

The derivation of Japanese relative clauses with scrambling and quantifier float
 By comparing relative clauses with scrambling, I would like to show that A'-movement employed in the derivation of relative clauses is not Agree-based in Japanese. To substantiate this claim, I will first present evidence for a movement account despite the dominant view that no movement is involved in Japanese relative clauses (Murasugi (1991)). Specifically, the head noun of a relative clause is first base-generated inside its own clause and goes through A'-movement to CP spec (i.e. a promotion analysis, cf. Aoun and Li (2003)). Next I will reveal that such A'-movement is actually (A'-) scrambling. Finally, I will indicate that after scrambling to CP spec, quantifier floating applies to the head noun (DP), which makes it possible to extract NP out of the DP later. As a result, the NP will be reused as the head noun by merging with a new D in the higher phase.

A few pieces of evidence are introduced here to demonstrate that a certain kind of overt movement to CP spec is involved to derive relative clauses in Japanese. Examine the following sentences:

- (1) a. [DP *zibunzisin-no shasin-o*]_i daremo-ga *t_i* totta. [scrambling (henceforth, SCR)]
 oneself-Gen picture-Acc everyone-Nom took
 '(Lit.) Pictures of themselves, everyone took.'
- b. [CP *daremo-ga t_i totta*] [DP *zibunzisin-no shasin*]_i [relative clause (henceforth, RL)]
 'Pictures of themselves that everyone took'
- (2) a. [DP *go-satu-izyoo -no hon-o*]_i daremo-ga *sorezore t_i* yonda. [SCR]
 five-CL-more.than-Gen book-Acc everyone-Nom individually read
 'More than five books, everyone read.' more than 5>>every; every>>more than 5
- b. [CP *daremo-ga sozezore t_i yonda*] [DP *go-satu-izyoo-no hon*]_i. [RL]
 'More than five books that everyone read.' more than 5>>every; every>>more than 5

As (1) shows, *daremo* 'everyone' can bind the anaphoric noun phrase, *zibunzisin-no shasin* 'pictures of oneself', which indicates that the noun phrase moves overtly in both scrambled and relative clause construction. Furthermore, the scopal ambiguity of (2)a (scrambled) and b (relative clause) suggests that 'more than five books' is reconstructed to generate more than one interpretation. These data support that overt movement is involved not only in scrambling but also in the derivation of relative clauses in Japanese contra Murasugi (1991).

Moreover, there is new data to suggest that movement employed in the derivation of relative clauses in Japanese is long-distance (or A'-) scrambling as follows:

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

Murasugi (1991) presents examples such as (3)a to show that a 'reason' (as well as a 'manner') adverb cannot go through long-distance relativization and to argue that no movement is involved in Japanese relative clauses. However, as Saito (1985) notes, the phenomenon is not limited to relative clauses: long-distance scrambling shows the same effect as in (3)b. Furthermore, when the domain of a 'reason' adverb is over individuals rather than propositions, long-distance movement of a 'reason' adverb is possible as in (4), where *ikutuka* 'several' is added to *riyuu* 'reason' so that its scope is over individuals:

- (4) a. [PP *ikutuka-no riyuu-de*]_i Mary-ga [John-ga *t_i* sono setu-o sinjiteiru to] omotteiru.
 several-Gen reason-at -Nom -Nom that theory-Acc believe C think[SCR]
 'For several reasons_i, Mary thinks [that John believes that theory *t_i*].' (Saito 1985: 175)
- b. [Mary-ga [John-ga *t_i* sono setu-o sinjiteiru to] omotteiru] [DP *ikutuka-no riyuu*]_i. [RL]
 'Several reasons_i [that Mary thinks [that John believes that theory *t_i*]]

This similarity suggests that the same movement applies to long-distance scrambling and relativization in Japanese.

Nonetheless, one peculiar phenomenon remains as follows:

- (5) [_{CP} daremo_i-ga t_i totta] [_{DP} *zibun_i-no nanmaika-no shasin/nanmaika-no zibun_i-no shasin]
 -Nom took self -Gen some-Gen pictures/some-Gen self-Gen pictures
 ‘Some of their pictures that everyone took’

In (5), if a head noun is headed by *zibun* ‘self’, the reconstruction effect is unobserved. However, if a modifier is placed before *zibun*, reconstruction is possible, which has not been discussed in the literature. To account for the contrast, I argue that after scrambling to CP spec, NP inside the DP is raised to its DP spec through quantifier floating. Since the NP is now visible to the higher phase, it will be reused and serve as the head noun. This account explains the strange phenomenon of (5). Suppose *zibun* is base-generated at DP spec. Then the NP cannot be raised to DP spec; as a result, the NP itself remains invisible to outside DP, and hence, cannot be reused as the head noun of a relative clause. However, if *zibun* is complement of *shasin* ‘picture’, it should follow the quantifier, *nanmaika* ‘some’, in which case *nanmaika-no zibun-no shasin* ‘several pictures of oneself’ can be raised to DP spec and relativization becomes possible. (6) supports this analysis:

- (6) a. daremo -ga [_{DP} zibun-no nanmaika-no shasin-o] totta.
 everyone-Nom self-Gen some -Gen picture-Acc took
 *‘Everyone took some pictures of themselves.’
 b. daremo-ga [_{DP} nanmaika-no zibun-no shasin-o] totta.
 c. daremo-ga [_{DP} [_{NP} zibun-no shasin-o]_i nanmaika t_i] totta. (Quantifier-floated)

As (6)a shows, when *zibun* heads DP, i.e. being at DP spec, VP does not mean ‘taking a picture of oneself.’ However, when *zibun* does not head DP as in (6)b, i.e. being not at DP spec, the interpretation of VP is available because *zibun* is complement of *shasin* there. (6)c is an instance of quantifier floating, and it allows the interpretation of self-portrait, which indicates that quantifier floating is available when *zibun* is not at DP spec. These facts suggest that DP spec of the head noun has to be empty before relativization applies to the noun.

The present analysis indicates one important difference between languages which employ *wh*-elements to derive relative clauses such as English and ones which do not as in Japanese. The former type uses Agree to initiate A’-movement. When the head noun itself rather than a *wh*-element is raised (i.e. a promotion analysis) to CP spec through Agree, the head noun is encapsulated in another covert DP (Hicks (2009)). After Agree, the *wh*-feature of the outer DP is checked off and erased, so that the head noun inside is then visible to the next higher phase. In contrast, Japanese resorts to scrambling to move DP to CP spec. Since scrambling does not involve Agree, no feature is deleted after scrambling to CP spec. Thus, the scrambled phrase, D of which has already received a theta-role and Case, cannot be used as the head noun as it is. To resolve this situation, quantifier floating is applied to expose NP out of DP so that the NP can be reused later as the head noun. The claims made here, if correct, implicate not only that every overt A’-movement in Japanese does not involve Agree and is achieved by an alternative overt mechanism such as scrambling, but also that covert *wh*-movement languages may have to employ a different mechanism from Agree to build relative clauses.

[Selected references] Aoun, Joseph and Y-h Audrey Li (2003) *Essays on the Presentational and Derivational Nature of Grammar: The Diversity of WH-Constructions*, MIT Press, Cambridge, Massachusetts; Hicks, Glyn (2009) “Tough-Construction and Their Derivation,” *LI* 40, 535-566; Murasugi, Keiko (1991). *Noun Phrases in Japanese and English: A Study in Syntax Learnability and Acquisition*, doctoral dissertation, University of Connecticut; Saito, Mamoru (1985). *Some Asymmetries in Japanese and Their Theoretical Consequences*, doctoral dissertation, MIT.