

Adjuncts, Labeling and Semantic Constituency: Further Evidence for the Label-Less Theory of Adjunction from *One*-Replacement

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1. Introduction: Hornstein and Nunes's (2008) Theory of Adjunction

Hornstein and Nunes's (2008) (henceforth, H&N; see also Hornstein (2009: ch.4)) version of the Bare Phrase Structure Theory (Chomsky 1995) proposes that the construction of a complement/specifier requires the result of concatenation to be labeled for proper interpretation at the Conceptual-Intentional System whereas that of an adjunct may only require concatenation. This theory may sound at odds with the implicit view in the pre-minimalist/Government-and-Binding era (Chomsky 1981, 1986) that special modes of integration (e.g. Chomsky-adjunction, different or complex labeling) are in order for the proper integration of adjuncts into a phrase structure theory, unlike complements and specifiers. However, H&N argue that their alternative view above makes more sense under the Neo-Davidsonian semantic framework (see Higginbotham 1986; Parsons 1990; Schein 1993; Pietroski 2004). Within this framework, it is complement/specifier elements that need grammatical pivots (such as *subject-of* or *object-of*) to properly serve as participants of an event denoted by the predicate; adjuncts, by contrast, can *directly* modify the event without such aid. This contrast is clearly seen in the Neo-Davidsonian semantic representation of (1b) for the sentence in (1a).

(1)a. John ate the cake in the yard.

b. $\exists e$ [eating (e) & subject (John, e) & object (the cake, e) & in-the-yard (e)]

(H&N 2008: 70, their (30a, b))

H&N claim that this difference between complements/specifiers and adjuncts at the interface conceptually motivates the two different modes of integration into a phrase structure stated above. More specifically, adopting the idea from Hornstein (2009) that the so-called Merge operation (Chomsky 1995) is decomposed into concatenation and labeling, H&N propose that the composition of a complement/specifier element requires both concatenation and labeling whereas that of an adjunct element may only require concatenation. (See also Uriagereka (1998, 2008) and Chametzky (2000) for two antecedents to the idea that adjuncts are not labeled.) This difference is shown in (2a) and (2b, c).

(2)a. $[_X X^Y]$

b. $[_X X^Y]^Z$

c. $[_X [_X X^Y]^Z]$ ((2a, b) from H&N 2008: 65, 66, their (18, 19))

In (2a), X is concatenated with Y. The result of this concatenation is then labeled as X to yield a complex atomic unit accessible for further concatenations. In (2b), on the other hand, Z is concatenated with the atomic unit in (2a), but the concatenate is not followed by labeling and hence cannot be accessed for further concatenations. This derivation, thus, gives substance to one recent view, expressed in one way or another, that adjuncts

“dangle off” the syntactic workspace (Uriagereka 1998, 2008; Chomsky 2004). (2c) illustrates the case where the concatenation of Z with $[_X X^Y]$ is followed by labeling.

H&N demonstrate that this label-less theory of adjuncts brings favorable empirical payoffs in a number of areas, including the general invisibility of adjuncts to broad focus projection (Gussenhoven 1984), the non-blocking effect of adjuncts (e.g. *never*) to affix hopping/T-to-V movement (Chomsky 1957), the distribution and the “discontinuous” interpretation of the *do so*-proform, and ellipsis resolution in antecedent-contained deletion/slucing (May 1985; Yoshida to appear). To reproduce one of these arguments, it has been widely acknowledged that syntactic operations do not target a discontinuous constituent. However, an examination of the full range of the interpretations available for *do so*-substitution in sentences with adjuncts suggests that this constituency requirement may need to be relaxed. Consider examples (3a, b).

