

## Some Notes on the Derivation of Extraposition from NP

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# Some Notes on the Derivation of Extrapolation from NP

Kenji Kawauchi

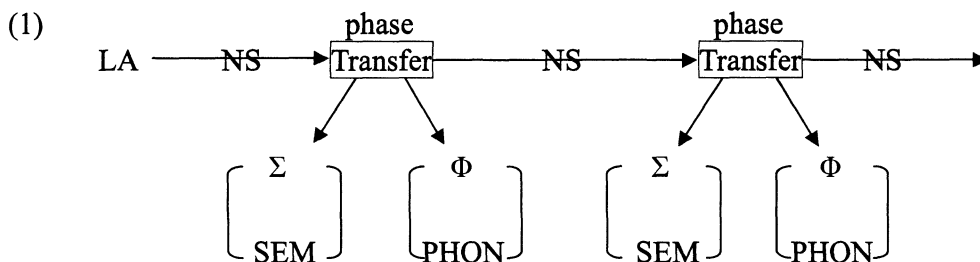
## 1. Phonological Component vs. Narrow Syntax

### 1.1 Extrapolation as a Stylistic Rule

In generative grammar, it has been traditionally assumed that extrapolation is a stylistic rule which is applied after transformational rules (cf. Ross (1967), Koster (1978), Rochemont (1978, 1986), and Chomsky (1986)), that is, it takes place in the PF component of the grammar.

Within the minimalist framework in Chomsky (1995: Sec. 4.7.3), stylistic rules are sharply distinguished from *Last Resort* movement which is driven by feature checking and is in the core part of the computational system for human language ( $C_{HL}$ ) which is called narrow syntax. Stylistic rules have no driving force, unlike Last Resort movement, and do not have any effect on LF (or interpretation). They are put in the phonological component, on the periphery of  $C_{HL}$ .

Within Chomsky's (2001, 2004, 2005) model of grammar in (1), stylistic rules are assumed to be in the phonological component (=  $\Phi$ ) or are part of Transfer (SPELL-OUT).



(LA: lexical array, NS: narrow syntax,  $\Phi$ : phonological component,  $\Sigma$ : semantic component)

If extrapolation is a stylistic rule as Chomsky and others argue, it should not affect  $\Sigma$  (interpretation). In the next section, we will see that this prediction is not borne out and extrapolation has some effects on  $\Sigma$ .

### 1.2 Extrapolation as a Phenomenon in Narrow Syntax

As mentioned in the previous section, it has been assumed in the literature that extrapolation takes places in the PF component. In this section, however, I will show that this assumption is not valid, based on the evidence that extrapolation can affect interpretation. I assume that it takes place not in the phonological component but in narrow syntax. Let us look at the following examples.

- (2) a. \*I sent her<sub>i</sub> [<sub>NP</sub> many gifts [<sub>CP</sub> that Mary<sub>i</sub> didn't like]] last year.  
 b. I sent her<sub>i</sub> [<sub>NP</sub> many gifts] last year [<sub>CP</sub> that Mary<sub>i</sub> didn't like].

(Rochemont & Culicover (1997: 282))

- (3) a. [NP A picture [PP of Mary<sub>i</sub>]] was sent to her<sub>i</sub>.  
 b. \*[NP A picture] was sent to her<sub>i</sub> [PP of Mary<sub>i</sub>].

(Guéron (1980: 650))

They show that extraposition has some effects on binding, as pointed out by Guéron (1980), Johnson (1985), Culicover & Rochemont (1990), Zwart (1990) and many others. The sentence in (2b) that has a relative clause in a right-peripheral position is considered to be derived from the sentence (2a), where the CP is internal to the NP it modifies. In the sentence (2a), the R-expression *Mary* is bound by the pronoun *her*, causing a Condition C violation. On the other hand, the example in (2b) shows that extraposition can cancel the violation. The example in (3) shows that PP extraposition also has an effect on binding relation. In the example (3a), which does not have PP extraposition, the R-expression is not bound by the pronoun, and they can be coreferential. However, the sentence (3b), where extraposition takes place, fails to have the interpretation that the R-expression is coreferential with the pronoun. If extraposition were a stylistic rule or took place after Transfer/Spell-Out, on the phonological branch of the derivation, it could not affect binding possibilities. Therefore, these facts lead us to conclude that extraposition has some effects on interpretation (that is, on  $\Sigma$ ). The conclusion is supported from sentences which include a negative polarity item (henceforth, NPI).

