Reconstruction and Linearity in Long-Distance Cleft Constructions

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1 Introduction

This paper is concerned with cleft constructions and reconstruction effects in English and Japanese. Japanese cleft constructions involve two different syntactic dependencies, movement and deletion. This assumption explains facts that have not been reported in the literature.

The reflexive pronoun in (1a) and the reciprocal pronoun in (1b) in the focus phrase can be bound either by the higher subject or by the lower subject in the presupposition.

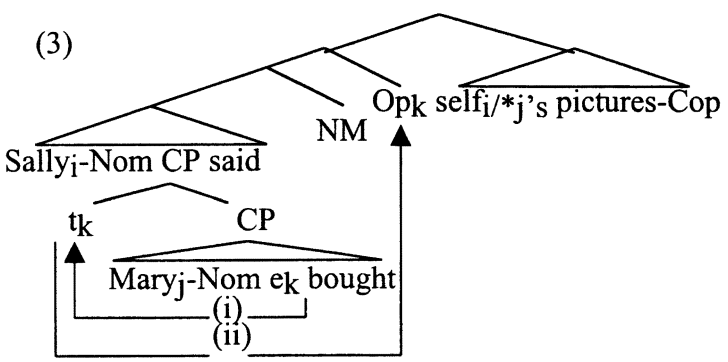
(1) a. It was [a picture of herself$_{i/j}$]$_k$ [Op$_k$ that Sally$_j$ thought [t'$_k$ that Mary$_i$ bought t$_k$]].
b. It was [a picture of each other$_{i/j}$] [Op$_k$ that the students$_i$ said [t'$_k$ that the professors$_j$ bought t$_k$]].

In clear contrast, the lower subject in Japanese cleft constructions cannot bind anaphors in the focus phrase. In (2), only the higher subject can bind the anaphors in the focus phrase.

(2) a. Sarii$_i$-ga [Mary$_j$-ga e$_k$ katta-to] itta-no -Op$_k$-wa
Sally$_i$ -Nom [Mary$_j$-Nom e$_k$ bought-Comp] said-NM-Op$_k$-Top
[zibun$_{j/*i}$-no syasin]$_k$-da.
[self$_{j/*i}$-Gen picture]$_k$-Cop
'It was self$_{j/*i}$'s picture that Sally$_i$ said that Mary$_j$ bought.'
b. Gakusei-tati$_i$-ga [sensei-gataj-ga e$_k$ hihan-sita-to]
student-Pl$_i$-Nom [teacher-Pl$_j$-Nom e$_k$ criticized-Comp]
omotteiru-no-Op$_k$-wa [otagai$_{i/*j}$-no ronbun]$_k$-da.
think-NM-Op$_k$-Top [each-other$_{i/*j}$'s paper]$_k$-Cop
'It was [each other$_{i/*j}$'s papers]$_k$ that the students$_i$ think that the professors$_j$ criticized t$_k$.'

What explains the contrast between (1) and (2)? We argue that an operator in Japanese moves from the position adjoined to the lower clause (t$_k$ in (3)), not from the thematic gap position (e$_k$).

(3)



It is shown that the dependency (ii) in (3) stems from movement, and (i) from deletion. Since Op$_k$ (or the focus phrase associated with it) reconstructs only to the position of t$_k$, the anaphor

can only be bound by the higher subject, *Sally$_i$-Nom*.

2 Linear Crossing in Long-Distance Clefts

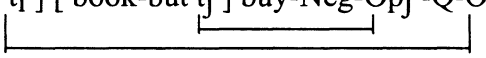
2.1 The Linear Crossing Constraint

Tanaka (1997) argues for the Linear Crossing Constraint (LCC), which requires two overlapping A'-dependencies nested. (4a), but not (4b), is ruled out by the LCC.

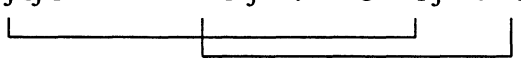
(4) a. ?* t_i ... t_j ... Op_i ... Op_j b. t_i ... t_j ... Op_j ... Op_i

The distribution of wh-phrases and *sika-nai* (*nakatta*) particles is captured by the LCC provided that they undergo invisible operator movement (Watanabe (1991)). Thus, (5a) is grammatical, but its scrambled counterpart, (5b), is not.

