Partee 1995: Towards a compositional theory

Chris Potts, Ling 130a/230a: Introduction to semantics and pragmatics, Winter 2019
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1 Overview
Themes

• Guiding principles of semantic theory
• The interpretation of proper names
• A typology of modifier meanings
• The prevalence of vagueness and context-dependence
• Compounds and the limits of compositionality

Page references are to Partee 1995. For more on the issues raised by this article for cognitive science more generally, check out Kamp & Partee 1995.

2 Guiding principles

Lewis’s advice “In order to say what a meaning is, we may first ask what a meaning does, and then find something that does that.”

Linguistic conventions (paraphrasing Lewis 1969) A regularity \( R \) in the behavior of the members of a community \( C \) is a convention if, and only if, (i) basically everyone in \( C \) conforms to \( R \), (ii) everyone in \( C \) expects everyone else in \( C \) to conform to \( R \), and everyone in \( C \) prefers to conform to \( R \) only on condition that everyone else in \( C \) conforms to \( R \) (arbitrariness).

Languages are systems of conventions in this sense. It’s rewarding to think about how linguistic conventions differ from other complex social conventions, like how to stand in an elevator, or which side of the street to drive on - differences in character and in the responses people give to violations of the conventions.

Compositionality The meaning of a whole is a function of the meanings of the parts and of the way they are syntactically combined.

A. J. Ayer’s ‘principle of verification’ (Ayer 1936:48) “We say that a sentence is factually significant to any given person if, and only if, he knows how to verify the proposition which it purports to express — that is, if he knows what observations would lead him, under certain conditions, to accept the proposition as being true, or reject it as being false.”
Cresswell’s “Most Certain Principle”  “For two sentences \( \alpha \) and \( \beta \), if [in some possible situation – BHP] \( \alpha \) is true and \( \beta \) is false, \( \alpha \) and \( \beta \) must have different meanings.”

If different truth conditions, the different meanings.  
Equivalently, if same meanings, then same truth conditions.  
Silent about cases truth conditions are the same.

Converse Cresswell  If \( \alpha \) and \( \beta \) have different meanings, then some situation should be such that \( \alpha \) is true and \( \beta \) is false.

If different meanings, the different truth conditions.  
If same truth conditions, then same meanings.  

Connotations seem like meanings that are not reducible to truth conditions, so they are counter examples to converse cresswell.  
Similarly, tautologies are true in all situations, but they don’t all have the same meaning!

Partee’s methodology  “Compositional semantic analysis is typically a matter of working backward from intuitions about sentences’ truth-conditions […]; and reasoning our way among alternative hypotheses concerning (a) lexical meanings, (b) syntactic structure, and (c) modes of semantic composition. Choices of any one of those constrain choices among the others; some choices lead to dead ends or at least make things much harder; others survive.” (p. 322)

3  Interpretation

The interpretation function is \([\ ]\). It is our bridge from language to the world. We hope it captures the conventional aspects of meaning.

4  Proper names

Proper names refer directly to the entities they pick out (Kripke 1980):

\[
[Bart] = \quad [Burns] =
\]

i. Baptism: There is an initial “baptism”, in which the entity is named.

ii. Convention: From then on, it is a convention of the language (and the society), that that name picks out that particular entity.

iii. A historical chain of users: Speaker \( S_n \) acquires the name from speaker \( S_{n-1} \), who acquires it from \( S_{n-2} \), and so forth, all the way back to people who were present at the “baptism”.

iv. Intentions: If I am not part of such a historical chain but I use the name anyway, then I do so with the intention to refer to the same entity that speakers in the chain intend to refer to.
5 Modification

5.1 The typology

**Intersective** An adjective ADJ is intersective iff (‘if and only if’), for all N, \([\text{ADJ} \cap \text{N}] = \text{ADJ} \cap \text{N}\)

Every intersective adjective is also subsective, because the intersection of A and B is always a subset of A (and B).