- (4) a. \*The names [of *any* of these composers] weren't called out yet.  
 b. The names weren't called out yet [of *any* of these composers].

(Guéron (1980: 650))

- (5) a. \*Pictures [of *any* of the women] were hanging on **none** of the walls.  
 b. Pictures were hanging on **none** of the walls [of *any* of the women].

(Culicover (1981: 20))

Traditionally, an NPI is considered to be licensed by a negative element like *not* or *none* that c-commands it.

Having the licensing condition in mind, let us see how the examples (4a) and (5a) are excluded. The basic sentences (4a) and (5a) are unacceptable since the NPI occupies a structurally higher position than the negative element and is not c-commanded by it. On the other hand, the examples (4b) and (5b) where extraposition occurs are acceptable since the licensing condition on NPIs is not violated.

There is one more reason that I assume that extraposition takes place in narrow syntax. Consider the examples below:

- (6) a. A review of a book [by three authors] appeared last year.  
 b. A review of a book \_\_\_\_ appeared last year [by three authors].

(Akmajian (1975: 122))

- (7) a. Many books with short stories [that I wanted to read] are on sale.  
 b. Many books with short stories \_\_\_\_ are on sale [that I wanted to read].

(Chomsky (1981: 42))

The sentence (6a) has two interpretations, and the ambiguity is attributed to what

elements the PP *by three authors* modifies. One interpretation is that *a book* is written *by three authors*, (*by three authors* modifies *book*). And the other is *a review* is written *by three authors* (*by three authors* modifies *review*). In contrast, the sentence (6b), in which PP is extraposed to sentence-final position, does not have such an ambiguity. It has only the latter interpretation. Likewise, (7a) has two possible interpretations: (i) what *I want to read* is *short stories*, and (ii) what *I want to read* is *many books*. Only the latter interpretation is obtained when extraposition takes place as in (7b).

These facts above show that extraposition can have some effects on binding, NPI licensing, and modification relation, that is it can give rise to some semantic differences. These observations are sufficient to establish that extraposition is not a stylistic operation in the phonological component, but rather an operation in narrow syntax.

## 2.2 Movement vs. Base-Generation Analyses

Since Ross (1967), extraposition phenomena have been widely discussed, and have been traditionally accounted for in terms of rightward movement in the generative literature (henceforth, movement analysis) (Akmajian (1975), Baltin (1978a, b, 1981), Johnson (1985), Wekker & Haegeman (1985), and many others). For example, sentences with a rightmost CP in (8b) and (9b) were derived from the sentences (8a) and (9a) by moving the CP to the sentence final position.

- (8) a. A man [<sub>CP</sub> who everybody recognized] came into the room.  
 b. A man \_\_\_ came into the room [<sub>CP</sub> who everybody recognized].
- (9) a. They brought a boy [<sub>CP</sub> who looked hungry] into the room.  
 b. They brought a boy \_\_\_ into the room [<sub>CP</sub> who looked hungry].

PP extraposition was considered in the same way as CP extraposition. Thus (10b) and (11b) were derived from (10a) and (11a) by moving a PP to the right of the sentence.<sup>1]</sup>

- (10) a. A student [<sub>PP</sub> with red hair] appeared yesterday.  
 b. A student \_\_\_ appeared yesterday [<sub>PP</sub> with red hair].
- (11) a. John met a man [<sub>PP</sub> with two heads] yesterday.  
 b. John met a man \_\_\_ yesterday [<sub>PP</sub> with two heads].

(Kaan (1993: 16))

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<sup>1</sup> It has been argued that PP extraposition from subject is banned in transitive constructions and unergative constructions (cf. Kirkwood (1977), Guéron (1980), Johnson (1985), Nakajima (1995), and Kawauchi (2006))

- (i) a. \*A man \_\_\_ kicked a woman yesterday [<sub>PP</sub> with blond hair].  
 b. \*A man \_\_\_ broke the window yesterday [<sub>PP</sub> with blond hair].
- (ii) a. \*A man \_\_\_ screamed [<sub>PP</sub> from Nuie].  
 b. \*A man \_\_\_ whispered [<sub>PP</sub> from Nuie].

