

Positions of adjuncts and binding without c-command

Introduction In the standard X-bar configuration, an adjunct is considered to be ‘layered’ over a structure without changing the bar-level of the attachment site (e.g. XP in (1)). Such a definition of adjuncts is untenable when the notion of bar-levels is replaced with the more general notion of ‘labels’ ([1]; see (2)). Moreover, binding data such as (3) raises a problem as to how the adjunct can be bound by the complement if it is layered higher. In this work, I show how the analysis of adjuncts by [2], where right-adjuncts are ‘hanging’ on the edge of a phrase as in (4), leads to solve these problems.

Previous analysis Adjuncts show mixed behavior. **(I)** Binding data seem to show that right side adjunction goes ‘lower.’ See (3). Similarly, when the complement PP adjoins to the right side of the adjunct PP (PP shift), it is bound by the adjunct ((5)). **(II)** An adjunct ((6)b; unlike (6)a), can be excluded from VP-targeting operations (e.g. VP fronting); it seems to show that adjuncts are ‘outer’ than the complement. [3] poses two parallel structures to account for these two properties: the ‘layered’ L-structure ((7)a) accounts for **(II)** and the ‘cascade’ C-structure ((7)b) is responsible for **(I)**. PP shift is raising in L-structure ((8)a) and is lowering in C-structure ((8)b). However, there are several problems for this approach. First, **(III)** binding is difficult when PP shift crosses a temporal adverb ((9)). If PP shift is lowering in C-structure and binding relations are determined by C-structure, it is hard to capture. Second, PP shift must involve a non-constituent movement ((8)b). The PP *to them* is a constituent only in L-structure. It is unclear how it can undergo movement in C-structure. Third, positing two different hierarchies for one sentence can be a burden for computation. To derive all the facts **(I)-(III)** by a single representation is theoretically more desirable.

Analysis [2] argue that adjuncts can be concatenated without labeling; they hang on the right edge of the attachment site as in (10). Adjunction is thus different from Merge, which is “concatenation + labeling.” This analysis has some empirical support. First, adjuncts on the right edge are freely ordered ((11)). Second, adjunct PPs are freely included in the VP-targeting operations ((12)); under the L-structure in (13), (12)b would be unexpected because no VP node includes PP2 and exclude PP1. These facts show that there is no inherent hierarchical relationship between adjuncts, as [2] predict.

Under [2]’s analysis, no labeled node dominates adjuncts. The ‘first-node’ definition for c-command (14) does not work. Thus, I claim that there is no c-command relation between an adjunct and the attachment site. Assuming that c-command relationship comes free with Merge ([4]), and that adjunction is different from Merge ([2]), c-command does not necessarily follow from adjunction. Instead, I try to account for the distribution of reflexives without relying on c-command. I adopt [5]’s analysis of reflexives as residues of movement. He assumes that A-movement from a Case position is possible if a nominal has two Case features. He analyzes *himself* as a copy of the antecedent (*John* in (15)) plus *self*. *John* and *self* each have a Case feature, while only *John* moves out to get the agent theta-role and check Case. (The residue of movement is pronounced as *himself*.) Note that, under this analysis, anaphor binding does not necessarily involve c-command. It just needs to conform to the constraint on movement (e.g. Extension Condition).

I claim that reflexives in (5)a and (6)b are derived by sideward movement ([6]). The derivation of (5)a is as follows. *The people + self* is generated inside an adjunct subtree and sideward-moves to the complement PP ((16)a). The adjunct is adjoined when the VP is constructed in the main tree ((16)b-c). ([6] assumes that adjunct island effect arises only after adjunction.) (6)b is derived in a similar way. The reflexive is generated inside the complement PP ((17)a), which becomes a subtree after PP shift ((17)b). *The people* sideward-moves from this subtree to another adjunct subtree ((17)c), followed by adjunction of both the shifted PP and the adjunct PP ((17)d). On the other hand, (9) is blocked by strict cycle condition. I assume that temporal adverbs such as *yesterday* need to attach to (at least) the vP level. The derivation proceeds as follows. The reflexive is born within the complement PP ((18)a). *Yesterday* is generated after vP is built ((18)b). The shifted PP also needs to be after the vP is built as it moves past this adverb ((18)c). Therefore, creating the VP-adjunct by sideward movement later ((18)d) is against strict cycle. This contrast between (16)-(17) and (18) accounts for the facts **(I)** and **(III)**. **(II)** also follows straightforwardly: adjuncts hanging on the edge of VP is only optionally included inside the phrase ([2]: (4)). When an operation targets the VP, the adjuncts can escape from the operation.

Conclusion I argue that adjuncts do not c-command, based on [2]’s structure of adjunction. Combined with [5]’s analysis of reflexives, it derives all the facts about adjuncts **(I)-(III)**. [2] is also desirable in making the fundamental structural distinction between specs/complements and adjuncts: the latter is merely concatenated, while the former is Merged. Although it remains to be seen if movement underlies c-command facts other than reflexives, it is not implausible given movement-based analyses for other phenomena ([7] on bound pronouns).

