

On the Status of Binding and Control: Evidence from Argument Ellipsis in Japanese


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1. Introduction

As Oku (1998), Kim (1999), and Saito (2007) point out, Japanese has argument ellipsis.

- (1) John-wa zibun-no kuruma-o aratta; Mary-mo ___ aratta
John-TOP self-GEN car-ACC washed Mary-also washed
'John washed his car, and Mary also washed his/her car.'

(1) allows the sloppy reading in the interpretation of the empty object of *aratta* (washed) in the second sentence, which refers to the object in the first sentence, *zibun-no kuruma* (self's car). On the presence of the sloppy reading in an example like (1), researchers have concluded that ellipsis is involved in the formation of the second sentence. Oku (1998) puts forth the copying approach, in which the object in the first sentence is copied as the object of the second sentence in LF.

- (1') John-wa zibun-no kuruma-o aratta; Mary-mo zibun-no kuruma-o aratta


In (1'), the object in the first sentence *zibun-no kuruma* is copied into the second sentence, and copied *zibun* can refer to the subject of the second sentence *Mary*.

Interestingly, as Sugisaki (2012) and Ikawa (2013) point out, a *wh*-phrase such as *nani* (what) in (2) does not seem to be eligible for argument ellipsis.

- (2) *John-wa nani-o katta no; Bill-mo ___ katta no
John-TOP what-ACC bought Q Bill-also bought Q
'*(intended) What did John buy? What did Bill also buy?'

Though Takita (2009) takes a *sika*-phrase in a *sika-nai* construction to be eligible for argument ellipsis, we can easily find an example showing that it is not eligible for argument ellipsis.

- (3) *John-wa zibun-no hon-sika kari-na-katta ga, Mary-wa ___ kawa-na-katta
John-TOP self-GEN book-SIKA borrow-not-past though Mary-TOP buy-not-past
'John borrowed only his book, but *(intended) Mary bought only her book.'

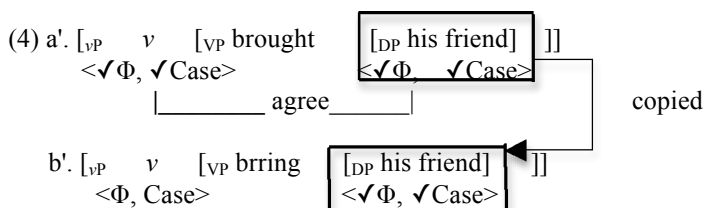
We are naturally led to the question what is responsible for the ineligibility of a *wh*-phrase and a *sika*-phrase for argument ellipsis. Looking back at (1) with this restriction on argument ellipsis in mind, we can see that (1) also poses an interesting question. In (1), the Japanese reflexive *zibun* is eligible for argument ellipsis, and copied *zibun* finds a new antecedent in the second sentence. The contrast between (1) on the one hand and (2) and (3) on the other shows that the determination of the antecedent of *zibun* is free from the restriction to which a *wh*-phrase and a *sika*-phrase are subject in argument ellipsis. Starting out with this contrast, this paper will argue that binding does not involve either Agree or Move. It will be also shown that control, like binding, is not a formal licensing relation which involves Agree or Move, either.

2. Deriving the ineligibility of a *wh*-phrase and a *sika*-phrase on Saito (2007)

2.1. Saito (2007)

Saito (2007) claims that the absence of argument ellipsis in English comes from the presence of formal features in its sentence structures which need to be licensed and checked under the operation Agree. More specifically, Saito (2007) attributes the absence of argument ellipsis in English to the presence of the uninterpretable Case feature in *v*.

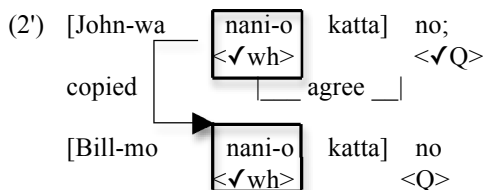
- (4) a. John brought [_{DP} his friend].
 b. *But Bill did not bring ____.



