

THE PRESENCE OF HEAD-RAISING AND RESUMPTIVE-STRANDING IN JAPANESE RELATIVE CLAUSES*

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Abstract: Japanese relative clauses (RCs) show peculiar characteristics. For instance, while weak crossover effects reveal that relativization includes movement, the absence of island effects seems to demonstrate that relativization does not include movement. Ishii (1991) accounts for this peculiarity of Japanese RCs by his last-resort analysis; however, because of the Inclusiveness Condition (Chomsky 1995), this last-resort model is not tenable in the Minimalist Program (MP). Therefore, an improved characterization of Ishii's last-resort analysis of relativization in Japanese is needed within the framework of the MP. In this paper, I claim that reconstruction/connectivity effects show that Japanese RCs include promotion/head-raising. I then propose that the amendment of Boeckx's (2003) resumptive-stranding model, which includes promotion/head-raising of a relative head and *pro*-stranding, can offer an account of both the movement properties and non-movement properties of Japanese RCs. The proposed analysis conforms to Inclusiveness. Also, I claim that the unavailability of A-scrambling in Japanese RCs, which could be raised as an objection to the promotion/head-raising analysis, is due to the ban on Improper Movement (Müller–Sternefeld 1993; 1996).

Keywords: relative clauses, weak crossover, reconstruction/connectivity, island insensitivity, head-raising, resumptive pronouns, Japanese

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NP in a configuration where the moved element crosses over a co-indexed pronominal that does not c-command the extraction site (see Wasow 1972/1979).² Hence, the fact that Japanese relative clauses show WCO effects as in (2b) demonstrates that relativization in Japanese does involve movement. In (2b), the relative head *otoko* ‘man’ undergoes movement and crosses over the co-indexed pronoun *soitu* ‘he’. As a result, the extraction site of the relative head *otoko*, which is marked by e_i , is coreferent with the pronoun *soitu* that does not c-command it. Thus, Japanese relative clauses possess peculiar characteristics. WCO effects reveal that movement is involved in relativization, while the immunity of island effects indicates that movement is not involved in relativization.³

Within the framework of the Principles and Parameters Theory, Ishii (1991) suggests a last-resort analysis of Japanese relative clauses: relativization in Japanese basically includes movement; however, when the movement crosses an island, relativization in Japanese does not rely on the movement operation and instead, *pro* occurs in the gap position as a last resort.⁴ That is, according to Ishii (1991), Japanese relative clauses have a hybrid nature.⁵

² The sentences in (ia–c) exemplify WCO effects.

- (i) (a) [?]*Who_i did Mary talk about his_i sister to t_i ?
 (b) [?]*Who_i did the woman he_i loved betray t_i ?
 (c) [?]*What_i did the man who lost it_i need to find t_i ? (Wasow 1972, 136, 143)

³ WCO phenomena also exist in Japanese sentences involving *wh*-extraction. Thus, (ib), where the covert movement of the *wh*-phrase *dare-o* ‘who-acc’ crosses the pronoun *soitu* ‘he/she’, is deemed ungrammatical.

- (i) (a) Dare_i-ga soitu_i-no hahaoya-o aisiteiru no.
 who-nom he/she-gen mother-acc love Q
 ‘Who_i loves his_i mother?’
 (b) [?]*Soitu_i-no hahaoya-ga dare_i-o aisiteiru no.
 he/she-gen mother-nom who-acc love Q
 ‘Who_i does his_i mother love?’ (Yoshimura 1992, 14)

⁴ Ishii’s last-resort analysis predicts that WCO effects do not arise in relativization crossing an island, because *pro* is generated in the base position. For detailed discussion, see *op.cit.*, 39–43.

⁵ Murasugi (1991) also points out that Japanese relative clauses have both movement and non-movement properties. She proposes that Japanese relativization involves null operator movement or the base-generation of *pro*. The ungrammaticality of (i) can be accounted for in terms of both the movement analysis and the non-movement analysis.

2. The presence of head-raising in Japanese relative clauses

Let us begin by considering whether the movement properties of relativization in Japanese are captured by the promotion/head-raising analysis. The promotion/head-raising analysis was suggested by Brame (1968); Schachter (1973); Vergnaud (1974), among others, and amended recently by Kayne (1994) and Aoun and Li (2003), among others. This analysis involves overt phrasal movement of a relative head. Compared with the null operator movement analysis (Chomsky 1977; Browning 1987; Aoun–Li 2003, among others), the promotion analysis has a clear advantage when it comes to providing an explanation for reconstruction/connectivity effects. Consider (4a–c).

- (4) (a) The portrait of himself_i that John_i painted is extremely flattering.
(Schachter 1973, 32)
- (b) We admired the picture of himself_i (that) John_i painted in art class.
(Aoun–Li 2003, 111)
- (c) The interest in each other_i that John and Mary_i showed was fleeting.
(Schachter 1973, 32)

In the English relative clauses in (4a–c), anaphors occur in the external relative head, and these anaphors can take the subjects of the relative clause as their antecedents, although it appears that these anaphors are not *c*-commanded by the subjects. If the relative heads are reconstructed into the gap positions of the relative clauses, the anaphors can be bound by their antecedent in their local domain. (5a–c) also show the reconstruction/connectivity effects of the relative head.

