

The Derivation of Japanese Relative Clauses with Scrambling and Quantifier Float*

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1. Introduction

This paper will make two new claims with regard to relative clauses in Japanese. One is that long-distance scrambling is employed to move NP (or DP) to CP, spec. The other claim is that the same mechanism as quantifier floating is applied to expose NP out of DP, so that the same NP will be able to merge with a new D (sideward movement) and serves as the head noun of a relative clause.

Let us start with an analysis of English relative clauses. According to Aoun and Li (2003), two different types of derivations are necessary for two types of relatives, *wh*-relatives as in (1) and *that*-relatives as in (2):

(1) John saw the person $who_i t_i$ hit Mary.
(*wh*-relative)

(2) John saw the person_i that t_i hit Mary.
(*that*-relative)

Since both types are subject to the subjacency condition as in (3), some kind of A' movement is necessary in both relatives.

(3) *John saw the person {who/that} Mary left
[after she hit t].

Nevertheless, Aoun and Li claim that the derivations of the two types are distinct from

each other. More specifically, in the case of *wh*-relatives, a *wh*-element, such as *who* in (1), is an operator which goes through overt A'-movement (so called matching analysis), whereas, in the case of *that*-relatives, a head noun, i.e. *person* in (2), is raised out of the relative clause (so called head-raising analysis).

I will introduce one piece of evidence from Aoun and Li (2003) for the distinction in this paper. Due to reconstruction of the head noun, *that*-relatives exhibit scope interaction while *wh*-relatives do not as follows:

(4) I phoned the two patients {that/who} every
doctor will examine tomorrow.

Aoun and Li (2003: 98, 113)

In the case of *that*, the head noun, *two patients*, can take either wide or narrow scope with respect to *every* doctor, but only the wide scope for *two patients* is possible in the *wh*-relative of (4). This difference indicates that the head noun itself goes through movement in *that*-relatives, while it does not in *wh*-relatives.

Next let us turn to Japanese relatives. At a first glance, it is not clear whether any kind of operator movement is involved. Moreover, there are data which seem to support a non-movement analysis as follows:

(5) [_{DP} [_{DP} [_{CP} $e_i e_j$ kiteiru]
wearing.is

[yoohfuku]_j]-ga yogoreteiru][sinsi]_i]
suit-Nom dirty.is gentleman

‘(Lit.) a gentleman who the suit that (he) is
wearing is dirty’

Kuno (1973: 239, adapted)

Suppose that *sinsi* ‘gentleman’ is generated inside the most embedded CP. Then, if it tries to move across the inner head noun, *yoofuku* ‘suit’, violation of the subjacency condition is expected contrary to the fact. Thus, one may consider that there is no movement in Japanese relatives

(Murasugi (1991)).¹

However, there are several pieces of evidence for the existence of movement, only two of which will be presented in this paper due to limited space.² First, Japanese relatives show scope interaction between the head noun and an object inside the relative clause as in (6):

- (6) [kinoo minna-ga t_i zibun-no ie-de
yesterday everyone-Nom self-Gen home-at
mita] eiga-no namae-o (zenbu) osiete
saw movie-Gen name-Acc all tell.me
‘Tell me all the names of movies that
everyone_j watched in his_j house’
‘every’ >> ‘names of movies’; ‘names of
movies’ >> ‘every’ Morita (2006:122)

As in English *that*-relatives (e.g. (4)), ‘names of movies’ can take wide or narrow scope with respect to ‘everyone’ in (6). If the head noun were base-generated in the matrix clause, its narrow scope interpretation would be impossible contrary to the fact. Thus, it is plausible to consider that the head noun is actually base-generated in the object position in the embedded clause first, and then is raised to the matrix clause.

