

TOWARDS A THEORY OF SPLIT BINDING: A PRELIMINARY SKETCH*

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1. Introduction

It has been alleged to hold universally valid that a locally-bound reflexive (such as *themselves* in English) cannot be bound by more than one antecedent;¹ that is, a local anaphor disallows split-binding (cf. Koster 1984, Lebeaux 1984, and Fiengo and May 1994). For example, the third-person plural non-local pronominal in English (i.e., *them*) permits split-binding, as shown by the well-formedness of the examples in (1a) and (1a') below, whereas its locally-bound counterpart (i.e., *themselves*) disallows it regardless of whether or not its purported antecedents co-occur within the minimal tensed-clause including the anaphor, as shown by the ill-formedness of the examples in (1b) and (1b') below:

(1) *English*

- a. John_k talked to Bill_h about *them*_{k+h}. (Fiengo and May 1994)
- a'. John_k told Bill_h that the police criticized *them*_{k+h}. (Heim 2008)
- b. *John_k told Bill_h about *themselves*_{k+h}. (Lebeaux 1984)
- b'. *John_k told Bill_h that the police criticized *themselves*_{k+h}.

Likewise, as shown in the examples in (2) and (3) below, the locally-bound reflexives in Dutch and Chinese (i.e., *zichzelf* and *tamen-ziji*) disallow split-binding, as expected.²

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¹ Throughout this paper, the term “local(ly-bound) anaphor/reflexive” is meant for an anaphor/reflexive that must be syntactically bound within the minimal tensed-clause including it.

² According to our experimental survey (see Ishino 2012), 10 out of the 12 native speakers of Chinese (i.e., 83.3%) disallow the split antecedents for *tamen-ziji*.

(2) *Dutch* (Koster 1984, Hicks 2009)

John_k sprak Peter_h over *zichzelf*_{k/h/*k+h}.

‘John_k told Peter_h about himself_{k/h}/*themselves_{k+h}.’

(3) *Chinese*

*Zhangsan_j gaosu Lisi_k youguan *tamen-ziji*_{j+k}.

Zhangsan tell Lisi about SELF(PL)

‘Zhangsan told Lisi about SELF(PL).’

Turning our attention to Japanese, we recognize that Japanese has two types of local anaphor, *zibun-(tati)-zisin* (‘SELF-(PL)-self’) and Pronoun+*zisin* (such as *kare-zisin* ‘himself’ or *karera-zisin* ‘themselves’). As shown in (4), these (plural) reflexive forms in Japanese must be bound within the minimal tensed clause containing it (cf. Kurata 1986, Nakamura 1989, Katada 1991, and Aikawa 1993), except where it is used logophorically or emphatically (cf. Kuno 1972, 1987 and Aikawa 1994).

- (4) a. John_k-ga [CP Bill_j-ga *zibun-zisin*_{*k/j}/*kare-zisin*_{*k/j}-o hihansi-ta to] it-ta.
 John-NOM Bill-NOM SELF-self/himself-ACC criticize-PST C say-PST

‘John said that Bill criticized **SELF**.’

- b. [John to Bill]_k-ga [CP keisatu_j-ga *zibun-tati-zisin*_{*k/j}/*karera-zisin*_{*k/j}-o
 John and Bill-NOM police-NOM SELF-PL-self/them-self-ACC
 hihansi-ta to] it-ta.
 criticize-PST C say-PST

‘John and Bill said that the police criticized **SELF(PL)**.’

If it is universally true that a locally-bound reflexive cannot be split-bound, we are naturally led to the prediction that *zibun-tati-zisin* and *karera-zisin*, if not used emphatically/logophorically, cannot have split-antecedents within its local domain, because *zibun-tati-zisin* and *karera-zisin* in Japanese are both a locally-bound anaphor as shown in (4). Surprisingly enough, however, *zibun-tati-zisin* is likely to allow local split-binding, as exemplified in (5) below:³

³ The observation that Japanese plural reflexives allow split-binding was reported in Katada (1991), who contended that *karera-zisin* (the other form of the Japanese local reflexive) in addition to *zibun-tati-zisin*, allows split-binding, the judgment which was also endorsed in Kasai (2000). According to Ishino’s (2012) experimental survey, however, 102 out of the 116 native speakers of Japanese (i.e., 87.9%) allow the split antecedents for *zibun-tati-zisin*, but 41 out of the 116 Japanese (i.e., 35.3%) accept the split antecedence of pronouns+*zisin* (*karera-zisin/kanojo-tati-zisin*). Later we will return directly to the comparison between *zibun-tati-zisin* and *karera-zisin* with respect to split-binding. Incidentally, Kasai (2000) provided ample data which show that the Korean counterpart of *zibun-tati-zisin* also allows local split-binding.

- (5) a. John_k-ga Bill_j-ni *zibun-tati-zisin*_{k+j}-nituite katar-ta.
 John-NOM Bill-DAT SELF-PL-self about tell-PST
 ‘John_k told Bill_j about SELF_{k+j}.’
- b. Chomsky_k-ga Lasnik_j-ni *zibun-tati-zisin*_{k+j}-o hihans-ase-ta.
 Chomsky-NOM Lasnik-DAT SELF-PL-self-ACC criticize-CAUS-PST
 ‘Chomsky_k made Lasnik_j criticize SELF_{k+j}.’

Given the fact in (5), we draw the conclusion that a local reflexive allows split-binding in Japanese (and Korean). On the other hand, it has been reported, in the literature, that the split-binding for a locally-bound reflexive is also disallowed in French (Pica 1984), Italian (Napoli 1976), Greek (Chiou 2007), Tamil (Selvanathan 2009), Icelandic (Everaert 1986), Arabic (Tsukanova and Nikolaeva 2008), Hebrew (Doron 1983), and Quechua (van de Kerke 1991); therefore, we have come to the conclusion that Japanese and Korean (Katada 1991, Kasai 2000) are the only languages in which we have detected that split-binding is allowed for a local reflexive.

Now our issue is to explain the above cross-linguistic difference in terms of split-binding for a local reflexive. Notice here that neither Faltz’s (1977) typological classification in terms of morphological complexity nor Burzio’s (1991) typological classification in terms of ϕ -defectiveness can work for the purpose of explaining the above cross-linguistic variation. Drawing a comparison between Dutch and Japanese, we detect that Dutch is parallel to Japanese in that *zichzelf* in Dutch and *zibun(-tati)-zisin* in Japanese are both ϕ -defective (*zichzelf* lacks its *gender*- and *number*-features, and *zibun(-tati)-zisin* lacks its *person*- and *gender*-features) and they are both morphologically complex; that is to say, the locally-bound plural reflexives in Dutch and Japanese are equal with respect to their morphological complexity and ϕ -defectiveness. It is important, nonetheless, to recall that Japanese, but not Dutch, allows split-binding for a local reflexive, as noted above.

Two theoretically significant issues to be addressed here are: (i) What syntactic mechanism makes it possible for a locally-bound reflexive in Japanese (and Korean) to be split-bound?; and (ii) Why is it that only Japanese (and Korean) allow split-binding though many other languages disallow it despite the fact that some of the languages which disallow split binding have a reflexive whose binding-theoretic properties are very similar to the ones in Japanese (and Korean).

Hence, the purpose of this paper is twofold: The first purpose is to attest our empirical observation that a locally-bound reflexive in Japanese can be syntactically split-bound within its local domain. In §2, we will first classify the locally split-bound reflexives into a syntactically bound anaphor or a contextually emphatic logophor. Then we will also explicate the locality for the syntactically split-bound reflexives in §3. The second purpose is to explain the parametric difference between the languages allowing local split-binding and the ones disallowing it. In §4, we will elucidate the syntactic mechanism that enables a local anaphor to be

bound by more than one antecedent. In §5, we will clarify under what conditions local split-binding is possible. Significant consequences and theoretical implications of our proposals will be discussed in §6. Finally, §7 will conclude the present paper.

2. Split Antecedence: Binding or Coreference?

Here, we are aiming at demonstrating that, despite the similarities in terms of their morphological complexity and their locality concerning syntactic binding, *zibun-tati-zisin* but not *karera-zisin* can be syntactically bound by split antecedents within its local domain. Before clarifying a distinction between them, we have to make a clear distinction between a syntactically bound anaphor and a (contextually emphatic) logophor that gets its referential antecedent through non-syntactic coreference (cf. Reinhart 1983).

