalist's commitment to Conceptual Non-Synonymy – that different things fall under the associated concepts ensures that the words expressing them **mean different things**, even though our Twin Earth counterparts have the same concept WATER.

…is a Problem for Internalism

(1) If the meaning of *water* is the concept WATER, *water* on Earth and *water* on Twin Earth are synonyms.

(2) Since different things fall under WATER on Earth and WATER on Twin Earth, *water* on Earth and *water* on Twin Earth are not synonyms. (Conceptual Non-Synonymy)

(3) So the meaning of *water* is not the concept WATER. (1, 2, *modus tollens*)

› So, therefore, the meaning of *water* isn't the concept WATER – nor any other concept – nor is the meaning fixed by a narrow internal mental state, which is duplicated between Earth and Twin Earth.

› So the internalist theory is false: the meaning of *water* determines its extension; we and the Twin Earthers are psychological duplicates; so the difference in extension cannot be explained by any difference in our internal psychological states:

> Cut the pie any way you like, 'meanings' just ain't in the *head*! (Putnam 1973: 704)

Internalist Responses

A. Deny (1). Perhaps the radical Chomskyian internalist who denies any words are synonyms can do this in a principled way. But it would be a **cost** to internalism if it couldn't account for such a basic property as synonymy.
B. Deny (2). Again, the Chomskyian who is indifferent to the external world except insofar as it manifests in differences that are detectable by our cognitive system may be indifferent to the difference between H_2O and XYZ. But that puts the internalist squarely in the line of Frege's objection that internalism makes words mean the wrong things.
C. Accuse the argument of **equivocation**: the word *synonym* itself means different things – it means something like, 'connected to the same concept' in (1), but 'having the same referent' in (2).
    - » On this response, the Twin Earth scenario illustrates that meaning has two components, internal and external, and these can come apart. (Perhaps illustrated the other way by non-synonymous names for the same thing.)
    - » But as Kripke notes, this is **methodologically desperate**: 'It is very much the lazy man's approach in philosophy to posit ambiguities when in trouble' (Kripke 1977: 268).

Referentialism Revisited

- The referentialist has no problem with the Twin Earth scenario: they already agree that meanings are **outside the head**.
  - For them, the **determinants of meaning** are outside the head (environmental facts together with patterns of use), and the **semantic values** (the intensions themselves) we assign to particular expressions are too (Wikforss 2007: §§3–4).
  - Since there was H_2O around when we acquired the English word *water*, we causally interacted with that stuff during our acquisition of the term, and we continued to use that word to denote that stuff, **that stuff** is what our word means.
- Since our word *water* has as its meaning the kind H_2O, it is true that there is no water on Twin Earth, despite there being something which answers to our concept WATER, just as Putnam argues.
- Since the environment determines what is **available** to be interacted with in use and to occur in the extension of an expression, it seems natural to give the environment a role in determining meaning.

The Role of Concepts for Referentialists

- Of course the referentialist also asserts that our **ability** to use the term *water* correctly is grounded in something inside the head.
- The natural candidate is: how well our concepts **fit** the meaning. (If your concepts fit poorly, your use will be deviant with respect to your community.)
- On Twin Earth, our concepts fit the meaning of **our word** very poorly, which explains why the astronaut might initially be hopeless at applying our word *water* there, applying it to lots of XYZ.
- What happens after a while?
  1. Either they 'go native', and their existing concept-word link makes them speakers of Twenglish; or
  2. they remain English speakers who learn to link their existing concept with a new word: *XYZ*, or *fool's water*, or something.

Wide Content

- Putnam draws a division between the psychological state, and the determinants of semantic values.
- This entails that some psychological states – like **belief** and **knowledge** – depend on the environment too.
  - Only people on real Earth can have beliefs about water that can be expressed by saying, e.g., *Xavier believes there is water in the glass before him*.
- However, some conclude that psychological states **in general** depend on the environment: so me and and my intrinsic duplicate on Twin Earth **do not even share the same psychological state or concepts** (Wikforss 2007: §3.1).
  - This preserves the traditional internalist picture – at the cost of making even the stuff 'inside the head' partly a matter of what is outside. On such a view, even our concepts

> are fixed by environmental factors that are not entirely captured in the explicatory or even discriminatory abilities of the individual. (Burge 1993: 318)

Ambiguity, Homonymy, and Polysemy

Ambiguity of Meaning

- Synonymy occurs when we have many expressions with one meaning. We should also attend to the converse possibility: many meanings for one expression, or **ambiguity**.
- Consider the expressions *down* and *animal* as they occur in the following:
  (4) In today's crossword, the down clues were very tricky.
  (5) Sarah bought a down blanket.
  (6) Humans are the most adaptable among all animals.
  (7) Campbell is an absolute animal. Scum like him should never be allowed to walk the streets.
- Clearly the occurrences of *down* in (4) and (5) mean different things: so different, in fact, that it seems almost accidental that we use the same expression.
- Contrast that with (6) and (7) where the meanings must differ (6 says that humans are animals; 7 presupposes they are not), but where there does seem to be more in common than in the case of *down* and *down*.