- (5) (a) The **headway** that we made was satisfactory. (Brame 1968)
- (b) The careful **track** that she's keeping of her expenses pleases me.
(Schachter 1973, 32)
- (c) Phil warned Daniel of the close **tabs** that the FBI kept on his movements.
(Carlson 1977, 537)

In (5a–c), an idiom chunk occurs in the relative head, and is linked to a verb in the relative clause that allows the idiomatic interpretation.⁶

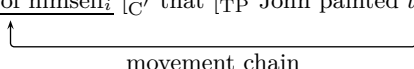
⁶ A reviewer pointed out that not all idioms behave this way; for instance, (ia–b) result in ungrammatical output:

- (i) (a) *The bucket she kicked was horrible.
(b) *The spot that Mexican food hit yesterday was unforgettable.

The same elements are incompatible with an idiomatic interpretation in a situation where they do not form a constituent with the verb that is needed to construct the idiomatic interpretation. This is illustrated below:

- (6) (a) *Headway/*The headway was satisfactory.
 (b) *Careful track/*The careful track pleases me.
 (c) *Tabs/*The tabs are really important for our project.

In the promotion analysis, as shown in (7), the NP that is to become the ‘head’ of the relative clause moves to the edge of the relative clause, namely Spec-CP. Due to the raising of the relative head, the external head position and the gap are linked by a movement chain; hence the head can be reconstructed in the gap position of the relative clause. Thus, the promotion/head-raising analysis can provide a clear account of the availability of reconstruction.

- (7) [DP the [CP portrait of himself_i [C' that [TP John painted *t_i]]]] ...*
- 

movement chain

Keeping this in mind, let us examine Japanese relative clauses. First of all, let us examine anaphor licensing facts. Consider (8a, b).

- (8) (a) Mary-wa [[John_i-ga *e_j* taipu-sita] kare-zisin_i-no ronbun_j]-o mottekita.
 M-top J-nom typed himself-gen paper-acc brought
 ‘(lit.) Mary brought himself_i’s paper that John_i typed.’ (Ishii 1991, 29)
- (b) Katie-wa [[Paul_i-ga *e_j* egaita] kare-zisin_i-no *e_j*]-o taisoo hosigatta
 K-top P-nom drew himself-gen picture-acc very wanted
 ‘(lit.) Katie wanted himself_i’s picture that Paul_i drew very much.’
 (Kitao 2009, 31)

I claim that the ungrammaticality of (ia–b) is due to the fact that in these sentences, the relative heads themselves do not imply the meaning that the respective idioms represent. The heads in (5a–c) can recall the denotation of the corresponding idioms: *headway* recalls ‘progress’; *track* means ‘path’ which can recall the trace of ‘information’; and *tab* is a paper that is attached to something with information, to facilitate its identification. Since we would check a tab carefully, the word *tab* could be associated with careful scrutiny. That is, idiom chunks that can appear in relative heads are “compositional” (Wasow et al. 1984) or “idiomatically combining expressions” (Nunberg et al. 1994)—the part contributes to the meaning of the whole idiom and should be assigned identifiable meanings. The relative head is comparatively focalized; therefore, I conclude that the heads of the idiom chunk themselves must allude to the idiom.

In (8a, b), the anaphor *kare-zisin* ‘himself’ can occur in the external relative head and it can take the subject of the relative clause as its antecedent. This is explained on a raising account of relativization, where the ‘head’ of the relative can be directly reconstructed in the gap position within the relative clause. Next, let us examine the possibility of the occurrence of idiom chunks in an external head in Japanese relative clauses. Consider (9a, b).

- (9) (a) [[*Karera-ga* *magarinarinimo* e_i *tuketa*] *kettyaku_i*]-*wa* *amari* *yorokobarenakatta*.
 they-nom somehow came to settlement-top not so pleasing
 ‘(lit.) The settlement that they somehow came to was not so pleasing.’
 (The conclusion that they reached was not so pleasing.) (Inoue 1973, 214)
- (b) *Raibaru-wa* [[*John-ga* *mizukara* e_i *hotta*] *boketu_i*]-*o* *totemo* *yorokonda*.
 rival-top J-nom himself dug grave-acc very happy
 ‘(lit.) The rival was very happy about the grave that John himself dug.’
 (The ruin John himself brought about made his rival happy.) (Kitao 2009, 33)

(9a) retains the idiomatic interpretation *kettyaku-o tukeru* ‘come to conclusion’ and (9b) maintains the idiomatic interpretation *boketu-o horu* ‘bring about the ruin’. The possibility of idiomatic interpretation indicates that the external relative head is reconstructed in the relative clause, and the idiom chunk gets interpreted in the gap position. If the idiom chunks do not associate with appropriate verbs, the idiomatic interpretation is not available as shown in (10a, b):