Second, Japanese relatives show anaphoric reconstruction as follows:

- (7) Mary-wa [[John_i-ga e_j taipusita]
-Top -Nom typed
[karezisin_i-no ronbun]_j]-o mottekita
kimsel-Gen paper-Acc brought
‘Mary brought himself_i’s paper that John_i
typed.’ Ishii (1991: 29)

The anaphor, *karezisin* ‘himself’, can refer to the subject of the relative clause, *John*, which indicates that *karezisin* was first generated inside the relative clause and raised to the matrix clause. Accordingly, Japanese *relatives* are similar to English *that*-relatives; that is, head nouns are raised, which automatically accounts

for why *wh*-elements are not employed in Japanese relatives.³

2. Two kinds of movement in Japanese relatives

This section will show that there are at least two types of movement involved in Japanese relatives: scrambling as A'-movement to CP, spec and the quantifier floating operation which induces sideward movement of NP out of DP. Let us discuss scrambling first.

2.1. Scrambling and relative clauses

Long-distance scrambling and relative clause constructions in Japanese have a few common characteristics. For example, both exhibit scope interaction and anaphoric reconstruction, the data of which are omitted here. However, these facts are not surprising because both types of constructions require A'-movement and A'-movement generally allows reconstruction. Nonetheless, there is a piece of evidence that the two types of movement are of the same kind. Examine the following sentences:

- (8) a. *[riyuu-mo-naku]_i Mary-ga [John-ga
reason-even-without -Nom -Nom
 t_i sono setu-o sinziteiru to] omotteiru.
that theory-Acc believe C think
‘Without a reason_i, Mary thinks [that
John believes that theory t_i].’
(Saito 1985: 175)
- b. *[Mary-ga [John-ga t_i sono setu-o
-Nom -Nom that theory-Acc
sinziteiru to] omotteiru] [_{DP} riyuu]_i.
believe C think reason
‘The reason_i [that Mary thinks [that
John believes that theory t_i]]

As already noted in Saito (1985) and Murasugi (1991), reason adverbs cannot go through long-distance scrambling as in (8)a or

long-distance relativization as in (8)*b*.

Interestingly, according to Morita (2012), long-distance relations in both constructions become possible when numerals, such as *ikutuka* ‘several’, are attached to the moved elements as follows:

(9) a. [_{PP} *ikutuka-no riyuu-de*]_i Mary-ga
 several-Gen reason-at -Nom
 [John-ga *t_i* sono setu-o *sinjiteiru* to]
 -Nom that theory-Acc believe C
omotteiru.
 think
 ‘For several reasons_i, Mary thinks [that John believes that theory *t_i*].’

b. [Mary-ga [John-ga *t_i* sono setu-o
 -Nom -Nom that theory-Acc
sinjiteiru to] *omotteiru*]
 believe C think
 [_{DP} *ikutuka-no riyuu*]_i.
 several-Gen reason
 ‘Several reasons_i, [that Mary thinks [that John believes that theory *t_i*]]

The contrast between (8) and (9) shows that only entity-level expressions, not propositional-level, can go through long-distance scrambling and relativization. Although the reason for the contrast is not clear at the moment, the data independently supports the movement analysis of Japanese relatives.

Moreover, if the discussion above is correct, Japanese relative clauses resort to the same mechanism as long-distance scrambling in order to move NP (or DP) to CP, spec. In other words, A’-movement of the head noun to CP, spec is achieved with scrambling in Japanese relatives (while *wh*-movement is employed in English relatives).

2.2. Quantifier Floating

Theoretically speaking, the head-raising analysis in English and Japanese relative clauses

is problematic. The θ -criterion is one because the same noun phrase has to receive more than one θ -role (due to its own A’ movement and subsequent sideward movement). To prevent a DP from receiving more than one θ -role, one can adapt Hicks’ (2009) smuggling analysis to relative clause constructions. In other words, an NP inside a covert D is released for reuse after A’-movement to CP, spec, and merges with a new D. If the θ -criterion applies to DP, not NP, then two Ds for one NP can satisfy the criterion.

The present paper supports Hicks (2009). In other words, as will be shown below, quantifier floating raises NP to spec of its own DP in the case of Japanese relatives. As a result, the NP can be reused as the head noun by merging with a new D later in the derivation. Furthermore, it implies that DP, spec must be empty in order for the derivation to build a relative clause. There is one piece of evidence for this claim, but before presenting such evidence, let us discuss one anaphor, *zibun*.

