

Adjunct extraposition from subjects and the parallel movement analysis

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Abstract: Extraposition has been well discussed as a rightward A-bar movement. The extraposed adjuncts, however, do not show reconstruction effects in their original position according to Fox and Nissenbaum (1999). This indicates that adjunct extraposition is not derived via A-bar movement, and Fox and Nissenbaum (1999) propose that the extraposition of adjuncts from object NPs is derived via Quantifier Raising of the host nominals and Late Merge of adjuncts. While they investigate the case of extraposition from objects, they do not discuss the special properties observable in subject cases. Thus, I propose that adjunct extraposition from subjects is derived in the same manner as that from objects. Furthermore, I consider whether two distinct types of movement under the analysis of the adjunct extraposition from subjects can be accounted for in the framework of Feature Inheritance proposed by Chomsky (2008).

Keywords: Extraposition of Adjuncts, Unaccusative Hypothesis, Quantifier Raising, Late Merge, Feature Inheritance, Parallel Movement

1. Introduction

Extraposition from NP has been discussed as a rightward extraction phenomenon since Ross (1967). Under the rightward extraction analysis, extraposition is constrained by the locality condition (Chomsky, 1973; Baltin, 1978, 1981; Guéron, 1980; Johnson, 1985; and others). On the other hand, there is an alternative analysis; namely, base-generation analysis (Culicover and Rochemont, 1990). Observe the following example:

- (1) a. * I sent her_i many gifts that Mary_i didn't like last year.
b. I sent her_i many gifts last year that Mary_i didn't like.
(Culicover and Rochemont, 1990, p. 29)

Culicover and Rochemont (1990) observe that extraposition can obviate the condition C effects, whereas the canonical sentence violates condition C. This indicates that movement analysis cannot account for the obviation of the condition C effects. Fox and Nissenbaum (1999) elaborate such observations of the extraposition from objects and, following Lebeaux (1988), claim that there are asymmetries between the extraposition of adjuncts and that of complements.

In this paper, I propose the derivational process of the extraposition of adjuncts from subjects following Fox and Nissenbaum's (1999) proposal (section 3). Furthermore, I consider whether the derivational process can be accounted for under the Feature Inheritance approach, proposed by Chomsky (2008) in section 4.

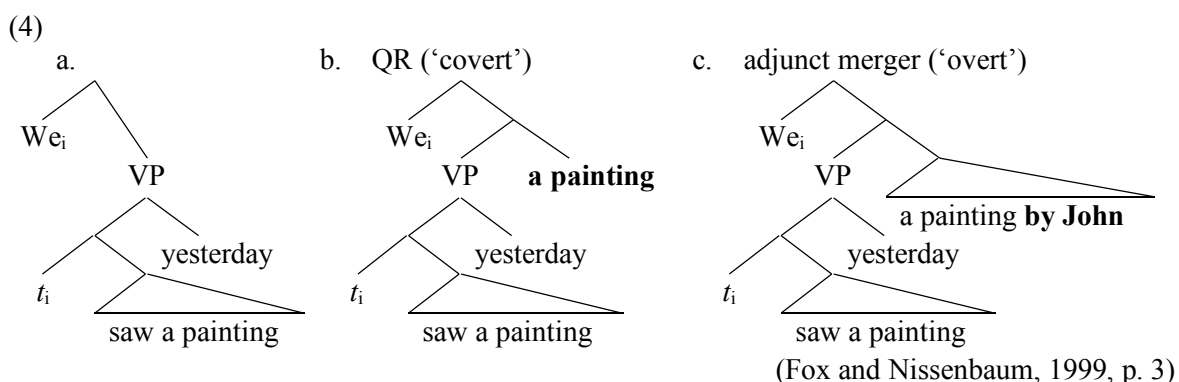
2. Fox and Nissenbaum (1999)

This section observes Fox and Nissenbaum's (1999) approach to the extraposition from object NPs. The core insight of Fox and Nissenbaum (1999) is that asymmetries between adjuncts and complements in (leftward) wh-movement is also observed in the case of rightward movement, in particular, the extraposition from objects.

