

A Comprehensive Approach towards Extraposition and Predication

Kay Nakago

0 Introduction

A construction in English known as “extraposition” is exemplified in (1 b) and (2 b).¹ The (a) and (b) pairs in (1)-(2) have essentially identical truth-conditional interpretation.

- (1) a. A man [_{PP} with blond hair] came into the room.
 b. A man _____ came into the room [with blond hair].
- (2) a. John met a man [_{CP} who was from Philadelphia] at the party.
 b. John met a _____ man at the party [who was from Philadelphia].

It seems that (1 b) is formed from (1 a) by moving, or extraposing, the element *with blond hair* rightward from under the dominating NP in the subject position. (2 b) seems to be formed from (2 a) by the extraposition of the element CP *who was from Philadelphia* from under the dominating NP in the object position. Since Move α does not specify the direction to which an element is moved, extraposition has long been commonly believed to involve rightward application of Move α , in contrast with leftward applications of it such as NP-movement and *Wh*-movement. But is it reasonable to suppose that extraposed elements are moved rightward from their base-generated positions? If so, where are they moved to? Three problems which arise in the analysis of extraposed phrases are listed below:

- (3) a. Are extraposed phrases generated through movement, or are they base-generated ?
- b. What structural positions do extraposed phrases occupy ?
- c. What kind of syntactic relations are there between extraposed phrases and their associates ?

In this paper, I will focus my attention mainly on the questions in (3 b) and (3 c).

Rochemont and Culicover (1990) propose the Complement Principle which they claim can characterize the syntactic behavior of extraposed phrases, but we will see that the predictions it makes are not valid. In order to make sound predictions, we will revise the Complement Principle so as to include the mutual m-command restriction between extraposed phrases and their associates. In section 2, I will propose a new principle, the Extended Complement Principle, which can account for the structural and distributional properties of both extraposed phrases and secondary predicates in a parallel way. The mutual m-command restriction is hinted from the similarity of the syntactic behavior between extraposed phrases and secondary predicates, which we will see in section 1. Section 3 deals with some problems that arise in our theory.

1 Parallelism between Extraposition and Predication

1.1 Adjunction Sites for Extraposed Phrases

Rochemont and Culicover (1990) argue that the interpretive rule, namely, the Complement Principle in (4), can characterize the positions in which extraposed phrases occupy and the relationship between extraposed phrases and their associates.²

(4) The Complement Principle

β is a *potential complement* of α ($\alpha, \beta = X^{\max}$), only if α and β are

in a government relation. (Rochemont and Culicover 1990 : 35)
 Note that their use of the term “complement”, which refers to extraposed phrase, differs from its general usage. Note also that although the Complement Principle requires that an extraposed phrase (i. e., complement, or β in (4)) and its associate (= α in (4)) should be in a government relation, it simply requires that one must be governed by the other. The definitions of the concepts related to (4) are as below :

(5) Government

α governs β iff α c-commands β and for every γ ($\gamma = X^{\max}$) that dominates β and excludes α , either

- i. $\beta = \gamma^0$, or
- ii. $\beta = \text{SPEC}, \gamma$, or
- iii. there exists a segment of γ that does not dominate β .

(ibid. : 35)

(6) C-command

α c-commands β iff for every γ that dominates α , either

- i. γ dominates β , or
- ii. $\gamma = \alpha'$ and γ^n dominates β .

(ibid. : 14)

(7) Domination

α is dominated by β only if it is dominated by every segment of β .

(Chomsky 1986 : 7)

(8) Exclusion

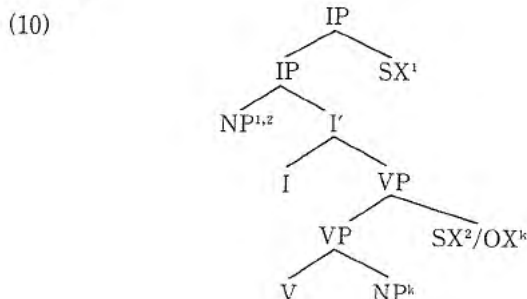
α excludes β if no segment of α dominates β . (ibid. : 9)

Here, we basically agree with Rochemont and Culicover’s claim that extraposed phrases are related to their associates by the Complement Principle. The principle virtually determines the adjunction sites for extraposed phrases as in (9).