(Johnson (1985: 109))

Ross (1967) argues within the framework of transformational grammar in Chomsky (1957, 1964, and 1965) that extraposition is one of transformation rules, called *Extraposition from NP*, which is applied last-cyclically. The transformation rule is assumed to be subject to the *Right Roof Constraint*, under which an extraposed element cannot be moved out of the sentence in which it originates. Chomsky (1973) subsumes the constraint under the condition, *Subjacency Condition*, that governs movement (see also Akmajian (1975), Baltin (1978a, b, 1981), and Wekker & Haegeman (1985)).

Under the Subjacency condition, movement from one position to another is ruled out if the moved constituent crosses more than one cyclic node (or a bounding node), where the set of cyclic nodes is some subset of maximal phrasal projections. The set of cyclic nodes for English is assumed to consist of NP and IP (S) under the assumption, the condition correctly discriminates between the grammatical and ungrammatical sentences, as in (12) below:

- (12) a. [CP<sub>2</sub> What<sub>i</sub> do [IP<sub>2</sub> you think [CP<sub>1</sub> t<sub>i</sub> that [IP<sub>1</sub> John bought t<sub>i</sub>]]]]  
 b. \*[CP<sub>2</sub> What<sub>i</sub> did [IP<sub>2</sub> John believe [NP the claim [CP<sub>2</sub> t<sub>i</sub> that [IP<sub>2</sub> Tom saw ] t<sub>i</sub>]]]]?

In (13a), the movement of the *wh*-element to the position of CP<sub>2</sub> crosses only one cyclic node, namely IP. In (13b), the *wh*-movement to the position of CP<sub>2</sub> crosses two cyclic nodes, NP and IP, causing a subjacency violation. Like leftward movement, rightward movement is subject to the condition, as can be seen from the contrast in (13).<sup>2</sup>

- (13) a. [IP [CP That [IP [IP [NP someone t<sub>i</sub>] would come]]] [CP who could help] became certain.]  
 b. \*[IP [IP [CP That [IP [NP someone t<sub>i</sub>] would come]]] became certain] [CP who could help]]<sub>i</sub>

(Kroch & Joshi (1987: 129))

Baltin (1981) and Kroch & Joshi (1987) state that this is not the whole story of extraposition and argue that the analysis in Akmajian (1975) and many others, that left and rightward movements are constrained in the same way, cannot account for the fact that leftward movement differs from rightward movement in one important respect. Leftward movement is unbound, as in (14):

- (14) [Who<sub>i</sub>] do you think that Mary will claim that Bill wants to visit t<sub>i</sub>.?  
 (Kroch & Joshi (1987: 131))

Here, the *wh*-element is extracted from within the most deeply embedded complement clause. Rightward movement out of the same position, on the other hand, is impossible, as in (15).

- (15) \*They announced that Mary would claim that Bill wanted to visit [someone t<sub>i</sub>] on the radio [who would tell funny stories].

(*ibid.*)

<sup>2</sup> Baltin (1978a, b) and van Riemsdijk (1978) propose that PPs are also cyclic nodes.

Another difference between leftward and rightward movement is observed in examples of VP fronting. The examples are from Baltin (1981: 269).

- (16) a. John said that he would call people up who are from Boston, and [call people up who are from Boston] he will.  
 b. \*John said that he would call people up who are from Boston, and [call people up] he will [who are from Boston].
- (17) a. John said that he would call people up from Boston, and [call people up from Boston] he will.  
 b. \*John said that he would call people up from Boston, and [call people up] he will from Boston.

These facts show that fronted VPs must contain an element (CP or PP) extraposed from an object, and that the extraposed element cannot be attached to a position higher than the VP in which it originates. On the other hand, *wh*-elements can freely move out of VP as long as subadjacency is preserved:

- (18) [CP<sub>2</sub> which book<sub>i</sub> do [IP you think [CP<sub>1</sub> that John will [VP read t<sub>i</sub> ]]]?

To account for the left / rightward asymmetry, Baltin extends the notion of subadjacency in the following way.


(19) *Generalized Subadjacency*

In the configuration A ... [ $\alpha$  ... [ $\beta$  ... B ... ] ... ] ... A'

- i. A' cannot be related to B where  $\alpha$  and  $\beta$  are maximal projections of any major categories;
- ii. A cannot be related to B where  $\alpha$  and  $\beta$  are drawn from the following list of phrasal categories: (a) PP; (b) NP; (c) S or S' or both, depending on the specific language.