First, let us summarize the difference between non-local/local anaphors in terms of their split-antecedence. A non-local anaphor (such as ordinary pronouns in English and Dutch) can be bound by more than one antecedent, as shown in (7) below:

(7) a. *English* (Seely 1993, Berman and Hestvik 1997)

^{OK}John_k said [that Bill_h hated *them*_{k+h}].

b. *Dutch* (Koster 1986)

^{OK}John_k zei [dat Peter_h *hen*_{k+h} haat].

‘John_k said that Peter_h hates them_{k+h}.’

On the other hand, a locally-bound plural reflexive such as *themselves* in English and *zichzelf* in Dutch, which exhibits clause-boundedness as its binding locality, cannot permit split-binding even when the purported antecedents occur within the minimal tensed clause including it, as noted in the previous section.

Lebeaux (1984) and Fiengo and May (1994) have tried to explain the ill-formedness of split-binding in English by attributing it to a violation of the traditional binding theory of Chomsky (1981), according to which no locally-bound anaphor can be bound by more than one antecedent. Then, it may come as a surprise to see that a local anaphor in Japanese allows split-binding, as shown in (5) above and in (8) below:

(8) a. Mary_k-ga Jane_h-kara *zibun-tati-zisin*_{k+h}/?² *kanojo-tati-zisin*_{k+h}-nituite kii-ta.

Mary-NOM Jane-from SELF-PL-self / them-PL-self about hear-PST

‘Mary_k heard from Jane_h about SELF_{k+h}.’

b. John_k-ga Bill_j-ni *zibun-tati-zisin*_{k+h}/**karera-zisin*_{k+h}-ni kibisikus-ase-ta.

John-NOM Bill-DAT SELF-PL-self / them-self-DAT do bitter-CAUS-PST

‘John_k made Bill_h get tough with SELF_{k+h}.’

Seemingly, it looks like *zibun-tati*, the non-local plural anaphor in Japanese, also allows split antecedents (see Katada 1991 and Kasai 2000).

- (9) a. John_k-ga Bill_j-ni *zibun-tati*_{k+j}-nituite katar-ta.
 John-NOM Bill-DAT SELF-PL about tell-PST
 ‘John_k told Bill_j about SELF_{k+j}.’
- b. Mary_k-ga Jane_j-kara *zibun-tati*_{k+j}-nituite kii-ta.
 Mary-NOM Jane-from SELF-PL about hear-PST
 ‘Mary_k heard from Jane_j about SELF_{k+j}.’
- c. Chomsky_k-ga Lasnik_j-ni *zibun-tati*_{k+j}-o hihans-ase-ta.
 Chomsky-NOM Lasnik-DAT SELF-PL-ACC criticize-CAUS-PST
 ‘Chomsky_k made Lasnik_j criticize SELF_{k+j}.’

Abe (1992) argues, however, that the split binding illustrated by the examples in (9) is not a genuine one, but it is obtained as a special case of the group reading for *zibun-tati* (cf. Kawasaki 1989).⁴ That is, the anaphoric interpretation demonstrated in (9) is achieved not through syntactic binding but through coreference in discourse.

Then, for the purpose of attesting our claim that *zibun-tati-zisin* allows split-binding in syntax, it is very significant to clarify a fine distinction between a syntactically bound anaphor and a contextually emphatic logophor in discourse. To detect it, we adopt Hoji’s (2003) proposal that Comparative Ellipsis with Case-marker in Japanese is parallel to VP Deletion in English: the sloppy identity reading cannot be obtained unless an anaphoric (i.e., syntactically bound) element is involved in each of these constructions. Consider the following English examples:

- (10) a. John_k’s friends will vote for John_k, and I want Bill_j’s friends to Ø, too.
 Ø = ‘vote for John_k’, Ø ≠ ‘vote for Bill_k’ (strict reading only)
- b. Mary_k will accept our present to her_k, and we want Jane_j to Ø, too.
 Ø = ‘accept our present to Mary_k’, Ø = ‘accept our present to Jane_k’
 (strict & sloppy)
- c. John_k will vote for himself_k, and I want Bill_j to Ø, too.
 Ø ≠ ‘vote for John_k’, Ø = ‘vote for Bill_k’ (sloppy reading only)

(10c) has only a sloppy interpretation (that is, ‘John will vote for John and I want Bill to vote for Bill.’) and it can be safely said that a syntactically bound element *himself* is involved in

⁴ See Appendix II for some discussion on *zibun-tati*, which we will ignore theretofore.

the elliptic part. On the other hand, (10b) has both the sloppy reading and the strict reading. According to Reinhart (1983) and Heim and Kratzer (1998), only a syntactically bound anaphor in the elliptic part has a sloppy interpretation, but a referential pronominal can have a strict interpretation by way of coreference in discourse. Thus, the sloppy reading is not available in (10a), where no syntactic binding is involved.

The examples in (11) below show the comparative ellipsis with Case-marker in Japanese:

- (11) a. Yakunin-ga [Toodai_k-no gakusei-ni Ø yorimo sakini], Kyoodai_j-no
 officer-NOM Tokyo U.-GEN students-DAT than earlier Kyoto U.-GEN
 gakusei-ni Kyoodai_j-no kyooju-o hihans-ase-ta.
 students-DAT Kyoto U.-GEN professor-ACC criticize-CAUS-PST

Ø = ‘criticized a professor at Kyoto U._j’, Ø ≠ ‘criticized a professor at Tokyo U._k’
 (strict only)

- b. Yakunin-ga [Toodai_k-no gakusei-ni Ø yorimo sakini], Kyoodai_j-no
 officer-NOM Tokyo U.-GEN students-DAT than earlier Kyoto U.-GEN
 gakusei-ni soko_j-no kyooju-o hihans-ase-ta.
 students-DAT it-GEN professor-ACC criticize-CAUS-PST

Ø = ‘criticized a professor at Kyoto U._j’, Ø = ‘criticized a professor at Tokyo U._k’
 (strict & sloppy)

- c. Yakunin-ga [Toodai_k-no gakusei-ni Ø yorimo sakini], Kyoodai_j-no
 officer-NOM Tokyo U.-GEN students-DAT than earlier Kyoto U.-GEN
 gakusei-ni mizukara_j-o hihans-ase-ta.
 students-DAT SELF-ACC criticize-CAUS-PST

Ø ≠ ‘criticized the student at Kyoto U._j’, Ø = ‘criticized the student at Tokyo U._k’
 (sloppy only)

The fact shown in (11) indicates that, under the Japanese construction of Comparative Ellipsis with Case-marker, a syntactically free R-expression yields only the strict reading, a locally free pronominal yields both the strict reading and the sloppy reading, and a locally-bound reflexive yields only the sloppy reading. Accordingly, this fact conforms to Hoji’s (2003) claim. Hoji (2003) therefore proposes to utilize Comparative Ellipsis with Case-marker for the purpose of detecting whether a given anaphoric expression is syntactically bound or contextually coreferential.

Now, we are applying Hoji’s (2003) test to the following examples:

- (12) a. Iinkai-ga [John_k-ni Ø yorimo sakini], Bill_j-ni *kare-zisin*-o
 committee-NOM John-DAT than earlier Bill-DAT him-self-ACC
 hihans-ase-ta.
 criticize-CAUS-PST
 Ø = ‘criticized Bill_j’, Ø ≠ ‘criticized John_k’ (strict only)
- b. Iinkai-ga [John_k-ni Ø yorimo sakini], Bill_j-ni *zibun/zibun-zisin*-o
 committee-NOM John-DAT than earlier Bill-DAT SELF/SELF-self-ACC
 hihans-ase-ta.
 criticize-CAUS-PST
 Ø = ‘criticized Bill_j’, Ø = ‘criticized John_k’ (strict & sloppy)
- c. Iinkai-ga [John_k-ni Ø yorimo sakini], Bill_j-ni *mizukara/onore*-o
 committee-NOM John-DAT than earlier Bill-DAT SELF/SELF-ACC
 hihans-ase-ta.
 criticize-CAUS-PST
 Ø ≠ ‘criticized Bill_j’, Ø = ‘criticized John_k’ (sloppy only)

As shown in (12a), it can be safely said that *kare-zisin* allows only the strict reading because *kare* cannot be a bound variable (Hoji 1991, Noguchi 1997). In passing, from the fact that (12c) has the sloppy reading alone, we can conclude that *mizukara* (‘SELF’) and *onore* (‘SELF’), both of which are simplex reflexive forms in Japanese, are a genuine locally-bound reflexive in Japanese (see Ishino and Ura 2011 for relevant discussion (cf., also, Kitagawa 1986)).

