Extending the Binding Domain of Anaphora in Japanese
Extending the Binding Domain of Anaphora in Japanese

Mari SAKAGUCHI*

日本語における照応表現の束縛領域の拡張について

坂口 真理

With the development of the Minimalist Program by Chomsky (1995), Binding Theory proposed by Chomsky (1981) may have to be recast as phi-feature checking as discussed in Rooryck and Wyngaed (2011). However, the incentive given by Chomsky (1981) and all the empirical data collected from studying the anaphoric properties of a variety of languages should be taken into account in constructing the new framework. In this sense, the present paper will serve as one of the empirical studies of Japanese anaphors. It takes Safir (1992) as a point of departure and investigates the binding properties of various anaphoric expressions in Japanese.

Section 1 introduces Safir’s (1992) analysis of English anaphoric expressions. In Section 2, Japanese anaphoric expressions are examined in contexts of contrastive predicates. In Section 3, comparisons are made between patterns of English anaphoric expressions and those of Japanese ones. It will be shown that the Japanese local anaphor zibunzisin does not extend its domain in similarity predicates and comparative predicates, while the reciprocal otagai-ni…aite (each …the other) extends its domain in all three kinds of contrastive predicates.

Key words: Binding Domain, local and long distance reflexives, reciprocals

※ 本学文学部英語英文学科
1. Safir (1992)—Domain Extensions of English anaphora

Safir (1992) examines the classes of predicates in English that permit long distance binding of reflexives across specified subjects beyond the domain predicted by Principle A of Chomsky’s (1981) Binding Theory. He shows that these predicates are isolable on semantic grounds and that notions such as “potential antecedent” (PA) and “implied non-coreference” are necessary to determine the domains which anaphors and pronouns must be bound or free. Finally, he proposes that syntactic, semantic and pragmatic factors contribute to the determination of domains for anaphora.

For example, the reflexive in (1a) is ruled out by Principle A of Binding Theory, while in (1b) the reflexive is coreferential with the antecedent.

(1) a. *I told Albert, [that himselfi was crazy.]
   b. I told Albert, [that physicists like himselfi were a godsend.]

Safir (1992:3) isolates the following three kinds of predicates (he calls them “contrastive predicates”) that allows the complement reflexives to be bound beyond the domain predicted by Chomsky’s (1981) Binding Theory. (1b) above is an example containing a similarity predicate.

(2) a. Similarity Predicates
   someone |unlike/similar to/very dissimilar to/completely different from/such as| himself
   b. Comparatives
      a woman |taller/more generous/less wealthy| than herself
   c. Exclusion Predicates
      no one |apart from/but| himself, everyone except himself
      someone | besides/other than/in addition to| himself

The following (3) is an example that includes an exclusion predicate. (4) shows that examples which contain a comparative extend the domain of binding.

(3) Miltoni warned Marsha that she shouldn’t trust anyone |but/other than/except| himself.
(4) a. [These men], believe that Mary would never consider marrying a |man| less wealthy than themselves.
   b. Marsha and Alice have told Milton that he can be assured that |women| more intelligent than themselves will be handling his case.

—Safir (1992:3)

The following example (5) shows that the reflexive complement of other predicates does
not extend the binding domain.

(5) “Miltoni warned Marsha that she shouldn’t trust anyone in love with himself.”

Chomsky’s (1981:211) Binding Theory is as follows:

   (A) An anaphor must be bound in its binding domain.
   (B) A pronoun must be free in its binding domain.
   (C) A name must be free.

b. Governing Category: A is a governing category for B if and only if A is the minimal category containing B, a governor of B, and a SUBJECT accessible to B.

By SUBJECT, Chomsky (1981:211) means “either subject-verb Agr or else the subject of a predication.” Safir (1992:4) uses “specified subject” for SUBJECT and limits his discussion to cases where the specified subject is simply the subject of a predication containing B. His proposal is as follows:

(7) If a predicate semantically implies non-coreference between its subject and complement arguments, then the role of the specified subject is somehow disqualified for the object of that predicate.