For instance, adjunct–complement asymmetries in a binding relation is observed; the generative process of adjuncts is counter-cyclic, and that of complements is cyclic. This is attested by the presence/absence of reconstruction effects in *wh*-movement in (2) and rightward movement (or extraposition) in (3):

- (2) a. Which pictures [_{Adj.} that John_i took] does he_i like?
 b. ?/* Which pictures [_{Comp.} of John_i] does he_i like?
 (Lebeaux, 1988, p. 102, with modifications)
- (3) a. I gave him_i a picture yesterday [_{Adj.} from John_i's collection].
 b. * I gave him_i a picture yesterday [_{Comp.} of John_i's mother.]
 (Fox and Nissenbaum, 1999, p. 8–9, with modifications)

The (a) sentences' pied-piping adjuncts do not exhibit the condition C violation: the bound reading of *him* as *John* is allowed. On the other hand, the (b) sentences' pied-piping complements do exhibit the condition C violation. Lebeaux (1988) accounts for this condition C obviation phenomenon, observed in *wh*-movement (2a) by proposing that adjuncts may be introduced to the derivation in a later stage; that is, *wh*-movement pied-piping adjuncts essentially do not violate condition C, but a reconstruction effects itself does not occur in this case because the adjunct is placed in its derived position by Late Merge, not by A-bar movement. In the case of complements, in contrast, the extraposition of complements is derived via A-bar movement, resulting in the reconstruction effect as in (2b). The contribution of Fox and Nissenbaum (1999) is that they extend Lebeaux's insight to the case of rightward movement. They claim that the extraposition of adjuncts is derived via covert movement (Quantifier Raising [QR]) of the host NPs and Late Merge of adjuncts, as in (3a). The extraposition of complements, on the other hand, is derived via A-bar movement to the right, resulting in the reconstruction effects as in (3b). Observe the illustration of the derivation of the adjunct extraposition from objects below:



Traditionally, QR has been regarded as an LF operation, and it is thus implemented following an overt operation in syntax (i.e., T-model of the grammatical architecture). Fox and Nissenbaum, on the other hand, assume that every operation, regardless of the overt/covert distinction, is implemented in syntax, and such distinction stems from the chain pronunciation (Bobaljik, 1995, 2002; Pesetsky, 1998; Groat and O'Neil, 1994; and others). In other words, the "overt" operations target the head of the chain, while the "covert" operations target its tail.

Fox and Nissenbaum's proposal is supported by coordination and parasitic gap facts in addition to the binding fact as already shown in (3). First, observe the evidence from the coordination structure in the extraposition form:

(5) Coordination

- a. * I wanted to [present an argument __] and [discuss evidence __] very badly that John told me about.
 b. I wanted to [present an argument __] and [discuss evidence __] very badly that what John told me is right.

(Fox and Nissenbaum, 1999, p. 9, with modifications)

As is known, across-the-board movement (ATB) should be applied to the extraction operation in the coordination structure. ATB movement is regarded as A-bar movement. This constitutes a piece of evidence for the asymmetry between the extraposition of adjuncts and that of complements because, under the QR-based approach, the extraposition of adjuncts cannot be derived via A-bar movement in principle. Thus, (5a) is ruled out because of the inapplicability of ATB movement in such a circumstance, as opposed to the case of complements, as in (5b).

Other evidence comes from parasitic gap licensing.

(6) Parasitic Gap

- a. * I presented an argument t_i before having evidence PG_i [that you told me about]_i.
- b. I presented an argument t_i before having evidence PG_i [that what you told me is right]_i.
(Fox and Nissenbaum, 1999, p. 10, with modifications)

Parasitic gap is licensed by A-bar movement and is thus one of the major tests for it. The parasitic gap in (6a) is not licensed when the extraposed element is an adjunct. In contrast, the A-bar movement of complements in (6b) properly licenses the parasitic gap in the adjunct phrase *before having evidence PG*.

In summary, Fox and Nissenbaum (1999) extend the adjunct–complement asymmetries observed in leftward movement to rightward movement, particularly the extraposition from object NPs. Section 3 proposes that such a QR-based approach can be further extended to the case of the extraposition of adjuncts from subjects.

3. Adjunct Extraposition from Subjects

3.1 Unaccusative–Unergative Asymmetry

Section 3 describes the way in which Fox and Nissenbaum’s (1999) proposal for the adjunct extraposition from objects can be extended to the case of that from subjects. Before taking a closer look at its derivational process, the extraposition of adjuncts from subjects should be divided into two types: the unaccusative predicate type and the unergative predicate type.