We will next examine whether *zibun-tati-zisin* and *karera-zisin*, both of which Katada (1991) has alleged to allow the split binding, allow the sloppy reading or not under the construction of Comparative Ellipsis with Case-marker. Pronouns+*zisin*, such as *karera/kanojotati-zisin* ‘themselves’ can have the strict reading alone, as shown in the examples in (13) below:

- (13) a. John_k-ga [Bill_j-ni Ø yorimo sakini], Tom_g-ni *karera-zisin*_{k+g}-nituite
 John-NOM Bill-DAT than earlier Tom-DAT them-self about
 katar-ta.
 tell-PST
 Ø = ‘told SELF_{*k+j(+else ⊃ g)/k+g(+else)/k+g+j(+else)}.’ (strict only)

- b. Mary_k-ga [Jane_j-kara Ø yorimo sakini], Sue_g-kara *kanojo-tati*_{k+g}-zisin-nituite
 Mary-NOM Jane-from than earlier Sue-from them-PL-self about
 kii-ta.
 hear-PST

Ø = ‘heard about SELF_{*k+j(+else⇒g)/k+g(+else)/k+g+j(+else)}.’ (strict only)

- c. Chomsky_k-ga [Lasnik_j-ni Ø yorimo sakini], Halle_g-ni *karera-zisin*_{k+g}-o
 Chomsky-NOM Lasnik-DAT than earlier Halle-DAT them-self-ACC
 hihans-ase-ta.
 criticize-CAUS-PST

Ø = ‘criticize SELF_{*k+j(+else⇒g)/k+g(+else)/k+g+j(+else)}.’ (strict only)

In (13a), the index *k+g(+else)* indicates the interpretation ‘Before John told Tom about John and Tom, John told Bill about John and Tom’, the interpretation of which corresponds to the strict reading, and the index *k+j(+else⊖g)* indicates the interpretation ‘Before John told Tom about John and Tom, John told Bill about John and Bill’, the interpretation of which corresponds to the sloppy reading. It is important to note that the sloppy reading in (13a) is missing. In terms of the index *k+g+j(+else)*, the index *g* is included when the group reading is available. The facts shown in (13a,b,c) show that there is no sloppy reading in the examples in (13). Therefore, we can say that *karera/kanojotati-zisin* has only the strict reading, but not the sloppy reading. The conclusion we have reached here is that pronouns+*zisin* in Japanese does not allow the split binding in syntax, though it seemingly looks as if it has its split antecedents, which takes only by way of coreference in discourse.

Zibun-tati-zisin, on the other hand, indeed allows the sloppy reading, as shown in the examples in (14) below:

- (14) a. John_k-ga [Bill_j-ni Ø yorimo sakini], Tom_g-ni *zibun-tati-zisin*_{k+g}-nituite
 John-NOM Bill-DAT than earlier Tom-DAT SELF-PL-self about
 katar-ta.
 tell-PST

Ø = ‘told SELF_{k+j/k+g/k+g+j(+else)}.’ (strict & sloppy)

- b. Mary_k-ga [Jane_j-kara Ø yorimo sakini], Sue_g-kara *zibun-tati-zisin*_{k+g}-nituite
 Mary-NOM Jane-from than earlier Sue-from SELF-PL-self about
 kii-ta.
 hear-PST

Ø = ‘heard about SELF_{k+j/k+g/k+g+j(+else)}.’ (strict & sloppy)

- c. Chomsky_k-ga [Lasnik_j-ni Ø yorimo sakini], Halle_g-ni *zibun-tati-zisin*_{k+g}-o
 Chomsky-NOM Lasnik-DAT than earlier Halle-DAT SELF-PL-self-ACC
 hihans-ase-ta.
 criticize-CAUS-PST
 Ø = ‘criticize SELF_{k+j/k+g/k+g+j(+else)}.’ (strict & sloppy)

The index $k+j$ in (14a) indicates the interpretation ‘Before John told Tom about John and Tom, John told Bill about John and Bill’, the interpretation of which corresponds to the sloppy reading. The fact that *zibun-tati-zisin* has the strict reading has no significance for our discussion here. What we should notice here is that *zibun-tati-zisin* yields the sloppy reading under the construction of Comparative Ellipsis with Case-marker. From the facts in (14), we draw the conclusion that *zibun-tati-zisin* can be syntactically split-bound. Let us, again, notice the fact that the sloppy identity reading is missing in (13) though it is readily available in (14); as a consequence, pronoun(PL)+*zisin* cannot be syntactically split-bound, contrary to the claim made by Katada (1991) and Kasai (2000).

In addition, the following examples including VP-deletions show that *karera-zisin* in (15a) cannot allow the sloppy reading, but *zibun-tati-zisin* in (15b) can. These facts also lend further support to our claim that *zibun-tati-zisin* can be syntactically split-bound:

- (15) a. [Chomsky_k-ga Lasnik_j-ni [_{VP} *karera-zisin*_{k+j}-o hihans]-ase-ta kara],
 Chomsky-NOM Lasnik-DAT them-self-ACC criticize-CAUS-PST because
 Sag_g-mo Pollard_p-ni Ø s-ase-ta.
 Sag-also Pollard-DAT did-CAUS-PST
 Ø = ‘criticized Chomsky_k and Lasnik_j’, Ø ≠ ‘criticized Sag_g and Pollard_p’
 (strict only)
- b. [Chomsky_k-ga Lasnik_j-ni [_{VP} *zibunn-tati-zisin*_{k+j}-o hihans]-ase-ta kara],
 Chomsky-NOM Lasnik-DAT SELF-PL-self-ACC criticize-CAUS-PST because
 Sag_g-mo Pollard_p-ni Ø s-ase-ta.
 Sag-also Pollard-DAT did-CAUS-PST
 Ø = ‘criticized Chomsky_k and Lasnik_j’, Ø = ‘criticized Sag_g and Pollard_p’
 (strict & sloppy)

Another piece of supporting evidence can be seen in the examples in (16) below:

- (16) a. ^{OK}Daremo_k-ga dareka_h-ni *zibun-tati-zisin*_{k+h}-nituite katar-ta.
 ‘For every x , there was some y such that x told y about x and y , (and, x told y about the group including x and y .)

- b. ^{OK}Daremo_k-ga dareka_h-ni *zibun-tati-zisin*_{k+h}-nokoto-o soodansi-ta.

‘For every x , there was some y such that x conferred with y about x and y , (and x conferred with y about the group including x and y .)’

According to Reinhart (1983) and Heim and Kratzer (1998), the bound variable reading of an anaphor manifests itself iff it is syntactically bound. The well-formedness of the examples in (16) also shows that *zibun-tati-zisin* can be syntactically split-bound.

To sum up, we have reached the conclusion that, among the locally-bound plural anaphora in Japanese, *zibun-tati-zisin* alone can be syntactically bound by split antecedents and pronoun(PL)+*zisin* takes its split antecedents only through coreference in discourse.⁵

3. Locality of Split Binding

In this section, we will demonstrate that the syntactic mechanism for the split binding in syntax obeys a locality condition.

First, as shown in (17) below, when both of the antecedents of *zibun-tati-zisin* are located within the clause containing *zibun-tati-zisin*, the split binding is allowed:

- (17) a. John_k-ga Tom_g-ni *zibun-tati-zisin*_{k+g}-nituite katar-ta.
 John-NOM Tom-DAT SELF-PL-self about tell-PST
 ‘John_k told Tom_g about SELF_{k+g}.’
- b. John_k-ga [Bill_j-ni Ø yorimo sakini], Tom_g-ni *zibun-tati-zisin*_{k+g}-nituite
 John-NOM Bill-DAT than earlier Tom-DAT SELF-PL-self about
 katar-ta.
 tell-PST
 Ø = ‘told about SELF_{k+j(-g)}.’ (sloppy OK)

Next, as shown in (18) below, when one of the antecedents of *zibun-tati-zisin* is located within the tensed-clause containing *zibun-tati-zisin* and the other is on the outside of the tensed-clause, the split binding is disallowed:

- (18) a. Kannonbosatu-wa Gokuu_k-ni [Gojoo_g-ga *zibun-tati-zisin*_{k+g}-ni situboosi-ta
 Kuan Yin-TOP Gokuu-DAT Gojoo-NOM SELF-PL-self-DAT despair-PST
 to] hookokus-ase-ta.
 C report-CAUS-PST
 ‘Kaun Yin made Gokuu_k report [that Gojoo_g despaired of them_{k+g}].’

⁵ See Appendix III for split binding in English.