- (9) i. Adjunction sites for object-oriented extraposed phrases (OXs) are VPs.

- ii. Adjunction sites for subject-oriented extraposed phrases (SXs) are either IPs or VPs

Let us first see that the Complement Principle indeed makes the prediction in (9). Consider the tree diagram in (10). The co-superscripting is used in order to indicate the relation between an extraposed phrase and its associate.



The object-oriented extraposed phrase, namely, OX^k , and its associate NP^k which is in the object position are in a government relation because OX^k governs NP^k .³ Hence, the prediction in (9 i) holds. Let us now turn to subject-oriented extraposed phrases. SX^1 , which is adjoined to IP, governs its associate NP^1 in the subject position. NP^2 and SX^2 are in a government relation since the former governs the latter.⁴ Hence the prediction in (9 ii) is confirmed, too.

Of the two predictions in (9), (9 i) is in accordance with most of the previous studies on extraposition phenomena, including Baltin (1978) and Guéron (1980). But (9 ii) is not: subject-oriented extraposed phrases are generally assumed to adjoin to IP but not to VP.

Rochemont and Culicover give the following as a piece of evidence in support of the adjunction of SX to VP. It is concerned with VP deletion.

- (12) a. Although none of the MEN did _____ [who were visiting from NEW YORK], several of the women went to the concert who

were visiting from BOSTON.

- b. Although none of the MEN did _____, several of the WOMEN went to the concert who were visiting from Boston.

(Culicover and Rochemont's (1990) (16) and (17 b))

Besides the deletion of VP with SX stranded as in (12 a), it is also possible to delete SX together with VP as in (12 b). Then, SX can be supposed to adjoin to VP, composing a segment of VP. If so, (12 a) can be formed through the application of VP deletion to the inner segment of VP, and (12 b) through its application to the outer segment.

However, many linguists disagree with this view. According to Kuno (1975), VP deletion is applied only to the VP that is VP-final.

(13) VP deletion is applied only to the VP that is VP final.

It is claimed in Nakajima (1990a) that deletion of the inner VP in the category VP consisting of two segments is in violation of the constraint in (13). Nakajima notes that (12 a) is evidently better than (12 b) and that the former can only be derived through deletion of the inner VP, violating the constraint to which it is subject to. Rather, the fact that (12 a) is more acceptable than (12 b) indicates that SX is outside of VP and that VP deletion is legitimately applied only to the constituent VP. Nakajima also notes that (12 b) can be derived without assuming VP adjunction of SX : that is, (12 b) is derived through two operations. Namely, VP deletion and then subsequently adjunct deletion. The necessity of adjunct deletion is motivated from the example in (14). In (14), the second conjunct allows the reading with the modification by the sentential adjunct *possibly* :

(14) John possibly will come tomorrow, and Bill will, too.

(Nakajima 1990a : 50)

Therefore, the argument which Rochemont and Culicover make for the assumption that SX may adjoin to VP turns out to be untenable. Note further that Erteschik-Shir (1991) is skeptical of Rochemont and

Culicover's judgment of (12), where they tell to read with sentence accents as indicated by the location of capitals. Erteschik-Shir says, "I would be surprised if speakers easily accept the relevant readings (*ibid.* : 526)." Therefore, we take the position that subject-oriented extraposed phrases never adjoin to VP. Given the discussion above, adjunction sites for extraposed phrases are not as in (9) but should be as (15) below.

(15) i. OXs adjoin to VPs.

ii. SXs adjoin to IPs.

The problem of the Complement Principle is that it allows the adjunction of SX to VP, and therefore we need to revise the principle so as to make the prediction in (15).

1.2 Adjunction Sites for Secondary Predicates

In the course of revising the Complement Principle, describing cases of secondary predicates and showing that extraposed phrases and secondary predicates behave in a parallel fashion proves to be helpful.