An Internalist Taxonomy

- Suppose we begin with the internalist idea that a word is a mental entity with syntactic, semantic, and phonologio-orthographic components (Elbourne 2011: 23).
- If we apply this theory strictly, **any** difference in meaning should suffice for distinct words.
- But few internalists would wish to take that path; usually 'sameness' of words is flexible enough to accommodate small differences in pronunciation (e.g., accents), the acceptability of particular grammatical occurrences (e.g., is *I got 99 problems* grammatical for you – so-called 'bare *got*'), and variations in meaning.
- This background allows us to distinguish two ways in which an expression can have multiple meanings:

  Homonymy: An expression is **homonymous** when it is associated with multiple words (i.e., words that overlap in orthography/phonology but are sufficiently different in syntactic or semantic components to be distinct).

  Polysemy: An expression is **polysemous** when it is associated with one word that nevertheless exhibits variation or complexity in its semantic components.

Homonymy

- The case of *down* is supposed to exemplify homonymy; *down* in (4) is a homonym of *down* in (5).
  - Etymologically, *down* with a directional sense originates from a Celtic borrowing, while *down* with the feather sense is a Scandinavian borrowing.
- That history suggests it is a **coincidence** that these words sound and look the same – they have different origins and radically different meanings.
- Other cases of homonymous expressions include *bark* in *Fido's bark is worse than his bite* and *Messmate bark is fibrous and flammable*.
- A parallel might be **ambiguous figures** like the Duck-Rabbit (fig. 1).

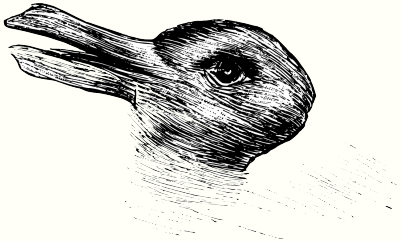

Figure 1: An ambiguous figure: the Duck-Rabbit.

Polysemy

- By contrast, the uses of *animal* are not historically unconnected, and there seems to be a **core meaning** which appears in both (6) and (7), modified by some additional element that differentiates those meanings.
  - As to what this core meaning is, it's hard to say. Maybe it is just the concept of a non-human animal, which may be extended to humans when emphasising our biological continuity, or denied of humans when emphasising our distinctness in being subject to rational and moral norms (in which case saying of a human that they are an animal is an attempt to dehumanise).
- Thus it is concluded that we have the same word here, which has different **senses** (distinct from Frege's notion of a sense (*Sinn*) to which we return next time, but closely related to the organisation of standard dictionaries).
- Another example might include *paper*:
  - (8) Silke wrote a very good paper for her final assignment.
  - (9) Jakob used very heavy paper for his wedding invitations.
- This is a case of what is known as **metonymy**, where the stuff on which essays might once have been written comes to be used for the abstract entity written on them. Intuition strongly suggests we have the same word here with two senses, given that, e.g., this can be true: *Jess produced a good paper even though she had no paper.*

Ambiguity, Words, and Internalism

- Ambiguity involves many meanings assigned to one expression.
- Whether there is a real distinction among kinds of ambiguity, between homonymy and polysemy, comes down to a surprisingly tricky question: **what is a word**?
- If a word just is an expression, polysemy just is homonymy.
- So if there are distinct kinds of ambiguity, it must be because words are distinct from expressions: sometimes a single expression, like *bank*, is associated with multiple words with their own meanings; sometimes an expression is linked to just one word with multiple meanings, like *company* (a business vs. a military unit).
- The internalist can make sense of this: their view already permits sameness of words to be associated with variations in meaning and other aspects, so the possibility of polysemy is to be expected.
- The referentialist, on the other hand, can predict homonymy, but has no real role for a notion of word that goes much beyond a thing that links a meaning to an expression type (though there are complexities even here, cf. Kaplan 1990). So it seems polysemy is hard to account for, for the referentialist – score 1 for the internalist!

Against Polysemy

- This is a compelling argument only if we need polysemy, if it does something for us that homonymy cannot. But is there?