- b. Kannonbosatu-wa [Gokuu_k-ni Ø yorimo sakini], Hakkaij-ni [Gojoo_g-ga
 Kuan Yin-TOP Gokuu-DAT than earlier Hakkai-DAT Gojoo-NOM
*zibun-tati-zisin*_{j+g}-ni situboosi-ta to] hookoku-sase-ta.
 SELF-PL-self-DAT despair-PST C report-CAUS-PST
- Ø ≠ ‘report that Gojoo_g despaired of SELF_{k+g(j)}.’ (sloppy NG)
 Ø = ‘report that Gojoo_g despaired of SELF_{j+g}.’ (strict OK)

In (18b), the sloppy reading is missing. One might conjecture that the split binding indicated with the index displayed in (18a) is acceptable, but it should be noted again that the lack of the sloppy reading there implies that *zibun-tati-zisin* in this example is not syntactically bound by the purported split antecedents.

Finally, when both of the antecedents of *zibun-tati-zisin* are on the outside of the tensed-clause containing *zibun-tati-zisin*, the split binding is never allowed. Take a look at the following example:

- (19) a. Sanzoo_g-ga Gokuu_k-ni [mamono-ga *zibun-tati-zisin*_{k+g}-ni
 Sanzoo-NOM Gokuu-DAT goblin-NOM SELF-PL-self-DAT
 nir-tei-ta to] tuge-ta.
 resemble-PROG-PST C tell-PST
- ‘Sanzoo_g told Gokuu_k [that goblins resembled them_{k+g}].’
- b. Sanzoo_g-ga [Gokuu_k-ni Ø yorimo sakini], Hakkaij-ni [mamono-ga
 Sanzoo-NOM Gokuu-DAT than earlier Hakkai-DAT goblin-NOM
*zibun-tati-zisin*_{k+g}-ni nir-tei-ta to] tuge-ta.
 SELF-PL-self-DAT resemble-PROG-PST C tell-PST
- Ø ≠ ‘told that goblins resembled SELF_{k+g(j)}.’ (sloppy NG)
 Ø = ‘told that goblins resembled SELF_{j+g}.’ (strict OK)

As indicated by the fact that the strict reading of *zibun-tati-zisin* is missing in (19b), the split binding of *zibun-tati-zisin* in (19a) is obtained not through the syntactic binding, but through the coreference in discourse; as a consequence, the syntactic split binding is impossible when both of the antecedents of *zibun-tati-zisin* are on the outside of the tensed-clause containing *zibun-tati-zisin*.

To recapitulate, the observations carried out in this section reveal that no tensed-clause boundary can intervene between *zibun-tati-zisin* and any one of its split antecedents.

4. Explanation of Split Binding

In this section, we will try to explicate the syntactic mechanism of split binding. In the previous sections, we observed that *zibun-tati-zisin*, one of the locally-bound reflexive forms in Japanese tolerates the split antecedence, the observation of which necessitates reformula-

tion of any existing theory of (Japanese binding), no matter how it might have been formalized. Abandoning the traditional binding theory owing to its aforementioned empirical insufficiency, we propose to supplant it with a new theory of binding, according to which the binding relation between an anaphoric expression and its antecedent is materialized not through c-command plus referential coindexing (i.e., through the binding relation formulated under the traditional Binding Theory in Chomsky (1981)) but through *Agree*, the approach which has recently been developed and defended by not a few researchers (Heinat 2008, Reuland 2008, Quicoli 2008, Lee-Schoenfeld 2008, Hicks 2009, *inter alia*).

4.1. Assumptions and Proposals

In recent studies on syntax of reflexive binding, it has often been proposed (see Reuland 2008, Uriagereka and Gallego 2006, and Gallego 2010) that a ϕ -defective reflexive must be ϕ -complete at LF (cf., also, Bouchard 1984, Burzio 1991), where every element must be properly interpreted (Chomsky 1995). Consequently, the syntactic binding of (ϕ -defective) reflexives can be recast within the Agree theory under the current minimalist Probe-Goal framework (Chomsky 2001 and subsequent work).

Following, basically, the theory of Binding through Agree proposed in Uriagereka and Gallego (2006) and Gallego (2010), we will make the following four assumptions: (I) A ϕ -defective reflexive must have its ϕ -features valued by a Probe with the whole ϕ -feature amalgam in order to become ϕ -complete; (II) α binds β if they are both Goals of a single relevant Probe; otherwise, α and β are obviative; and (III) we particularly hypothesize that T with the whole ϕ -feature amalgam supplies ϕ -features through Agree to a ϕ -defective anaphor at a post-Spell-Out level (because the referential interpretation is supposed to take place at LF); that is, T with the whole ϕ -feature amalgam serves as a Probe for a ϕ -defective anaphor; and (IV) the ϕ -completeness for anaphoric expressions is a requirement for interpretation (cf. Bouchard 1984 and Burzio 1991).

It is important to note, here, that these assumptions demand that the feature-binding through Agree should take place at a post-Spell-Out (i.e., at LF); as a consequence, a PHASE, being a cycle for Spell-Out, never bears on the locality of Binding through Agree under our assumptions.

4.2. Binding by a Single Antecedent

With the abovementioned assumptions in mind, let us take consideration of an ordinary binding by a single antecedent. Look at the following Japanese example, which includes *zibun-zisin* at the object position of a tensed clause and the subject DP of the clause:

- (20) a. John_k-ga zibun-zisin_k-o kirat-tei-ta (koto).
 John-NOM SELF-self-ACC hate-PROG-PST (fact)
 ‘(the fact that) John_k hated himself.’

- b.
$$\begin{array}{c} \text{OK} \\ \hline \text{[TP John-ga [}_{\text{VP}} \text{zibun-zisin-o V] T}_{[\varphi]} \end{array}$$
- c.
$$\begin{array}{c} \text{OK} \\ \hline \text{[TP John}_k\text{-ga [}_{\text{VP}} \text{zibun-zisin}_k\text{-o V] T}_{[\varphi]} \\ \hline \text{OK} \end{array}$$

T[+tense] agrees with the subject DP to provide it with the nominative Case before Spell-Out, as illustrated in (20b). Then, T[+tense] with the whole φ -feature amalgam can agree with a φ -defective reflexive in order to supply it with φ -features at LF, as illustrated in (20c). Because *zibun-(tati-)zisin* lacks the specifications for *person* and *gender*, it must be supplied with φ -features by T[+tense] through Agree. As a consequence, Agree has established the binding relation between the subject and the reflexive through the mediation of T.

Next, we will show that the clause-boundedness of *zibun-zisin*, which we noted in §1, also follows directly. Consider the structure in (21) below:

- (21)
$$\text{[TP DP-ga [CP [TP DP-ga [}_{\text{VP}} \text{zibun-zisin-o V] T}_{[\varphi]} \text{] C] T}_{[\varphi]}$$

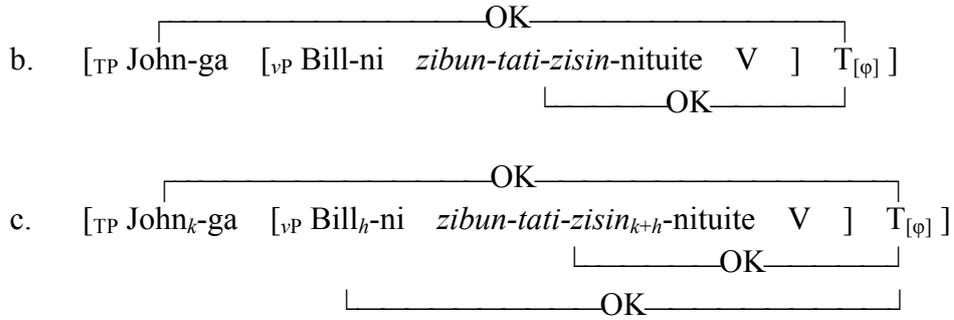
T[+tense] in the embedded CP has the whole φ -feature amalgam and T in the embedded CP is the nearest Probe for *zibun-zisin*; as a consequence, Agree between the matrix T and *zibun-zisin* is prohibited, as (22a) below illustrates, and only the agree relation between the DP at the subject position of the embedded CP and *zibun-zisin* can hold, as illustrated in (22b) below:

- (22) a.
$$\begin{array}{c} \text{[TP DP-ga [CP [TP DP-ga [}_{\text{VP}} \text{zibun-zisin-o V] T}_{[\varphi]} \text{] C] T}_{[\varphi]} \\ \hline \text{OK} \\ \hline \text{✱} \end{array}$$
- b.
$$\begin{array}{c} \text{OK} \\ \hline \text{[TP DP}_k\text{-ga [CP [TP DP}_h\text{-ga [}_{\text{VP}} \text{zibun-zisin}_k\text{-o V] T}_{[\varphi]} \text{] C] T}_{[\varphi]} \\ \hline \text{OK} \end{array}$$

4.3. Split Binding

Here, let us assume that T[+tense] in Japanese (and Korean) is capable of agreeing with more than one Goal other than its canonical subject DP (see Ura 1996 and Hiraiwa 2005 for much relevant discussion). Given this assumption, we will explicate the syntactic mechanism of the split binding through Agree. First, let us take a look at the example in (23a) below:

- (23) a. John_k-ga Bill_h-ni *zibun-tati-zisin*_{k+h}-nituite katar-ta.
 John-NOM Bill-DAT SELF-PL-self about tell-PST
 ‘John_k told Bill_h about themselves_{k+h}.’