Under the copying analysis, *his friend* in (4a) is to be copied into (4b), but its formal features have already been checked against *v* in (4a), and copied *his friend* in (4b) without any Case feature to be checked does not qualify as the goal of the agree relation with *v* in (4b), as in (4a', b'). Thus, with the uninterpretable features of *bring* left unchecked, (4b) is not allowed.¹

2.2. Deriving the ineligibility of a *wh*-phrase and a *sika*-phrase for argument ellipsis

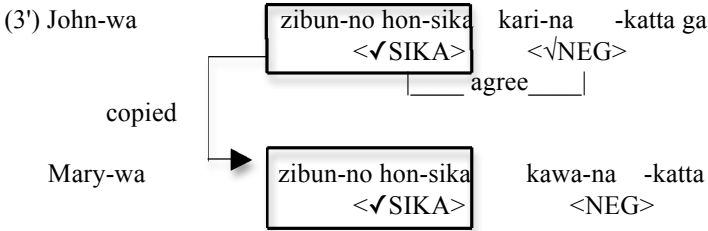
It seems possible to derive the ineligibility of a *wh*-phrase and a *sika*-phrase for argument ellipsis on Saito's proposal. It has been generally agreed that a *wh*-phrase in Japanese and the Q-morpheme *ka/no* stand in a formal licensing relation. Then, we can say that *nani* and *no* in the first sentence of (2) stand in an agree relation. Following Sugisaki (2012) and Ikawa (2013), we can consider that this agree relation is responsible for the ineligibility of a *wh*-phrase for argument ellipsis.



After its *wh*-feature has been checked by *no* in the first sentence, *nani* is copied into the second sentence, but with its *wh*-feature already checked, copied *nani* does not qualify to check the Q-feature of *no*.

The same analysis is applicable to (3). Following Aoyagi and Ishii (1994), we can consider that a *sika*-phrase and *nai* (not) stand in a formal licensing relation involving Agree.

¹ Saito assumes that Japanese has argument ellipsis because its *v* lacks Φ-features, and hence does not need to stand in any agree relation with an object.

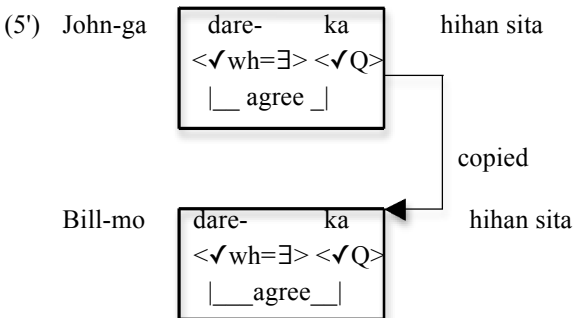


After its formal feature has been checked by *nai* in the first sentence, *zibun-no hon-sika* (only self's book) is copied into the second sentence, but since its formal feature has been checked, copied *zibun-no hon-sika* does not qualify to stand in an agree relation with *nai* in the second sentence, and fails to induce the meaning a *sika-nai* construction should have.

Ikawa (2013) points out further facts derivable on Saito's (2007) proposal. For instance, unlike a *wh*-phrase in a question, a *wh*-phrase forming an existential phrase is eligible for argument ellipsis.

- (5) John-ga dare-ka hihansita; Bill-mo ____ hihansita
 John-NOM who-Q criticized Bill-also criticized
 'John criticized someone; Bill also criticized someone.'

In (5), *dare* (who) and *ka* directly following it form an existential phrase corresponding to *someone* in English, and it is eligible for argument ellipsis. Under the copying approach, (5) should have the derivation in (5').

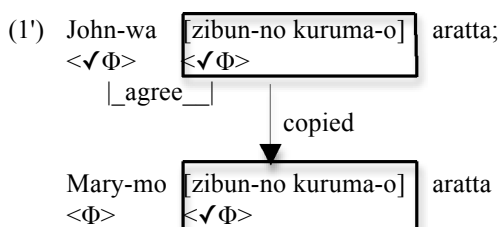


In (5'), *nani* and *ka* locally agree with each other to induce an existential interpretation. Here, what is copied is the entire phrase in which an agree relation is established, and the second sentence does not contain any material which needs to stand in an agree relation with copied materials. For this reason, a *wh*-phrase forming an existential expression with *ka* is eligible for argument ellipsis. The facts we have seen above show that an analysis following Saito's (2007) proposal may be on the right track.