- (10) (a) **Sono kettyaku-wa amari yorokobarenakatta*.
 the settlement-top not very pleasing
 ‘(lit.) The settlement was not very pleasing.’ (Inoue 1973, 214)
- (b) **John-wa mizukara boketu-o tukutta*.
 J-top himself grave-acc made
 ‘(lit.) John made (his) grave by himself.’
 (*John made the ruin by himself.) (Kitao 2009, 33)

Thus, Japanese relative clauses demonstrate reconstruction/connectivity effects in idiom chunk interpretation as well. The possibility of the occurrence of anaphors in the external head position and the possibility of the idiomatic interpretation of an idiom chunk in the external head position support the fact that an external head can be reconstructed in a relative clause. The reconstruction/connectivity effects are thus in favor of the promotion/head-raising analysis of Japanese relative clauses.

3. The resumptive-stranding strategy for relativization in Japanese

3.1. Boeckx (2003)

I have argued that movement properties of Japanese relative clauses should be captured by the promotion/head-raising analysis. However, Japanese relative clauses also possess non-movement properties as represented in (1a, b). Ishii's (1991) last-resort model captures the conflicting characteristics of relativization in Japanese; however, due to the Inclusiveness Condition (Chomsky 1995), this model is not tenable within the framework of the Minimalist Program.

I claim that Boeckx's (2003) resumptive-stranding model⁷ can capture Ishii's generalization in a way that obeys the Inclusiveness Condition. With this in mind then, let us examine Boeckx's resumptive-stranding model in detail.

It has been argued in the literature that resumptive pronouns are insensitive to Complex NP islands. Consider the Hebrew example in (11):

- (11) ra?iti ?et ha-yeled_i she-/asher dalya makira ?et ha-?isha_k she- [e]_k ?ohevet ?oto_i
 saw-I acc the-boy that Dalya knows acc the woman that loves him
 'I saw the boy that Dalya knows the woman who loves him.' (Borer 1984, 221)

In (11), the relative head *ha-yeled* 'the boy' has its original gap in a complex NP. If a dislocation from the original gap to the external head takes place, the movement interferes with the Complex NP Constraint. Thus the resulting structure should be ungrammatical; in fact, (11) is deemed grammatical. Hence, it seems that no movement takes place when a resumptive pronoun is generated in the internal gap position. In fact, if the gap is left as it is, the resulting structure is deemed ungrammatical—as represented in (12):

- (12) *ra?iti ?et ha-yeled_i she-/?asher david makir ?et ha-?isha_k she-/?asher [e]_k ?ohevet [e]_i
 saw-I acc the-boy that David knows acc the woman that loves
 'I saw the boy that David knows the woman that loves [e].' (*op.cit.*, 226)

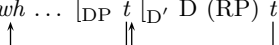
However, the examples in (13) suggest that movement takes place even when a resumptive pronoun occurs in the internal position.

⁷ Boeckx (2003) does not actually use this term. The designation of Boeckx's model as the "resumptive-stranding model" is solely my own.

- (13) (a) Yidaŋ ?et ha-?idiot_i še ha more yaxšil ?oto_i
 I-informed acc the-idiot that the teacher will-flunk him
 ‘I informed the idiot that the teacher will flunk him.’
- (b) *Ze ha baxur še yidaŋti ?et ha-?idiot_i še ha more yaxšil t_i
 this-is the guy that I-informed acc the-idiot that the teacher will-flunk
 ‘This is the guy that I informed the idiot that the teacher will flunk.’
- (c) *Ze ha baxur še yidaŋti ?et ha-?idiot_i še ha more yaxšil ?oto_i
 this-is the guy that I-informed acc the-idiot that the teacher will-flunk him
 ‘(lit.) This is the guy that I informed the idiot that the teacher will flunk him.’
 (Boeckx 2003, 20–1)

(13a) shows that the epithet *ha-?idiot* ‘the idiot’ can be coreferent with the pronoun *?oto* ‘him’. In (13b), a gap is left as a result of the relativization of *ha baxur* ‘the guy’ and this renders the sentence ungrammatical, as a result of the violation of Condition C of the Binding Theory or strong crossover. In other words, the movement crosses the epithet *ha-?idiot*, which is coindexed with the relative head. Interestingly, (13c)—where a resumptive pronoun occurs in the gap position—also shows crossover effects. This means that the resumptive pronoun left in the gap position does not behave like the pronoun in (13a), but it behaves like the trace in (13b).

On the basis of this crucial data, Boeckx (2003) proposes a movement analysis of resumptive pronouns. He claims that resumptive pronouns are stranded portions of the moved phrases they “associate with”. He proposes that on First Merge, resumptive pronouns form a constituent “Big-DP” with their antecedents in resumptive relative clauses. Then, the *wh*-complement of D is extracted from DP and a resumptive pronoun is stranded as seen in (14). That is, resumptive chains are the results of stranding (subextraction) under A'-movement.