As illustrated in (23b), T agrees with the subject DP to provide it with the nominative Case. Then, in (23c), T[+tense] with the whole ϕ -feature amalgam agrees with *zibun-tati-zisin*, which is a ϕ -defective reflexive, to supply it with ϕ -features; moreover, (23c) illustrates that T can agree *optionally* with another DP when the DP is within the same clause thanks to T's multiple checking ability in Japanese (and Korean). If this situation arises, T with the whole ϕ -feature amalgam mediates three Goals; namely, the subject DP, the ϕ -defective reflexive, and the non-subject DP within its clause, as illustrated in (23c). Under our theory of binding, this gives rise to a situation where the ϕ -defective reflexive is syntactically bound by the subject DP and another DP within the clause; whence, split-binding emerges, as required.⁶

This reasoning leads us to the prediction that split-binding is not materialized when either or both of the split antecedents is/are not within the same clause in which the reflexive is embedded, as shown in (24) and (25) below:

- (24) a. Kannonbosatu-wa [Gokuu_k-ni \emptyset yorimo sakini], Hakkai_j-ni [Gojoo_g-ga
 Kuan Yin-TOP Gokuu-DAT than earlier Hakkai-DAT Gojoo-NOM
*zibun-tati-zisin*_{j+g}-ni situboosi-ta to] hookoku-sase-ta.
 SELF-PL-self-DAT despair-PST C report-CAUS-PST
- $\emptyset \neq$ 'report that Gojoo_g despaired of SELF_{k+g(j)}.' (sloppy NG)
 $\emptyset =$ 'report that Gojoo_g despaired of SELF_{j+g}.' (strict OK)

⁶ It is highly probable that D also has the ϕ -feature specifications, resulting in the Probe for a ϕ -defective reflexive to supply it with the ϕ -features. As a consequence, the split binding can be allowed within a DP containing *zibun-tati-zisin*. For example, look at (i), where the plural reflexive allows split antecedents in syntax, as is confirmed by the fact that it is interpreted as a variable bound by one of its antecedents:

- (i)^{OK} kaku iin_k-no iintyou_h-nitaishuru *zibun-tazi-zisin*_{k+h}-nitaishuru
 each committeeman-GEN committee chair-towards SELF-PL-self-against
 kokuhatsu
 accusation

'Each committeeman's accusation against SELF towards the chair'

Given that D in Japanese can have a multiple checking ability with some ϕ -feature specification, it is natural that the split binding within a DP is allowed in Japanese. We will leave it to future research to pursue this issue further, however.

- b. Sanzoo_g-ga [Gokuu_k-ni Ø yorimo sakini], Hakkai_j-ni [mamono-ga
 Sanzoo-NOM Gokuu-DAT than earlier Hakkai-DAT goblin-NOM
*zibun-tati-zisin*_{k+g}-ni nir-tei-ta to] tuge-ta.
 SELF-PL-self-DAT resemble-PROG-PST C tell-PST

Ø ≠ ‘told that goblins resembled SELF_{k+g(j)}.’ (sloppy NG)

Ø = ‘told that goblins resembled SELF_{j+g}.’ (strict OK)

- (25) a. *Daremo_k-ga sensei-ni [dareka_h-ga *zibun-tati-zisin*_{k+h}-o hihansi-ta to] it-ta.
 ≠ ‘For every *x*, there is some *y* such that *x* told the teacher that *y* criticized *x* and *y*.’
- b. *Daremo_k-ga dareka_h-ni [sensei-ga *zibun-tati-zisin*_{k+h}-o hihansi-ta to] it-ta.
 ≠ ‘For every *x*, there is some *y* such that *x* told *y* that the teacher criticized *x* and *y*.’

In (25), the tensed-clause boundary intervenes between *zibun-tati-zisin* and one/both of its antecedents. (25a) is unacceptable when the reflexive is construed as a variable bound by the split antecedents. This lends strong support to our proposed theory of Binding through Agree.

It should be noticed that, under our theory of Binding through Agree, split-binding in syntax emerges iff T optionally agrees with some elements other than the subject DP with which T agrees for the purpose of providing nominative Case to it. Look at (26) below:

- (26) a. [John_k to Bill_h]-ga Mary_j-ni *zibun-tati-zisin*_{k+h/k+h+j}-nituite katar-ta.
 John and Bill-NOM Mary-DAT SELF-PL-self about tell-PST
 ‘John_k and Bill_h told Mary_j about themselves_{k+h/k+h+j}.’

- b. [TP [John_k to Bill_h]-ga [vP Mary_j-ni *zibun-tati-zisin*_{k+h}-nituite V] T_[φ]]
 OK
 OK

- c. [TP [John_k to Bill_h]-ga [vP Mary_j-ni *zibun-tati-zisin*_{k+h+j}-nituite V] T_[φ]]
 OK
 OK
 OK

(26a) has two interpretations because of T’s optional feature checking. When T does not execute an optional agreement with anything other than the conjoined plural subject, the ordinary binding between *zibun-tati-zisin* and the conjoined subject is established, as illustrated in (26b). If, on the other hand, T happens to execute an optional agreement with *Mary* in addition to its obligatory agreement with the conjoined plural subject, then the split binding is successfully established as shown in (26c).

4.4. Interim Summary

In this section, we have argued (i) that *zibun(-tati)-zisin* is a ϕ -defective anaphor, which needs to be licensed through Agree by T with the ϕ -complete specifications, (ii) that the binding relation between *zibun(tati)-zisin* and its antecedent(s) is mediated through Agree by T, and (iii) that, when the situation occurs in which T may agree with some element other than its subject DP, the split binding of *zibun-tati-zisin* emerges.

5. Split Binding and Its Parametric Variation

Up through the previous sections, we have demonstrated how the theory of Binding through Agree enables us to explain the syntactic mechanism of the split binding for a locally-bound reflexive. To elucidate the cross-linguistic variation concerning split binding is our remaining issue in this paper. In this section, we will thus attempt to deduce the contrast between the languages allowing the split binding for a locally-bound reflexive and the ones disallowing it from some independently motivated assumptions concerning parametric differences in human language. Recall that we observed in §1 that the split-binding for a locally-bound reflexive is disallowed in English, Dutch, Chinese, French, Italian, Greek, Tamil, Icelandic, Arabic, Hebrew, and Quechua, whereas, as we extensively argued, Japanese (and Korean) allow the split binding for a locally-bound reflexive.

In §4, we demonstrated (A) that a binding relation through Agree is essential for the split binding; and (B) that the split binding for a locally-bound reflexive can be materialized only if T has the ability of multiple checking. Because only ϕ -defective reflexives need to be bound by way of binding through Agree, the fact (A) means that the split binding for a locally-bound reflexive in a language *L* is materialized only if the locally-bound reflexive in *L* is a ϕ -defective anaphor. Thus, we have reached the following conclusion:

- (27) Split-binding for a locally-bound reflexive is materialized in a language *L* iff both (i) and (ii) hold:
- (i) the locally-bound reflexive in *L* is a ϕ -defective anaphor;
 - (ii) T in *L* is capable of multiple feature checking.

