

A powerful critique of semantic networks:

Jerry Fodor's atomism.

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A rock-bottom notion

- Meaning is intimately related to **truth conditions**
- Word meanings are concepts
- And concepts “apply to” things
- (Things do, or do not, “fall under” them)
- A concept C is “true of” something, and **only** of that something
- That’s its **referent** (its extension)
- The referent is the “truth-maker” of C
- But this is not enough
- The same referent can be singled out by different intensions (the morning star/the evening star)
(Gottlob Frege *On Sense and Reference* 1892/1948)

Meanings

- Meanings are shared, they are **public**
- They are **not** the same as the “mental pictures” (or images, or associations) that a word may elicit in each individual speaker
- Dog means dog, even if I mentally entertain the picture a poodle, while you picture a terrier.
- Marriage does not mean different things to a future bride, her father, a priest, a lawyer etc.
- It’s crucial that our lexical semantics does **not** “cut” meanings **so** thin
- But must cut them thin enough to allow different intensions to pick out the same extension.

Associations

- This applies also to mental “associations”
- Via a suitable number of links, everything is associated with everything else
- *Cat* is commonly associated with *mouse*, *milk* etc.
- These are **not** “constitutive” of the meaning of *cat*

What is constitutive?

- The central issue (Fodor's issue) here will be:
- Has the association between *cat* and *animal*
- A **different semantic** status than the association with, say, *mouse*, *milk*, *meows* etc.?
- Fodor's answer is: No!

Different strengths of the thesis

- Weakest: The available semantic networks do not represent lexical meanings
- Moderate: No such network **could** represent lexical meanings
- Strong: No kind of network (for instance inferential networks) can represent lexical meanings
- Strongest: Lexical meanings have no external **nor internal** structure whatsoever

The classic (Aristotelian) theory of concepts

- There are individually necessary and jointly sufficient criteria (properties, attributes, predicates)
- DOG = animal, mammal, domestic, barks, etc.
- Nothing that “misses” one of these properties **can** “fall under” the concept DOG
- Nothing that **has all** these properties can **fail** to fall under the concept DOG

Problems

- Many counterfactual cases (Chinese emperors had a race of non-barking dogs)
- Putnam's Martian robot cats
- Some central properties may not be accessible to introspection (the typical bird is “friendly”, while “crunchy” is intimately associated with acoustic properties, etc.)

An alternative: “family resemblance”

- No property is shared by **every** member of the category
- But many members of the category share at least one property, and frequently many of them
- Properties are not isolated, but come in clusters
- $p(\text{flies/feathers}) \gg p(\text{flies/fur})$
- $p(\text{beak/feathers}) \gg p(\text{beak/scales})$

Problems

- Categories become “hazy”
- Different individuals “mean” different things by the same word
- Unless
- Some properties are more important (more diagnostic) than others
- But there is no principled (category-independent) way of determining which ones
- You may as well “go atomistic”

Another alternative:

- Meanings are micro-structural (the real criteria are essentialist)
- We have to use manifest attributes, but we tacitly appeal to internal, essential attributes which we cannot see (DNA, molecular composition, design features, etc.)
- We defer to the experts to tell us what these are

Problems

- We really do not know the meaning of most of the words we use
- Most meanings are partial, approximate, defeasible (even for *cat*, *dog*, *silver* etc.)
- Even the experts defer to the continuous progress of science and scholarship.
- Many meanings have no structural component **at all** (*uncle*, *chair*, *expensive*)
- What about verbs? (*cut*, *run*, *detect* etc.)

Inferential Role Semantics (IRS)

- The meaning of a concept is functionally determined
- By the inferences it licenses, and those it disallows, and by their strength
- If one is not disposed to assent to **all and only** the right inferences, one does not “have” that concept.
- This also applies to verbs, adjectives, adverbs

Problems

- Intractable proliferation of inferences
- Again, you have to delimit the crucial ones
- But there is no principled (category independent) criterion for doing that
- So, maybe atomism?
- That's Fodor's choice.

Fodor on concepts

- The ontology of concepts (word meanings) is intimately tied with the problem of what it is to *have* concepts (and meanings), and to acquire them.
- He is strongly against the idea that the epistemic problem of possession and identification is prior to, and ontologically dominant over, the problem of what concepts and meanings *are*.