> My theory is that there is no such thing as polysemy. The appearance that there is a problem is generated by the assumption that there are definitions; if you take the assumption away, the problem disappears. … definitions don't *solve* the problem of polysemy; definitions *are* the problem of polysemy.
>
> People sometimes say 'exist' must be ambiguous because look at the difference between 'chairs exist' and 'numbers exist'. A familiar reply goes: the difference between the existence of chairs and the existence of numbers seems, on reflection, strikingly like the difference between numbers and chairs. Since you have the latter to explain the former, you don't also need 'exist' to be polysemic. (Fodor 1998: 53–54)

Vagueness

Vagueness, Imprecision, and Generality

- The last semantic property of words we will consider is **vagueness**.
- The term *vague* itself has been used for many different relations.
  - Some use *vague* for expressions which are **nonspecific** (Elbourne 2011: 35–36), such as *animal*, because there are many types of animal.
  - Some use *vague* to mean **ambiguous**: 'A representation is *vague* when the relation of the representing system to the represented system is not one-one, but one-many' (Russell 1923: 89–90).
- The notion focused on by philosophers these days is **imprecision**: a vague term is one that lacks precise boundaries. E.g., consider where to draw the extension of *red* on fig. 2. Where does *orange* stop applying, and *red* start? It's **around** 630nm, but any **precise** number seems wrong.

Figure 2: The yellow-orange-red colour spectrum with wavelengths

Borderlines and Margins

> A vague word admits of borderline cases, cases in which we don't know whether to apply the word or not, even though we have all the kinds of information which we would normally regard as sufficient to settle the matter. We may see how tall a man is, or even know his height to a millimetre, yet be unable to decide whether he counts as tall or not. We may see a collection of grains of sand, and even know exactly how many grains of sand the collection contains, yet not know whether it should be called a heap or not. … This ignorance is not a manifestation of any failure to understand our language. (Sainsbury 2009: 41)

> If a and b are very close in F-relevant respects, then 'Fa' and 'Fb' are very close in respect of truth. (Smith 2005: 164)

> since colours form a continuum … there are shades of colour concerning which we shall be in doubt whether to call them red or not, not because we are ignorant of the meaning of the word 'red', but because it is a word the extent of whose application is essentially doubtful. (Russell 1923: 85)

- All emphasise a characteristic feature of vague expressions: there is no **sharp cutoff** between cases of F cases which are not F. Examples include *tall*, *bald*, *heap*, *lots* ….

Vagueness Puzzles: the *Sorites*

One puzzle posed by vagueness is the traditional *sorites*, or the paradox of the heap.

(10) A 10,000-grained pile of sand is lots of sand.

(11) If a n-grained pile of sand is lots, then so is an $n-1$-grained pile. (No sharp cutoffs for vague predicates like *lots*; the so-called **Tolerance principle**)

(12) A 9,999-grained pile is lots. (From 10, 11, logic)

(13) A 9,998-grained pile is lots. (From 12, 11, logic)

⋮

(14) A 1-grained pile is lots. (Follow the preceding pattern)

We could run the same format for *red*, *bald*, etc.: any vague word linked to an underlying smoothly varying quantity (wavelength, number of hairs, ...).

Options

- The space of options is straightforward, but how to choose is difficult:
  - **Reject a premise** (presumably (11), but on what grounds?)
  - **Reject the reasoning** (but it seems impeccable!)
  - **Accept the conclusion** (How absurd!)
- All have been defended! (See Sainsbury (2009), Williams (2012) for a useful overviews.)

Table 1: Options in resolving the *sorites*.

Option	View
Reject premise	Epistemicism (Williamson 1994); Supervaluationism (Fine 1975); Degree theory (Smith 2008)
Reject reasoning	Degree theory (Edgington 1996)
Accept conclusion	Eliminativism (Unger 1979)

Vagueness puzzles: ontology and semantics

- **Solving** the *sorites* is not our goal; that's a job for a different class. Our question is: how to account for vague meanings?
- One answer we foreclose from the start is **ontic vagueness**:

> Vagueness and precision alike are characteristics which can only belong to a representation, of which language is an example. They have to do with the relation between a representation and that which it represents. Apart from representation … there can be no such thing as vagueness; things are what they are, and there is an end of it. Nothing is more or less what it is, or to a certain extent possessed of the properties which it possesses. (Russell 1923: 85)

- So we will need to account for vagueness by assigning meanings to imprecise expressions but which make use of only precise entities.
  - One already suspects difficulties for referentialism.

Vagueness and Referentialism

- The referentialist offers as the meaning of any predicate an intension – a certain kind of **set**.
- But sets, and set membership, are precise – the relational predicate '$\in$' is **not vague**.
- So there are no borderline cases of being in an intension, and hence no borderline cases of falling under a predicate, if intensions are predicate meanings.
- Referentialists are thus forced to try to make these precise intensions dissolve the phenomenon of vagueness.