- (14) *wh* ... [DP t [D' D (RP) t]]
 *stranding (subextraction)*

Furthermore, Boeckx suggests the emergence of islands is tied to the presence of AGREEMENT. As an example, he raises the difference in island sensitivity between Irish *aL*-relatives and *aN*-relatives. Consider (15a, b) from Irish.

(15) Irish

(a) *An fear a phóg mé an bhean a phós _ _
 the man aL kissed I the woman aL married
 ‘the man that I kissed the woman that married’

(b) An fear a bpóg mé an bhean a phós _ é
 the man aN kissed I the woman aL married him
 ‘the man that I kissed the woman that married (him).’ (Sells 1984, 200–1)

(15a), where an agreeing complementizer *aL* occurs, shows island sensitivity. On the other hand, when a non-agreeing complementizer *aN* is generated, no island effects arise, as shown in (15b). Thus Boeckx (2003) argues that a resumptive chain and agreement are strongly related: resumptive chains that are formed by a non-agreeing complementizer are insensitive to islands, but resumptive chains that are formed by an agreeing complementizer are subject to islands.

I argue that the amendment of this resumptive-stranding strategy can account for the distinctive characteristics of Japanese relative clauses.

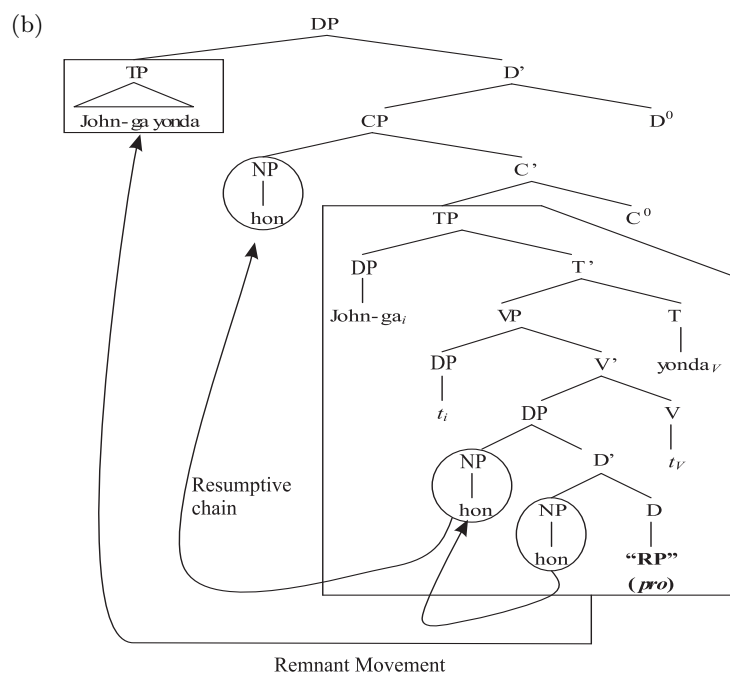
3.2. Proposal: subextraction and promotion/head-raising in Japanese relative clauses

As I discussed above, Boeckx’s resumptive-stranding model accounts neatly for the fact that resumptive chains containing non-agreeing complementizers are immune to the Complex NP Constraint, but do demonstrate WCO effects. Relativization in Japanese also bears the characteristics of island insensitivity and the presence of WCO effects. I then utilize Boeckx’s resumptive-stranding model and attempt to explain the distinctive characteristics of relativization in Japanese, which Ishii (1991) captures through his last-resort model within the framework of the Principles and Parameters Theory.

Using Boeckx’s resumptive-stranding model, I propose that Japanese relative clauses contain a null “resumptive” pronoun (*pro*) in a gap position and this forms a constituent with a relative head, making a “Big-DP”. The head then undergoes phrasal movement which results in the null resumptive pronoun (*pro*) being stranded. I claim that a head NP undergoes movement overtly; that is, relative clauses involve promotion/head-raising. The head NP first moves to Spec-DP before finally landing in Spec-CP in the relative clause and these movements

form a resumptive chain. After the head lands in Spec-CP, the relative clause TP undergoes (additional) remnant movement. The derivation is represented as (16a, b):⁸

- (16) (a) [John-ga yonda] hon
 J-nom read-past book
 ‘the book that John read’



I argue that a “null” resumptive pronoun is generated in a relative clause. A null pronoun is not added in the course of computation, and hence it does not interfere with the Inclusiveness Condition, which was the problematic issue in the application of Ishii’s (1991) last-resort model within the framework of the Minimalist Program.

The analysis presented here entails the presence of a pronoun in a relative clause. However, if an overt pronoun occurs in the gap position of a relative clause which does not include any island between the external

⁸ Following Kayne (1994, 94), I assume that Japanese relatives, i.e., N-final relatives, have structures with no overt D^0 for external heads and C^0 for relative clauses.

same woman is associated with all the men. In the multiple-interpretation (b), on the other hand, the pronoun in the matrix VP is interpreted as a variable bound by *every man*. Therefore, a different woman is associated with each man in this case.