(3)a. John *ate the cake* in the yard with a fork *in the afternoon*,

b. but Bill did (so) in the kitchen, with a spoon. (H&N 2008: 74, their (41))

Standard generative accounts (Jackendoff 1977; Baker 1978; Hornstein and Lightfoot 1981) state that *do so* replaces an intermediate verbal projection in a linguistic antecedent in the sense of X'-Theory. In the pre-minimalist, X'-conception of phrase structure, adjuncts are integrated as a sister of (a series of) V's dominated by the VP. This conception of adjuncts is clearly falsified by the interpretation (3b), in which *did so* refers back to the two italicized phrases (*ate the cake* and *in the afternoon*) to the exclusion of the two intervening locative and instrumental PPs (*in the yard* and *with a fork*). Rather than relaxing the constituency requirement on syntactic operations,

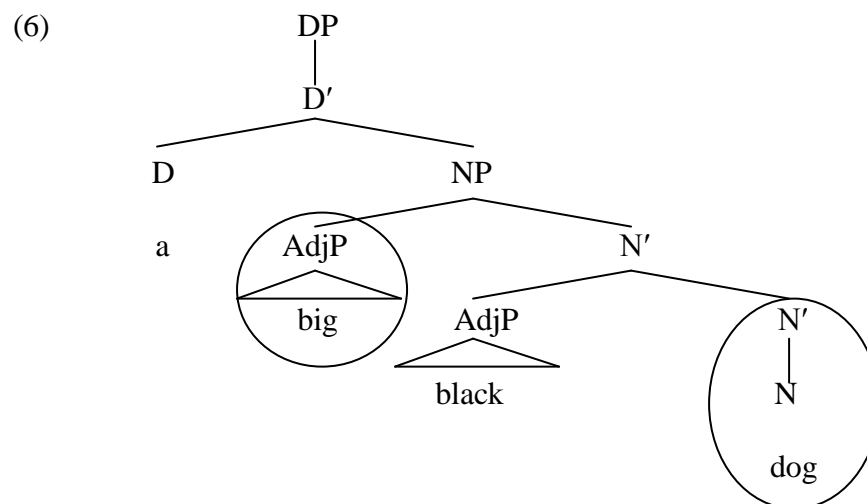
one-replacement has an identical unitary constituent in its antecedent clause. One empirical problem with this traditional analysis, which was first noted by Radford (1988) but has never been fully appreciated in the literature, comes from examples like (5a-c), where *one* targets what appears to be a discontinuous constituent.¹

(5)a. Jane has a big black dog, and Jean has a brown one.

b. ...a brown dog [one = dog]

c. ...a big brown dog [one = big dog] (Radford 1988: 221; his (3a-c))

(5b, c) indicate two possible interpretations of the pro-form *one*. In (5b), *one* refers back to *dog*. This interpretation is consistent with the X'-theoretic treatment of *one*-replacement, as *one* can be considered as replacing an N'-node (that dominates the N head). However, the interpretation in (5c), where *one* refers back to *big dog*, is problematic for the X'-analysis because *big* and *dog* cannot form an N'-constituent to the exclusion of the intervening adjective *black* in the antecedent clause. This point can be seen in the derivation for the interpretation in (5c), shown in (6).



In this derivation, there is no unitary constituent that consists solely of the two circled elements. The point here thus is the following: to the extent that the standard X'-theoretic treatment of adjuncts as sisters of X' dominated by another X' is to be maintained, *one* must be replacing the pair of two superficially discontinuous lexical items. This conclusion, of course, is clearly at odds with the fundamental assumption in syntactic theory that syntactic operations are subject to the constituency requirement.

H&N's (2008) label-less theory of adjuncts provides an elegant answer to the problem. According to this theory, *big* and *dog*, being two adjuncts to *dog*, in principle only require concatenation with the head noun. The interpretation in (5b) arises when the head *dog* is replaced with *one*, as shown in (7a). The other interpretation in (5c) stems from the derivation in (7b), in which the adjunct *big* concatenates with the head *dog*, followed by labeling.