The subject physicists in (1b), anyone in (3), a man in (4) do not count as potential antecedents for the reflexive because they are implied non-coreferent with the reflexive.

On the other hand, anyone in (5) does not have this implication.

Notice that reflexives and pronouns are not in complementary distribution in contrastive predicates. In (8), both the reflexive and the pronoun allow coreferential reading with The women. On the other hand, in example (9) with a non-contrastive predicate, only the pronoun allows the coreferential reading.

(8) contrastive predicate (similarity predicate)
   The women, consider Mary similar to themselves, / them.

(9) non-contrastive predicate
   The women, consider Mary hostile to themselves, / them.

Safir (1992:8) proposes the following potential antecedent restriction (PAR):

(10) a. The Potential Antecedent Restriction (PAR) (to be revised)
    In order for A to count as the nearest Specified Subject for B, A must be a potential antecedent for B.
b. Implied Non-coreference (to be revised)

If the meaning of a predicate P induces an interpretation whereby the subject of P is understood as non-coreferent with the object of P, then the subject of P is not a potential antecedent for the object of P.

The subject in (10b) is a Specified Subject. For instance, since the subject physicists in (1b) is understood as non-coreferent with himself, the subject does not count as a PA of himself. Here by “implied,” he does not mean “logical implication.”

Then he develops two kinds of implied non-coreference motivated by the behaviors of reciprocals and pronouns in contrastive predicate contexts.

First, let us look at the examples that motivate his classification. The following examples show that reflexives and reciprocals behave differently in similarity predicates. # indicates that the sentence if deviant in some sense.

(11) similarity predicates
   a. #The men are [similar to/unlike] themselves.
   b. The men are [similar to/unlike] each other.

The sentences with reflexives in (11a) are deviant, while the sentences with reciprocals in (11b) are acceptable due to distributed reciprocal relations in a way that does not compare each men with himself.

On the other hand, exclusion predicates and comparatives pattern together in that they do not produce acceptable readings with reciprocals but are acceptable with reflexives.

(12) exclusion predicates
   a. [Three women, in addition to themselves, ] should round out our party.¹
   b.*[Three women, in addition to each other, ] should round out our party.

(13) comparatives
   a.*John disliked [two women, smarter than themselves,] (by M)
   b.*John disliked [two women, smarter than each other,]
   c.* [Tom and Jerry], disliked two women smarter than [each other], (by M)

According to Safir (1992:12), comparatives and exclusion predicates imply disjoint reference (IDJR) in (14), while similarity predicates imply only distinct reference (IDTR) in (15).

Thus, he defines two kinds of implied non-coreference, “implied distinct reference” (IDTR) and “implied disjoint reference” (IDJR) as follows:
(14) Implied Distinct Reference (IDTR)(provisional)
Given a predicate P which denotes a relation R holding between two sets X and Y (for X the denotation of the subject of P and Y the denotation of the complement argument), Y and X are “implied distinct in reference” iff for all X,Y, such that XRY,
(i) There is no x, x a member of X and of Y, and xRx.

(15) Implied Disjoint Reference (IDJR)(provisional)
Given a predicate P which denotes a relation R holding between two sets X and Y (for X the denotation of the subject of P and Y the denotation of the complement argument), Y and X are “implied disjoint in reference” iff for all X,Y, such that XRY,
(i) There is no x in both X and Y.

The difference between (14) and (15) is that (14) has xRx. By stating that no member of X can be in relation with itself, (14) excludes the reading with a similarity predicate Tom is unlike himself. Thus (14) captures the reciprocal interpretation. For instance, if the men in (11b) denotes the set {Bill, Tom}, a reciprocal only requires that Bill is similar to Tom and Tom is similar to Bill, but does not require that Bill is similar to Bill or Tom is similar to Tom.

On the other hand, (15) is intended for the interpretation of comparatives and exclusion predicates, where there is no reflexive statement xRx. So (15) does not exclude the reading Tom is unlike himself.

Thus disjoint reference (IDJR) in (15) always implies distinct reference (IDTR) but not vice versa.