3. Binding as a non-formal licensing relation

3.1. The eligibility of the Japanese reflexive *zibun* for argument ellipsis

As (1) shows, the Japanese reflexive *zibun* is eligible for argument ellipsis. Given that the ineligibility of a *wh*-phrase and a *sika*-phrase for argument ellipsis is derivable on Saito's (2007) proposal introduced above, we need to say that binding of *zibun* is not a formal licensing relation involving Agree. If its antecedent were determined through the application of Agree, as in (1'), it should behave like *nani* in (2) and *zibun-no hon-sika* in (3) with respect to argument ellipsis.



In the first sentence in (1'), the binding relation is established through the application of Agree, and the formal feature of *zibun* is checked. Then, *zibun-no kuruma* is copied into the second sentence. Copied *zibun*, however, cannot stand in an agree relation with *Mary* in the second sentence since its formal feature has already been checked. Thus, under the assumption that binding involves Agree, we would wrongly predict that *zibun* should be ineligible for argument ellipsis. The grammaticality of (1) strongly suggests that binding does not involve Agree.

Notice also that *zibun* interpreted as a bound variable is also eligible for argument ellipsis.

- (6) Subete-no dansi gakusei-ga zibun-no kuruma-o aratta;
 all-GEN male student-NOM self-GEN car-ACC washed
 subete-no zyosi gakusei-mo _____ aratta
 all-GEN female student-also _____ washed
 'All the male students washed their own cars; all the female students also washed their/their own cars.'

In (6), *zibun* bound by the quantified phrase *subete-no dansi gakusei* (all the male students) is interpreted as a variable. One might say that the bound variable interpretation of *zibun* is different from the coreferential interpretation of *zibun*, and involves some formal process like Agree. Nevertheless, as (6) shows, *zibun* interpreted as a variable is also eligible for argument ellipsis. *Zibun* copied into the second sentence can be interpreted as a variable bound by the subject of the second sentence *subete-no zyosi gakusei* (all the female students). Thus, the bound variable interpretation of a reflexive is highly likely to result not from formal mechanisms but from some interpretive process at the CI interface.

3.2. The eligibility of The Turkish reflexive for argument ellipsis

Argument ellipsis in Turkish provides further support to the claim made in this paper. Şener and Takahashi (2010) observe that Turkish has argument ellipsis.

- (7) a. Kim kendi-ni eleştir-di?
 who self-ACC criticize-past
 'Who criticized himself?'
 b. Can _____ eleştir-di
 John _____ criticize-past
 'John criticized himself.' (Şener and Takahashi (2010: 88))

Şener and Takahashi claim that (7a, b) show that Turkish has argument ellipsis. If the empty object in (7b) were an empty pronoun, it should not be able to refer to *Can*. The presence of the coreferential interpretation between *Can* and the empty object strongly suggests that the empty object is the ellipsis site, and *kendi-ni* (self-ACC) in (7a) is to be copied into (7b). Here, the Turkish reflexive *kendi* is eligible for ellipsis and copied *kendi* finds its new antecedent in (7b).

Şener and Takahashi further observe that the subject of a finite clause is not eligible for argument ellipsis.

- (8) a. Can [pro öneri-si]nin kabul ed-il-eceğ-i]ni düşün-üyor
 John his proposal-3SG accept do-PASS-NM-3SG-ACC think-PRES
 'John thinks that his proposal will be accepted.'

- b. Aylin-se [____ redded-il-eceğ-i]ni düşün-üyor
 Eileen-however reject-PASS-NM-3SG-ACC think-PRES
 Lit. 'Eileen, however, thinks that e will be rejected.'

