

## A Sideward Movement Approach to Non-Constituent Deletion

Brian Agbayani / CSU Fresno

Ed Zoerner / CSU Dominguez Hills

WECOL 2003 / Univ. of Arizona/ Sept 26—28

**The Goal:** To show that a sideward movement-based analysis for certain apparent non-constituent “deletion” forms improves on the traditional deletion analysis in at least two important ways:

- i) The need to appeal to the theoretically unsatisfying notion of non-constituent deletion disappears.
- ii) Directionality Effects (e.g., Ross 1970) follow from independent properties of the computational system.

### I. The Non-Constituency Puzzle

It is generally maintained that deletion affects a single constituent at PF:

1. a. I will eat parsnips, and you will [VP ~~eat parsnips~~] too (VP-Ellipsis)
- b. Robin likes chicken, and Kim [V ~~likes~~] fish (Gapping)
- c. I saw someone, but I don't know who<sub>i</sub> [IP I ~~saw t<sub>i</sub>~~] (Sluicing)

Certain forms, however, pose a conceptual difficulty for deletion-based analyses, because they contravene this standard assumption that deletion processes operate only over a single syntactic constituent. Consider for example English Left-Peripheral Deletion (LPD; Sag 1976) which apparently deletes elements on the left edge of a second conjunct clause; *strikeout* shows “deleted” material:

2. a. We usually play chess on Mondays, and ~~we usually play~~ bridge on Tuesday
- b. Robin gave Kim a book, and ~~Robin gave~~ Terry a magazine
- c. Terry gives lots of money to friends, but ~~Terry not send~~ a cent to relatives

The Japanese counterpart of (2b):

3. Robin-wa Kim-ni hon-o ~~ageta~~, Robin-wa Terry-ni zasshi-o ageta  
   -TOP -DAT book-ACC give.PT -TOP -DAT magazine-ACC give.PT  
   ‘Robin gave Kim a book, and Terry a magazine’

In (2a,b), we see apparent deletion of non-constituent linear strings. (2c) shows apparent discontinuous deletion, and (3) shows apparent deletion across a clause boundary. An attempt to avoid this problem with a general “delete under identity” rule overgenerates:

4. a. \*Robin usually writes poems in the summer, and Kim ~~usually reads poems in the summer~~
- b. \*Dana gave Merle a penny, and Sandy ~~gave Merle~~ a nickel
- c. \*I prefer hamburgers with mustard, but you ~~prefer hamburgers~~ with ketchup
- d. \*Lupe can speak French, and Gaby ~~can read French~~

*Puzzle 1:* how to account for forms such as those in (2-3), since a straightforward deletion account doesn't seem to work.

### II. The Directionality Puzzle

Ross (1970) notes correctly that left-branching material deletes forward; right-branching material deletes backward.

Another look at (2b) and (3):

5. a. Robin will give Kim a book, and ~~Robin will give~~ Terry a magazine
- b. Robin-wa Kim-ni hon-o ~~ageta~~, Robin-wa Terry-ni zasshi-o ageta  
      -TOP -DAT book-ACC give.PT -TOP -DAT magazine-ACC give.PT  
      ‘Robin gave Kim a book, and Terry a magazine’ (Japanese)
- c. John-i Mary-eykey chayk-ul ~~eu-ess-ta~~, John-i Sally-eykey capci-lul cu-ess-ta  
      -Nom -Dat book-Acc give-Pst-Dec -Nom -Dat magazine-Acc give-Pst-Dec  
      ‘John gave a book to Mary and a magazine to Sally.’ (Korean)

Though Ross' generalization is correct, nothing *a priori* would force left-branching material to delete forward rather than backward.

*Puzzle 2:* how to derive Directionality Effects from independent properties of grammar.

- The answer to both of the puzzles comes from abandoning the deletion-based analysis for LPD, and accepting a movement-based analysis instead.

### III. A Movement Analysis of LPD (First Approximation)

6. LPD constructions result from ATB V movement out of conjoined VPs. (cf. Larson 1988; Johnson 1994 for Gapping)

LPD does **not** come about from an underlying coordination of clauses.

LPD constructions involve only one underlying subject, base-generated in a single [Spec,  $\nu$ P] position.

Derivations for (2a-c) under this idea become:

7. a. [IP [I' usually [I' [ $\nu$ P we [VP [VP play chess on Mondays] and [VP play bridge on Tuesdays]]]]]]  
b. [IP We<sub>1</sub> [I' usually [I' [ $\nu$ P t<sub>1</sub> play<sub>2</sub> [VP [VP t<sub>2</sub> chess on Mondays] and [VP t<sub>2</sub> bridge on Tuesdays]]]]]]
8. a. [IP [I' will [ [ $\nu$ P Robin [VP [VP give Kim a book] and [VP give Terry a magazine]]]]]]  
b. [IP Robin<sub>1</sub> [I' will [ $\nu$ P t<sub>1</sub> give<sub>2</sub> [VP [VP t<sub>2</sub> Kim a book] and [VP t<sub>2</sub> Terry a magazine]]]]]]
9. a. [IP [I' [ [ $\nu$ P Terry [VP [VP gives lots of money to friends] but [VP not [VP gives a cent to relatives]]]]]]  
b. [IP Terry<sub>1</sub> [I' [ $\nu$ P t<sub>1</sub> gives<sub>2</sub> [VP [VP t<sub>2</sub> lots of money to friends] but [VP not [VP t<sub>2</sub> a cent to relatives]]]]]]

- The apparent deletion of the verb results from the trace of ATB movement.
- Anything external to the VP-coordination (e.g. subject, adverbs such as *usually*, etc.) will appear to be part of the “deleted” material because it will have scope over the entire VP-coordination—but there is only one base-generated instance.
- Adjuncts to the second conjunct (such as *not* in (9b)) can give the appearance of discontinuous deletion, since they do not take part in the ATB raising.