Before looking at empirical results of how IDTR and IDJR extend the binding domain, I summarize the coindexing between the subject and complement from Safir’s examples presented so far in the following chart (16). The numbers in the chart indicate examples shown below:

(16) coindexing between the subject and the complement in English

<table>
<thead>
<tr>
<th></th>
<th>Reflexive</th>
<th>Reciprocal</th>
<th>Pronoun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similarity</td>
<td># semantically odd, tautology (17a)</td>
<td>semantically well-formed</td>
<td>* by Principle B (17a)</td>
</tr>
<tr>
<td>predicates</td>
<td></td>
<td>(17b)</td>
<td></td>
</tr>
<tr>
<td>Exclusion</td>
<td>ambiguous # contradictory &amp; non-contradictory (18c)</td>
<td>* (18b)</td>
<td>* by Principle B (18a)</td>
</tr>
<tr>
<td>predicates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparatives</td>
<td># contradictory (19a)</td>
<td># contradictory (19c)</td>
<td>* by Principle B (19b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(17) (similarity predicates)
   a. #John, is similar to himself/*him.
   b. [The men], are similar to each other.

(18) (exclusion predicates)
   a. *[Three women, in addition to them,] should round out our party.
   b. *[Three women, in addition to each other,] should round out our party.
   c. [Three women, in addition to themselves,] should round out our party.
   (two readings: contradictory & non-contradictory)

(19) (comparatives)
   a. #John, is bigger than himself, (contradictory)
   b. * John, is bigger than him.
   c. [John and Mary], are bigger than [each other]. (contradictory)

So the question is "how do IDTR and IDJR interact with Potential Antecedent Restriction (PAR) and extend the binding domain?"

The following examples show reciprocals with the IDTR predicates. According to Safir, (20b) is ambiguous with local reading preferred.

(20) (similarity predicates)
   a. Mary always seems to go out with men, similar to each other.
   b. These women, date men, similar to each other.
   c. The men, will trust {everyone/not a single man} similar to each other.

   -Safir (1992:14)

In the following examples with IDJR predicates, reciprocal can seek an antecedent in the domain of the next higher subject in the sentence.

(21) (exclusion predicates)
   a. * Jane will only praise two women other than each other.
   b. Bud and Ollie have implicated two Israelis in addition to each other.
   c. These guys will trust {anyone/everyone/no one but} each other.

   -Safir (1992:15)

The binding domain for pronouns is not extended for similarity predicates. In other words, pronouns are not required to be disjoint for subjects higher than their local subjects as shown by the following example.

(22) (similarity predicates)
John, wants to marry [a woman, similar to himself/him.]

In (22), the pronoun *him* does not extend its binding domain to the entire sentence. Otherwise, *John* and *him* must be distinct.

By contrast, the domain in which pronouns must be free is extended for the exclusion predicates. In these examples pronouns do not receive focal stress.

(23) John, will criticize anyone besides ??him/himselfi.
(24) Mary, admires only two women |other than/in addition to| ??heri.

—Keenan (1988)

Safir’s (1992:18) empirical results are summarized as follows:

(25) a. The Binding Domain for pronouns and reciprocals is extended past a contrastive predicate specified subject iff the contrastive predicate implied disjoint reference between its subject and complement.
   b. The Binding Domain for reflexives is extended past a contrastive predicate specified subject iff the contrastive predicate implies distinct reference between its subject and complement.

So how far extended are extended binding domains? Safir (1992:18) assumes the following “Next Subject Up” (NSU) hypothesis:

(26) The NSU Hypothesis: If the contrastive predicate subject is disqualified, then the next higher subject is likely to count as a specified subject.

The following examples show that pronouns in (28a) and reciprocals in (27a) obey NSU, but not reflexives. The NSU hypothesis makes wrong predictions for reflexives. For reflexives the binding domain is extended beyond what (26) predicts.

(27) (exclusion p. : reciprocal)
   a. [The boys]i said that [the girls]j would support at least two men in addition to [each otherj/j].
   b. *[These democrats]i suspect that the computer will select candidates other than [each other ]j from the new list.