(5) a. [Dare-ga t_i] [hon-sika t_j] kawa-nai-Op_j-no-Op_i?
[who-Nom t_i] [book-but t_j] buy-Neg-Op_j -Q-Op_i



b. ?* [Hon-sika t_j]$_j$ [dare-ga t_i] t_j kawa-nai-Op_j-no-Op_i?
[book-but t_j]$_j$ [who-Nom t_i] t_j buy-Neg -Op_j -Q-Op_i



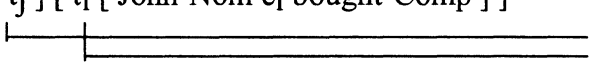
'Q who doesn't buy anything but books?'

The next sections examines the interaction of cleft constructions and the LCC.

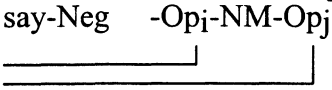
2.2 *Sika-Nai*, Cleft Operators, and the Linear Crossing Constraint

Cleft constructions interfere with *sika-nai* particles under the LCC in such a way as to further support the structure in (3). (6) has *sika-nai* as a part of presupposition. The cleft operator moves from the position adjoined to the embedded clause.

(6) ?* [Mary-sika t_j] [t_i [John-ga e_i katta-to]]
[Mary-but t_j] [t_i [John-Nom e_i bought-Comp]]



iwa-nakatta-Op_i-no -Op_j-wa hon-da.
say-Neg -Op_i-NM-Op_j-Top book-Cop



'It was books that nobody but Mary said that John bought.'

The scrambled embedded clause in (7) pied-pipes the trace of the operator, t_i.

(7) [t_i [John-ga e_i katta -to]]$_k$ [Mary-sika t_j] t_k
[t_i [John-Nom e_i bought-Comp]]$_k$ [Mary-but t_j] t_k

iwa-nakatta-Op$_j$-no -Op$_i$-wa hon-da.
say-Neg -Op$_j$-NM-Op$_i$-Top book-Cop

'It was books that nobody but Mary said that John bought.'

The contrast between (7) and (6) shows that the relevant trace is in the embedded clause. However, the thematic gap position (e) cannot be responsible for the ungrammaticality of (6), since the LCC would rule out (8) if e was the crucial position for the LCC.

(8) Mary-ga [t_i [John-ga [Sue-ni-sika t_j] e
Mary-Nom [t_i [John-Nom [Sue-Dat-but t_j] e

kawa-nakatta-Op$_j$-to]] itta-no -Op$_i$-wa hon-da.
buy-Neg-Past-Op$_j$-Comp]] said-NM-Op$_i$-Top book-is

'It was books that Mary said that John bought for nobody but Sue.'

Sentences like (8) are not always free from the LCC. When the *sika*-phrase in (8) is scrambled as in (9), the sentence is ungrammatical, due to crossing dependencies.

(9) ?* [Sue-ni-sika t_j]$_j$ Mary-ga [t_i [John-ga t_j e_i
[Sue-Dat-but t_j]$_j$ Mary-Nom [t_i [John-Nom t_j e_i

kawa-nakatta -Op$_j$-to]] itta-no -Op$_i$-wa hon-da.
buy-Neg-Past-Op$_j$-Comp]] said-NM-Op$_i$-Top book-is

'It was books that for nobody but Sue, Mary said that John bought.'

(9) shows that the trace of the cleft operator is adjoined to the left of the embedded clause, since the two A'-dependencies would not cross if t_i was right-adjoined to the lower clause.

2.3. Wh-Questions and Long-Distance Clefts

Wh-questions also interfere with cleft constructions. The scrambled counterpart of (10) in (11) is ungrammatical due to the LCC.

(10) Mary-ga [t_i [John-ga [dare-ni t_j] e katta -ka-Op$_j$]
Mary-Nom [t_i [John-Nom [who-Dat t_j] e bought-Q-Op$_j$]

siritagatteiru -no -Op$_j$-wa hon-da.
want-to-know-NM-Op$_j$-Top book-is

'It was books that Mary wants to know Q John bought for whom.'

(11) ?* [Dare-ni t_j]$_j$ Mary-ga [t_i [John-ga t_j e katta-ka -Op$_j$]
[who-Dat t_j]$_j$ Mary-Nom [t_i [John-Nom t_j e bought-Q-Op$_j$]

siritagatteiru -no-Op$_j$-wa hon-da.
want-to-know-NM-Op$_j$-Top book-is

'It was books that for whom$_j$, Mary wants to know Q John bought t_j.'