Contra Wittgenstein and family resemblance

- Concepts are *public*; they are the sorts of things that lots of people *can*, and do, *share*
- Concept “similarity” (whatever that may mean) will not do.
- To be viable, it must explain and preserve the invariance of intentional explanations, but it must not **presuppose** a “robust notion of content identity”.
- No theory of conceptual similarity has been able to do both.
- Something, at bottom, must be literally shared (for instance a belief), even if all you want is to calibrate degrees of similarity.

Identity is what we need

- If you have criteria for literal sharing (for the identity of concepts and beliefs), then you have a robust notion of what counts as “public”.
- You do not need similarity.
- There are individually different degrees of intensity of the same belief.
- There are different mental pictures or associations for the **same** concept (say, DOG)
- But concept (and content) identity is always (tacitly) **presupposed**.
- If you don't, then relativism is unstoppable. So, let's go for identity.

What is (and what isn't) constitutive of meaning

- There are metaphysical connections between meanings, because properties are often connected with other properties, presuppose other properties, entail other properties etc.
- You want to have counter-factual supporting criteria for new and possible applications of the concept.
- No such connection, presupposition or entailment, however, is constitutive of the meaning of a concept.

What is primary

- It's not language use, it's not capacities or abilities that are primary.
- If having concepts were having capacities (to recognize, to sort, or to draw sound inferences), then concepts would not be mental particulars, they would not be *things* at all,
- and therefore a fortiori they would not be *mental* things.
- But they are!

Fodor contra Inferential Role Semantics

- **First:** Buying IRS would lead to circularity: “*I can’t both tell a computational story about what inference is and tell an inferential story about what content is.*” (Concepts, 1998. p.13)
- **Second:** “*an inferential role semantics has holistic implications that are both unavoidable and intolerable*” (ibid.) (see also his book with LePore)

Fodor contra Inferential Role Semantics

- **Third:** atomism. “*Satisfying the metaphysically necessary conditions for having one concept never requires satisfying the metaphysically necessary conditions for having any other concept.*” (p.14)
- No inference can be constitutive of the meaning of a concept.
- It is metaphysically conceivable that a mind can exist that possesses *only* the concept (the meaning) DOG, and *nothing else* (no “cat”, and, most of all, no “animal” concept).
- Frogs and sticklebacks are neat instantiations

Fodor contra Inferential Role Semantics

- “*Much of the life of the mind consists in applying concepts to things*” (p.24). Concepts have their satisfaction conditions essentially, but it does not follow that “*the confirmation conditions of a concept are among its essential properties*”. (p.25)
- Satisfaction conditions are metaphysical, while confirmation conditions are epistemic.

Fodor contra Inferential Role Semantics

- Confirmation may well be (and sometimes is) a holistic enterprise (mobilizing relevant clues and inferential skills from everything you know),
- though concept-satisfaction is not holistic.
- Dispositions to draw inferences, to sort things competently, to make connections etc. are the **consequence** of knowing the meaning of concepts
- Not the other way around.

Fodor's atomism

- A word means the property that the concept it expresses is locked to.
- Mental states and processes are typically species of relations to mental representations, of which latter concepts are typically the parts.
- Thoughts are mental representations analogous to closed sentences, while concepts (their constituents) are mental representation analogous to the corresponding open ones.

Fodor contra iconicity

- *"The idea that there are mental representations is the idea that there are Ideas minus the idea that Ideas are images"* (*Concepts* 1998, p.8, see also *Hume Variations*, 2003)
- Thought is a lot like **language**, and concepts are a lot like mental lexical entries (if primitive), or mental phrasal constituents (if composed).
- This is perfectly OK. We want both of them (thought and language) to be productive and systematic.

Fodor's atomism

- DOG means dog
- PUT means put
- KEEP means keep
- etc. (a Tarskian theory)
- What you have on the right are mental particulars (atomistic mental representations of qualities).
- No decomposition

No decomposition

- *Kill* means KILL
- Not “cause-to-become-not-alive”
- Nor anything like that.
- John poisons Bill on Tuesday and Bill dies on Saturday.
- Did John kill Bill?
- **When** did he kill him?

No decomposition

- Sue tells John on Monday that their affair is over. The poor desperate John commits suicide on Wednesday.
- Did Sue “kill” John?
- She surely caused him to become not alive.
- Endless counterexamples like this one.