There is a fairly general agreement that object-oriented predicates appear in a position which is immediately dominated either by VP or V'. On the other hand, opinions are divided among linguists as to the position where subject-oriented secondary predicates occupy. Some argue that subject-oriented secondary predicates generate in positions immediately dominated by VP (see, for example, Roberts 1988 and McNulty 1988), while others insist that they generate in positions immediately dominated by IP (see, for example, Williams 1980 and Rothstein 1983). Although opinions differ as to the position of subject-oriented predicates, it is believed by many that secondary predicates and their "subjects" must conform to some kind of configurational condition : many observe that a predicate and its "subject" must mutually m-command or c-command.

In Nakajima (1990b), object-oriented secondary predicates and their

“subjects” are claimed to be in VP, while subject-oriented secondary predicates and their “subjects” are in IP.

- (16) i. An object-oriented secondary predicate and its “subject” are in VP.
 ii. A subject-oriented secondary predicate and its “subject” are in IP.

Since secondary predicates mutually m-command their “subjects” in both cases, a condition on secondary predication in (17) is provided. Let us refer to the condition as the Predication Condition.

(17) Predication Condition

A secondary predicate mutually m-commands its “subject”.

Now, if we compare (15) with (16), it is apparent that there is a parallelism between the behavior of secondary predicates and extraposed phrases. In fact, Williams (1980) considers extraposition to be one of predication. From the discussion above, we can safely conclude that subject-oriented elements (i. e., extraposed phrases and secondary predicates) are generated in IP. On the other hand, object-oriented elements are in VP. Moreover, apart from their syntactic similarities, it is obvious that extraposed phrases and secondary predicates have the same semantic function. Consider the pair in (18).

- (18) a. A man came into the room *nude*.
 b. A man came into the room *with nothing on*.

In the next section, we will try to revise the Complement Principle. In particular, we will see that the Complement Principle will be revised so as to include the mutual m-command condition on predicates shown in (17).

2 Towards the Extended Complement Principle

Following the observation in the previous section, we propose the

Extended Complement Principle which can handle extraposed phrases and secondary predicates in a parallel way.

(19) Extended Complement Principle

α is the associate of β ($\alpha, \beta = X^{\max}$), only if α and β are in a mutual m-command relation.

The definitions of m-command and its relevant notion are shown below :

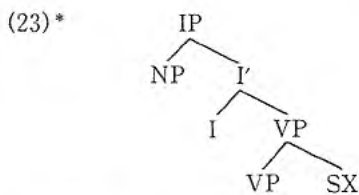
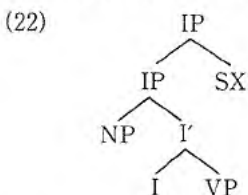
(20) α m-commands β iff α does not dominate β and every maximal projection that dominates α dominates β .

(Chomsky 1986 : 8)

(21) α is dominated by β only if it is dominated by every segment of β .

(ibid. : 7)

In connection with (15 ii), the main purpose of the Extended Complement Principle is to permit the desirable configuration in (22) and to rule out (23) where SX is attached to VP.

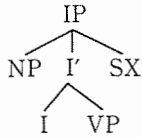


In (22), SX and its associate NP in the subject position are not in a mutual m-command relation. But in (23), SX and the NP in question m-command mutually. Therefore, we end up getting an undesirable result. We would wrongly rule out (22) where there is no mutual m-command relation between the extraposed phrase and its associate. We would also incorrectly predict that (23), which has a mutual m-command relation, as grammatical.

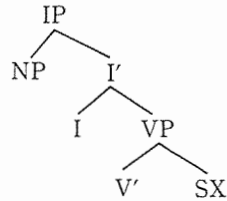
In order to solve the problem, let us now look at adjunction from a different angle. The only type of adjunction that has been seriously considered in the recent framework is Chomsky-adjunction. But if we assume another type of adjunction, that is, daughter-adjunction, the problem seems

to be readily solved. Given daughter-adjunction, the counterparts of the structures in (22) and (23) will be (24) and (25), respectively.

