

The Rightward Movement analysis of Gapping in NP and its Structural Implications

Gapping has a long tradition in generative grammar. However, gapping in categories other than VP (what I call Verbal Gapping (VG)), has not been studied seriously since Jackendoff's (1971) seminal work. This study deals with gapping in NP as in (1), which I will refer to as Nominal Gapping (NG). The study has two goals. The first is to argue for a rightward movement approach to gapping (Jayaseelan 1990, Lasnik & Saito 1991). A detailed comparison between NG and VG will reveal close parallelisms between them. Here, I will show that both NG and VG are derived by deletion following the rightward movement of the complement phrase that is also responsible for so-called Heavy Shift (Pesetsky 1995). The second goal is to support the particular analysis of the structure of NP proposed by Ritter (1991) and argue against the analysis of the Adjective Phrase hypothesis proposed by Abney (1987), using data from NG. I will show that the data from NG shed new light on the structure of NP and AP.

Phenomena The first prominent characteristic of NG is that it shows properties characteristic of rightward movement, parallel to those seen in VG. Jayaseelan (1990) and Lasnik & Saito (1992) analyze VG as TP deletion following rightward movement of the object phrase, based on the fact that VG shows diagnostic properties of Heavy Shift as follows: Only one constituent from the VP can be a remnant ((2)); The remnants cannot be separated by a CP boundary ((3)); The gapped phrase cannot be embedded ((4)). Interestingly, NG shares all of these properties as shown in (5) to (7). These parallelisms strongly suggest that NG as well as VG contains the rightward movement of a complement. We can see a further parallelism between the two phenomena in (8): Like VG, NG cannot take place in the first conjunct. The rightward movement approach is further supported by the following facts. First, the gapping remnant and the heavy shifted constituent show the island effect as in (9), suggesting that these elements are actually moved (see Takahashi 1994). Second, leftward movement in general can target the object of preposition as in (10), however, NG and VG cannot, like Heavy Shift ((11)). All of these facts, especially the ban on P-stranding, strongly suggest that NG and VG contain the rightward movement of the complement phrase. The second interesting set of properties of NG is that the deleted site in NG must contain attributive adjectives ((12a)), optionally contains numerals ((12b, c)), and must not contain determiners ((12d)). These facts indicate that determiners, numerals and attributive adjectives are hierarchically organized inside an NP, and further that the structure of NP and the scope of deletion interact in a specific way.

Analysis To capture the properties of NG presented above, I propose the following. First, the internal structure of NP is as in (13), where I adopt the DP analysis of Abney (1987) and the Number Phrase (NumP) analysis of Ritter (1991). Further, I adopt Svenonius's (1994) analysis of attributive adjectives in which these adjectives are adjoined to NP, contra Abney (1987). Armed with this structure of NP, I propose NG contains ellipsis of NP or NumP following the rightward movement of complement PP. The rightward moved PP adjoins to the NP or NumP and the lower segment of the adjoined phrases is deleted (a la Hornstein's 1994 analysis on adjunct ACD) as in (14). This analysis has several advantages. First, it correctly captures the parallelisms between NG and VG as they are derived by the same operation, the rightward movement of complement phrases. Second, under this analysis we can understand how the scope of deletion reflects the internal structure of NP: Attributive adjectives must be deleted because they are located lower than the NP, the NumP can escape the scope of deletion because it is located higher than the NP, and the DP always escapes the scope of deletion because it is the highest projection. The optionality of numerals can be understood as a consequence of the optionality of the scope of deletion. If the scope of deletion is as low as the NP, the NumP can be left behind. However, if it is high enough to contain the NumP, the numeral is deleted together with the NP. Third, this analysis sheds new light on the typology of adjectives. If attributives stay higher than the NP we would predict that the adjective escape the scope of deletion as the numerals do, contrary to the fact. Abney (1987) claims that both attributive adjectives and predicative adjectives head an AP. The example (15) suggests that Abney's treatment of predicative adjective is correct where the PP can be a gapping remnant because the predicative adjective heads an AP and takes the PP as its complement, rather than adjoining to the PP. To capture the behavior of these two classes of adjectives, we need to postulate different structures for them. Thus, as a consequence of this analysis of gapping, we can successfully differentiate the two, i.e., an attributive adjective is adjoined to NP, but a predicative adjective heads an AP and can take PP as its complement.

Summary In summary, in this study, I have argued the following. First NG and VG are best analyzed as NP or NumP deletion following the rightward movement of the complement. Second, the data of NG require the DP analysis and NumP analysis as well as adjunction analysis of attributive adjectives to capture the scope of deletion correctly. Third, different structures for attributive adjectives and predicative adjectives must be postulated to capture the behavior of adjectives under gapping.