However, when a resumptive pronoun occurs in the gap position, the multiple-individual interpretation is not available, only the single-individual reading is available.

- (20) ha-iSa Se kol gever hizmin **ota** hodeta lo
 the woman that every man invited her thanked to-him
 (a) ⟨Single-individual⟩ the woman every man invited thanked him
 (b) ⟨Multiple-individual⟩ * (op.cit., 588)

Thus, there is a difference in interpretation between traces and resumptive pronouns in relative clauses. According to Meral (2004), Turkish, an SOV language, has this difference too.

- (21) (a) [Her adam-in e_i çağır-diğ-i] kadın_i
 every man-gen invite-op-poss woman
 ‘the woman that every man invited’
 ⟨Single-individual⟩ the (same) woman who every man invited
 ⟨Multiple-individual⟩ the (different) woman who every man invited
 (b) [Her adam-in **kendensi-ni**_i çağır-diğ-i] kadın_i
 every man-gen herself-acc invite-op-poss woman
 ‘the woman who all men invited’
 ⟨Single-individual⟩ the (same) woman who every man invited
 ⟨Multiple-individual⟩ * (Meral 2004)

Keeping this in mind, let us consider Japanese relative clauses again. As shown in (17a, b), an overt pronoun cannot occur in the gap position of the direct object position in simple relative clauses. However, if relativization in Japanese relies on the resumptive-stranding strategy, a null “resumptive” pronoun should occur in a direct object position. This means that the nature of the null resumptive pronoun should be different from that of a trace—the single-individual interpretation is only available when the resumptive pronoun in a gap position is bound by a quantified expression. Let us then examine the interpretation of relative clauses in which a quantified expression c-commands the gap in the relative clause. Consider (22):

- (22) [Dono otoko-mo e_i (pro) $_i$ sasotta] josei $_i$ -wa kare/soitu-ni kansyasita.
 every man invited woman-top him thanked
 ‘the woman that every man invited thanked him’
 (a) ⟨Single-individual⟩ the woman every man invited thanked him
 (b) ⟨Multiple-individual⟩ ??

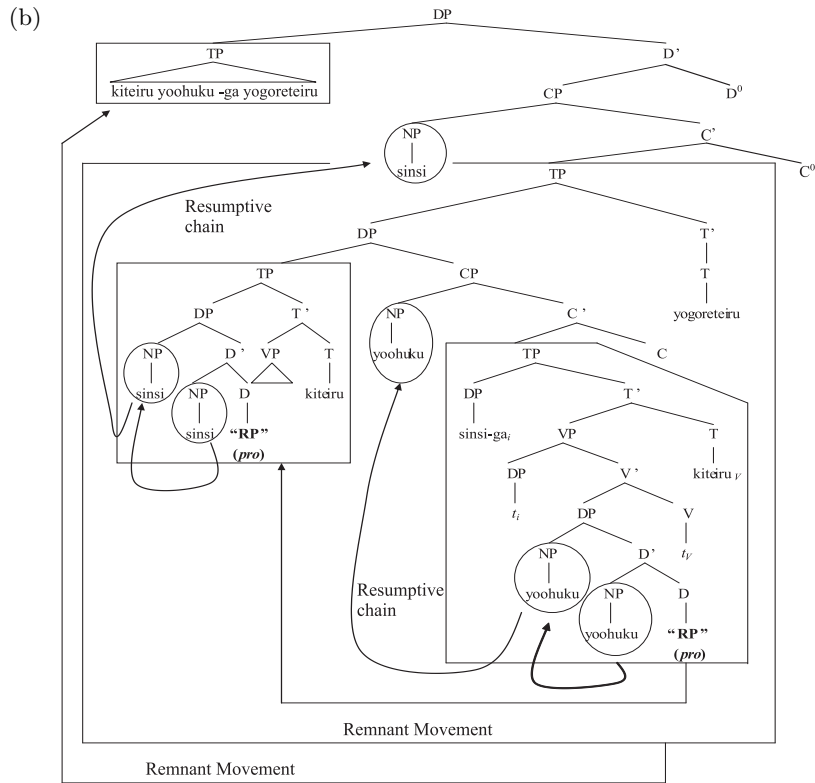
(22) favors a single-individual reading. This implies that a resumptive pronoun occurs in the gap position in the relative clause. Given that a null “resumptive” pronoun behaves like an overt resumptive pronoun, it seems reasonable to conclude that the lack of a phonetic element in a resumptive pronoun is due not to a narrow syntactic reason but, rather, to a PF-related reason. In other words, a resumptive pronoun does exist in a gap position of a relative clause but it does not have phonetic content.⁹

Thus, I claim that relativization in Japanese involves promotion/head-raising and (null) resumption-stranding. This resumptive-stranding model can account for the reconstruction/connectivity effects in Japanese RCs. This model includes promotion/head-raising as represented in (23b) and (24b), and hence the movement chain (resumptive chain) makes it possible to reconstruct the relative head in the internal head position.