Johnson (1985) claims that extraposition from subjects is restricted in the predicate types under the Unaccusative Hypothesis (Perlmutter, 1978; Burzio, 1986). He argues that extraposition from NPs is only possible from the D-structure object; that is, the extraposition from subject NPs is only possible in the case of unaccusative (or passive) predicates, the surface subject of which was base-generated in the complement position of V, in contrast to unergative subjects, which were base-generated in the subject position. Observe the following unaccusative–unergative contrasts:

(7) Unaccusative Predicate Type

- a. Men appeared from Tanzania.
- b. A storm followed from the North.
- c. A picture stands in the hallway by Picasso.

(Johnson, 1985, p. 111)

(8) Unergative predicate Type

- a. * A man whispered/screamed/conversed/etc. from Niue.
- b. * A man ran/walked/jumped/drove/etc. from the EPA.
- c. * A man hiccupped/coughed/vomited/drank/etc. from the EPA.

(Johnson, 1985, p.109)

Furthermore, the extraposition from the passive subjects is also possible because they originate in the complement position of V.

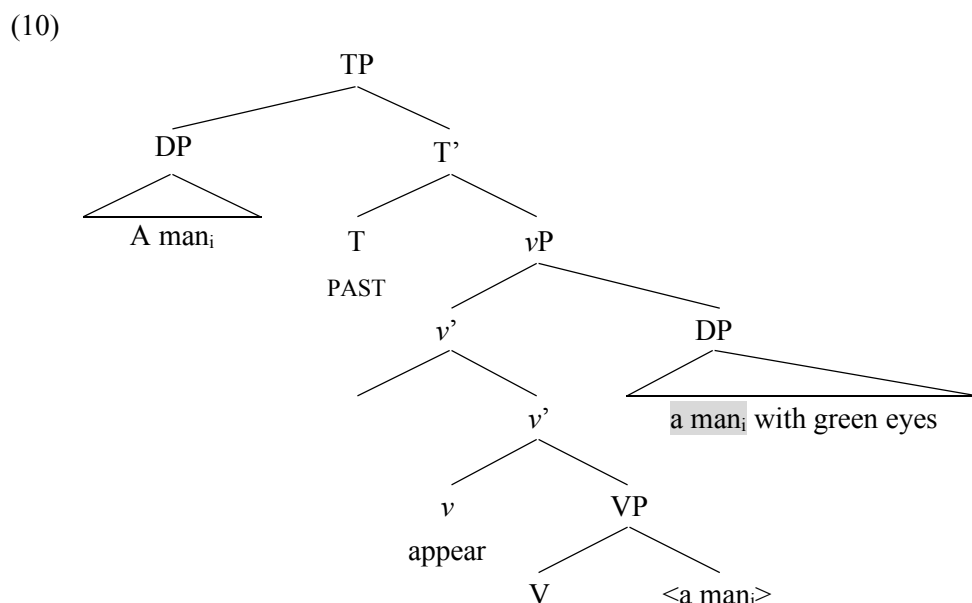
- (9) A man was seen/called/hired/freed/etc. with green eyes.

(Johnson, 1985, p. 114)

Given the observations above, the next subsection proposes that the extraposition of adjuncts from unaccusative subjects can be derived via QR and late merge.

3.2 Derivation

I next consider how the extraposition of adjuncts from the unaccusative subjects is derived. Assuming that the subjects of unaccusative verbs originate in the complement position of V under the Unaccusative Hypothesis, the derivation can be illustrated as follows. Note here that the shading of the words in (10) indicates that they have undergone QR.



The base-generated subject of the unaccusative verb adjoins to the vP by covert movement (QR), and then the adjunct *with green eyes* late-merges to the QR-ed element. Finally, the base-generated unaccusative subject in the complement position of V undergoes A-movement to the Spec, TP, for the requirement of EPP. Here, we suppose that the base-generated subject undergoes two distinct types of movement: covert movement (QR) and A-movement. In this sense, one might imagine that two distinct movements of the base-generated unaccusative subject are implemented in parallel under Chomsky's (2008) Feature Inheritance approach. I consider this possibility in Section 4.