(Şener and Takahashi (2010: 91))

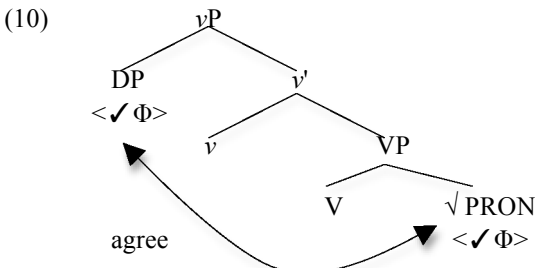
The null embedded subject in (8b) induces the strict reading, but not the sloppy reading. Şener and Takahashi take the absence of the sloppy reading in (8b) to show that the subject of a finite clause is not eligible for argument ellipsis. Şener and Takahashi attribute the status of (8b) to the presence of the subject-verb agreement, assuming Saito's (2007) proposal. In (8a), the verb *ed* (do) agrees with the subject [*pro öneri-si*] (his proposal). Then, the formal features of [*pro öneri-si*] are checked. After that, it is copied into (8b), but as its formal features have been checked in (8a), it cannot agree with *redded* (reject) in (8b). The only element to be used for the empty position of the embedded clause is an empty pronominal, and it lacks the sloppy reading. If the binding of *kendi* in (8a) involved agree, it should not be able to be copied into (8b) and find its new antecedent. Here again, the eligibility of *kendi* in Turkish for argument ellipsis indicates that binding is not a formal relation involving Agree.

3.3. Binding as a non-formal licensing relation

In attempts to deal with binding in a way consistent with the minimalist program, it has been argued by Heintz (2008) and Rooryck and Wyngaerd (2011) that the binding relation between a reflexive and its antecedent involves an agree relation. For instance, Heintz (2008) considers a reflexive to be a root pronoun with its formal features unvalued, as in (9).

- (9) $\sqrt{\text{PRON}}$
 $\langle u\Phi, uC \rangle$

After it has been merged into the vP structure, its unvalued formal features are valued or checked by the closest DP usually merged into the SPEC of vP , which functions as its antecedent.



In (10), an agreement relation is established between the reflexive in the object position and its antecedent in the SPEC of vP .² If binding of a reflexive involved this kind of formal licensing under Agree, reflexives should be ineligible for argument ellipsis in Japanese and Turkish, but actually they are eligible for argument ellipsis. The facts we have seen in this section cast serious doubts on attempts to treat binding as an agree relation.

4. Binding as a non-movement relation

4.1. The ineligibility of a copy left by movement for argument ellipsis

We can observe another restriction on argument ellipsis. It is that a copy left by movement resists argument ellipsis.

² Heintz (2008) assumes the unvalued Case-feature for the reflexive since it is a DP. As the Case of the reflexive is not of our direct concern, we are abstracting away from it.

- (11) a. *Hon-o Taroo-wa [_{CP} Hanako-ga t(=hon-o) katta to] itta ga,
 book-ACC Taro-TOP Hanako-NOM bought that said though
 zassi-o Ziroo-wa _____ itta
 magazine-ACC Ziro-TOP said
 'Taro said that Hanako bought a book, but *(intended) Ziro said that she bought a magazine.'
- b. *Ken-ga [_{VP} Naomi-o [_{CP} t(=Naomi) baka da to] omotte iru];
 Ken-NOM Naomi-ACC foolish be that think
 Yuriko-mo Taroo--o _____ omotte iru
 Yuriko also Taro-ACC think
 'Ken considers Naomi to be a fool; *(intended) Yuriko also considers Taro to be a fool.'

In (11a), as Shinohara (2006) observes, the CP containing a copy left by scrambled *hon-o* (book-ACC) fails to be copied into the second sentence. For (11b), following Hiraiwa (2010), we can assume that the accusative subject *Naomi* (Naomi) in the first sentence has moved out of the complement CP to the SPEC of *vP*. We can take (11b) to show that CP containing the copy left by *Naomi* resists argument ellipsis.