- (23) (a) Mary-wa [[John $_i$ -ga e taipu-sita] kare-zisin $_i$ -no ronbun]-o mottekita.
 M-top J-nom typed himself-gen paper-acc brought
 ‘(lit.) Mary brought himself $_i$ ’s paper that John $_i$ typed.’ (Ishii 1991, 29)
 (b) [TP Mary-wa [DP [TP John $_i$ -ga t_i taipu-sita] $_j$
 [CP **kare-zisin $_i$ -no ronbun** [TP John-ga [DP t'_i [D' t_i pro]] taipu-sita] $_j$...]]-o
 mottekita].
- (24) (a) Raibaru-wa [[John-ga mizukara e_i hotta] boketu $_i$]-o totemo yorokonda.
 rival-top J-nom himself dug grave-acc very happy
 ‘(lit.) The rival was very happy about the grave that John himself dug.’
 (The ruin John himself brought about made his rival happy.)
 (b) [TP Raibaru-wa [DP [TP John $_i$ -ga mizukara t_i hotta] $_j$
 [CP **boketu $_i$** [TP John-ga mizukara [DP t'_i [D' t_i pro]] hotta] $_j$...]]-o totemo
 yorokonda].

⁹ A reviewer asks why resumptive pronouns must be null if they behave the same way as overt resumptive pronouns. I could claim this is related to the fact that Japanese allows null *pro* objects, as well as null *pro* subjects. It could be argued that a null *pro* alternative is favored when a gap in the relative clause and the head are in a local relation, whereas an overt resumptive pronoun could occur if a gap and the head are in a long-distance relation. However, further research is required to confirm this.

(26) (a) $[[e_i e_j \text{ kiteiru }] \text{ yoohuku}_j\text{-ga } \text{yogoreteiru }] \text{ sinsi}_i = (1a)$



dergo A-scrambling within the relative clause, as pointed out by Miyamoto (2007). Since Saito (1985) introduced the concept, the notion that an A-scrambled object can bind an anaphor within a subject NP has been subject to intense debate. Consider (27a, b):

(27) (a) $^?*[_{\text{TP}} [\text{Otagai}_i\text{-no } \text{sensei}]\text{-ga } [\text{karera}_i\text{-o } \text{hihansita}]] (\text{koto})$
 each other-gen teacher-nom they-acc criticized fact
 ‘Each other_i’s teachers criticized them_i.’

(b) $^?[_{\text{TP}} \text{Karera}_i\text{-o } [_{\text{TP}} [\text{otagai}_i\text{-no } \text{sensei}]\text{-ga } [t_i \text{ hihansita}]]] (\text{koto})$
 they-acc each other-gen teacher-nom criticized fact
 ‘Them_i, each other_i’s teachers criticized t_i .’ (Saito 1992, 74–5)

In (27a), the anaphor *otagai* ‘each other’ occurs in the subject NP, and is not c-commanded by its antecedent, namely the object NP *karera-o*

‘them’. Hence, it violates Condition A of the Binding Theory. On the other hand, in (27b), the object NP *karera-o* ‘them’ is scrambled to a TP-adjoined position. The grammaticality of (27b) shows that the scrambled object can bind the anaphor in the subject NP. Keeping this in mind, let us consider relative clauses in which an anaphor occurs in the subject position:

- (28)*[[Kare-zisin_i-no tan'nin-no sensei-ga e_i hometeita] seito_i]-wa
 himself-gen homeroom teacher-nom praised-asp student-top
 zenkoku sakubun konkuuru-de syoo-o totta.
 national composition contest-in award-acc got
 ‘(lit.) The student_i that himself_i’s homeroom teacher praised got a prize in the
 national composition contest.’ (Kitao 2009, 59)

(28) is deemed ungrammatical. If no anaphor occurs in the subject NP in the relative clause, the sentences are grammatical, as shown in (29).

- (29) [Tan'nin-no sensei-ga e_i hometeita] seito_i]-wa
 homeroom teacher-nom praised-asp students-top
 zenkoku sakubun konkuuru-de syoo-o totta.
 national composition contest-in award-acc got
 ‘(lit.) The student that the homeroom teacher praised got a prize in the national
 composition contest.’

Therefore, it seems reasonable to conclude that the ungrammaticality of (28) is due to the fact that the anaphor within the subject NP is not c-commanded by the antecedent, namely the relative head.

Let us now examine (28) again in detail. In (28), the antecedent of the anaphor *kare-zisin* ‘himself’ is the relative head *seito* ‘student’. The relative head does not c-command the anaphor in the gap position. The relative head in the external position, namely the surface position, c-commands the anaphor within the subject NP, but it does not occur in the local domain of the anaphor. Therefore, the anaphor is not locally bound by the relative head in the external position. Hence, if the relative head undergoes movement to Spec-CP directly—without landing somewhere in the relative clause TP, as represented in (30a, b)—the ungrammaticality of (28) is explained.