The QR-based analysis is supported by the following linguistic fact:

- (11) a. ?? It seemed to her_i that a man had arrived that Mary_i knew from school.
 b. A man seemed to her_i to have arrived that Mary_i knew from school.
 (Reeve, 2011, p. 155)

The R-expression *Mary* in the extraposed relative clause is bound in (11a). It seems that QR and Late Merge may take place in (11a). In fact, the condition C violation occurs in this case because the attachment site of the Late Merge is in the embedded clause, which is c-commanded by the pronoun. On the other hand, if the host NP undergoes A-movement to Spec, TP of the matrix clause, the condition C effect is obviated, as in (11b). This is because Late Merge takes place in the matrix TP-domain, which is outside of the c-command domain of the pronoun *her*. These data support that the adjunct extraposition from the unaccusative subjects also involves QR and late merge.

4. Feature Inheritance Approach

As I have indicated in the previous section, there is a possibility that the base-generated unaccusative subjects undergo QR and A-movement in parallel, in which one might assume Chomsky's (2008) Feature Inheritance. Section 4.1 observes the Feature Inheritance Approach. In Section 4.2, I consider

whether that analysis can be applied to the case of the adjunct extraposition from the unaccusative subjects.

4.1 Chomsky (2008)

Feature Inheritance is a process by which some features are transferred from (strong) phase heads (i.e., C and v^*) to non-phase heads (i.e., T and V). One of the consequences of this hypothesis is that it may be possible to derive an element to be moved in parallel. This type of movement (henceforth, parallel movement) can account for subject *wh*-movement. Note here that Chomsky assumes that subject can be divided into the predicate-external subject (i.e., unergatives) and the predicate-internal subject (i.e., unaccusatives), due to the existence of the distinct phase heads (strong phase head [v^*] vs. weak phase head [v]). Observe the following examples of subject *wh*-movement:

- (12) *Who saw John?*
 a. C [T [who [v^* [see John]]]]
 b. Who [C [who [T [who v^* [see John]]]]]
 (13) *Who arrived?*
 a. C [T [v [arrive who]]]
 b. Who [C [who [T [v [arrive who]]]]]

(Chomsky, 2008, p. 149)

In the case of *wh*-movement of the predicate-external subject, the subject *wh*-phrase is base-generated in Spec, v^*P in (12), whereas the subject *wh*-phrase is base-generated in the complement position of V in the case of *wh*-movement of the predicate-internal subject in (13). Under the Feature Inheritance approach, the base-generated *wh*-phrase undergoes two distinct movements driven by different features, respectively. One is that the subject *wh*-phrase undergoes A-movement to Spec, TP, triggered by the Edge (EPP) feature inherited from C to T. The other is that it undergoes *wh*(A-bar)-movement to Spec, CP, triggered by the *wh*-feature. In other words, the *wh*-phrase induces parallel chains of movement.

4.2 Puzzles

This subsection considers whether the Feature Inheritance can be applied to the case of the extraposition of adjuncts from the unaccusative subjects. The possible explanation for it under the Feature Inheritance is that the unaccusative subject is triggered by a feature. However, it has been argued that QR is an optional operation like scrambling.

- (14) Someone loves everyone. ($\exists > \forall, \forall > \exists$)

As can be seen, there are two interpretations of the sentence in (14). One takes the wide-scope reading of existential quantifier, and the other takes wide-scope reading of universal quantifier. The reading of two distinct scope relations is arbitrary. Following the traditional perspective, QR is not a feature-driven operation (cf. Hornstein, 1995); thus, it cannot be said that QR forms an A-bar chain. If the parallel chains under the Feature Inheritance approach are formed by an A-chain and an A-bar chain as in Chomsky's analysis of subject *wh*-movement, problems arise both in principle and empirically.

First, if an operation such as QR is not feature driven, it cannot be accounted by the Feature Inheritance in the sense of Chomsky's (2008). This is because two types of movement are driven by two distinct features, and one is inherited from C to T. Covert movement such as QR, which is not driven by features, does not need any inherited features. Therefore, it can be said that such a mechanism cannot be applied to the adjunct extraposition in principle.

Next, I provide an observation of empirical facts against the Feature Inheritance approach. If the approach is correct, *wh*-movement of a passive subject in the form of extraposition would be predicted not to be legitimate. However, the opposite is true, as in (15).

- (15) a. A book written by Chomsky was sold out.