3 Three-Layered Structures

We now address the following question: what is the nature of the dependency (i) in (3)? Since it shows neither reconstruction effects nor LCC effects, it cannot be movement, if these are the properties of movement. (12) shows that the dependency (i) can hold long-distance.

(12) John-ga [t_i [Bill-ga [Tom-ga e katta-to]
John-Nom [t_i [Bill-Nom [Tom-Nom e bought-Comp]
omotteiru-to]] itta-no-Op$_i$-wa hon-da.
think-Comp]] said-NM-Op$_i$-Top book-is
'It was books that John said that Bill thought that Tom bought.'

When the presupposition has three layers of Ss, only the highest subject can bind the anaphor, showing that the operator moves from the position adjoined to the second highest clause.

(13) John$_i$-ga [t_l [Bill$_j$-ga [Tom$_k$-ga e$_l$ katta-to]
John$_i$-Nom [t_l [Bill$_j$-Nom [Tom$_k$-Nom e$_l$ bought-Comp]
omotteiru-to] itta-no-wa [zibun$_i$/*$_j$/*$_k$-no hon]$_l$-da.
think -Comp] said-NM-Top [self$_i$/*$_j$/*$_k$-Gen book]$_l$-is
'It was self$_i$/*$_j$/*$_k$'s books that John$_i$ said that Bill$_j$ thought that Tom$_k$ bought.'

The LCC also points to the same conclusion. (14a), (14b), and (14c) have *sika-nai* particles in the highest, intermediate, and the lowest S, respectively. Only (14a) is ungrammatical.

(14) a. ?* John-sika-t_j [t_i [Bill-ga [Tom-ga e katta-to]
John-but -t_j [t_i [Bill-Nom [Tom-Nom e bought-Comp]

omotteiru-to] iwa-nakatta-Op$_j$-no -Op$_i$-wa hon-da.
think-Comp] say-Neg -Op$_j$-NM-Op$_i$-Top book-is

'It was books that nobody but John said that Bill thought that Tom bought.'

b. John-ga [t_i [Bill-sika-t_j [Tom-ga e katta-to]
John-Nom [t_i [Bill-but-t_j [Tom-Nom e bought-Comp]

omowa-nai-Op$_j$-to] itta-no -Op$_i$-wa hon-da.
think-Neg-Op$_j$-Comp]said-NM-Op$_i$-Top book-is

'It was books that John said that nobody but Bill thought that Tom bought.'

c. John-ga [t_i [Bill-ga [Tom-sika-t_j e kawa-nakatta-Op$_j$-to]
John-Nom [t_i [Bill-Nom [Tom-but-t_j e buy-Neg -Op$_j$-Comp]

omotteiru-to] itta -no -Op$_i$-wa hon-da.
think -Comp] said-NM-Op$_i$-Top book-is

'It was books that John said that Bill thought that nobody but Tom bought.'

To summarize, the dependency (i) cannot be movement, but may obtain across a clause, *i.e.*, it is essentially unbounded. The next section puts this observation in a more general context.

4 Movement, Deletion, and Subjacency

We suggest that the dependency (i) is identical to deletion in English comparative constructions, which observe island conditions (15a), but may be unbounded (15b).

(15) a. * John bought more pictures than Tom believed the claim that Bill saw.
b. John bought more pictures than Tom said that Bill saw.

Chomsky (1977) argues for 'successive-cyclic' movement analysis of (15b), depicted in (16).

(16) ... more pictures [Op$_i$-than [Tom said [t'$_i$ that [Bill saw t_i]]]]

Bresnan (1976) argues that 'subcomparative deletion' in (17) cannot involve movement , since such movement is generally banned by the Left Branching Condition (Ross (1967), Bresnan's generalized A-over-A Principle), as shown by (18).

(17) John bought more pictures than Bill has e portraits.

(18) *How many$_i$ did John buy t$_i$ pictures?

Bresnan concludes that not only movement but also deletion can be essentially unbounded, since there is no deletion analogue of successive-cyclic movement. Thus, the second occurrence of *pictures* underlined in (19) is deleted under identity with the first occurrence.