Indeed, the conditions stated in (27) are very pertinent to the aforementioned observation concerning the cross-linguistic variation concerning split binding: Notice that English, French, Italian and Modern Greek disallow the split binding because they deviate from both of (i) and (ii); for, the reflexives in those languages have a full-fledged specification of the ϕ -features and T does not allow multiple checking in those languages. On the other hand, Dutch, Tamil, Icelandic and Chinese have a locally-bound ϕ -defective reflexive, they disallow the split binding for it; for, they deviate from condition (ii); that is, they do not allow T to check more than one nominative. In Arabic and Quechua, in contrast, T has a multiple checking ability because they allow the multiple nominative construction (see Ura 1994, 1996); nevertheless, they disallow the split binding for a locally-bound reflexive; for, they deviate

from the condition (i); that is, their locally-bound reflexives have a complete specification of their ϕ -features. Finally, it is because Japanese (and Korean) comply with both (i) and (ii) that they allow the split binding for a locally-bound reflexive. In (28) below, we summarize the parametric variation of the split binding for a locally-bound reflexive:

(28) Parametric variation concerning the split binding for a locally-bound reflexive

Split binding is prohibited:

- a. English, French, Italian, and Modern Greek: deviant both from (i) and from (ii)
(cf. *French* (Pica 1984); *Italian* (Napoli 1976); *Modern Greek* (Chiou 2007))
- b. Dutch, Tamil, Icelandic, and Chinese: deviant from (ii)
(cf. *Dutch* (Koster 1984); *Tamil* (Selvanathan 2009);
Icelandic (Everaert 1986))
- c. Arabic, Hebrew, and Quechua: deviant from (i)
(cf. *Arabic* (Tsukanova and Nikolaeva 2008); *Hebrew* (Doron 1983);
Quechua (van de Kerke 1991))

Split binding is permitted:

- d. Japanese and Korean (& Kumyk): compliant both with (i) and with (ii)
(cf. *Korean* (Kasai 2000))

In this section we argued that our theory of split binding is adequate enough to explain the cross-linguistically detected parametric difference in terms of split binding.

6. Consequences and Theoretical Implications of the Feature Binding in Japanese

In this section we will sketch out some consequences of our theory of split binding.

6.1. Subject Orientation

Given that T agrees usually with the subject DP in a tensed clause in order to provide nominative Case to the subject DP, the subject orientation of *zibun(-zisin)* can be explained straightforwardly: Because *zibun(-zisin)* must agree with T in order to make its defective ϕ -features complete, T always mediates the agreement between the subject DP and *zibun(-zisin)* in terms of binding relation. Thus, our proposed theory of Binding through Agree naturally enables us to explain that *zibun(-tati)-zisin* (and *zibun(-tati)*) show subject orientation. Look at the examples of multiple Nominative construction in Japanese in (29) below:

- (29) a. John_j-dake-ga imooto_k-ga *zibun-tati-zisin*_{j+k}-o hihanshi-ta.
 John-only-NOM sister-NOM SELF-PL-self-ACC criticize-PST
 ‘As for only John, his sister criticized SELF_{j+k}.’
- b. John_j-dake-ga imooto_k-ga Mary_l-ni *zibun-tati-zisin*_{j+k/l+j+k+l/*j+l/*k+l}-nituite
 John-only-NOM sister-NOM Mary-DAT SELF-PL-self about
 katar-ta.
 tell-PST
 ‘As for only John, his sister told Mary about SELF_{j+k/l+j+k+l/*j+l/*k+l}.’

It has been assumed (cf. Ura 1996 and Hiraiwa 2005) that a single T in Japanese may enter into multiple nominative Case feature checking relations with multiple Subjects. Given our theory of Binding through Agree, according to which T mediates a binding relation between a subject DP and a ϕ -defective reflexive within its clause, it can be naturally explained that (29a) has the interpretation ‘John’s sister criticized John and herself,’ because T individually agrees with *John* and with *imooto* ‘sister’ in the nominative Case and their ϕ -features. Then, T provides *zibun-tati-zisin* with their ϕ -features.

Next, consider the example in (29b). In (29b) T agrees obligatorily with the two subjects *John* and *imooto* to provide them with nominative Case. Additionally, if T agrees optionally with the non-subject DP *Mary*, *zibun-tati-zisin* can be split bound by the two subjects and *Mary*, resulting in the split binding, as shown by the index ‘*j+k+l*’. An empirically interesting point here is that the split binding by one of its subjects (nominative DPs) and the non-subject DP is never allowed, as shown by the index ‘**j+l*’ and ‘**k+l*’. That is, there is no way for the subjects (nominative DPs) with which T agrees not to enter into the binding relation with *zibun-tati-zisin* in (29b), but only the non-subject DP is allowed to be free from the binding relation because T may or may not agree with it in (29b). This lends a piece of strong supporting evidence for the syntactic mechanism of split binding through the mediation of T.

6.2. Φ -complete Anaphora as a Reflexivizer

Because pronoun+*zisin* (such as *kare(ra)-zisin*), another locally-bound reflexive in Japanese, is ϕ -complete, it needs no ϕ -feature agreement with T; rather, we assume, following Aikawa (1993), that pronoun+*zisin* is a reflexivizer à la Reinhart and Reuland (1993). Given this, the binding relation between pronoun+*zisin* and its antecedent is materialized not through syntactic binding but through co-argumenthood; as a result, its strict locality follows. Contra Aikawa (1993), however, we hypothesize that the other reflexives in Japanese are not a reflexivizer. The fact that pronoun+*zisin* needs no ϕ -feature agreement with T results in its lack of subject orientation.

6.3. *Zibun* vs. *Zibun-zisin*

As for the non-local reflexive *zibun(-tati)* in Japanese, its lack of person- and gen-

der-features indicates that it is ϕ -defective. Thus, we predict that *zibun-tati* permits split binding. The syntactic mechanism of the split binding of *zibun-tati* can be explained consistently with our proposed theory of Binding through Agree (See Appendix II for a diagnosis of syntactically split binding with respect to *zibun-tati*). Why is it that *zibun(-tati)* behaves differently from *zibun(-tati)-zisin* in terms of the locality of binding dependency? We follow the idea that the former, being morphologically simple, may undergo (sometimes long-distance) LF movement (à la Pica 1991, Katada 1991, Hestvik 1992, etc.).⁷ In addition, we assume that binding through the Probe-Goal agreement should take place after *zibun* undergoes long-distant LF movement. Therefore, if *zibun* in an embedded tensed clause moves up to the matrix clause, the matrix T can agree with *zibun* after its long-distant movement. As a result, the long-distant binding between the subject DP and *zibun* can be established through the mediation of the matrix T at LF. This indicates that *zibun* allows the long-distant binding over a tensed-clause boundary.

Then, an empirically significant question arises: Why is it that the split binding of *zibun-tati* with the property of long-distant LF movement is not allowed when the tensed-clause boundary intervenes between *zibun-tati* and one of its antecedents? Consider the following examples in (30) by comparing it with the examples of *zibun-tati-zisin* in (25) above.

- (30) a. *Daremo_k-ga sensei-ni [dareka_h-ga *zibun-tati*_{k+h}-o hihansi-ta to] it-ta.
 ≠ ‘For every x , there is some y such that x told the teacher that y criticized x and y .’
- b. ^{OK}Daremo_k-ga dareka_h-ni [sensei-ga *zibun-tati*_{k+h}-o hihansi-ta to] it-ta.
 = ‘For every x , there is some y such that x told y that the teacher criticized x and y .’

Given that *zibun-tati* in an embedded tensed clause can undergo long-distant LF movement, it can be naturally explained why (30b) is acceptable in contradiction to the ill-formed examples of *zibun-tati-zisin*, as shown in (25b). When one of its antecedents is on the outside of the embedded tensed clause, as shown in (30a), the binding relation between *zibun-tati* and the subject DP of the matrix clause can be established through the mediation of the matrix T, but the matrix T cannot agree with another possible antecedent in the embedded tensed clause (i.e., the subject DP in the embedded tensed clause), because T in the embedded tensed clause agrees with the embedded subject DP. Then the derivation crashes at LF, and this is why (30a) is unacceptable. However, when both of its antecedents are on the outside of the embedded tensed clause, we predict that the split binding of *zibun-tati* (i.e., the binding relation between the subject DP and the non-subject DP in the matrix clause and *zibun-tati* within the embedded tensed clause) is allowed, unlike the same situation of *zibun-tati-zisin*. This is bor-

⁷ In Appendix I, we argue that other Japanese morphologically simplex reflexives *mizukara* and *onore* are locally bound. This is because we assume *mizukara* and *onore* cannot move at LF. As a result, it can be naturally explained that they show the same locality for the binding dependency as that of *zibun-zisin*; that is, they can be bound over the non-tensed-clause boundary, but they cannot be bound when the tensed-clause boundary intervenes between them and their antecedents.

ne out, as shown in (30b).