- (30) (a) [CP seito_i [TP kare-zisin_i-no tan'nin-no sensei-ga t_i hometeita]
 ↑
 (b) [DP [TP kare-zisin_i-no tan'nin-no sensei-ga t_i hometeita]_j [CP seito_i t_j]]

However, as Miyamoto (2007) points out, it is reasonable to assume that the relative head can undergo A-scrambling, as an object can in (27b), because the head undergoes an “overt” movement in the derivation under the promotion analysis. Let us suppose that the relative head undergoes A-scrambling and is adjoined to the relative clause TP, before it is landed in Spec-CP. In this case, it is predicted that the A-scrambled relative head can c-command the anaphor within the subject NP in the relative clause. The representation of (28) with the A-scrambling of the relative head is that of (31).

- (31) $\left[\text{DP} \left[\text{TP}_j t'_i \left[\text{TP} \text{ kare-zisin}_i \right\text{-no tan'nin-no sensei-ga } t_i \text{ hometeita} \right] \right] \right]$
 [CP [NP seito_i] t_j]-wa zenkoku sakubun konkuuru-de syoo-o totta.
- A-bind

The relative head is A-scrambled to the TP-adjoined position and from there moves to Spec-CP. Then, TP undergoes movement to Spec-DP. Based on the promotion analysis, it is reasonable to suppose that the relative head in the TP-adjoined position can bind the anaphor in the subject NP in the relative clause. (32), in which the object in the relative clause is A-scrambled to a TP-adjoined position, shows clearly that the A-scrambled objects can c-command the anaphor within the subject:

- (32) $^?[\text{TP}(\text{Sono}) \text{ Seito-o}_i \left[\text{TP} \text{ kare-zisin}_i \text{-no tan'nin-no sensei-ga } t_i \right. \right]$
 (the) student-acc himself-gen homeroom teacher-nom
 hometeita/hometa].
 was praising/praised
 ‘(lit.) the student_i, himself_i’s homeroom teacher was praising/praised.’

Therefore, it follows that the anaphor licensing fact in (28) shows that a relative head cannot A-scramble in the relative clause.¹⁰

¹⁰ Kitao (2005) argues that the anaphor *otagai* ‘each other’ can occur in the subject position in the relative clause. Consider (ia–b).

- (i) (a) $^?[\text{Otagai-no } \text{tan'nin-no sensei-ga } t_i \text{ hometa}] \text{ hutari-no seito}_i$
 each other-gen homeroom teachers-nom praised two students
 ‘(lit.) the two students who(m) each other’s homeroom teachers praised’
 (b) $^?[\text{Otagai-no } \text{joosi-ga } t_i \text{ sikatta}] \text{ hutari-no sin'nyu-syain}_i$
 each other-gen boss-nom scolded two new employees
 ‘(lit.) the two new employees who(m) each other’s bosses scolded’
(*op.cit.*, 48)

In (ia–b), the anaphor *otagai* ‘each other’ occurs within the subject NP of the

Further evidence to support the unavailability of A-scrambling of the relative head in Japanese relative clauses comes from WCO effects. It has been argued that A-scrambling, namely clause-internal scrambling, can remedy WCO effects. Consider (33a, b):

- (33) (a) [?]**Soitu_i-no hahaoya-ga dare_i-o aisiteiru no.*
 he/she-gen mother-nom who-acc love Q
 ‘Who does his_i/her_i mother love?’ (Yoshimura 1992, 14)
- (b) [?]*Dare-o_i soitu_i-no hahaoya-ga t_i aisiteiru no?*
 who-acc his/her mother-nom love Q
 ‘Who_i does his_i/her_i mother love?’ (Saito 1992, 73)

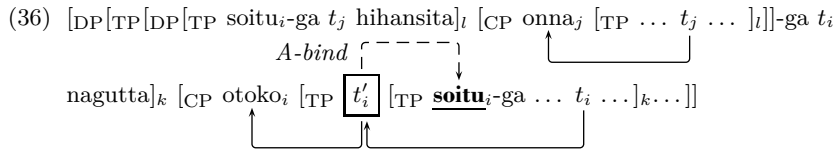
In (33a), the LF trace of *dare-o* ‘who’ does not c-command the pronoun *soitu* ‘he/she’, which is coindexed with the *wh*-phrase, and hence the structure induces a WCO violation. In (33b), however, the bound pronoun *soitu* is A-bound by the A-scrambled object *dare-o* in the TP-adjoined position, and the sentence is deemed grammatical. Thus it is clear that A-scrambling can remedy WCO.