(28) (exclusion p.: pronouns and reflexives)
   a. [The boys]i said that [the girls]j would support at least two men in addition to [themj/j/ themselvesj/j].
   b. [These democrats], suspect that the computer will select candidates other than [themj/j/ themselvesj/j] from the new list.
The following chart summarizes how binding domains in English are extended. Some of the examples are not found in Safir (1992).

(29) Binding domain extensions in English

<table>
<thead>
<tr>
<th>Similarity predicates</th>
<th>Reflexive</th>
<th>Reciprocal</th>
<th>Pronouns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>extended</td>
<td>extended</td>
<td>not extended</td>
</tr>
<tr>
<td></td>
<td>(1b)</td>
<td>(20b)</td>
<td></td>
</tr>
<tr>
<td>Exclusion predicates</td>
<td>extended beyond NSU (28a)</td>
<td>obeys NSU (27a)</td>
<td>obeys NSU (28a)</td>
</tr>
<tr>
<td>Comparatives</td>
<td>extended (4)</td>
<td>not extended (13c)</td>
<td>not extended</td>
</tr>
</tbody>
</table>

Finally, Safir (1992:33) proposes implied non-coreference as a pragmatic effect.

(30) IMPLIED NON-COREFERENCE: An antecedent x is implied non-coreferent with y if x and y are co-arguments of a predicate P and coindexation between x and y yields a tautological or contradictory interpretation.

PAR is revised by Safir (1992:33) as follows. In revising it, he adopts Chomsky’s (1986) notion of CFC (Complete Functional Complex):

(31) Potential Antecedent Restriction (PAR)

If the minimal CFC K containing x (x a pronoun or anaphor) also contains a c-commanding antecedent implied non-coreferent for x, then the binding domain for K will be the binding domain for x.

K in (31) is referred to as Disqualified Complete Functional Complex (DCFC). PAR in (31) cannot apply recursively. (31) ensures that a whole DCFC containing a pronoun or anaphor will pattern with simple pronouns and anaphors. That is, (31) incorporates the insight of Keenan (1988) that the distribution of “complex anaphors” properly includes all the domain where the basic anaphors are possible. Furthermore, (31) now enables us to treat conjunctions because it is no longer stated in terms of subjects.

Safir’s (1992:43-44) conclusions are as follows:

(A) The types of predicates that will induce the pragmatic effects of IDTR or IDJR are isolable on semantic grounds.
(B) As they interact with the conditions on potentially referential items (pronouns,
anaphors, reciprocals), the pragmatic effects of IDTR and IDJR determine whether a given indexing is informative or not.

(C) Whether or not an indexing is informative interacts with syntactic conditions on binding domains through the PAR.

Safir contends that no real world knowledge is required to make the pattern of indexing informative.

2. Domain Extensions of Japanese anaphora

In this section, I will investigate how Safir’s proposal is relevant to Japanese anaphoric expressions. The anaphoric expressions examined in this section are two kinds of reflexives zibun and zibun-zisin, reciprocal otagai (each other), otagai-ni aite (each… the other) and pronouns.

Syntactic behaviors of these expressions are summarized as follows:

(32) syntactic behaviors of Japanese anaphoric expressions

<table>
<thead>
<tr>
<th>Reflexives</th>
<th>zibun</th>
<th>Long Distance anaphor, has subject-orientation, no Specified Subject Condition (SSC) effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>zibunzisin</td>
<td>local anaphor, has subject-orientation, has SSC effects</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reciprocals</th>
<th>otagai</th>
<th>local anaphor, has subject-orientation, has SSC effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>otagai-ni…aite</td>
<td>local disjoint anaphor, has SSC effects</td>
</tr>
</tbody>
</table>

| Pronouns     | kare/hanozo,etc | has no subject orientation, no SSC effects                                     |

Katada (1991) is one of the first studies to point out zibunzisin as a local anaphor instead of the much studied zibun, which is a long distance anaphor.