- b. A book was sold out written by Chomsky.
- c. Which book was sold out written by Chomsky?

If we assume QR forms an A-bar chain, the sentence in (15b) has already forms parallel chains, and (15c) would form triple chains, an A-chain, an A-bar chain (QR), and an A-bar chain (*wh*-movement). Therefore, I predict that it would be ruled out, but it is legitimate actually. This indicates that the parallel movement analysis in the sense of Chomsky cannot be straightforwardly applied to the adjunct extraposition.

5. Concluding Remarks

In this paper, I propose the derivation of the extraposition from the unaccusative subjects via QR of the host NPs, Late Merge of adjuncts, and A-movement of the host NPs to Spec, TP. If this analysis is correct, the following question arises: What exactly is QR? Section 4 argues that QR is not a feature-driven operation. The inapplicability of Feature Inheritance to the adjunct extraposition indicates that QR may be an operation distinct from other overt operations.

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References

- Baltin, Mark (1978) "PP As A Bounding Node," *Proceedings of The Eighth Regional Meeting of the Northeast Linguistic Society*, Amherst, Massachusetts.
- Baltin, Mark (1981) "Strict Bounding," *The Logical Problem of Language Acquisition*, ed. by C. L. Baker and J. McCarthy, 257–295, MIT Press, Cambridge, Massachusetts.
- Bobaljik, Jonathan (1995) *Morphosyntax: The Syntax of Verbal Inflection*, Doctoral dissertation, MIT.
- Bobaljik, Jonathan (2002) "A-chains at the PF-interface: Copies and 'Covert' Movement," *Natural Language and Linguistic Theory* 20(2), 197–267.
- Burzio, Luigi (1986) *Italian Syntax: A Government-Binding Approach*, Reidel, Dordrecht.
- Chomsky, Noam (1973) "Conditions on Transformations," *A Festschrift for Morris Halle*, Holt, Reinhart and Winston, ed. by S. Anderson & P. Kiparsky, 232–286, New York,.
- Chomsky, Noam (2001) "Derivation by Phrase," *Ken Hale: A Life in Language*, ed. by M. Kenstowicz, 1–52, MIT Press, Cambridge, Massachusetts.
- Chomsky, Noam (2008) "On Phases," *Foundational Issues in Linguistic Theory*, ed. by Robert Freidin, Carlos Otero and María Luisa Zubizarreta, 133–166, MIT Press, Cambridge, Massachusetts.
- Culicover, Peter and Michael Rochemont (1990) "Extraposition and the Complement Principle," *Linguistic Inquiry* 21(1), 23–48.
- Fox, Danny and Jonathan Nissenbaum (1999) "Extraposition and Scope: A Case for Overt QR," *Proceedings of the 18th West Coast Conference on Formal Linguistics*, ed. by S. Bird, A. Carnie, J. D. Haugen and P. Norquest, 132–144. Somerville, Cascadilla Press, MA.
- Groat, Erich and J. O'Neil (1994), "Spellout at the LF Interface," ms., Harvard.
- Guéron, Jacqueline (1980) "On the Syntax and Semantics of PP Extraposition," *Linguistic Inquiry* 11, 637–678.
- Hornstein, Norbert (1995) *Logical Form: From GB to Minimalism*, Wiley-Blackwell.
- Johnson, Kyle (1985) *A Case for Movement*, Doctoral dissertation, MIT.
- Lebeaux, David (1988) *Language Acquisition and the Form of the Grammar*, Doctoral dissertation, University of Massachusetts, GLSA, Amherst. [Published 2000, John Benjamins Publishing Company, Amsterdam /Philadelphia.]
- Perlmutter, David (1978) "Impersonal Passives and the Unaccusative Hypothesis," *Proceedings of the Annual Meeting of the Berkeley Linguistics Society* 38.
- Pesetsky, David (1998) "Some optimality principles of sentence Pronunciation," *Is the Best Good Enough? Optimality and Competition in Syntax*, ed. by P. Barbosa et al., MIT Press and MITWPL, Cambridge.
- Reeve, Matthew (2011) "The Syntactic Structure of English Clefts," *Lingua* 121, 142–171.
- Ross, John R. (1967) *Constraints on variables in syntax*, Doctoral dissertation, MIT. [Published 1986 as *Infinite Syntax!*, Norwood, Ablex, NJ.]