(Baltin (1981: 262))

This constraint works in different ways, depending on the direction of movement. (19i) is the condition on rightward movement, whereas (19ii) is on leftward movement. In addition, Baltin imposes the direction particular condition on leftward movement, which requires it take place in a successive cyclic manner, as illustrated in (20).

- (20) [S' which book<sub>i</sub> [S do you think [S' t<sub>i</sub> that [S John will [VP read t<sub>i</sub> ]]]]?  


The assumption here is that  $\alpha$  and  $\beta$  in (19) are Ss in English.

We have seen so far that Akmajian (1975), Baltin (1978a, 1981), Johnson (1985), and Wekker & Haegeman (1985) analyze CP/PP extraposition from NP as movement.

But these movement analyses still leave some questions open. The first question is why only leftward movement is applied step by step, while extraposition is not. If an extraposed element moves to the rightmost position in a successive cyclic manner like

leftward movement as illustrated in (21), the ungrammaticality of the following sentence would not be expected.

- (21) \*<sub>[IP [CP[C:That [<sub>IP</sub> [<sub>NP</sub> a gun *t*<sub>i</sub>] went off]] surprised no one] *t*<sub>i</sub> [<sub>CP</sub> which I had cleaned]<sub>i</sub>.</sub>

In the minimalist program, however, nothing drives this movement unless we posit an EPP feature in an appropriate position. What is more, Rochemont & Culicover (1990) argue that extraposed elements are not necessarily given a focus, so they could not have been moved for focus-reasons either. Hence the movement analyses of extraposition are conceptually dubious.

They cannot be supported on empirical grounds either. Let us look at some examples in which an extraposed CP takes a split antecedent.<sup>3</sup>

- (22) a. *A man* entered the room and *a woman* went out [who *were* quite similar].  
b. \**A man* entered the room [who *were* quite similar].  
c. \**A woman* went out [who *were* quite similar].  
(22a) Perlmutter & Ross (1970: 350))

- (23) a. *A man* just came in and *a woman* went out [who hate *each other* like poison and always have].  
b. \**A man* just came in [who hate *each other* like poison and always have].  
c. \**A woman* went out [who hate *each other* like poison and always have].  
(23a) Gazdar (1981: 179))

In (22a), the extraposed CP takes a split antecedent, and the relative pronoun is interpreted as plural as we can see from the inflected form of the auxiliary verb. If the sentence were derived by moving the CP out of its antecedent NPs across-the-board, the acceptability of the sentence (22a) is unexpected. If the CP moved in such a way, the relative pronoun should agree with the singular auxiliary, contrary to the fact. And if the relative pronoun in (22) could take a singular NP as its antecedent, sentences like (22b, c) should be possible, contrary to the fact again. Hence the movement analyses cannot derive sentences like (22a).

In (23a), an anaphora shows up in the relative clause that appears in a sentence final position, and it is bound by its antecedents *a man* and *a woman*. However, the sentences (23b, c), where one of the conjuncts in (23a) is missing, fail to have the binding relation between the anaphora and its antecedents, since *each other* cannot take a singular antecedent. Hence, the movement analyses cannot account for these sentences.

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<sup>3</sup> Note that an extraposed PP cannot take a split antecedent, as can be seen in the following example:

- (i) \*A man came in and a woman went out [from different countries].  
(Nakajima (1995: 24))

This fact strongly suggests that CP and PP extraposition from NP should be treated differently.

Additionally, the movement analyses are falsified by the argument/adjunct asymmetry seen in (24) and (25).

- (24) a. \*A student \_\_\_ appeared [of linguistics].  
b. \*The king \_\_\_ arrived at the gate [of England].  
c. \*The loss \_\_\_ was a tremendous shock [of the ship].
- (25) a. A student \_\_\_ appeared [with red hair].  
b. The king \_\_\_ arrived at the gate [from France].  
c. A lost ship \_\_\_ was discovered [on the raging sea].

The sentences in (24), where the extraposed PPs are arguments of the head nouns, result in ungrammaticality. On the other hand, the sentences in (25), where the extraposed PPs are adjuncts of the head nouns, are grammatical. The contrast calls the movement analyses into question, since it runs contrary to what is expected if we adopt them. As noted by Huang (1982), Chomsky (1986), and Culicover & Rochemont (1992), argument PPs but not adjunct PPs can be extracted from an NP in the case of leftward movement.