- (1) [_{XP} [_{XP} Spec [_{X'} X0 Complement]] Adjunct]
- (2) [_X [_X Spec [_{X'} X0 Complement]] Adjunct]
- (3) a. John talked [to these people₁] [about themselves₁].
 b. *John talked [to themselves₁] [about these people₁].
- (4) [_{XP} Spec [_{X'} X0 Complement]] ^ Adjunct
- (5) a. John talked _ [about these people₁] [**to themselves₁**].
 b. *John talked _ [about themselves₁] [**to these people₁**].
- (6) a. *?John talked [PP to Mary]. Bill did so [PP to Susan].
 b. John talked [PP near Mary]. Bill did so [PP near Susan].
- (7) give the book to them in the garden (*to them* = complement; *in the garden* = adjunct)
 a. [_{VP} [_{VP} give the book] [_{PP} to them]] [_{PP} in the garden]] L-structure
 b. [_{VP} give [_{PP} the book [_{P'} to [_{PP} them [_{P'} in the garden]]]] C-structure
- (8) give the book in the garden **to them**
 a. [_{VP} [_{VP} [_{VP} give the book [_{PP} to them]]] [_{PP} in the garden]] [_{PP} to them]]
 b. [_{VP} give [_{PP} the book [_{P'} **to** [_{PP} them] [_{P'} in [_{PP} the garden [_{P'} to them]]]]]
- (9) ??John talked _ [about these people₁] yesterday [**to themselves₁**].
- (10) [_{VP} give the book [_{PP} to them]] ^ in the garden
 ^ at noon
- (11) a. John eats the cake [with a fork] [in the yard].
 b. John eats the cake [in the yard] [with a fork].
- (12) John could eat the cake [_{PP1} in the yard] [_{PP2} with a fork] and...
 a. [**eat the cake**] he did [_{PP1} in the yard] [_{PP2} with a fork].
 b. [**eat the cake [_{PP2} with a fork]**] he did [_{PP1} in the yard].
 c. [**eat the cake [_{PP1} in the yard]**] he did [_{PP2} with a fork].
 d. [**eat the cake [_{PP1} in the yard] [_{PP2} with a fork]**] he did.
- (13) John could [_{VP} [_{VP} [_{VP} eat the cake] [in the yard]]] [with a fork] and ...
- (14) A c-commands B if the node that immediately dominates A also dominates B.
- (15) a. John₁ likes himself₁. b. [_{TP} **John** T [self [_{VP} John [likes [[**John**]self]]]]]
 -nom -acc +nom +nqm +acc
- (16) a. [_{PP} about **the people₁**+self] b. [_{PP} about **the people₁**+self]
 ↓
 [_{PP} to **the people₁**] [_{VP} talked [_{PP} to **the people₁**]]
 c. [_{VP} talked [_{PP} to the people₁]] ^ [_{PP} about **the people₁**+self]
- (17) a. [_{VP} talked [_{PP} to the men₁+self]] b. [_{VP} talked PP_] [_{PP} **to** the men+self]
 ↓
 [_{PP} to **the men₁**+self]
 c. [_{VP} talked PP_] [_{PP} to **the men₁**+self]
 ↓
 [_{PP} about **the men₁**]
 d. [_{VP} talked PP_] ^ [_{PP} to **the men** themselves]
 ^ [_{PP} about **the men₁**]
- (18) a. [_{VP} talked [_{PP} to the men+self]]
 b. [_{VP} John v [_{VP} talked [_{PP} to the men+self]]] yesterday
 c. [_{VP} John [_{VP} talked PP_]] yesterday
 ↓
 [_{PP} to the men+self]
 d. * [_{VP} John [_{VP} talked PP_]] ^ [_{PP} about **the men**] ^ yesterday
 ^ [_{PP} to **the men**+self]

References [1] Chomsky 1995. *Minimalist Program*. MIT Press. [2] Hornstein and Nunes 2006. Some Thoughts on Adjunction. Ms., University of Maryland, College Park. [3] Pesetsky 1995. *Zero syntax: Experiencers and cascades*, MIT Press. [4] Epstein 1999. Un-Principled Syntax. In *Working Minimalism*, ed. by Epstein and Hornstein, MIT Press: 317-345. [5] Hornstein 2001. *Move! A Minimalist Theory of Construal*, Blackwell. [6] Nunes 1995. *The Copy Theory of Movement and Linearization of Chains in the Minimalist Program*, Ph.D. dissertation, University of Maryland, College Park. _ 2004. *Linearization of Chains and Sideward Movement*, MIT Press. [7] Kayne 2002. Pronouns and their Antecedents. In *Derivation and Explanation in the Minimalist Program*, ed. by Epstein and Seely, Brackwell: 133-166.