The ineligibility of a copy left by movement for argument ellipsis follows naturally under the copy theory of movement. Under the copying approach for argument ellipsis coupled with the copy theory of movement, (11a, b) should have the following derivations.

- (11) a'. Hon-o Taroo-wa [_{CP} Hanako-ga hon-o katta to] itta ga,
 ↓ copied
 zassi-o Ziroowa [_{CP} Hanako-ga hon-o katta to] itta
- b'. Ken-ga [_{VP} Naomi-o [_{CP} Naomi baka da to] omotte iru]
 ↓ copied
 Yuriko-ga Taroo-o [_{CP} Naomi baka da to] omotteiru

The copied CP in (11a') contains a copy of the moved element *hon-o*, and the copied CP in (11b') has the copy of moved *Naomi-o*. Then, they are copied into the second sentences. As the copied CPs contain a copy of a moved element, there should be no "original" positions for *zassi-o* (magazine-ACC) and *Taroo-o* (Taro-ACC) in the second sentences, and they fail to be properly interpreted.³

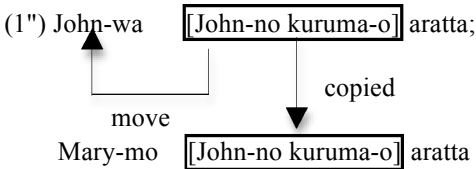
4.2. The eligibility of *zibun* for argument ellipsis again

In 4.1., we have seen that a copy left by movement is not eligible for argument ellipsis. Now, let us consider (1) again, which shows that the Japanese reflexive *zibun* is eligible for argument ellipsis.

- (1) John-wa zibun-no kuruma-o aratta; Mary-mo _____ aratta
 John-TOP self_GEN car-ACC washed Mary-also _____ washed
 'John washed his car, and Mary also washed his/her car.'

Under the assumption that the antecedent of the reflexive moves from the position of the reflexive, as proposed by Boeckx, Hornstein, and Nunez (2007), (1) should have the following derivation.

³ Saito (2007) attributes the status of (11a) to the total reconstruction of scrambling. After *hon-o* is reconstructed to its original position, the complement CP is copied into the second sentence, and *zassi-o* fails to be properly interpreted. As (11b) shows, however, the restriction on argument ellipsis we are discussing is observed with movement in general, and the copy theory of movement enables us to explain the restriction on principled grounds.



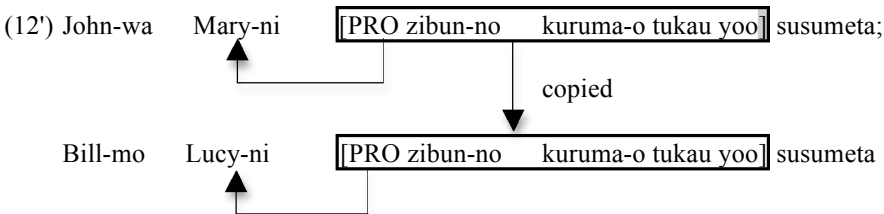
In the first sentence, *John* moves from the prenominal position followed by the genitive marker *no*, and its copy is pronounced as *zibun*. Then, the object NP containing the copy of moved *John* is copied into the second sentence. Since the copied object has the copy of *John* in the prenominal position, there is no "original" position for *Mary*, and the sloppy interpretation should fail to obtain.⁴

5. Control relations

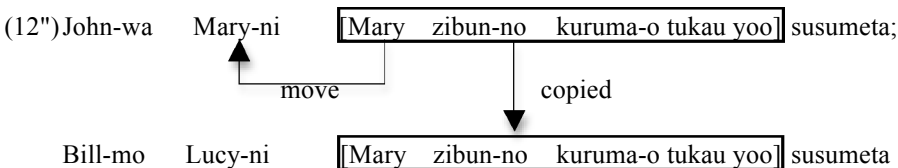
Given that binding relations are not formal licensing relations, we are naturally led to expect that control relations, which are another kind of referent-determining relation, should not be formal licensing relations, either, and our expectation seems to be borne out. A constituent containing a PRO subject is eligible for argument ellipsis.