- (26) a. Of whom<sub>i</sub> did you read [a biography  $t_i$ ]?  
b. Of whom<sub>i</sub> did you buy [a picture  $t_i$ ]?

(Lasnik & Park (2003: 653))

- (27) a. \*On which table<sub>i</sub> did you read [books  $t_i$ ]?  
b. \*From which city<sub>i</sub> did you meet [men  $t_i$ ]?

(*ibid.*)

The contrast between rightward and leftward movement shows that extraposition sentences are not derived by movement.

This problem does not arise if we take the position that “extraposed elements” are base-generated in a right-periphery position, and are linked to their antecedent NPs under some structural and interpretational constraints. And this position is adopted by many others (*e.g.* Andrews (1975), Koster (1978b), Culicover & Rochemont (1990), Rochemont & Culicover (1990), and Nakajima (1995)).<sup>4</sup>

If we adopt structural constraints as discussed in Asakawa (1979), Baltin (1981), Culicover & Rochemont (1990), and Rochemont & Culicover (1990), extraposed CPs can be considered as occupying the positions specified in (28a).<sup>5</sup> (The terms SX and

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<sup>4</sup> Note that Nakajima (1995) assumes that extraposed PPs are derived by movement, whereas extraposed CPs are not. The sentence-final CPs are generated separately from the NPs they modify, and are semantically related to the modifyees by means of an interpretative mechanism.

However, I do not take this eclectic stance in this thesis since PP extraposition does not necessarily have the same characteristics as leftward movement (see the facts in (24)-(27)). This will be discussed in more detail in the next section.

<sup>5</sup> I am tentatively employing the structural constraint on extraposed elements which is proposed in Asakawa (1979) for the sake of convenience. See Kawauchi (2004, 2005) for a detailed discussion of structural constraints on extraposed elements.



OX are adopted from Rochemont & Culicover (1990), and are used to refer to extraposed CPs from subject and extraposed CPs from object, respectively.) On the other hand, extraposed PPs from subject (SXP) and object (OX) are generally assumed to be in the Spec of VP, as illustrated in (28b).

- (28) a. [IP [IP Subj [VP [VP V Obj] OX]] SX]  
 b. [IP Subj [VP [VP V Obj] OX/SX]]

Under the base-generation analysis, SX and OX are assumed to be attached to IP and VP respectively.

### 2.2.1 Arguments Against Base-Generation

Guéron (1980) and Johnson (1985) reject the base-generation approach and provide the following arguments.

First, extraposed elements cannot have a split-antecedent as shown in (29). In these examples, the PP in (29a) and the CP in (29b) cannot modify both the subject and the object.

- (29) a. \**A man met a woman yesterday* [from two different regions of India].  
 b. \**A man met a woman yesterday* [who were similar].  
 (Guéron (1980: 648), italics and brackets mine)

Guéron states that these examples can easily be ruled out if we assume that extraposition sentences are derived by movement, since the extraposed elements cannot establish one-to-one relation with the preceding two NPs at the starting point of movement. Hence, the fact in (29) is regarded as supporting the movement analysis.

The argument does not hold for two reasons. In the first place, the ungrammaticality of (29b) may be attributed to a parallelism constraint as observed in Andrews (1975). Guéron admits herself that the examples in (29) can also be excluded by some semantic/pragmatic condition of linking of an extraposed element to its antecedent NP. According to Guéron, an extraposed element can be linked to an NP only if the latter is in focus. In the examples in (29), only one NP can be the focus of the sentence, so an extraposed element can be properly linked to only one NP. This is the reason why (29a) and (29b) are ruled out, which is independent from movement.

The second reason is that an extraposed element can have a split antecedent, as shown in (22a) and (23a). This can be explained if we take the extraposed element as an element that is base-generated in the extraposed position, and is linked to the preceding two NPs in its interpretation. The contrast between (22a, 23a) and (29) can be accounted for by Guéron's focus requirement. In (22a) and (23a), two sentences are coordinated; hence, two constituents can be focused on. In (29), on the other hand, only one constituent can be in focus. In effect, Guéron's argument is an argument not against, but rather in favor of, the approach in terms of base-generation.