The following examples (33) illustrate the properties summarized in chart (32).

(33) a. Taroo-wa Ziroo-ni [Hanako-ga zibun/,/ zibunzisin/,/]-o top dat nom acc
tutaga-ttei-ru] to i-tta.
doubt-asp-prs cp say-pst
“Taroo, said to Ziroo, that Hanako doubted zibun/,/ zibunzisin/,/.”

b. *[Taroo-to Ziroo]-wa [Sabu-ga otagai-ni aitei-o nikun-dei-ru] to
-and top nom each the=other-acc hate-asp-prs cp
i-tta.
say-pst
“*[T & Z], said that Sabu hated [each other],”
(33a) shows the local nature of *zibunzisin* and the non-local nature of *zibun* as well as the subject-orientation of both of the reflexives.

(33b) illustrates that the specified subject *Sabu* blocks the reciprocal to find the antecedent in the matrix clause. As a result, (32b) is rendered unacceptable.

(33c) shows that the pronoun *kare* does not have the subject-orientation and obeys Principle B.

**2.1. Similarity Predicates**

Let us look at how these two kinds of reflexives are used in similarity predicates.

(34) #|Taroo|\textsubscript{1} –wa \{zibuni/zibunzisin\}-ni ni-tei-ru.

"#Taroo\textsubscript{1} is similar to zibuni/zibunzisin ." (semantically odd)

As the following example shows, the binding domain of the local anaphor *zibunzisin* is not extended. This may be due to the fact that Japanese also has an LD anaphor *zibun*.

(35) Taroo\textsubscript{1} –wa \{zibuni/zibunzisin\}-ni ni-tei-ru zoseej-to kekkonsi-ta.

"Taroo\textsubscript{1} married a woman similar to \{zibuni/zibunzisin\}."

In (35), the local reflexive *zibunzisin* still refers to the specified subject *zosei*.

The same is true in the case of conjunctions. Instead of extending the domain of a local anaphor, an LD anaphor is used.

(36) Hanako\textsubscript{1}–wa Taroo\textsubscript{1}–ni [e] [Ziroo-to \{zibuni/zibunzisin\}]–o tayori-ni

"Hanako, reassured Taroo, that (he), may count on Ziroo and \{zibuni/zibunzisin\}."

Japanese pronouns behave just like English pronouns in this environment.

(37) a. *Taroo\textsubscript{1}–wa kare\textsubscript{1}–ni ni-tei-ru.

"Taroo\textsubscript{1} is similar to him\textsubscript{1}."
Japanese reciprocal in similarity predicates behave like English reciprocals. From now on I will use the disjoint anaphor otagai-ni…aite (each … the other) instead of the argument otagai (each other) because the latter is more restrictive in the places it may appear. The disjoint anaphor otagai-ni… aite consists of otagai-ni , which is an adverb plus aite, which occupies the argument position. It could be that otagai is historically derived from the adverb otagai-ni.

Reciprocal otagai-ni …aite extends the binding domain in the following (38c). (38c) is ambiguous. It has a local reading (i) and the long distance reading (ii).

\[(38)\]
\[a. \text{[Taroo-to Hanako]-wa otagai-ni aite,ni ni-tei-ru.} \]
\[-and \quad -top \text{ each the=other-to similar-asp-pr} \]
\["\text{[Taroo and Hanako], are similar to [each other].}" \]
\[b. \text{Taroo-wa otagai=ni aite,ni ni-tei-ru} \text{ futari-no zosee,to deetosi-ta.} \]
\[-top \text{ each the=other-to similar-asp-pr two-gen women-with date-pst} \]
\["\text{Taroo dated [ two women, who are similar to each other,] }" \]
\[c. \text{[Taroo-to Jiroo]-wa otagai-ni [aite,ni ni-tei-ru]zosee,]to deetosi-ta.} \]
\[-and \quad -top \text{ each the=other-to similar-asp-pr women-with date-pst} \]
\["\text{[Taroo and Jiroo], dated women, who are similar to each other,}" \]
\[(i) "\text{T and Z dated women, who are similar to each other,}" \]
\[(ii) "\text{T and Z dated women, who are similar to each other,}" \]
\[(i.e. T dated a woman who is similar to J & J dated a woman who is similar to T)\]
\[d. \text{[Hanako-to Umeko]-wa [[Taroo-to Ziroo]-ga otagai-ni [aite,/,/\text{*ni} \text{ ni-tei-ru] zosee,] to deetosi-ta] to i-tta} \]
\[\text{similar-asp-pr women-with date-pst cp say-pst} \]
\["\text{[H & U]k said that [T&Z], dated with [women], similar to [each other],/\text{*k."} \]