(24)



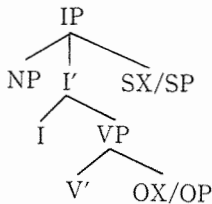
(25)*



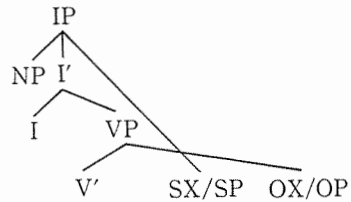
In (24), the subject NP does not dominate SX, and the minimal maximal projection that dominates NP, IP, dominates SX. Hence, NP m-commands SX from the definition of m-command in (20). The same argument holds for m-command of SX against the NP. Therefore, if we assume daughter-adjunction of SX to IP, NP and SX mutually m-command, which makes us possible to correctly accept the structure in (24) by the Extended Complement Principle. Under the present framework, (25) can be correctly ruled out because SX and its associate NP in the subject position do not mutually m-command : the minimal maximal projection of SX, VP, does not dominate the NP, which makes it impossible for SX to m-command the NP.⁵

From the discussion we have just seen, the configurational positions for extraposed phrases and secondary predicates should be as in (26 a). SP and OP stand for subject-oriented secondary predicates and object-oriented secondary predicates, respectively.

(26) a.



b. *



The configuration in (26 a) allows a free linear order between SX and SP, and also between OX and OP. It is indicated in (26 b) that SX/SP can never

precede OX/OP because it violates the No Crossing Branches Constraint (Radford 1988 : 121). Sentences in (27)-(32) strongly support our claim.⁶

- (27) a. A man came into the room last night [that I just finished painting] [who had blond hair]. (OX-SX)
 b. *A man came into the room last night [who had blond hair] [that I just finished painting]. (SX-OX)
- (28) a. Someone brought beans to the party [cooked in oil imported from Italy] [who we didn't know]. (OP-SX)
 b. *Someone brought beans to the party [who we didn't know] [cooked in oil imported from Italy]. (SX-OP)
- (29) a. John ate some beans yesterday [that should have been cooked] [in his bathrobe]. (OX-SP)
 b. *John ate some beans yesterday [in his bathrobe] [that should have been cooked]. (SP-OX)
- (30) a. John ate the meat [raw] [nude]. (OP-SP)
 b. *John ate the meat [nude] [raw]. (SP-OP)
- (31) a. A man was painting the wall [fully clothed] [who was from Philadelphia]. (SP-SX)
 b. A man was painting the wall [who was from Philadelphia] [fully clothed]. (SX-SP)
- (32) a. John ate some beans yesterday [raw] [that should have been cooked]. (OP-OX)
 b. John ate some beans yesterday [that should have been cooked] [raw]. (OX-OP)

The situation mentioned in detail in (27)-(32) is summarized in table 1 below :

Table 1

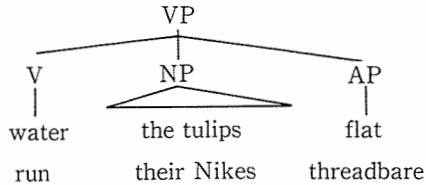
	SX	OX	SP	OP
SX		SX-OX (27b) *	SX-SP(31b)OK	SX-OP (28b) *
OX	OX-SX (27a)OK		OX-SP(29a)OK	OX-OP (32b)OK
SP	SP-SX (31a)OK	SP-OX (29b) *		SP-OP (30b) *
OP	OP-SX (28a)OK	OP-OX (32a)OK	OP-SP(30a)OK	

Note, once again, that subject-oriented elements (SXs and SPs) never precede object-oriented elements (OXs and OPs). Note also that a subject-oriented element can precede another subject-oriented element, and an object-oriented element can precede another object-oriented element. These facts strongly support the structure in (26 a).

For our theory that treats extraposition and predication exactly in the same way, it is inevitable that we should assume daughter-adjunction, although it is not accepted widely. Under our theory, extraposed phrases and secondary predicates are predicted to be base-generated in their S-structure positions. But how are they base-generated? We cannot resort to the Projection Principle for the mechanism, since neither extraposed phrases nor secondary predicates appear in the argument structure. Let us make clear the status of daughter-adjunction at this point. We assume that there are indeed two kinds of adjunction, that is, daughter-adjunction and the familiar Chomsky-adjunction. Let us assume further that sister nodes of *V'* and those of *I'* are both available as optional adjunct positions. We hold that elements which satisfy the Extended Complement Principle, namely, extraposed phrases and secondary predicates, are generated in these optional adjunct positions. Note that the daughter-adjoined configuration is essentially the same in spirit as that of Carrier and Randall (1992). They claim that the verb, the postverbal NP, and the result XP in (33) must all be sisters, in a ternary-branching VP as in (34).