Deploying Classical Semantic Values: Epistemicism

- The **epistemicist** argues that there is fact a sharp boundary for any vague predicate, but that we cannot **know** where the cutoff lies – that lack of knowledge is **mistaken** for the non-existence of a boundary.
- Epistemicists can preserve the whole orthodox logical framework, including the assignment of classical sets as the semantic values of vague predicates: so the meaning of *red* just is the set $\{x : x \text{ is red}\}$ – a vague description of a precise set.
- For epistemicists, vagueness is a **metasemantic** matter: our collective use does fix a best candidate referent, but that use is so complex and varied that (i) their sharp cutoff would be different had the pattern of use been different, and so (ii) we individual speakers cannot, on the basis on the samples of use we have witnessed, determine what that best candidate referent is.
- So vague expressions have **sharp yet unstable** cutoffs, and that instability means whatever true beliefs we have about borderline cases of *red* would be false in an indiscriminable scenario, and hence we don't know whether those borderline cases are red.
  - We mistake our irremediable ignorance of the intension with there being 'no fact of the matter' about borderline cases.

Deploying Classical Semantic Values: Supervaluationism

- The **supervaluationist** thinks that vagueness is **semantic indecision**: vague predicates have many precise intensions that are equally good candidates to represent their use; logic and semantics should model vague expressions by using these acceptable precise candidates.
  - The basic idea is that those cases are simply **not decided** by our use and hence should not be counted either as falling under the predicate or not.
- A case which lies within every candidate intension for F falls under F; a case which lies outside of every candidate falls outside of F; other cases, which are in some candidates and outside of others, turn out **neither to fall under nor outside** F (Sainsbury 2009: 52). This gives a **gap** in the meaning of the predicate.
- This gap will also make premise (11) **false** – because on every every candidate intension of F, there is some sharp cutoff, $\exists n(F(n) \wedge \neg F(n+1))$ is true on every candidate intension.
- But each instance of (11), each particular proposal for where the sharp cutoff is, is untrue – which may explain our intuitive endorsement of (11).
  - For them, it is a false generalisation without any false instances! A puzzling logical feature…

Vagueness and Internalism

- This incomplete look at referentialist options reveals there are ways of preserving classical semantic values but they are not straightforward.
- The internalist, by contrast, has a natural account of linguistic vagueness. A vague word, like *bald*, expresses a **vague concept** BALD. And this is very well modelled by the prototype theory of concepts:

> Entities are associated with the category to the extent that they resemble the good examples. Often, the boundary of a prototype category will be fuzzy – it might not be clear whether some entities belong in the category or not. Moreover, prototype categories have an internal structure, in that some entities count as more central members than others. (Taylor 2015: 286)

- Here we have both borderline cases, where the 'extent of resemblance' to various prototypes is not sufficient; and we have the sense in which the internal structure 'shades off' towards those borderline cases.
- So internalists provide concepts as semantic values for vague words that mimic the behaviour of those words.

Concepts and the *Sorites*

- The standard internalist model treats all this probabilistically; the internal structure of concepts is that the more similar x is to the paradigm F, the higher the chance a subject will judge x to be F (Égré, Ripley, and Verheyen 2019: 269–70).
- The standard prototype theory says: sufficiently indiscriminable objects will be **very close** in their probabilities of being judged to be F.
  - Contrast this with the tolerance premise (11) in the *sorites*, which says that sufficiently indiscriminable objects are both or neither Fs.
- This principle, unlike (11), is **intransitive**: a chain of pairwise indiscriminable objects can have F-discriminable entities at each end without conflict, as long as the probability of being judged to be F also declines along the chain.
- The psychologist makes progress, in a sense, by simply setting aside the original *sorites*: rather than ask, *is this an F?*, the psychophysics of classification attempts to model our discriminatory behaviour probabilistically, and asks *what is the probability this will be classified as an F?*
- Those probabilities start high, and decline smoothly over the course of a sorites sequence, which enables this model to reproduce our classificatory intuitions.

Vagueness and Internalism

- Moving to a probabilistic model obscures the *sorites*, but doesn't really solve it.
- We can see this if we consider a *sorites* for *is sufficiently similar to a paradigm F* – an obviously vague predicate.
- In fig. 2, we might say that because each adjacent colour patch is indiscriminable from its neighbours, then if patch n is sufficiently similar to the paradigm yellow patch at the far left, then so is patch $n + 1$, adjacent and to the right of patch n.
- But that just leads immediately to the false conclusion that all the patches are sufficiently similar to yellow.
- So the internalist must deny the tolerance principle for *sufficiently similar to a paradigm F*, somehow. But of course this, for the internalist, **just is** the key metasemantic notion involved in understanding vague language.
- That is: while the internalist offers a fuzzy entity to be the semantic value for a vague expression, they themselves must address a *sorites* puzzle about **the framework in which they offer their semantic theory**.
  - As it were, the psychological framework in which internalism is placed must deal at the worldly level, rather than the linguistic level, and hence must deal with *sorites* sequences as the referentialist does.

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