- (12) John-wa Mary-ni [PRO zibun-no kuruma-o tukau yoo] susumeta;
 John-TOP Mary-DAT self-GEN car-ACC use recommended
 Bill-mo Lucy-ni _____ susumeta
 Bill-also Lucy-DAT _____ recommended
 'John recommended Mary to use his/her car; Bill also recommended Lucy to use his/her car.'

In (12), the complement clause containing PRO as its subject in the first sentence can be copied into the second sentence, and its PRO subject can find its new antecedent *Lucy*, as in (12').



If control relations were mediated by movement of the controller from the position of PRO, as argued by Boeckx and Hornstein (2006), Boeckx, Hornstein, and Nunez (2010), and Takano (2010), (12) should have the following derivation.



⁴ Boeckx, Hornstein, and Nunez (2007) propose the movement approach to reflexive-binding on the facts of languages like Hmong discussed by Mortensen (2003), in which the Condition C violation is allowed.

- (i) Pov yeej qhuas Pov
 Pao always praise Pao
 'Pao always praises himself.'

In (i), the R-expression *Pov* in the object position is bound by *Pov* in the subject position, but it is grammatical. Boeckx, Hornstein, and Nunez take bound *Pov* as the copy of moved *Pov* in the subject position, and extend their analysis to reflexive-binding in other languages. Given the discussion in this paper, we cannot assume a formal mechanism for binding, and the question to be asked should be how languages like Hmong allow condition C violations at CI interface.

In (12"), in the position of PRO, the copy of the moved controller *Mary* is left, and the complement clause containing the copy is copied into the second sentence. In the second sentence, since the copied complement clause has the copy of *Mary* as its subject, there should be no way to take *Lucy* to be coreferential with the subject of the copied complement clause. Thus, control relations, like binding relations, are highly likely not to involve any agree relation or movement.⁵

6. Further asymmetries between binding and agree/move relations: cleft constructions

We have seen on argument ellipsis that binding relations and control relations do not involve Agree or Move. We can observe exactly the same with cleft constructions.

A *wh*-phrase which needs to agree with *ka* in the presupposed clause is excluded from the focus position of cleft constructions.

(13) a. Cleft construction

*John-ga [Bill-ga e katta ka] kiita no-wa nani-o da
 John-NOM Bill-NOM bought Q asked GEN-TOP what-ACC be

b. Pseudo-cleft construction

*John-ga [Bill-ga e katta ka] kiita no-wa nani da
 John-NOM Bill-NOM bought Q asked GEN-TOP what be
 '*It was what that John asked Bill bought.'

Like *wh*-phrases, a *sika*-phrase which needs to agree with *nai* in the presupposed clause is excluded from the focus position of cleft constructions.

- (14) a. *[John-ga e hanasi-kake-na-katta] no-wa Bill-ni-sika da
 John-NOM talked-to-not-past GEN-TOP Bill-to-SIKA be
 b. *[John-ga e hanasi-kake-na-katta] no-wa Bill-sika da
 John-NOM talked-to-not-past GEN-TOP Bill-SIKA be
 'It was only to Bill that John talked to.'

A constituent containing a copy of the moved element is excluded from the focus position of cleft constructions.

⁵ Takano (2010) proposes that PRO is a copy left by the movement of its controller to derive the following contrast.

- (i) a. Mittu-izyoo-no daigaku_i-ni soko_i-no sotugyoosei-ga [t_i' PRO_i t_i syutugansi-yoo to] sita
 three or more-GEN university-DAT it-GEN graduate-NOM apply-will that did
 'Their graduates tried to apply to three or more universities.'
 b. *Mittu-izyoo-no daigaku_i-ni soko_i-no sotugyoosei-ga Ken_j-ni [t_i' PRO_j t_i syutugansuru-yoo]
 three or more-GEN university-DAT it-GEN graduate-NOM Ken-DAT apply-will
 susumeta
 recommended
 'Their graduates recommended to Ken that he apply to three or more universities.'