- (33) a. The gardener watered the tulips flat.
 b. The joggers ran their Nikes threadbare.

(34)



(Carrier and Randall 1992 : 176)

3 The VP-Internal Subject Hypothesis and Some Other Potential Problems

Although it has been generally considered that extraposed phrases are generated in their S-structure position by movement, Rochemont and Culicover (1990) take a different view and argue that the phrases are base-generated in their S-structure position. However, if we assume that the Extended Complement Principle is applied at S-structure, whether extraposed phrases are moved from their D-structure position or they are base-generated in their S-structure position turns out to be not a critical problem for our theory.

A potential problem that faces our theory is the VP-internal subject hypothesis. Specifically, a trace of a subject in [Spec, VP] might be incorrectly judged to be an associate of an object-oriented element by the Extended Complement Principle. But, as before, if we assume that the Extended Complement Principle takes only S-structure into account, the hypothesis will not prevent us from justifying our theory. Furthermore, note that traces of non-variables sometimes have to be disregarded, as in the Minimal Binding Requirement proposed by Aoun and Li (1989).

(35) Minimal Binding Requirement

Variables must be bound by the most local potential A'-binder.

(Aoun and Li 1989 : 141)

If so, a trace of a subject in the specifier of VP position being a non-variable, we can naturally take it out of consideration.

We have so far argued extraposition and predication from syntactic point of view. However, I must admit that there exist various complex instances, especially with extraposed phrases, whose grammaticality cannot be judged by the Extended Complement Principle alone. For instance, the contrast in (36) should be accounted for without appealing to syntactic restrictions.

(36) a. A man is here who is wearing a large package.

b. *The man is here who is wearing a large package.

Since extraposed phrases can be considered to function as modifiers, the unacceptability of (36 b) can be attributed to the fact that definite NPs cannot be modified as (37) shows.

(37) *John who I saw.

Next consider the gradual changes of acceptability below observed by Takami (1990).

(38) a. I talked with a man *yesterday* with a mustache.

b. (?) I talked with a man *several days ago* with a mustache.

c. ?/ ??I talked with a man *last Thursday* with a mustache.

d. ??/*I talked with a man *one year and four months ago* with a mustache.

(Takami 1990 : 209)

The adverbials between the extraposed phrases and their associates seem to affect the acceptability of the sentences in (38). The longer and the more specific the adverbials become, the acceptability of the sentences decreases. Since the adverbials in (38) are all locative, it is natural to assume that there are no essential structural differences between (38a-d). Takami

attributes the fact in (38) to the functional condition in (39).

- (39) More/Less Important Information Condition for Extraposition from NP :

Extraposition from NP is allowed only when the extraposed element itself may be interpreted as being more important than the rest of the sentence.

(ibid. : 206)

Instances of the type in (38) cannot be accounted for in purely syntactic terms at all. I assume that non-syntactic restrictions should be considered on top of the Extended Projection Principle.⁷

4 Conclusion

In this article, we have given clear answers to the questions in (3 b) and (3 c). First, we have pointed out that the Complement Principle wrongly predicts VP adjunction of a subject-oriented extraposed phrase, which is not tenable. Then, in the process of revising the principle, we have paid attention to the fact that the S-structure position of extraposed phrases and that of secondary predicates are quite closely related. Specifically, we have claimed that subject-oriented extraposed phrases (SXs) and secondary predicates (SPs) adjoin to IP, while object-oriented extraposed phrases (OXs) and secondary predicates (OPs) adjoin to VP. The Extended Complement Principle, which can handle both extraposed phrases and secondary predicates, is a mixture of the Complement Principle and what we referred to as the Predication Condition. Since secondary predicates are generally assumed not to involve movement, the fact that secondary predicates and extraposed phrases can be handled by the same principle may support Rochemont and Culicover's claim that extraposed phrases are base-generated.

Notes

* This is a revised version of the paper read at the 33rd Annual meeting of the Society of English Literature and Linguistics Nagoya University (SELN) held at Nagoya University on April 23, 1994.