(19) ... more pictures than Tom said that Bill saw [pictures]

The claim here is that the dependency (i) stems from deletion that is also responsible for comparative constructions. This predicts that comparative constructions and the dependency (i) behave similarly in a variety of contexts, as demonstrated in the following sections.

4.1 Lack of Reconstruction

Like cleft constructions, English comparative deletion also fails to show reconstruction effects, showing that they behave in the same way as the dependency (i).

(20) a. *Mary bought more pictures of himself$_i$ than Bill$_i$ had ever seen.
b. * Mary bought as many pictures of himself$_i$ as Bill$_i$ saw.

(21) a. *Mary bought more pictures of each other$_i$ than [Bill and Tom]$_i$ had seen.
b. * Mary bought as many pictures of each other$_i$ as [Bill and Tom]$_i$ had seen.

4.2. Long-Distance Clefts and Islands

(22) and (23) show that (i) can hold long-distance ((15b)) and observes island constraints, in much the same way that comparative constructions observe island constraints ((15a)).

(22) John-ga [Bill-ga [Tom-ga e katta-to]
John-Nom [Bill-Nom [Tom-Nom e bought-Comp]
omotteiru-to] itta-no-wa hon-da.
think-Comp] said-NM-Top book-is
'It was a book that John said that Bill thought that Tom bought.'

(23) ?* John-ga [Bill-ga [Tom-ga e katta-toyuu]
John-Nom [Bill-Nom [Tom-Nom e bought-that]
zizitu-o kiita-to] itta-no-wa hon-da.
fact-Acc heard-Comp] said-NM-Top book-is
'It was a book that John said that Bill heard the fact that Tom bought.'

5 Rightward-Movement and English Cleft Construction

5.1 Right-Roof Constraint

English cleft constructions reconstruct to the thematic gap position.

(24) It was a picture of himself$_{i/j}$ that John$_i$ said that Bill$_j$ bought.

The question is why these languages differ in this way. We would like to suggest that Japanese cleft constructions involve a process similar to rightward movement, illustrated by (25), and that the differences between the two languages follow from this assumption.

(25) a. John sent t$_i$ to his mother [the statue that he had spent the whole summer carving]$_i$

b. [A review t_i] appeared [of Chomsky's new theory]$_i$

Having the focus (and the operator, see Tanaka (1997) for the view that Japanese is spec-final) on the right, cleft constructions are subject to the Right Roof Constraint (RRC: Ross (1967)), which prevents the temporal adverb, *yesterday*, from modifying the matrix clause.

(26) * John said [a review t_i] appeared yesterday [of Chomsky's new theory]$_i$

As a rightward movement rule, Japanese cleft constructions cannot appeal to long movement due to the RRC. As such, the rest of derivation appeals to deletion. English cleft constructions involve leftward movement. Thus, it involves long-distance movement.

To recapitulate, English cleft constructions involve leftward movement, while Japanese cleft constructions involve rightward movement, which gives rise to the difference in the reconstruction possibilities.

5.2 Reconstruction and Condition C

Our analysis entails that Japanese cleft constructions share properties in common with rightward movement in English, on top of the fact that they are both clause bound under the RRC. In this context, observe (27), cited from McCawley (1987) (see McCawley (1982, 1987) for a radically different interpretation of this fact).

(27) a. Chomsky$_i$'s recantation of his$_i$ 1973 theory has just appeared.
a'. * His$_i$ recantation of Chomsky$_i$'s 1973 theory has just appeared.
b. (?)[Chomsky$_i$'s recantation t_j] has just appeared [of his$_i$ 1973 theory]$_j$.
b'. * [His$_i$ recantation t_j] has just appeared [of Chomsky$_i$'s 1973 theory]$_j$.

While (27a) is grammatical, the Condition C rules out (27a'). Note that extraposing the PP out of the subject NP does not change binding relations. In particular, (27b') shows that reconstruction is mandatory in the case of PP-extraposition.

We have seen above that Japanese cleft constructions reconstruct to the intermediate position. However, examples so far only show that reconstruction is optional, since they involve anaphors: as long as anaphors can reconstruct, the Condition A can be satisfied. Let us examine whether reconstruction is obligatory in cleft constructions. The Condition C provides us with an unique testing opportunity, since it has a filtering function. Consider the following sentences. (28a) is ungrammatical due to the Condition C. Scrambling the embedded object out of the c-command domain of the matrix subject pronoun saves the sentence, as seen in (28b-c).