Examples

- (1) John read Mary's book about syntax, and Bill's ~~book~~ about semantics.
- (2) a.* John gave Mary a book, and Bill ~~gave~~ Susan a magazine.
 b.* John built t_1 t_2 yesterday [the house that he will live in]₁ [with a hammer]₂
- (3) a.* John believes that gapping is important and Bill ~~believes [_{CP} that sluicing is important]~~.
 b.* John believes [_{CP} t_1 is important] [what Mary was studying].
- (4) a.* John thinks [_{CP} that the boy likes ice cream] and Bill thinks [_{CP} that the girl ~~likes~~ pizza].
 b.* John believes [_{CP} t_1 is important] [what Mary was studying].
- (5)* Ormandy's recording [_{PP} of Ive's 1st][_{PP} on Columbia] and Von Karajan's ~~recording~~ [_{PP} of Morzarts's 40th][_{PP} on Angel] can be recommended none too highly. (Jackendoff 1971)
- (6)* John read [_{DP} Mary's book about [_{DP} Chomsky's theory of syntax]] and [_{DP} Bill's ~~book about [_{DP} Chomsky's theory~~ of phonology]].
- (7)* John read [_{DP} Mary's book about [_{DP} Halle's theory of stress]] and [_{DP} Bill's book about [_{DP} Chomsky's ~~theory~~ of syntax]].
- (8) a. John likes Mary and Bill ~~likes~~ Sue.
 b.* John ~~likes~~ Mary and Bill likes Sue.
 c. John read Bill's book about syntax, and Mary's ~~book~~ about semantics.
 d.* John read Bill's ~~book~~ about syntax, and Mary's book about semantics.
- (9) a. [Which topic]₁ did you read few books about t_1 rather than many books about t_1 ?
 b.* [Which topic]₁ did you read few books about t_1 rather than many ~~books~~ about t_1 ?
 c.* [Which topic]₂ did you read books t_1 yesterday [about t_2]₁?
- (10) [Which topic]₁ did you read books about t_1 ?
- (11) a.* John talked about Mary, and Bill ~~talked about~~ Susan.
 b. John talked about Mary and Bill ~~talked about~~ Susan.
 c.* John talked about t_1 yesterday [the man I recently met]₁.
 d. John talked t_1 yesterday [~~about~~ the man I recently met]₁.
 e.* John read Mary's book about syntax and Bill's ~~book about~~ semantics.
 f. John read Mary's book about syntax and Bill's ~~book about~~ semantics.
- (12) a.* John's funny stories about Mary and Bill's ~~boring stories~~ about Susan both amazed me.
 b. John's funny stories about Sue and Bill's ~~funny story~~ about Susan both amazed me.
 c. John read Bill's three books about syntax and Mary's ~~two books~~ about semantics.
 d. John read Bill's three books about syntax and Mary's ~~three books~~ about semantics.
 e.* John read Bill's books about syntax and ~~Mary's books~~ about semantics.
 f. John read Bill's books about syntax and ~~Mary's books~~ about semantics.
- (13) [DP Bill's [NumP three [NP [AP boring] [NP books [PP about syntax]]]]]
- (14) a. [DP Bill's [NumP three [NP [NP [AP boring] [NP books ~~t_1~~] [PP about syntax]₁]]]]]

 b. [DP Bill's [NumP [~~NumP~~ three [NP [AP boring] [NP books ~~t_1~~] [PP about syntax]₁]]]]]
- (15) John is proud of his brother and Mary is [AP ~~proud~~ of her sister].

References Abney, S. 1987. The English Noun Phrase in Its Sentential Aspects, MIT: Ph.D. diss. Hornstein, N. 1994. An argument for minimalism: The case of antecedent contained deletion. *Linguistic Inquiry*. Jackendoff, R. 1971. Gapping and related rules. *Linguistic Inquiry*. Jayaseelan, K.A. 1990. Incomplete VP deletion and gapping. *Linguistic Analysis*. Lasnik, H, and Saito, M. 1992. *Move α* . MIT Press. Pesetsky, D. 1995. *Zero Syntax*. MIT Press. Ritter, E. 1991. Two Functional Categories in Noun Phrases: Evidence from Modern Hebrew. *Perspectives on Phrase Structure*. Academic Press. Svenonius, P. 1994. The structural location of the attributive adjective. *The Proceedings of WCCFL*. Takahashi, D. 1994. Minimality of Movement, University of Connecticut: Ph.D. diss.