(Takano (2010: 86, 88))

In (ia), *soko* (it) can be interpreted as a variable bound by *mittu-izyoo-no daigaku* (three or more universities) scrambled out of the complement clause is possible, but it is not possible in (ib). Assuming that the controllers of PRO in (ia, b) are base-generated in the position of PRO and move to their surface positions, Takano claims that the bound variable interpretation of *soko* is possible when it is c-commanded by *mittu-izyoo-no daigaku* when it is scrambled clause-internally to the position of *t_i'*. Given the discussion in this paper, however, the interpretation of PRO does not involve either Agree or Move. Then, Takano's interesting observations should be considered in terms of how the interpretation of PRO contributes to the bound variable interpretation.

- (15) a. ??Sono hon-o John-ga [Mary-ga t (=sono hon-o) yonda koto]-o
 that book-ACC John-NOM Mary-NOM read fact-ACC
 sitte iru
 know
 'John knows the fact that Mary read that book.'
- b. *[Sono hon-o John-ga e sitte iru] no-wa [Mary-ga t (=sono hon-o) yonda
 that book-ACC John-NOM know GEN-TOP Mary-NOM read
 koto]-o da
 fact-ACC be
- c. *[Sono hon-o John-ga e sitte iru] no-wa [Mary-ga t (=sono hon-o) yonda
 that book-ACC John-NOM know GEN-TOP Mary-NOM read
 koto] da
 fact be
 'It is the fact that Mary read that book that John knows.'

In (15b, c), a constituent containing a copy of the scrambled element *sono hon-o* (that book-ACC) is in the focus position, and they are ungrammatical. Scrambling out of a complex NP headed by *koto* (fact) induces just a weak island effect, as (15a) shows, so the strong deviance of (15b, c) should be due to a constituent containing a copy of the scrambled element in the focus position. Thus, we can say that neither an element which needs to stand in an agree relation in the presupposed clause nor a copy of the moved element is allowed to be in the focus position of cleft constructions.

The Japanese reflexive *zibun* can be in the focus position of cleft constructions.

- (16) a. John-ga e tataita no-wa zibun-no ootoo-o da
 John-NOM hit GEN-TOP self-GEN brother-ACC be
- b. John-ga e tataita no-wa zibun-no ootoo da
 John-NOM hit GEN-TOP self-GEN brother be
 'It was his brother that John hit.'

Similarly, a constituent containing a PRO subject can be in the focus position of cleft constructions.

- (17) John-ga Mary-ni e susumeta no-wa [PRO zibun-no kuruma-o
 John-NOM Mary-DAT recommended GEN-TOP self-GEN car-ACC
 tukau yoo]-ni da
 use be
 Lit. 'It is to use his/her car that John recommended Mary.'

Cleft constructions and pseudo-cleft constructions are generally assumed to involve an empty operator and an empty pronominal, respectively, in their derivations. They are phonetically null, represented as *e* in the examples in (13), (14), (15), (16), and (17). Ikawa (2013) argues that phonetically null elements are inert in that no formal features can be encoded in them. The formal features for a *wh*-phrase and a *sika*-phrase cannot be encoded in *e* in (13a, b) and (14a, b). For the movement of *sono hon-o* (that book-ACC) to take place in (15b, c), an agree relation needs to be established between *sono hon-o* and some higher head. In order for *e* to contain a copy of *sono hon-o*, it has to be able to contain the formal features relevant for its movement. Then, it is natural that *e* in (15b, c) cannot contain the copy of moved *sono hon-o*. Binding and control, which *e* can take part in, cannot be a relation involving formal features. If a formal dependency is to be established in the computational system of language only under the operation Agree, binding and control are highly likely not to be formal dependencies.

Cleft constructions also tell us more about what binding relations are. It is generally assumed that an empty operator in the presupposed clause moves to its edge to be coreferential with the element in the focus position under predication. Let us consider (18).

- (18) [John-ga e tataita]-no-wa Bill-o da
 John-NOM hit GEN-TOP Bill-ACC be
 'It was Bill that John hit.'

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