- (34) [CP dare-o_i [TP $\boxed{t'_i}$ [TP **soitu_i**-no hahaoya-ga t_i aisiteiru]] no]
- └──────────┘ A-bind

Taking this fact into consideration let us again examine (35), which exhibits WCO effects, on the basis of the promotion analysis. Suppose that the head *otoko* ‘man’ undergoes A-scrambling before it moves to Spec-CP. In this situation, the A-scrambled head can A-bind the pronoun *soitu* and remedy WCO, as represented in (36).

- (35) [?]*[[*soitu_i-ga t_j hihansita*] *onna_j*]-ga t_i nagutta] *otoko_i*
 he-nom criticized woman-nom hit man
 ‘the man_i who_i the woman he_i criticized hit t_i’ (Ishii 1991, 41)

relative clause. Thus, the implication is that the anaphor *otagai* is c-commanded by its antecedent. However, as we have seen, other empirical data indicate that A-scrambling of the relative head NP has not taken place in relative clauses. Especially, (28) also includes the anaphor in the subject position in the relative clause and is deemed ungrammatical. Therefore, the grammaticality of (ia–b) is not reliant on the fact that the anaphor is bound by the raised object, as Miyamoto (2007) also points out in his claim for the unavailability of A-scrambling of the head NP in the relative clause. Rather, the grammaticality might be due to the fact that the anaphor *otagai* is licensed by the hidden pronoun inside it, as Hoji (2003) argues.



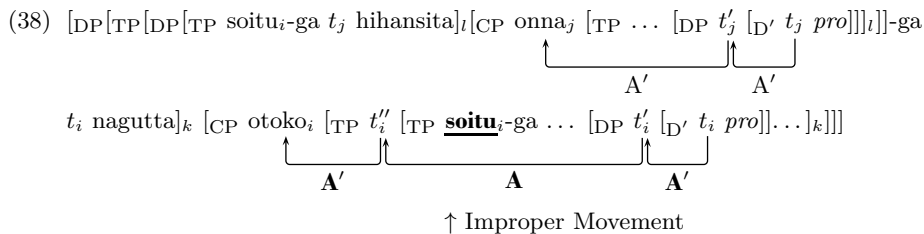
Thus, an A-scrambled object can A-bind the pronoun *soitu* and remedy the WCO violation. However, (35) does in fact exhibit WCO effects. This shows that a raised head cannot undergo A-scrambling before it lands in Spec-CP.

Then, let us consider why the raised head cannot A-scramble in a relative clause. The solution suggested here is that the unavailability of A-scrambling in Japanese relative clauses is due to the Principle of Unambiguous Binding (PUB). The PUB is defined as (37a, b):

(37) **Principle of Unambiguous Binding (PUB)**

- (a) A variable that is α -bound must be β -free in the domain of the head of its chain (where α and β refer to different types of positions).
 (Müller–Sternefeld 1993, 461)
- (b) A'-movement to a certain type of position (say, α) must not be followed by movement to another type of position (say, β); otherwise, the initial variable will be bound ambiguously (i.e., from two different positions simultaneously) and hence will violate the PUB.
 (Müller–Sternefeld 1996, 496)

The PUB in (37a, b) dictates that A-bar movement to a certain kind of position cannot be followed by another movement step that ends up in a different kind of position. As I argued, in the resumptive-stranding model presented here, relativization forms a resumptive chain. The head first undergoes A'-movement to Spec-DP, which results in *pro* being stranded. If the head undergoes A-movement to a TP-adjoined position before it eventually raises to Spec-CP, the chain of movements becomes A'-A-A' movement. This chain violates the PUB, and hence it is an improper movement chain. (38) is a representation of (2b).



Thus, the unavailability of A-scrambling in the relative clause in Japanese relativization is due precisely to the resumptive-stranding strategy.¹¹

5. Conclusion

In this paper, I have argued that the resumptive-stranding strategy, which includes promotion/head-raising and *pro*-stranding, can account for the movement properties of relativization in Japanese, namely, the reconstruction/connectivity effects and WCO effects, and its non-movement properties, viz. island insensitivity, in a way that is compatible with Inclusiveness. I have also argued that the unavailability of A-scrambling of the relative head on the way to Spec-CP is due to the ban on Improper movement. In particular, I adopt a “big DP” analysis of resumptive-stranding according to which the first step of movement, the one that makes stranding possible, is A'-movement of the relative head to a Spec-DP position.

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¹¹ Balázs Surányi pointed out that the proposed analysis would predict that relativization of an A-moved passive or raised subject is impossible. In these cases, I suggest that resumptive-stranding takes place after passivization or raising, because the passivized/raised DP must get its uninterpretable Case-feature checked, which is different from A-scrambling cases. This analysis would induce the violation of Freezing Principle (Wexler–Culicover 1980), because the head NP moves (with resumptive-stranding) from a DP that has been involved in movement process. However, as Collins (2005) shows in his “smuggling” analysis of English raising constructions, it seems that some movement types can obviate freezing effects. I tentatively assume that resumptive-stranding can make it possible to obviate freezing effects. I leave a thorough analysis of non-freezing effects on resumptive-stranding for future research.

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