

# Partee 1995: Towards a compositional theory

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Jan 10

## 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*).

**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."

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

**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  $\llbracket \cdot \rrbracket$ . It is our bridge from language to the world. We hope it captures the *conventional* aspects of meaning.

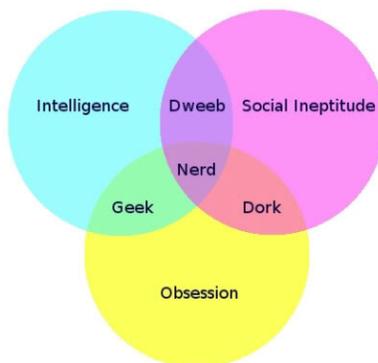
### 4 Proper names

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

$$\llbracket \text{Bart} \rrbracket = \text{

- 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



<http://www.greatwhitesnark.com/>

### 5.1 The typology

**Intersective** An adjective ADJ is intersective iff ('if and only if'), for all N,  $\llbracket \text{ADJ N} \rrbracket = \llbracket \text{ADJ} \rrbracket \cap \llbracket \text{N} \rrbracket$

**Subsective** An adjective ADJ is subsective iff, for all N,  $\llbracket \text{ADJ N} \rrbracket \subseteq \llbracket \text{N} \rrbracket$

**Nonsubsective** An adjective ADJ is nonsubsective iff ADJ is not subsective, i.e., there is at least one N such that  $\llbracket \text{ADJ N} \rrbracket \not\subseteq \llbracket \text{N} \rrbracket$

**Privative** An adjective ADJ is privative iff, for all N,  $\llbracket \text{ADJ N} \rrbracket \cap \llbracket \text{N} \rrbracket = \emptyset$

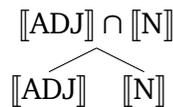
**Examples**

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

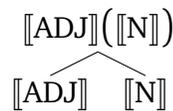
**Question** What problems do we face if we try to define  $\llbracket former \rrbracket$  and  $\llbracket skillful \rrbracket$  as sets?

**5.2 Interpretation**

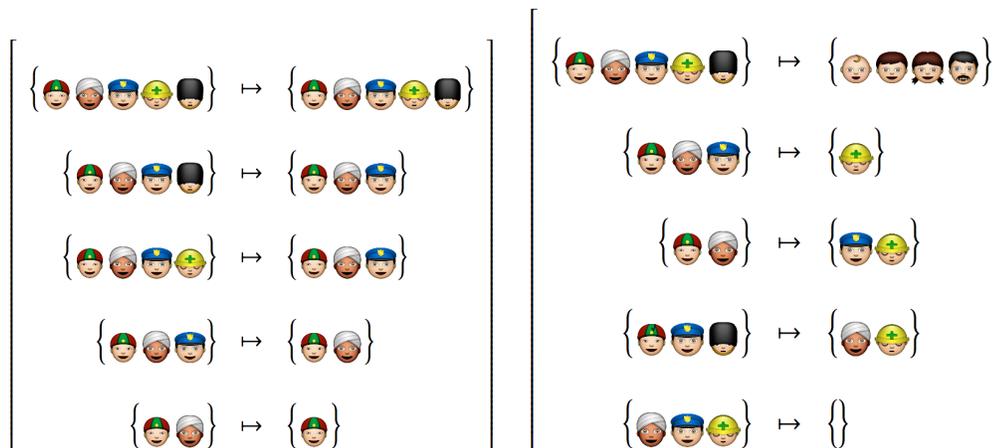
(2) If ADJ is intersective:



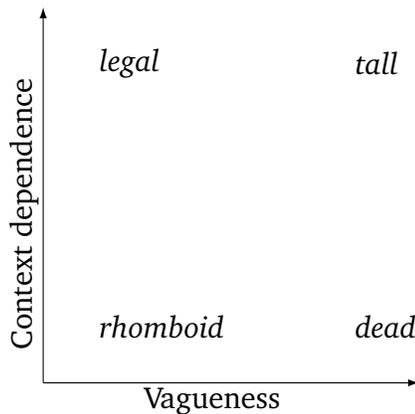
(3) If ADJ is not intersective:



(The other nonintersective subtypes tell us something about what function  $\llbracket ADJ \rrbracket$  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)

### The role of context

- (4) a. Win is a tall 14-year-old. (p. 330)  
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. (p. 331)  
b. The D.U. fraternity brothers built a really tall snowman last weekend.

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

### 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)

Modifier-head	Compound
black BIRD	BLACK bird
black BOARD	BLACK board
white HOUSE	WHITE house
toy STORE	TOY store
brick FACTORY	BRICK factory

“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

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