

## LECTURE ONE

### ARGUMENTS FOR THE DAVIDSONIAN THEORY

#### 1.1. THE DAVIDSONIAN THEORY

In this lecture, I will introduce the (neo)-Davidsonian theory of event arguments, and discuss several of the arguments that Terry Parsons gives in Parsons 1990 in favor of this theory. I will discuss some details of Parsons' own proposal in the next lecture. There too, I will present a particular version of the neo-Davidsonian theory, that I will build on in later lectures on plurality.

The Davidsonian theory is a cluster of theories of relations, their arguments and their modifiers. Look at the sentences in (1):

- (1) a. Jones buttered the toast.
- b. Jones buttered the toast slowly in the bathroom with a knife.

Ignoring verb phrase modification, the classical theory of relations and arguments (as found in e.g. Montague 1973, Thomason and Stalnaker 1973) tells us that the verb *butter* in sentence (1a) expresses a two-place relation between the two nominal arguments, and that the adverbials in (1b) are verb modifiers: functions from verbs to verbs; in other words, the verb and the modifiers in (1b) form a complex two-place relation (as in 2b):

- (2) a. BUTTER(j,t)
- b. ([WITH(k)(IN(b)(SLOWLY(BUTTER)))) (j,t)

Davidson 1967 proposes that the verb in an action-sentence (i.e., a non-stative verb), like (1a), expresses a three-place relation between the nominal arguments and an implicit event argument, which is existentially quantified over; and he proposes that the modifiers in (1b) are added conjunctively as predicates of the event argument. This leads to representations like (3a) and (3b):

- (3) a.  $\exists e[ \text{BUTTER}(e,j,t) ]$
- b.  $\exists e[ \text{BUTTER}(e,j,t) \wedge \text{SLOWLY}(e) \wedge \text{IN}(e,b) \wedge \text{WITH}(e,k) ]$

What is called the neo-Davidsonian theory, which is explored in, among others, Higginbotham 1983 and Parsons 1990, radicalizes this idea by assuming that all verbs, non-statives and statives alike, have such an implicit argument - verbs are not relations,

but one-place predicates of events (or states); and it assumes that both modifiers and arguments are added conjunctively, the latter through thematic roles. This gives representations like (4a) and (4b):

- (4) a.  $\exists e[ \text{BUTTER}(e) \wedge \text{AGENT}(e)=j \wedge \text{THEME}(e)=t ]$   
 b.  $\exists e[ \text{BUTTER}(e) \wedge \text{AGENT}(e)=j \wedge \text{THEME}(e)=t \wedge$   
 $\text{SLOWLY}(e) \wedge \text{LOCATION}(e)=b \wedge \text{INSTRUMENT}(e)=k ]$

We see three salient features that the Davidsonian and neo-Davidsonian theory share:

1. Besides the arguments that are explicit in the sentence, verbs have an extra, implicit argument: an event (or state) argument.
2. Modifiers modify this event argument.
3. In the sentence, this event argument is existentially quantified over.

In Parsons 1990, three kinds of arguments are presented in favor of the (neo)-Davidsonian theory: the modifier argument, the argument from explicit event reference, and the argument from perception reports.

In this lecture, I will discuss these arguments. I will extensively discuss the modifier argument, and argue that it is indeed a very powerful argument. I will discuss some putative alternatives in this lecture, but postpone the comparison with what I think is its most serious competitor to lecture Three. I will further argue that the modifier argument applies to stative verbs as well, though the arguments that Parsons' himself gives are not conclusive.

I will argue that Parsons' argument from explicit event reference isn't as powerful as it looks at first sight. I will argue that, in the end, what plausibility it has derives from the modifier argument, and hence this isn't an independent argument. Concerning the argument from perception verbs, I will argue that the facts here are more complicated than Parsons' assumes, and that, in the final account, they are compatible with the Davidsonian theory, but do not support it. Thus, while some of the glamor of the Davidsonian theory will be eroded in this lecture, the theory will still survive as a powerful approach to adverbial modification.

## 1.2. THE MODIFIER ARGUMENT

I will present Parsons' modifier argument by looking at adjectives first. Look at sentence (5a):

- (5) a. John is a blue-eyed, blond, forty year old American with a beard, in his midlife crisis, dressed in a suit.

Kamp 1975 presents and discusses the classical semantic theory of prenominal adjectives. This theory assumes that such adjectives are nominal modifiers, semantically, functions that take a noun (type  $\langle e, t \rangle$ ) and turn it into a complex noun (also type  $\langle e, t \rangle$ ). This means that semantically, (5a) is analyzed as (5b):

- (5) b. DRESSED IN A SUIT(IN HIS MIDLIFE CRISIS (WITH A  
BEARD(BLUE-EYED(BLOND(FORTY YEAR OLD  
(AMERICAN)))))) (j)

where each of the modifiers has type  $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$  (or rather the corresponding intensional type).

There are two problems with the classical analysis:

1. **Permutation:** Disregarding syntactic distribution constraints (concerning which modifiers are prenominal and postnominal), it seems to be the case that **permuting** the modifiers in (5a) does not change the truth value of (5a), i.e. (5a) is equivalent to (5c):

- (5) c. John is a forty year old, blond, blue-eyed American, dressed in a suit, with a beard, in his midlife crisis.