The second counterargument to the base-generation analysis that Guéron (1980)

- 
- (i) The element which is extracted out of NP is adjoined to the node which immediately dominates that NP.

(Asakawa (1979: 505))

and Johnson (1985) point out is that extraposition meets the Name constraint (cf. Fiengo & Higginbotham (1981)), formulated in (30) and (31).

(30) A Name may not contain an empty argument position.  
(Guéron (1980: 666))

(31) A *Name* is a complete referring expression. It designates *a unique object or individual* (or set of these) in the world of the discourse, either directly, through the use of proper names or deictic expression (*John, that man*), or indirectly, by means of complements containing direct referring expression (*the girl who sits next to you, some of those books*).  
(*ibid.*: 667)

On the basis of this constraint, the following sentences are excluded:

(32) a. \**That* book was published [about linguistics].  
b. \*A certain book came out [by Chomsky].  
(Guéron (1980: 665), italics and brackets mine)

According to Guéron (1980), a Name from which an element is extracted forms a semantic contradiction: a Name, which is a complete referring expression by definition, contains a trace that must be bound from outside, and hence is not complete. In the structures of (32) before extraposition is applied, a specific NP contains a PP (viz. [<sub>NP</sub> N [<sub>PP</sub> P NP]]), hence the NP can be regarded as a complete referring expression. In the structures after extraposition is applied, a specific NP contains the trace of an extraposed element. So it is not a complete referring expression any longer. If extraposed PPs were base-generated, the specific NPs in (32) would have no such a trace within them. Thus, the Name constraint would not be able to rule out the sentences.

Johnson's (1985) counterargument to the base-generation analysis is made from a comparison between secondary predicates and extraposed elements. Predication may involve a specific NP, while extraposition may not.

(33) a. I remember *John's* friend *unhappy*.  
b. I ate *every* dish *raw*.  
c. I bought *this* radio *broken*.  
(Johnson (1985: 102), italics mine)

(34) a. \*I remember *John's* friend yesterday [from Chicago].  
b. \*I ate *every* dish on Tuesday [from Cantor's].  
c. \*I bought this radio yesterday [from Taiwan].  
(*ibid.*)

He argues that the contrast can be explained if extraposition sentences are derived by movement, while secondary predicates are generated at the rightmost position without movement. In English, *wh*-extraction from within a specific NP is blocked, as shown in (35):

- (35) a. \*Who<sub>i</sub> did you remember *John's* friend of *t<sub>i</sub>*?  
       (vs. Who did you remember *a* friend of *t<sub>i</sub>*?)  
 b. \*Who did you buy *every* picture of *t<sub>i</sub>*?  
       (vs. Who did you buy *a* picture of *t<sub>i</sub>*?)  
 c. \*What did you hear *this* story about *t<sub>i</sub>*?  
       (vs. What did you hear *a* story about *t<sub>i</sub>*?)

(*ibid.*., italics mine)

From these examples, he concludes that the ungrammaticality of (34) is correctly predicted, if extraposition is a movement.

However, Guéron (1980) and Johnson's (1985) argument above is untenable since the Name constraint itself is empirically inadequate. Kaan (1992) observes that PP extraposition is possible from a specific NP in Dutch:

- (36) a. We hebben Bea [van hiemaast] gezien.  
       we have Bea from next door seen  
       'we have seen Bea from next door.'  
 b. We hebben Bea \_\_\_ gezien [van hiemaast].

Furthermore, she points out that examples like (37) are acceptable in Dutch.

- (37) a. Dat boek is eindelijk gepubliceerd over taalkunde.  
       that book has finally been published about linguistics  
 b. Er is een zeker boek uitgekomen van Chomsky.  
       there is a certain book come out by Chomsky

Exactly the same is true of English. The Name constraint sometimes makes a wrong prediction:

- (38) a. The king \_\_\_ arrived at the gate [from France].  
 b. The advertisement \_\_\_ will be seen [on television].

We have seen that Guéron (1980) and Johnson (1985) argue against the base-generation analysis of extraposition, but the argument is not convincing.

### 2.2.2 Kayne's (1994) Antisymmetric Approach

There is another approach to extraposition which is proposed in Kayne (1994). In his theory of antisymmetry, Kayne argues that movement in the functional domain is invariably leftward. This is led by the *Linear Correspondence Axiom* (LCA), according to which, if  $\alpha$  asymmetrically c-commands  $\beta$ , then  $\alpha$  must linearly precede  $\beta$ . That is, linear precedence is determined based on the structural relation of asymmetric c-command.