Contra internal structures

- Pace Pustejowski, Jackendoff, Talmy etc.
- It's not the case that, say
- *Melt* = <CAUSE, change-of-state, SOLID to LIQUID>
- This is not a **semantic** decomposition
- You should not “explain” the perfectly clear with the totally unclear
- What is the meaning of CAUSE?
- Do we understand “change-of-state”?
- Let's not confuse physical relations in the world with conceptual semantics.

Word meanings

- The meaning of a word is:
- its reference
- **Plus** its Mode of Presentation (MOP)
- This solves Frege's "evening star", "morning star" puzzle
- And the "water" H₂O puzzle
- Same extension, but different MOPs
- MOPs are mental particulars
- MOPs are "entertained" or "grasped".
- There are many (innumerably many) ways of thinking about water. This does *not* mean that the concept WATER has innumerably many meanings (there are not innumerably many concepts of WATER).

More about MOPs

- *"MOPs are mental objects and referents aren't"*
- *[...] "Mental objects are ipso facto available to be proximal causes of mental processes; and it's plausible that at least some mental objects are distinguished by the kinds of mental processes that they cause; i.e. they are functionally distinguished."*
- *Suppose that MOPs are in fact so distinguished.*
- *Then it's hardly surprising that there is only one way a mind can entertain each MOP; since, on this ontological assumption, functionally equivalent MOPs are ipso facto identical"*
(ibid p.19)

More about MOPs

- A causal connection with actual tokenings of the real thing in the real world is necessary.
- But (pace Skinner et al.) it is not sufficient.
- Tokenings must be “presented” adequately to the mind.
- Modes of Presentation, plus actual causal encounters with the extensions, are necessary and sufficient.

A division of labor

- Satisfaction criteria, identity criteria and conceptual connections are all metaphysical in nature (they must explain how mental representations connect with properties and objects in the world).
- Confirmation criteria are then evaluated epistemically (and may well be, indeed, holistic).
- The psychologist's job is to study how the mind gets access to, and then manipulates, these metaphysically necessary relations.
- No less, and no more.

Turing meets Frege

- The convergence of Turing's story (that mental processes are computations on symbols sensitive to their contents)
- and Frege's story (that some individuating component - for Fodor, a mental representation - has to combine with the way the world is to determine reference)
- *"is about the nicest thing that ever happened to cognitive science"* (*Concepts* p. 22)

Turing meets Frege

- *"Wherever mental states with the same satisfaction conditions have different intentional objects (like, for example, wanting to swallow the Morning Star and wanting to swallow the Evening Star) there must be corresponding differences among the mental representations that get tokened in the course of having them."* (ibid)

Fodor's story

- *“My story is: The laws that govern mental processes are intentional, hence sensitive to semantic properties. But their implementation is syntactic. It would be a mystery how syntactic processes could implement semantic regularities, but Turing showed us how to do so. Proving, thereby, that he was very clever. Anyhow, that's the line I take in 'Elm', and I haven't yet been disconvinced of it”.*

Fodor's story

- For some concepts (RED, DOG, DOORKNOB etc.) we are directly connected with their extensions, via personal experience. For other concepts (METAL, HYDROGEN, NEUTRINO etc.) the connection is indirect, inherited along a chain, by deference to other persons (the experts, books, eyewitnesses etc.)
- The point is that their connection to the extension is direct (no indefinite regress).

Fodor's story

- Objects, sets, events, situations etc. connect causally, and nomologically, to the mind via a suitably abstract power to convey information.
- “*Concepts are categories, and are routinely employed as such*”. (p. 24)
- Things in the world “fall under them”.
- “*The thesis that concepts are mental particulars is intended to imply that having a concept is constituted by having a mental particular, and hence to exclude the thesis that having a concept is, in any interesting sense, constituted by having mental traits or capacities*” (p.3)

In essence

- “*understanding what a thing is, is invariably prior to understanding how we know what it is*” (p. 5)
- The metaphysics of meaning is primary
- The epistemology of meaning is derived.
- “*What bestows content on mental representations is something about their causal-cum-nomological relations to the things that fall under them: for example, what bestows upon a mental representation the content dog is something about its tokenings being caused by dogs*”