2. **Drop:** We can drop any number of adjectival modifiers anywhere in (5a), and (5a) entails the resulting sentence, i.e. (5a) entails (5d):

- (5) d. John is a blue-eyed, forty year old American, in his midlife crisis.

There are two kinds of exceptions to these observations, one real and one not real. In the first place, intensional adjectives like *former* and *potential* do not obey Permutation and Drop, as can be seen by the fact that (6a) and (6b) are not equivalent, and that (6c) does not entail (6d):

- (6) a. John is a former world-class ballet dancer.  
b. John is a world-class former ballet dancer.  
c. This is a potential problem.  
d. This is a problem.

Such intensional adjectives only occur as prenominal adjectives, not as predicative adjectives, and I will assume that they form a special class that I will not be concerned with here.

The second kind of exceptions are scalar adjectives.

It would seem at first sight that Permutation and Drop do not hold for the large class of scalar adjectives either, cf. (7a)-(7c):

- (7) a. Jumbo is a small pink elephant.  
b. Jumbo is a pink small elephant.  
c. Jumbo is a small elephant.

It is not clear that (7a) and (7b) have the same truth conditions, and if pink elephants are extraordinarily large, (7a) does not intuitively entail (7c).

However, Kamp 1975 argues that scalar adjectives require for their interpretation an implicit comparison class, and he argues that the nature of this comparison class is determined in discourse. Typically, out of the blue this comparison class is determined by the noun that the scalar adjective applies to (i.e. *pink elephant* in (7a), but *elephant* in (7b)), but, as Kamp and Partee 1994 neatly show, this is not always the case, cf. (8):

- (8) a. My three-year-old built a really huge snowman.  
 b. The college team built a really huge snowman.

Out of the blue, *huge* in (8a) means: huge in comparison to snowmen built by three-year-olds. With appropriate stress on *snowman*, it can even mean: huge in comparison to things typically built by three-year-olds, in which case the noun *snowman* doesn't play any role at all in the comparison class.

Given this, it is no longer clear that scalar adjectives don't obey the principles of Permutation and Drop. The reason is that the principles of Permutation and Drop obviously have nothing to say about inferences where in the premise and the conclusion the adjectives do not have the same interpretation. Since Kamp analyzes scalar adjectives as predicates, he assumes that principles like Permutation and Drop constrain these adjectives as much as they do other adjectives, and that the putative counterexamples in (7) aren't counterexamples: on the problematic interpretation (which is their natural interpretation), they do not challenge Permutation and Drop, because the comparison class is not kept the same.

The claim that Permutation and Drop hold for scalar adjectives is the claim that (9a) and (9b) are equivalent, and that (9a) entails (9c), assuming that the comparison classes are as given, and this claim seems unproblematic.

- (9) a. Jumbo is a small[for a pink elephant] pink elephant.  
 b. Jumbo is a pink small[for a pink elephant] elephant.  
 c. Jumbo is a small[for a pink elephant] elephant.

We can assume, then, that, except for the intensional adjectives, the principles of Permutation and Drop hold generally for prenominal adjectives.

The problem then is to account for this.

Theoretically, we have the following problem. We have the following structure:

- (10) a.  $A(B(C(N)))(x)$

(10a) entails any permutation of the modifiers in (10b):

- (10) b. 1.  $A(C(B(N)))(x)$   
 2.  $B(A(C(N)))(x)$   
 3.  $B(C(A(N)))(x)$   
 4.  $C(A(B(N)))(x)$   
 5.  $C(B(A(N)))(x)$

And (10a) entails any case with adjectives dropped in (10c), plus their permutations:

- (10) c. 1.  $B(C(N))(x)$       2.  $C(B(N))(x)$   
           3.  $A(C(N))(x)$       4.  $C(A(N))(x)$   
           5.  $A(B(N))(x)$       6.  $B(A(N))(x)$   
           7.  $A(N)(x)$   
           8.  $B(N)(x)$   
           9.  $C(N)(x)$   
          10.  $N(x)$

The standard way to try to ensure this is by means of meaning postulates. One principle that will give us some of these entailments is the so-called meaning postulate of *subsectivity*:

### Subsectivity

For any (relevant) modifier A and simple or complex noun N:  $A(N)(x)$  entails  $N(x)$

Now (7a) entails (7d), and (7d) entails (7e), and hence (7a) entails (7e):

- (7) a. Jumbo is a small pink elephant.  
       d. Jumbo is a pink elephant.  
       e. Jumbo is an elephant.

However, such a meaning postulate is not enough, because it cannot give us the entailment from (5e) to (5f):

- (5) e. John is a blond, forty year old American.  
       f. John is a forty year old, blond American.

Nor can it allow us to drop an adjective in the middle, i.e. give the entailment from (5g) to (5h):

- (5) g. John is a blond, blue eyed, forty year old American.  
       h. John is a blond, forty year old American.

To get the latter, we would have to add a principle of *monotonicity*:

### Monotonicity

If  $A(N)(x)$  and N entails M then  $A(M)(x)$

So let N be the complex noun in (5i), M be the complex noun in (5j), and let A be *blond*. Since (5i) entails (5j), it follows with monotonicity that (5k) entails (5l):

- (5) i. Blue-eyed forty year old American  
       j. Forty year old American  
       k. Blond blue-eyed forty year old American  
       l. Blond forty year old American

However, it seems that to get the full permutation facts, a meaning postulate constraining the meaning of a single modifier cannot suffice. More precisely, what is not



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