**Subsective** An adjective ADJ is subsective iff, for all N, \([\text{ADJ} \cap \text{N}] \subseteq \text{N}\)

Skillful cannot be analyzed as intersective. Suppose it could. Then it denotes a set. Assume I am in that set, on the grounds that I am a skillful linguist, and also in the set of saxophone players. It then follows that I am a skillful saxophone player. This is sadly not true. The lesson is that the set ‘skillful N’ is dependent on the nature of N.

**Nonsubsective** An adjective ADJ is nonsubsective iff ADJ is not subsective, i.e., there is at least one N such that \([\text{ADJ} \cap \text{N}] \not\subseteq \text{N}\)

Every privative adjective is non-subsective, because A not being a subset of B is consistent with A and B being disjoint.

**Privative** An adjective ADJ is privative iff, for all N, \([\text{ADJ} \cap \text{N}] \cap \text{N} = \emptyset\)

‘Fake’ is the usual example of a privative adjective, since ‘fake N’ often does seem to entail ‘not N’, but we can probably find exceptions to that.
Examples

(1)  
   a. future
   b. so-called
   c. virtual
   d. foreign
   e. boring
   f. current
   g. actual
   h. non-
   i. simulated

Question

What problems do we face if we try to define [former] and [skillful] as sets?

5.2 Interpretation

(2) If ADJ is intersective:

\[
\begin{align*}
[\text{ADJ}] & \cap [\text{N}] \\
[\text{ADJ}] & \cup [\text{N}] \\
\text{Sets} & \\
\end{align*}
\]

(3) If ADJ is not intersective:

\[
\begin{align*}
[\text{ADJ}([\text{N}])] & \\
\text{function from sets to entities} \\
\text{also a set} \\
\text{set} & \\
\end{align*}
\]

(The other nonintersective subtypes tell us something about what function [ADJ] is, but there is still an incredible amount of room for variation in meaning.)
6 Vagueness and context dependency

“Even the line between vague and nonvague predicates is vague; a concept may count as sharp for most purposes but vague relative to the demands of scientific or legal or philosophical argument. Probably almost every predicate is both vague and context-dependent to some degree.” (p. 332)

See also ‘Utopian for beginners’ (The New Yorker, Dec 24, 2012)

The role of context

(4) a. Win is a tall 14-year-old.  
   b. Win is a basketball player.  
   c. Therefore Win is a tall basketball player.

(5) a. My 2-year-old son built a really tall snowman yesterday.  
   b. The D.U. fraternity brothers built a really tall snowman last weekend.
   
   Both of these can be true even if the snowmen are very different in height, because we let the contextual standard shift across the two sentences.

Sorites Paradox

(6) a. A $5 cup of coffee is expensive (for a cup of coffee).  
   b. Any cup of coffee that costs 1 cent less than an expensive cup of coffee is expensive (for a cup of coffee).  
   c. Therefore, any free cup of coffee is expensive.  
   
   (Kennedy 2007)

(7) “12:01 is noonish”, “one hair on his head”, “10,000 grains of sand is a heap”, …

(8) \[ \text{expensive}^c = \{ x : x \text{ is above } c \text{ on the scale of costs} \} \]

A closing note

it is also worth noting that as one studies how vagueness works in more detail, one quickly overcomes the common prejudice that vagueness is always a bad thing, that it is some kind of “defect” of natural language. (p. 336)
7 Compounds and the limits of compositionality

In compounds […] there is no general rule for predicting the interpretation of the combination (p. 341)

<table>
<thead>
<tr>
<th>Modifier-head</th>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>black BIRD</td>
<td>BLACK bird</td>
</tr>
<tr>
<td>black BOARD</td>
<td>BLACK board</td>
</tr>
<tr>
<td>white HOUSE</td>
<td>WHITE house</td>
</tr>
<tr>
<td>toy STORE</td>
<td>TOY store</td>
</tr>
<tr>
<td>brick FACTORY</td>
<td>BRICK factory</td>
</tr>
</tbody>
</table>

“In this paper, we propose that the head-modifier relation found in a given compound is strongly influenced by the nature of its referent: in particular, whether the referent is construed as an artifact, an entity made by humans for a purpose, or as a natural kind, an entity that exists independently of humans.” (Levin et al. 2018)

References