1 The term “extraposition” used in this article is different from its original sense in Rosenbaum (1967). Rosenbaum uses the term to express the transformation to form sentences such as (ia) from its underlying structure in (ib).

(i) a. It surprised me that he came.

b. It [that he came] surprised me.

By “extraposition,” we refer to the construction exemplified in (1) and (2): that is, “extraposition from NP” including “PP extraposition” and “relative clause extraposition.”

2 The Complement Principle is advanced initially in Guéron (1980) and further modified and refined in Guéron and May (1984).

3 In (10), OX *c*-commands NP^k because every node that dominates OX (i. e., IP) also dominates the NP. Note that VP does not dominate OX because the lower segment does not dominate OX. Note further that VP, though dominating NP^k (=β in (5)), does not exclude OX (=α in (5)), because the higher VP segment does dominate OX. Therefore, VP does not qualify as γ in the definition of government in (5). Similarly, IP does not qualify as γ either, because it also does not exclude OX. Thus the second clause of the definition of government is not relevant here, but the first clause is satisfied since OX *c*-commands NP^k. Hence, OX governs NP^k and they are in a government relation. Note, however, that NP^k does not *c*-command OX because the lower VP segment that dominates NP^k does not dominate OX. Therefore NP^k does not govern OX.

4 In (10), SX¹ *c*-commands the subject NP because every node dominating SX¹ (i. e., IP) also dominates the NP. IP, though dominating NP, does not exclude SX¹ because the higher IP segment dominates SX¹. Therefore, the second clause of the definition of government (5) is irrelevant, and SX¹ is shown to govern NP. Next, notice that NP in turn *c*-commands SX² because

every node dominating NP (i. e., IP) also dominates SX^2 . Note further that since SX^2 is in a segment of VP, there is no maximal projection ($= \gamma$ in (5)) between SX^2 ($= \beta$ in (5)) and NP ($= \alpha$ in (5)) which dominates the former and excludes the latter. This is due to the fact that VP does not dominate SX^2 , since the lower VP segment does not dominate it. Hence, the second clause of the definition of government is not relevant, but since the first clause is satisfied, government relation holds between NP and SX^2 .

- 5 I consider that nodes such as AGRoP, AGRsP and TP will not change the situation. Specifically, the internal structure of IP will not prevent the mutual m-command relation in (24).
- 6 (27)-(29), (31)-(32) are from Rochemont and Culicover (1990 : 58). (30) is from Nakajima (1992 : 314).
- 7 For other non-syntactic restrictions, see Rochemont (1978) and Guéron (1980) for the predicate of appearance restriction on SX. In terms of the framework of Rochemont (1986), SX is subject to the restriction that the predicate must be "c(ontext)-construable."

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Synopsis

A Comprehensive Approach towards Extraposition and Predication

By Kay Nakago

The purpose of this paper is to show that it is possible to treat the configurational properties of both extraposed phrases and secondary predicates in a parallel way.

It is generally assumed that subject-oriented extraposed phrases (SXs) are adjoined to IP, and object-oriented extraposed phrases (OXs) to VP. In Rochemont and Culicover (1990), it is argued that the locality restrictions on extraposed phrases are due to the Complement Principle. I basically agree with the idea, but the problematic point of the principle is that it wrongly predicts VP adjunction of SXs. Therefore, we need to revise the principle.

In Nakajima (1990b), subject-oriented secondary predicates (SPs) are shown to adjoin to IP, and object-oriented secondary predicates (OPs) to VP. Therefore, a secondary predicate should mutually m-command its subject. It is striking to note, at this point, that secondary predicates and extraposed phrases show similar behavior. Specifically, subject-oriented elements (SXs and SPs) adjoin to IP, while object-oriented elements (OXs and OPs) to VP. Based on these facts, I propose the Extended Complement Principle :

(1) Extended Complement Principle

α is the associate of β ($\alpha, \beta = X^{\max}$), only if α and β are in a mutual m-command relation.

In order to make correct predictions, I also show that adjunction is conducted not through Chomsky-adjunction but through daughter-adjunction. The daughter-adjoined configuration is essentially the same in spirit with Carrier and Randall (1992) who claim that a verb, a postverbal NP, and a result XP must all be sisters, in a ternary-branching VP.