(28) a. *Kare$_i$-ga [Mary-ga John$_i$-no ronbun-o yonda-to] itta.
he$_i$-Nom [Mary-Nom John$_i$-Gen paper-o read-Comp] said
'He$_i$ said that Mary read John$_i$'s paper.'
b. * Kare$_i$-ga [[John$_i$-no ronbun-o]$_j$ [Mary-ga t_j yonda-to]] itta.
he$_i$-Nom [[John$_i$-Gen paper-o]$_j$ [Mary-Nom t_j read-Comp]] said
'He$_i$ said that John$_i$'s paper, Mary read.'
c. ?[John$_i$-no ronbun-o]$_j$ kare$_i$-ga [Mary-ga t_j yonda-to] itta.
[John$_i$-Gen paper-o]$_j$ he$_i$-Nom [Mary-Nom t_j read-Comp] said
'John$_i$'s paper, he$_i$ said that Mary read.'

Clefting does not improve grammaticality.(29) violates the Condition C through reconstruction.

(29) * Kare$_i$-ga [Mary-ga e yonda-to] itta-no-wa
he$_i$-Nom [Mary-Nom e read-Comp] said-NM-Top
[John$_i$-no ronbun]-da.
[John$_i$-Gen paper]-Cop
'It was John$_i$'s paper that he$_i$ said that Mary read.'

The ungrammaticality of (29) shows that reconstruction in cleft constructions is obligatory, just as with extraposition in English. If reconstruction was only optional, (29) would be ruled in, since reconstruction is not required. This shows another parallelism between the dependency (ii) in Japanese cleft constructions and English rightward movement rules.

Reconstruction in Japanese cleft constructions is obligatory only to the intermediate position, not to the thematic gap position. (30a), which has a pronoun binding an R-expression, is ungrammatical, but scrambling saves the sentence from a violation of the Condition C ((30b-c)).

(30) a. *Mary-ga [kare$_i$-ga John$_i$-no ronbun-o yonda-to] itta.
Mary-Nom [he$_i$-Nom John$_i$-Gen paper-o read-Comp] said
'Mary said that he$_i$ read John$_i$'s paper.'

b. ?Mary-ga [[John$_i$-no ronbun-o]$_j$ [kare$_i$-ga t_j yonda-to]] itta.
Mary-Nom [[John$_i$-Gen paper-o]$_j$ [he$_i$-Nom t_j read-Comp]] said
'Mary said that John$_i$'s paper, he$_i$ read.'

c. ?[John$_i$-no ronbun-o]$_j$ Mary-ga [kare$_i$-ga t_j yonda-to] itta.
[John$_i$-Gen paper-o]$_j$ Mary-Nom [he$_i$-Nom t_j read-Comp] said
'John$_i$'s paper, Mary said that he$_i$ read.'

Unlike (29), the cleft counterpart of (30a) is as grammatical as (30b-c).

(31) ? Mary-ga [kare$_i$-ga e yonda-to] itta-no-wa
Mary-Nom [he$_i$-Nom e read-Comp] said-NM-Top
[John$_i$-no ronbun]-da.
[John$_i$-Gen paper]-Cop
'It was John$_i$'s paper that Mary said that he$_i$ read.'

(31) shows that reconstruction is obligatory only to the intermediate position. This is consistent with our observation that anaphors do not reconstruct to the thematic gap position.

6 Summary

Japanese cleft constructions involve both deletion (i) and movement (ii) (see (3)). (i) is identified with comparative constructions in English, as analyzed by Bresnan (1976): it is essentially unbounded, but subject to island conditions. (ii) is identified with rightward movement. (ii) interferes with *sika-nai* and wh-questions under the LCC. Being rightward movement, (ii) is clause-bound. If the LCC refers to operators and variables, this entails that rightward movement can involve movement of operators. Chomsky (1986) independently shows that certain instances of rightward movement (Heavy NP Shift) can license parasitic gaps, a characteristic property of operator-variable constructions. Reconstruction is obligatory, as evidenced by an R-expression in the focus phrase. A number of issues and consequences come out from our analysis. For instance, Japanese cleft constructions seem to be similar to relative clauses, which are in turn similar to topicalization (Kuno (1973)). One of the many questions that are left unanswered here, then, is how cleft constructions are related to topicalization and relativization.

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