Although anaphoric reconstruction (cf. (7)) was presented to support the movement analysis of Japanese relatives in the previous section, one particular type of anaphor, *zibun* ‘self’, is different from other types of anaphoric elements in that it may not allow reconstruction as follows:

(10) * [_{DP} [John_i-ga *e_j* taipusita] [*zibun_j*-no
 -Nom typed self-Gen
ronbun]_j]
 paper
 ‘(Lit.) self_i’s paper (that) John_i typed’

Hasegawa (1988: 59)

However, there are cases in which *zibun* can be reconstructed as follows:

- (11) [DP [John_i-ga e_j taipusita] [zibun_i
-Nom typed self
-nituite-no ronbun]_j]
-about-Gen paper
'(Lit.) a paper about self_i John typed.
- (12) [Mary-ga e_i totta] [zibun_j-no shasin]_i
-Nom took self-Gen picture
-ga soko-ni aru.
-Nom there-at is
'[Pictures of herself]_j_i that Mary_j took t_i are
there.'

Morita (2012: 77)

The contrast between (10) on one hand and (11) and (12) on the other indicates that reconstruction is possible when *zibun* is complement or adjunct to the head noun. More specifically, I argue that reconstruction of the whole DP is disallowed when *zibun* is at DP, spec as in (10).⁴

There are more data which support the claim that relativization is inhibited when DP, spec is filled. Compare the following examples:

- (13) a. *[CP daremo_i-ga t_i totta] [DP zibun_i-no
everyone-Nom took self -Gen
nanmaika-no shasin]
some-Gen pictures
- b. [CP daremo_i-ga t_i totta] [DP nanmaika
everyone-Nom took some
-no zibun_i-no shasin]
-Gen self-Gen pictures
'Some of their pictures that everyone
took'

If *zibun* precedes a numeral such as *nanmaika-no* 'some-Gen' as in (13)a, the example becomes ungrammatical. According to Watanabe (2008: 517), the structure of Japanese DP can be the following:

- (14) [DP [QP [#P [CaseP [NP]]]]]

Numerals such as *nanmaika-no* are generated under the head of #P and raised to the head of QP. Thus, it is plausible that *zibun*, which

precedes, and hence, is higher than *nanmaika-no*, occupies DP, spec. In this configuration, the derivation of a relative clause is disallowed as in (13)a.

In contrast, if *zibun* follows *nanmaika-no* as in (13)b, the example becomes acceptable because *zibun* is not at DP, spec. To summarize so far, the discussion above has indicated that DP, spec must be vacated in order for a relative clause to be derived.⁵

Moreover, according to Watanabe (2008), NP (CaseP in his paper) can be raised over #P to spec of DP, which separates NP and #P, the result of which is called quantifier floating. Therefore, it is plausible to consider that NP is raised to its own DP, spec to initiate sideward movement, and merge with a new D in the matrix clause later.

There is one piece of evidence for the DP-internal movement. First, consider the following sentence:

- (15) daremo -ga [DP zibun-no nanmaika-no
everyone-Nom self-Gen some-Gen
shasin-o] totta.
picture-Acc took
*'Everyone took some pictures of
themselves.'
'Everyone took some pictures which they
now possess.'

If *zibun* is at DP, spec as in (15), the sentence can mean 'Everyone took some pictures which they now possess,' but not 'Everyone took some pictures of themselves.'

Next compare the following examples:

- (16) a. daremo-ga [_{DP} nanmaika-no zibun
 everyone-Nom some-Gen self
-no shasin-o] totta.
 -Gen pictures-Acc took
- b. daremo-ga [_{DP} [_{NP} zibun-no shasin-o]_i
 everyone-Nom self-Gen pictures-Acc
 nanmaika *t_i*] totta.
 some took

In (16)*a*, the order between *zibun* and *nanmaika-no* in (15) is reversed. Since *zibun* is now understood as complement of *shasin* ‘picture’, the interpretation that everyone took some pictures of themselves is available unlike (15). In addition, (16)*b* is a case of quantifier floating, where the numeral seems to be “floated” out of DP. According to Watanabe (2008), however, NP is moved within its own DP to a position higher than #P, that is, to DP, spec.