Given the LCA, a specifier and a complement are always on the opposite sides of the head, and "specifier-head-complement, and not the reverse, is the only order available to the subcomponents of a phrase" [p.36]. The LCA leads to a ban against rightward movement, and all of the existing word order variations result from different combinations of leftward movement. Hence, extraposition cannot be a rightward

movement in his theory.

Based on this theory, he suggests that extraposition sentences are derived by moving an antecedent NP leaving a CP in its base-position as follows:

- (39) a. Something just happened [that you should know about].  
 b. Something<sub>i</sub> just happened [[e]<sub>i</sub> that you ...


(Kayne (1994: 118))

Within his framework, rightward movement is banned, and only leftward movement is legitimate. Hence, such an analysis as (39) is the only possible way to account for the extraposition data.

However, Kayne's analysis poses a serious problem. Before going into the problem, let us see how restrictive relative clauses (henceforth, RRC) are derived in his theory. Following the idea put forward by Schachter (1973), Vergnaud (1974), and others, Kayne assumes that the nominal head of a RRC originates in the relative clause and moves to the specifier position of the relative CP as in (40):

- (40) the picture that John liked  
 a. [DP the [CP that John liked picture]]  
 b. [DP the [CP picture<sub>i</sub> [C' that John liked e<sub>i</sub>]]]

But the analysis raises the question of how antecedent NPs are fronted which do not form a constituent, as illustrated in (41).

- (41) *Kayne's Analysis of Extraposition*  
 ... [DP the [CP [NP picture<sub>i</sub> [C' that John liked e<sub>i</sub>]]]]
- 

Another problem comes from the following example:

- (42) \*I saw the picture of himself<sub>i</sub> \_\_\_\_ yesterday [that John<sub>i</sub> liked].  
 (Hulsey & Sauerland (2002: 7))

In this example, Condition A is violated since the anaphor *himself* is not bound by the possible antecedent *John*. Under Kayne's analysis, this sentence goes through the following stages:

- (43) a. [DP the [CP that John liked picture of himself]]  
 b. [DP the [CP [NP picture of himself [C' that John liked t]]]]  
 c. I saw the picture of himself yesterday [DP the [CP [NP picture of himself [C' that John liked t]]]]

It should be noted that at the stage of (43a) the anaphor *himself* is bound by the antecedent *John*. Kaye's analysis expects that (42) would be grammatical, contrary to the fact.

On these theoretical and empirical grounds, Kaye's antisymmetric approach to extraposition cannot be sustained.

### 2.2.3 A Hybrid Analysis

A different approach to extraposition is taken by Fox & Nissenbaum (1999a, b) and Fox (2002). They argue, based on the so-called copy theory of movement (cf. Chomsky (1993), Bobaljik (1995), Groat and O’Neil (1996), Pesetsky (1998)<sup>6</sup>), that extraposition is a movement if an extraposed element is an argument of a nominal head, while it involves no movement if the element is an adjunct of a nominal head. In the former case, extraposition is followed by covert quantifier raising of the antecedent NP, and the extraposed element overtly moves to the landing site of the antecedent. In the latter case, the extraposed element is merged into a structural position independently of its antecedent, and to the position the antecedent NP covertly moves up. What is important here is that timing of merging is different in these two cases. This comes from Lebeaux’s (1988) idea concerning the following examples:

- (44) a. ??/\*[Which book *about John<sub>i</sub>’s library*] did he<sub>i</sub> read?  
b. [Which book *from John<sub>i</sub>’s library*] did he<sub>i</sub> read?  
(Fox & Nissenbaum (1999a: 137))

If a nominal head takes a PP as its argument as in (44a), the PP is introduced in the derivation before *wh*-movement takes place as in (45):

- (45) [Which book *about John<sub>i</sub>’s library*] did he<sub>i</sub> read [Which book *about John<sub>i</sub>’s library*]

The second *John* is bound by *he* and violates Condition C of the Binding Theory, resulting in the marginal or unacceptable status of the sentence (44a).

