Outline of a NonDavidsonian Event Semantics

ABSTRACT

Parsons (1990) and Landman (2000) have recently argued that certain logical similarities between adverbial modifiers and intersective adjectives underwrite the hypothesis of a Davidsonian event argument for verbs. In this paper I present an alternative to the Davidsonian theory that is grounded in a systematic level-shifting operator, descriptive predication (Bealer 1993).

The argument for the Davidsonian theory begins with the traditional proposal that strings of (nonintensional) adjectives are best treated as complex conjunctive predicates. Thus, (1a) expresses the conjunctive property represented in (1b).

- 1) a. Donald is a hard-nosed, analytic philosopher.
 - b. $[\lambda x.HARD-NOSED(x) \land ANALYTIC(x) \land PHILOSOPHER(x)](d)$

Arguably, this analysis provides the best account of the permutation and drop properties of such strings.

Strings of adverbs exhibit the same properties of permutation and drop as intersective adjectives. By parity, therefore, we should expect a similar analysis in the case of adverbs. Unfortunately, there is an important disanalogy between the two types of modifiers–whereas each nominal adjective has a corresponding predicative counterpart that may take the sentential subject as an argument, it is not possible to treat adverbs in this way. In order for the intersective analysis to go through, however, we need the adverbial modifiers to function as predicates to some argument.

Parsons (following Davidson) solves this problem by hypothesizing that sentences contain an *implicit* event argument. Thus, on the (neo)-Davidsonian analysis, (2a) will be analyzed as either (2b), the Davidsonian analysis, or (2c), the neo-Davidsonian analysis.

2a. Donald gargled loudly in the bathroom.

- b. $\lambda x. \exists e[(GARGLE^2(x, e) \land LOUD(e) \land IN(e, b))](d)$
- c. $\lambda x.\exists e[GARGLE(e) \land AGENT(e) = x \land LOUD(e) \land IN(e, b)](d).$

This is a compelling argument for an underlying (neo)-Davidsonian event argument.

As a theory of *truth-conditions*, the (neo)-Davidsonian proposal is largely adequate. Nevertheless, it does not yield an adequate theory of *meaning* for eventive sentences—as can be seen by focusing on its inappropriateness in intensional contexts. For this reason, I outline an alternative account of the data that does not rely on an underlying event argument, but depends instead on positing an algebraically structured model together with systematic level-shifting operations over its domain.

An algebraic model structure is a sequence $\mathbf{M} = \langle D, \mathcal{E}, \Lambda \rangle$. *D* is the universe of discourse; \mathcal{E} is a set of extensionalization functions on *D* that specify the actual and possible extensions of the elements of *D*, and, Λ is a set of logical operations on the elements of *D*. We let D_i be the subdomain of *D* containing individuals, D_e be the subdomain of events, and D_n ($n \ge 0$) be the subdomain of n-ary relations-in-intension (where propositions and properties are understood to be 0-ary and unary relations-in-intension, respectively).

The members of \mathscr{E} are total functions on D and are constrained as follows: for all extensionalization functions $\partial \in \mathscr{E}$, if $x \in D_e$, then $\partial(x) = x$; if $x \in D_i$, then $\partial(x) =$; if $x \in D_0$, then $\partial(x) = \emptyset$ or $\{e\} \subseteq D_e$; if $x \in D_1$, then $\partial(x) \subseteq D$; if $x \in D_n$ for n > 1, then $\partial(x) \subseteq D^n$. The crucial point here is that this definition requires the extension of a proposition to be either a singleton set of events or the empty set–which one will determine the truth value of the proposition according

to the following truth rule: $(\forall p \in D_0)(\forall (p) = 1 \text{ iff } (\exists e)(e \in \partial(p); \text{ otherwise } \forall (p) = 0)$. I assume that this rule can be refined along the lines of, for example, Gupta & Belnap (1993).

Given this framework, we can now provide a straightforward analysis of the propositions expressed by sentences containing iterated strings of non-intensional adjectives. The basic idea is to analyze these propositions by means of a logical operation of nominal modification or mod_{np} . This operation takes pairs of properties and maps them on to a third, conjunctive property. Specifically, mod_{np} is an operation from $D_1 \times D_1 \rightarrow D_1$ such that for all $\varphi_1, \varphi_2 \in D_1$ and $x \in D, x \in \partial(\text{mod}_{np}\langle\varphi_1, \varphi_2\rangle)$ iff $x \in \partial(\varphi_1) \land x \in \partial(\varphi_2)$.

In order to preserve the analogy between adjectives and adverbs, we need to not only generate the relevant sort of conjunctive properties, we also need an appropriate entity of which to predicate them. This may be achieved by defining a logical operation that allows us to combine event-level properties with other properties (rather than events) in such a way that the resulting complex property respects the categorical requirements of the originals. Specifically, we introduce a logical operation of verb phrase modification or mod_{vp} . mod_{vp} is an operation from $D_1 \times D_1 \to D_1$ such that for all $\varphi_1, \varphi_2 \in D_1$ and $x \in D, x \in \partial(\operatorname{mod}_{vp}(\varphi_1, \varphi_2))$ iff $(\exists e)(e \in \partial([\varphi_2 x]) \land e \in \partial(\varphi_1))$, where $[\varphi_2 x]$ is the proposition that arises from predicating φ_2 of x.

With this definition of VP modification in place, we can now state the proposed analysis of (2a):

2d. pred_s $\langle mod_{vp} \langle \langle LOUD, IN THE BATHROOM \rangle, GARGLE \rangle, d \rangle$.

(where pred_s is the operation of singular predication). The proposition in (2d) will true just Donald is in the extension of the property $\text{mod}_{vp}\langle\langle \text{LOUD}, \text{IN THE BATHROOM}\rangle$, GARGLE \rangle . And Donald will be in the extension of this property just in case there is an event *e* in the extension of the proposition [Donald gargled] which is also in the extensions of the properties LOUD and IN THE BATHROOM. That is:

V(pred_s(mod_{vp}((LOUD, IN THE BATHROOM), GARGLE), d)) = 1 iff ($\exists e$)($e \in \partial$ ([GARGLE(d)]) $\land e \in \partial$ (LOUD) $\land e \in \partial$ (IN THE BATHROOM)).

Consequently, the analysis correctly accounts for the permutation and drop properties of (2a). This analysis also has a second interesting consequence. Since it requires that there be an event in the extension of the proposition that John gargles, it effectively requires that this proposition be true. As a result, it correctly predicts the factivity of VP adverbials (Parsons 1990).

References

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