The analysis extends to Japanese/Korean:

10. [IP [ $\nu$ P Robin-wa [[VP Kim-ni hon-o ageta] [VP Terry-ni zasshi-o ageta]]]]

The lone subject raises to the leftmost [Spec, IP] position

The verb undergoes rightward ATB movement (presumably) to clause-final  $\nu$ /I position

11. [IP Robin-wa [ $\nu$ P t<sub>1</sub> [[VP Kim-ni hon-o t<sub>2</sub>] [VP Terry-ni zasshi-o t<sub>2</sub>]]] ageta<sub>2</sub> ]

Japanese/Korean verbs evidence backward V “deletion”; the apparent Directionality Effects fall out as a result of properties of verb raising either leftward to a head-initial “ $\nu$ /I” position, or rightward to a head-final “ $\nu$ /I” position (Koizumi 2000). This suggests that there is a directionality parameter on movement in narrow syntax (contra Chomsky 1995)

- Questions:*
- a. Status of ATB Movement?  
b. Can the directionality parameter on movement be eliminated in favor of some universal property of the computational system itself?

### IV. Sideward Movement

Under the present analysis, LPD involves VP coordination. Here we recast the insights of the ATB analysis in favor of a sideward movement analysis (Nunes 2001) that arrives at the same conclusions without the need to appeal to the potentially unappealing notion of ATB. We show that the “forward deletion” pattern for V in English derives from sideward movement of V out of right conjunct VP.

Some preliminary assumptions:

- A coordinator heads its own projection (e.g., Johannessen 1993; Zoerner 1999)

12. Coordinate Structures in English:  
[ $\&$ P Conjunct 1 [ $\&$ ' & [Conjunct 2]]]

- Conjunct 2 is complement of  $\&$ .
- Cyclic Spell-Out (Uriagereka 1999) applies to the structure [  $\&$  [Conjunct] ]
- Spell-Out renders an element embedded within the spelled-out domain invisible for further computation (Nunes and Uriagereka 2000)

Derivation of (2b): [ $\dots$ ] = copy deleted at PF; outline text = spelled-out material]

13. Robin gave Kim a book, and Terry a magazine (=2b)
14. a. Numeration (partial) = {Robin, give, Kim, a (2), book, Terry, magazine, and}
- b.  $K = [_{\&P} \text{ and } [_{VP} \text{ give Terry a magazine}]]$   
 $L = [_{NP} \text{ a book}]$   
 $M = [_{NP} \text{ Kim}]$
- c.  $K = [_{\&P} \text{ and } [_{VP} \text{ <give}^1 \text{> Terry a magazine}]] \leftarrow$  Copy verb  
 $O = [_{VP} \text{ give}^1 \text{ Kim a book}] \leftarrow$  Merge verb with L, M (“sideward”)
- d.  $K = [_{\&P} \text{ and } [_{VP} \text{ <give}^1 \text{> Terry a magazine}]] \leftarrow$  Cyclic Spell-Out applies to K
- e.  $P = [_{\&P} [_{VP} \text{ give}^1 \text{ Kim a book}] [_{\&} \text{ and } [_{VP} \text{ <give}^1 \text{> Terry a magazine}]]] \leftarrow$  Merge K, O
- f.  $Q = [_{VP} \text{ Robin } [_{v'} \text{ give}^1 [_{\&P} [_{VP} \text{ <give}^1 \text{> Kim a book}] [_{\&} \text{ and } [_{VP} \text{ <give}^1 \text{> Terry a magazine}]]]] \leftarrow$   
Merge  $v$ ; raise verb to  $v$ ;  
Merge subject;  
Copies deleted at PF

Crucial steps are (14c-d)

- Cyclic Spell-Out would render V within [ & [Conjunct 2]] structure invisible for further computation
- Only one main V provided by the Numeration
- V undergoes sideward movement as a Last Resort (otherwise theta properties of [Kim], [a book] would not be licensed, nor would [+V] of light  $v$  be checked)

ATB effect falls out from independent properties of the computational system:

- Operations: Copy, Merge, PF deletion of copies
- Parallel construction of cyclic domains
- Cyclic Spell-Out
- Last Resort

## V. Deriving Directionality Effects

15. Coordinate Structures in English (2-termed):  
 $[_{\&P} \text{ Conjunct 1 } [_{\&} \text{ \& } [_{\text{Conjunct 2}}]]]$
16. Coordinate Structures in Japanese (2-termed; Johannessen 1993, Zoerner 1999):  
 $[_{\&P} [_{\&} [_{\text{Conjunct 1}}] \text{ \& } ] \text{ Conjunct 2}]$

English-type coordination:

- Conjunct 2 is complement of &.
- Cyclic Spell-Out applies to the head-complement structure  
 $\rightarrow$  V “gap” will appear to be in Conjunct 2 (see section IV)

Japanese-type coordination:

- Conjunct 1 is complement of &.
- Cyclic Spell-Out applies to the head-complement structure  
 $\rightarrow$  V “gap” will appear to be in Conjunct 1

The derivation of (3):

17. Robin-wa Kim-ni hon-o, Terry-ni zasshi-o ageta (=3)  
-TOP -DAT book-ACC -DAT magazine-ACC give.PT  
‘Robin gave Kim a book, and Terry a magazine’

18. a. Numeration (partial) = {Robin, Kim, hon, Terry, zasshi, ageta, &}