If the PP is an adjunct, on the other hand, it is introduced into the structure after *wh*-movement, as illustrated in (46):

- (46) a. he<sub>i</sub> read [which book]  
b. *wh*-movement ➤ [which book] did he<sub>i</sub> read [which book]  
c. *adjunct merge* ➤ [Which book *from John<sub>i</sub>’s library*] did he<sub>i</sub> read [Which book]

At the stage of (46c), the R-expression within the PP is not bound by the subject *he*, and can evade the violation of Condition C. In this way, the difference between (44a) and (44b) can be explained by assuming the late merger of adjuncts.

With this in mind, let us now look at Fox & Nissenbaum’s account for extraposition in detail. They argue that extraposition goes through the following stages if the element to be extraposed is an argument of a nominal head as in (47):

- (47) I gave him an argument yesterday [that this sentence supports John’s theory].

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<sup>6</sup> Roughly speaking, the copy theory of movement is the idea that movement is copying. Under the theory Fox and Nissenbaum adopt, either the head or the tail of a chain created by movement is pronounced. If the head is pronounced, it results in overt movement, whereas if the tail is pronounced, it ends in covert movement.

- (47') a. ... [VP [VP gave [NP an argument [CP that ... ]]] yesterday]  
 b. QR ('covert')  
     ➤ ... [VP [VP [VP gave [NP an argument [CP that ... ]]] yesterday]  
         **an argument**  
 c. Movement ('overt')  
     ➤ ... [VP [VP [VP gave [NP an argument [~~CP that ...~~]]] yesterday]  
         **an argument [that ...]**

Firstly, the argument CP shows up with its antecedent within NP as in (47'a). And the antecedent undergoes movement (QR) to VP to receive an interpretation as in (47'b). Furthermore, the CP attaches to the moved antecedent as in (47'c). In the case of the antecedent movement which is assumed to be QR, the head of a chain is deleted, and the movement is in effect regarded as covert. In the case of the movement of an extraposed element, the tail part is deleted, which results in an overt movement.

On the other hand, when an extraposed element is an adjunct as in (48), it is not generated with its antecedent as in (48'a):

- (48) They brought a boy into the room [who looked hungry].
- (48') a. ... [VP they [VP brought a boy [PP into the room]]]  
 b. QR ('covert')  
     ➤ ... [VP [VP they [VP brought a boy [PP into the room]]] [NP **a boy**]  
 c. *adjunct merger* ('overt')  
     ➤ ... [VP [VP they [VP brought a boy [PP into the room]]] [NP **a boy**  
         [CP **who ...**]]]

And the antecedent moves to the edge of VP by QR ((48'b)), to which the extraposed element is attached ((48'c)). As we have seen above, the head of a chain created by QR is deleted. Hence the movement is regarded as a covert movement here again.

Here, several problems arise. The first problem is that it is unclear why the antecedent moves rightward but not leftward, since QR has no directionality.<sup>7</sup>

The next question is that their analysis cannot make a correct prediction as to extraposition from a definite NP. QR should not apply to definite NPs. Hence, the analysis cannot predict that sentences like (49b) are possible:

- (49) a. A man entered *the room* [that I had just finished painting] last night.  
 b. A man entered *the room* \_\_\_ last night [that I had just finished painting].

### 2.3 Conclusion

In this paper, I have discussed two points: (i) where extraposition takes place in the grammar, and (ii) how extraposition sentences are derived. As to the first point, we have argued that extraposition takes place in narrow syntax, based on the observation that it can affect sentence interpretation, e.g. binding, NPI licensing, and modification ambiguity.

<sup>7</sup> Fox & Nissenbaum (1999) do not deal with extraposition from subject.

As to the second point, we have argued that extraposition can be accommodated on the basis of not the movement analysis but the base-generation analysis which regards extraposed elements as being generated separately from their antecedents in a sentence final position.

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## 名詞句からの外置についての覚書

### 要旨

本論文は、次の二点について議論を行う。

第一点、名詞句からの外置は解釈に影響しない音韻部門で適用される文体規則の一つとして捉えられてきた。しかし、外置は音韻部門ではなく狭義の統語部門で起こることを示す。

第二点、外置構文の派生は、大きく分けて外置要素が名詞句内から移動することによって派生されるとする立場と、外置要素はもともと名詞句内ではなく外置された位置に基底生成されるとする立場とがあるが、移動分析には経験的、理論的に不備があることを示し、外置は基底生成分析によって捉えることができることを示す。