6.4. Binding within Causative Clauses

It is very interesting to consider how our theory of split binding enables us to explain that a ϕ -defective anaphor in a causative clause can be bound by a causer over the non-tensed clause boundary. This fact was first reported in Kuroda (1965), as shown in (31a) below:

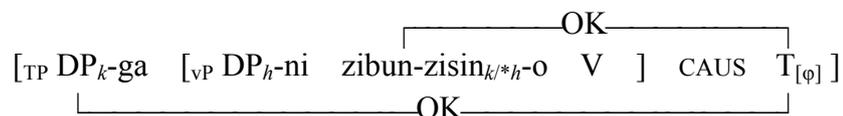
- (31) a. John_k-ga [Bill_h-ni *zibun-zisin*_{k/h}-o mi]-sase-ta. (Kuroda 1965)
 John-NOM Bill-DAT SELF-self-ACC see-CAUS-PST
 ‘John made Bill see SELF.’
- b. John_k-ga [Bill_h-ni *kare-zisin*_{*k/h}-o mi]-sase-ta. (Kurata 1986)
 John-NOM Bill-DAT himself-ACC see-CAUS-PST
 ‘John made Bill see himself.’

In (31a), the local reflexive *zibun-zisin* can be bound by the causer *John* over the non-tensed clause boundary, even though it cannot undergo LF movement. In contrast, *kare-zisin*, the other local reflexive in Japanese, cannot be bound over a non-tensed clause boundary, as shown by the ill-formedness of (31b).

6.4.1. Two Types of Causative Clause

Under our theory of split binding, the antecedent(s) of a ϕ -defective anaphor is/are always destined to be the one with which T agrees. In this paper, we assume that the causative clause may or may not have T[–tense] with the ϕ -complete specifications (see Kitagawa 1986 for a similar idea). If the causative clause does not have T[–tense] (in this case, the causative clause is *vP*, as shown in (32) below), there is no Probe for a ϕ -defective reflexive in *vP* within the causative clause:

- (32) *causative clause* = *vP*

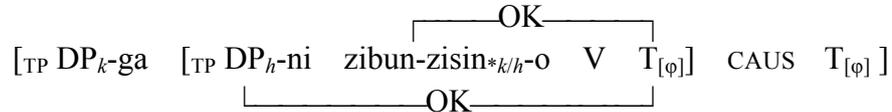


As a result, T[+tense] in the matrix clause turns out to be a Probe and agrees with the reflexive and it also agrees with the subject DP. Here it should be recalled that a binding dependency through Agree is established at LF, where phases are irrelevant to any operation. Thus, the binding relation between the causer at the matrix clause and the ϕ -defective reflexive within the causative clause over the non-tensed clause boundary can safely be established, as required, when the causative clause does not have T.

On the other hand, if the causative clause has T[–tense] with the ϕ -complete specifications (in this case, the causative clause is TP, as shown in (33) below), T in the causative

clause can agree with the causee within the causative clause, but it cannot agree with the causer at the matrix clause, because T in the embedded clause is the T nearest to the causee, but it is not the T nearest to the causer (because the matrix T is the nearest to the causer). Thus, the ϕ -defective reflexive within the causative clause can be bound by the causee through the mediation of the embedded T, but it cannot be bound by the causer at the matrix clause when the causative clause has T.

(33) *causative clause = non-tensed TP with ϕ -complete specifications*



To sum up, a ϕ -defective reflexive within the causative clause is bound by the causee within the causative clause when the causative clause has T, while it is bound by the causer at the matrix clause when the causative clause does not have T.

6.4.2. Ban on Crossover-Binding

In this subsection, we will provide a piece of supporting evidence for the above conclusion that there are two types of causative clause in Japanese. Look at the following example in (34), where crossover-binding is blocked; that is, the two occurrences of *zibun-zisin* must have the same single binder:

- (34) John-wa [Taro-ni *zibun-zisin*-no hahaoya-ni *zibun-zisin*-no
 John-TOP Taro-DAT SELF-self-GEN mother-DAT SELF-self-GEN
 koibito-o shookais]-ase]-ta.
 girl friend-ACC introduce-CAUSE-PAST.

‘John made Taro introduce SELF’s girl friend to SELF’s mother.’

In (34), the two occurrences of *zibun-zisin* must have *Taro* as their binder or they must have *John* as their binder, but it cannot be the case that one of them has *Taro* and the other has *John* as their binders. It should be noted, however, that crossover-binding is possible in general, as shown in (35):

- (35) Toyota-sae_k-ga dono sitauke-gaisya_j-ni-mo soko_j-no keiei-bumon-e
 Toyota-even-NOM every subsidiary-DAT-PRT it-GEN managing section-to
 soko_k-no syain-o ukeire-sase-ta.
 it-GEN staff-ACC take in-CAUS-PST

‘Even Toyota_k made every subsidiary_j take in its_k staff to its_j managing section.’

Why is the crossover-binding impossible in (34)? If the causative clause in (34) happens to have T, then our theory described in §6.4.1 above demands that the two occurrences of *zibun-zisin* should be feature-bound by the causee, which agrees with the T within the causative clause; accordingly, they must have the causee as their binder. On the other hand, if the

causative clause in (34) happens to lack T, then our theory demands that the two occurrences of *zibun-zisin* should be feature-bound by the matrix T, which agrees with the causer at the Spec of the matrix T; accordingly, they must have the causer as their binder. It is important to notice, here, that our theory appropriately explains that there is no crossover-binding in (34).

6.4.3. Subjecthood of Causee

Given Ura's (1996, 2000) assumption that a DP assumes subjecthood when the DP agrees with T, then we are led to predict (I) that the causee in a causative clause has subjecthood when *zibun-zisin* is bound by the causee, and (II) that the causee in a causative clause does not have subjecthood when *zibun-zisin* within the causative clause is bound by the causer at the matrix clause. Look at (36):

- (36) Mary_k-wa [John_h-ni [PRO okori-nagara] *zibun-zisin*-o hihans]-ase-ta.
 Mary-TOP John-DAT angry-while SELF-self-ACC criticize-CAUS-PAST
 'Mary made John criticize SELF, while PRO being angry.'

The factual interpretation for (36) is as follows: If *zibun-zisin* is to be bound by *John*, PRO in the adjunct adverbial clause must be construed as *John*, and if *zibun-zisin* is to be bound by *Mary*, PRO in the adjunct adverbial clause must be construed as *Mary*. This fact becomes clearer if we take a closer look at the interpretation for (37) below:

- (37) a. Mary_k-wa [karera_h-ni [PRO_{*k/h} okori-nagara] *zibun-tati-zisin*_h-o
 Mary-TOP them-DAT angry-while SELF-self-ACC
 hihans]-ase-ta.
 criticize-CAUS-PAST
 'Mary_k made them_h criticize SELF_h, while PRO_{*k/h} being angry.'
- b. Mary_k-wa [karera_h-ni [PRO_{k/??h} okori-nagara] *zibun-zisin*_k -o
 Mary-TOP them-DAT angry-while SELF-self-ACC
 hihans]-ase-ta.
 criticize-CAUS-PAST
 'Mary_k made them_h criticize SELF_k, while PRO_{k/??h} being angry.'

In the case where (37a) is acceptable, it must be that *zibun-tati-zisin* is bound by the causee *karera*, because it is a plural form. Thus, the causative clause in (37a) must be TP and T[–tense] in the causative clause inevitably agrees both with the reflexive and with the causee. Because there is no interpreting the controller of PRO in the adjunct adverbial clause as any element other than *karera* in (35a), the prediction with our theory is borne out, as required. This lends strong support to our theory of Binding through Agree.

7. Conclusion

Our aim in this paper was to clarify under what conditions the split binding is possible. First, we have argued that one of the Japanese locally-bound reflexive form *zibun-tati-zisin* can be syntactically bound by split antecedents within its local domain. Next, we have proposed the theory of Binding through Agree, and demonstrated that T with the ability of multiple checking mediates the agreement between a ϕ -defective reflexive and its split antecedents (i.e., the subject DP and the non-subject DP). We also explained the parametric difference between the languages allowing the split binding for a locally-bound reflexive and the ones disallowing it.

Appendix I: Morphologically Simple Reflexives That Are Locally-bound

Mizukara and *onore*, being their ϕ -defective nature, show subject orientation, too (Ishino and Ura 2011), as correctly predicted with our theory presented herein.

- (I.1) a. John_k-ga Bill_j-ni *mizukara*_{k/*j}/*onore*_{k/*j}-nituite katar-ta.
 John-NOM Bill-DAT SELF/SELF about tell-PST
 ‘John_k told Bill_j about SELF_{k/*j}.’
- b. John_k-ga Bill_j-ni *zibun-zisin*_{k/*j}/*zibun*_{k/*j}-nituite katar-ta.
 John-NOM Bill-DAT SELF-self/SELF about tell-PST
 ‘John_k told Bill_j about SELF_{k/*j}.’
- c. John_k-ga Bill_j-ni *kare-zisin*_{k/j}-nituite katar-ta.
 John-NOM Bill-DAT he-self about tell-PST
 ‘John_k told Bill_j about SELF_{k/j}.’