Interestingly, (16)*b* has the same interpretation as (16)*a*. The contrast of interpretation between (15) on one hand and (16)*a* and *b* on the other suggests that the quantifier floated example, (16)*b*, is derived from (16)*a*, not from (15). If DP, spec is occupied by *zibun* as in (15), quantifier floating is blocked because NP has nowhere to move to, which is why (15) cannot have the interpretation of (16)*b*.

Moreover, as shown already, if DP, spec is filled, relativization is also prevented. These two facts receive a simple and logical explanation if subextraction of NP through DP, spec is essential for the derivation of relative clauses. Accordingly, the present paper supports Hicks’ (2009) smuggling analysis in the case of Japanese relative constructions.

3. Conclusion

This paper has shown that two overt operations are involved to derive relative clauses in

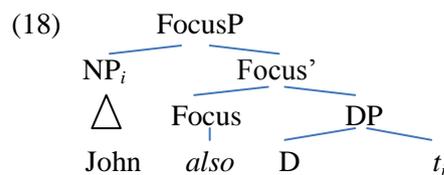
Japanese: scrambling and quantifier floating. Scrambling moves DP to CP, spec, where sideward movement takes NP out of DP and merges it with a new D. However, as it is, the derivation cannot see the NP inside DP, so some kind of movement of the NP to its own DP, spec must be applied to expose the NP to the derivation. The present paper has shown that it is the same mechanism as quantifier floating that moves NP to its own DP, spec in Japanese.

However, one might wonder what happens in the case of English *that*-relatives. According to Aoun and Li (2003), they also induce head-raising. If so, English needs to have a mechanism that lets NP move to its DP, spec for sideward movement. However, no quantifier floating is available in English.⁶ Let me conclude the paper by suggesting one solution.

Focus adverbs such as *also* can appear before or after the noun as follows:

- (17) a. John also went there.
 b. Also John went there.

It is possible that (17)*a* is derived from (17)*b* as follows:



Due to the focus movement of NP to the edge of DP, the derivation can now see the NP. Suppose the Focus head is covert in the case of *that*-relatives. Then head-raising is possible even in English relatives.

FOOTNOTES

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1 Following Sakai (1994), Hoshi (2004) claims that *sinsi* is actually base-generated in the outer relative clause as a major subject. If so, the example does not count as a counterexample to the movement analysis.

2 For other pieces of evidence, refer to Kitao (2005, 2009, 2011) and Morita (2006, 2012).

3 See also fn. 4 for an argument that Japanese relatives do not have something comparable to *wh*-relatives in English, where lexical items other than noun heads go through A'-movement.

4 Note that (10) is grammatical when *zibun* refers to the matrix subject as follows:

- (i) Mary_j-wa [John-ga e taipusita] [zibun_j-no
 -Top -Nom typed selg-Gen
 ronbun-o] nakusitesimatta.
 paper-Acc lost
 'Mary lost her paper that John typed.'

There are at least two ways to explain the derivation of (i). One is to assume that a covert operator goes through A'-movement and matches with the head noun as in *wh*-relatives in English. However, this approach is not tenable according to the present paper, which claims that A'-movement in Japanese relatives is scrambling,

because scrambling cannot apply to covert elements.

The other way is simply that only *ronbun* 'paper' goes through A'-movement and later merges with *zibun*. If so, it suggests that Japanese relative clauses employ only one type, that is, head raising, unlike English, which has head raising and matching methods according to Aoun and Li (2003).

5 One may wonder why many speakers feel (7) better than (10). It may be simply contextual. The following example shows that *karezisin* before a numeral blocks relativization:

- (i) *Peter-wa John_i-ga taipusita [karezisin_i
 -Top -Nom typed himself
 -no sambon -no ronbun-o] mottekita
 -Gen three -Gen paper-Acc brought
 '(Lit.) Peter brought himself_i's paper that
 John_i typed.'

(i) is ungrammatical because *karezisin* sits at DP, spec, which shows that there is no difference between *zibun* and other anaphoric elements as far as reconstruction is concerned.

6 *All* and *both* may be presented as evidence for quantifier floating in English, but unlike Japanese, the phenomenon is limited to only a few items such as *all* and *both*. Moreover, they cannot be applied to (non-pronominal) objects unlike Japanese. According to Doetjes (1992), they are simply adverbials.

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