(7a. [N [N dog] ^ big] (Concatenate only)

^black

b. [N [N dog] ^ big]] (Concatenate *plus* Labeling)

^black

It is clear from the above that the surface order in (5a) is not reflecting the underlying order of adjuncts. In other words, as in the case of verbal adjuncts, the linearization of adjuncts in nominal domains seems to require mechanisms distinct from the linearization of arguments. A cursory look at the English grammar shows that some

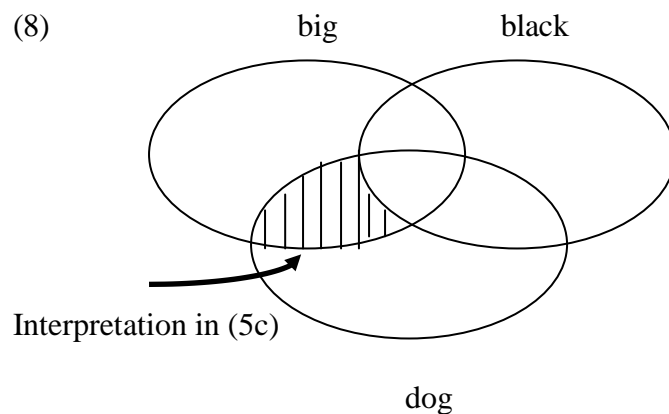
such mechanisms are indeed at play for adjuncts. Thus, English has a fixed order (Quality>Size>Shape>Color>Provenance) for adjectival expressions (Vendler 1968; Kitagawa and Ross 1981; Dixon 1982; Sproat and Shih 1991; Cinque 1994). This condition thus may well be one of the default language-particular linearization procedures for adjunct expressions. (Note that this kind of rigid adjectival ordering is not observed in Arabic, Japanese, Korean, and Mandarin Chinese, for instance.) Another candidate for adjunct linearization may be one related to information structure of adjuncts. To take one example, the adjective of size (*big*) precedes the adjective of color (*black*) in the default case (see the template above), as shown in (5a). Sproat and Shih (1992: 592) point out, however, that “brówn small dog” (with heavy accent on *brown*) is fine on the interpretation that small dogs form a discourse-relevant class and that the speaker wishes to refer to the brown members of that class.” In other words, a nominal adjunct can violate the fixed template only when this reordering leads to new focus interpretation.

Whatever PF linearization algorithms turn out to be, two points are clear by now. First, H&N’s theory of adjuncts provides us with an illuminating account of a certain constituency paradoxes that arise with the standard X’-theoretic treatment of adjunct expressions and *one/do so-* replacement. Second, we need two distinct sets of procedures for linearization of arguments and adjuncts because of the way that their modes of integration into phrase structure are different.

3. Conclusion: Toward the Notion of “Semantic Constituency”

One broader implication of (our proposed application of) H&N’s label-less theory of adjuncts is that it suggests a need between two related but different notions: syntactic

constituency vs. semantic constituency. As stated above, one important discovery of the generative syntactic enterprise is that syntactic processes only apply to a syntactic constituent. However, to the extent that H&N's analysis holds, it suggests that certain processes, *one-/do so*-replacement included, target not a syntactic constituent but something else. Let us therefore introduce the notion of a "semantic constituent" and define it as the intersection of the denotations of the head plus its complement(s) (if any) plus any number of adjuncts. Under this proposal, the interpretation in (5c) obtains because *one* stands for the intersection of the denotations of *big* and *dog* highlighted in (8).



The interpretation in (5b) can also be obtained in the same fashion: *one* is substituted for the denotation of *dog* (and only *dog*). A similar analysis holds for examples as in (3a, b) in which *do so*-replacement targets a discontinuous constituency.

It remains to be seen as an important research question whether natural language grammar has other grammatical processes whose application is sensitive to the notion of semantic constituency as opposed to its well-known syntactic counterpart. H&N's theory leads us to find some such processes given its proposed

fundamental asymmetry between arguments and adjuncts in a bare phrase structure framework. I leave empirical verification of this expectation for future investigations.

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Notes

- ¹ Radford (p. 221) in turn attributes this observation to the late David Kilby.