As observed in (11c) and (12c) above in the main text, *mizukara* and *onore* differ from *zibun* and *zibun-zisin* in that the former disallow the strict identity reading in an elliptical domain as a surface anaphor. Ishino and Ura (2011) argue that *zibun* and *zibun-zisin* can be used not only as a ϕ -defective anaphor but also as a referential pronominal, which does not need any syntactic binding, whereas *mizukara* and *onore* can only be used as a ϕ -defective anaphor in syntax.

The morphologically simple reflexive forms *mizukara* and *onore* in Japanese, unlike the other morphologically simple reflexive *zibun*, show the strict locality just like pronoun+*zisin* and *zibun-zisin* (cf. Kitagawa 1986 and Ishino and Ura 2011). This fact is revealed by the ill-formedness of (I.2a,b,c) below:

- (I.2) a. *Sanzoo_k-ga Gokuu-ni [mamono-ga *zibun-zisin_k/kare-zisin_k-o*
 Sanzoo-NOM Gokuu-DAT goblin-NOM SELF-self/he-self-ACC
 oikaker-teir-u to] tuge-ta.
 chase-PROG-PRES C tell-PST
 ‘Sanzo_k told Goku [that goblins chased SELF_k].’
- b. *Sanzoo_k-ga Gokuu-ni [mamono-ga *mizukara_k/onore_k-o*
 Sanzoo-NOM Gokuu-DAT goblin-NOM SELF/SELF-ACC
 oikaker-teir-u to] tuge-ta.
 chase-PROG-PRES C tell-PST
 ‘Sanzo_k told Goku [that goblins chased SELF_k].’
- c. Sanzoo_k-ga Gokuu-ni [mamono-ga *zibun_k-o* oikaker-teir-u to]
 Sanzoo-NOM Gokuu-DAT goblin-NOM SELF-ACC chase-PROG-PRES C
 tuge-ta.
 tell-PST
 ‘Sanzo_k told Goku [that goblins chased SELF_k].’

This is very surprising, given Faltz’s (1977) and Pica’s (1987) generalization that morphologically simple reflexives with subject-orientation are tolerable with the long-distance binding. Under our theory of feature-binding, the locally-bound nature of *mizukara* and *onore* is naturally explained; for, ϕ -defective reflexives must be feature-bound through Agree, the operation which is principally restricted within a single tensed clause, as we argued in the main text. The conclusion is that *mizukara* and *onore*, unlike *zibun-zisin* and *zibun* (both of which can be used as a referential pronominal), can only be used as a genuine ϕ -defective anaphor (Ishino and Ura 2011).

Appendix II: Split Binding and *Zibun-tati*

Abe (1992) claims that the split antecedence illustrated in (9) above in the text is not a genuine one, but it is obtained as a special case of the group reading for *zibun-tati* (cf., also, Kawasaki 1989), which depends not upon syntactic binding but upon coreference in discourse. This claim can be examined by detecting whether or not *zibun-tati* tolerates the sloppy identity reading when being embedded in an elliptical domain as a surface anaphor.

- (II.1) a. John_k-ga [Bill_j-ni \emptyset yorimo sakini], Tom_g-ni *zibun-tati_{k+g(+else)}-nituite*
 John-NOM Bill-DAT than earlier Tom-DAT SELF-PL about
 katar-ta.
 tell-PST
 \emptyset = ‘told about SELF_{k+j(+else-g)/k+g(+else)/k+g+j(+else)}.’ (strict/sloppy)

- b. Mary_k-ga [Jane_j-kara Ø yorimo sakini], Sue_g-kara *zibun-tati*_{k+g(+else)}-nituite
 Mary-NOM Jane-from than earlier Sue-from SELF-PL about
 kii-ta.
 hear-PST

Ø = ‘heard about SELF_{k+j(+else-g)/k+g(+else)/k+g+j(+else)}.’ (strict/sloppy)

- c. Chomsky_k-ga [Lasnik_j-ni Ø yorimo sakini], Halle_g-ni *zibun-tati*_{k+g(+else)}-o
 Chomsky-NOM Lasnik-DAT than earlier Halle-DAT SELF-PL-ACC
 hihans-ase-ta.
 criticize-CAUS-PST

Ø = ‘criticize SELF_{k+j(+else-g)/k+g(+else)/k+g+j(+else)}.’ (strict/sloppy)

As the interpretation of the above examples shows, *zibun-tati* yields the sloppy reading in addition to the strict reading. Under our theory, this implies that *zibun-tati* can be used as a logophor, which utilizes coreference in discourse. This, in turn, lends empirical support to Abe’s (1992) claim.

Appendix III: Split Binding in English

It has widely been admitted that the English third-person plural reflexive *themselves* is a locally-bound reflexive and cannot be split bound.

- (III.1) a. *John_k told Bill_h about *themselves*_{k+h}. (Wasow 1979)
 b. *John_k showed Mary_h *themselves*_{k+h} in the mirror. (Fiengo and May 1994)

However, it has sometimes been reported in the literature that the split binding for *themselves* is possible in a certain context.

- (III.2) a. ^{OK}Mary_k showed Paul_h a nice picture of *themselves*_{k+h}. (Carroll 1986)
 b. ^{OK}John told Mary about interesting and important political ideas, while Bill_k told Sue_h only about *themselves*_{k+h}. (Okada 1998)
 c. [Mary and Sue told Jane that they all looked exactly alike, but Jane was the only one who claimed not to be able to see the resemblance.]
^{OK}So Mary_k showed Jane_h *themselves*_{k+h} in the mirror, so that she could see their faces together and could compare them. (Okada 1998)

It has also been reported that the English reflexives can be bound over the tensed-clause boundary in a certain context. Our theory demands that the reflexives in these kinds of example should be an instance of the contextually emphatic logophor in discourse. Importantly, this is, indeed, endorsed by the observation that they do not have the sloppy reading when they are interpreted under the VP-deletion context. Consider the following:

- (III.3) a. ^{OK} *Mary* thought that everyone was fond of pictures of *herself*.
(Cantall 1974, Lebeaux 1984, Pollard and Sag 1992, etc.)
- b. ^{OK} *John* eventually realized that the girl was taller than *himself*. (Zribi-Hertz 2007)
- c. ^{OK} *Jack* came to know that this bitch was in love with *himself*. (Gast 2002)
- (III.4) a. *Mary* thought that everyone was fond of pictures of *herself*, and Jane did \emptyset , too.
herself in $\emptyset = \text{Mary}$, ?*herself* in $\emptyset = \text{Jane}$ (strict OK, sloppy ?)
<Lebeaux 1984: possibility of the existence of PRO in the *picture*-noun>
- b. *John* realized that the girl was taller than *himself*, and Bill did \emptyset , too.
himself in $\emptyset = \text{John}$, *?*herself* in $\emptyset = \text{Bill}$ (strict OK, sloppy NG)
- c. *Jack* came to know that this bitch was in love with *himself*, and Bill did, \emptyset too.
himself in $\emptyset = \text{John}$, **herself* in $\emptyset = \text{Bill}$ (strict OK, sloppy NG)

Logophorically/emphatically used reflexives cannot be a bound variable (cf. Sevcenco 2006).
The following examples also endorse this:

- (III.5) a. Mary_k showed Paul_h a nice picture of *themselves*_{k+h}, and Jane_j did \emptyset , too.
 $\emptyset =$ showed Paul a nice picture of Mary and Paul, $\emptyset \neq$ showed Paul a nice picture of Jane and Paul (strict OK, sloppy NG)
- b. [Under the same context as in (III.2b)]
 Bill_k told Sue_{k+h} only about *themselves*_{k+h}, and Tom_j did, \emptyset too.
 $\emptyset =$ told Sue about Bill and Sue, $\emptyset \neq$ told Sue about Tom and Sue
(strict OK, sloppy NG)
- c. [Under the same context as in (III.2c)]
 Mary_k showed Jane_h *themselves*_{k+h} in the mirror, but Sue_j didn't want to \emptyset , too.
 $\emptyset =$ show Jane *themselves*_{k+h}, $\emptyset \neq$ show Jane *themselves*_{k+j}
(strict OK, sloppy NG)

We therefore conclude that the split binding of a reflexive under special contexts in English (such as exemplified in (III.2)) is materialized only through the coreference in discourse.

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