It seems that the reciprocal cannot extend the domain higher than the next subject up in similarity predicates.

In this section, we have seen that the binding domains of the local anaphor and the pronouns are not extended. Only the reciprocal has its domain extended obeying
the NSU hypothesis.

2.2. Comparatives

In this section, we will look at anaphoric expressions in comparative predicates. Again the binding domain does not extend for local reflexive anaphor *zibunzisin*.

(39) a. #Taroo-wa [zibun/*zibunzisin,]-yori se-ga takai.
   
   
   
   
   
   Taro is taller than {zibuni/zibunzisini}.” (contradictory)

b. Taroo-wa [[zibun/ zibunzisin,]-yori se-ga takai] zosee-to
   
   
   
   
   
   Taro married a woman taller than {zibuni/zibunzisini}.

Now let us look at reciprocals with a comparative predicate.

(40) a. #[Taroo-to Hanako]-wa otagai-ni aitei-yori se-ga takai.
   
   
   
   
   
   Taroo and Hanako are taller than each other.” (contradictory)

b. [Taroo-to Jiroo]-wa otagai-ni [aitei-yori se-ga takai] zosee-to
   
   
   
   
   
   (i) “Taroo and Ziroo married women taller than each other.” (Taroo married a woman taller than Ziroo & Ziroo married a woman taller than Taroo.)

(ii) #Taroo and Ziroo married women, taller than [each other].
   
   
   
   
   (contradictory)

Japanese reciprocals in comparative predicates seem to conform to the NSU hypothesis.

(41) [Taroo-to Ziroo]-wa [[sono hutari-no otoko]-ga otagai-ni [aitei,-yori se-ga takai] zosee-to kekkonsi-ta] omo-ttei-ru
   
   
   
   
   
   “[Taroo and Ziroo] think that [the two men] married a woman taller than [each other].”

Unlike in English, the binding domain for pronouns in comparatives does not seem to be extended in Japanese. If the binding domain for pronouns to be free was extended, the i-coindexing in (42c) should have been out, but it is not.
   "Tarooi, is smarter than himi.

   b. Tarooi-wa [karei-yori atama-ga ii] otoko∗ni a-tta.
   "Tarooi met [a man smarter than himi]."

   c. Zirooj-wa [Tarooi-ga [karei/j-yori atama-ga ii] otoko∗ni a-tta] to
      omo-ttei-ru.
   "Zirooj thought [that Tarooi met a man smarter than him/j]."

In this section, we have seen that the local anaphor *zibunzisin* and pronouns
do not extend their binding domains, while the reciprocal does conform to the NSU
hypothesis.

2.3. Exclusion Predicates

Unlike similarity predicates and comparatives, exclusion predicates in Japanese
show an extended binding domain for *zibunzisin*. (Thus *zibun* and *zibunzisin*
are not in complementary distribution in this environment.) However, for these predicates, implied
non-coreference seems to be unavailable. But then, coindexing between *zibunzisin* and
Taroo in (43b) should be ruled out. (43a) is not semantically odd at all.

(43) a. Tarooi-wa koohosha-no risuto-kara |zibun/|zibunzisin,|-o nozoi-ta.
   "Tarooi excluded {zibuni/zibunzisini} from the candidates' list.”

   b. Tarooi-wa [|zibun/|zibunzisin,|-o nozoi-ta][subete-no gakusee]-o
      suisensi-ta.
   "Tarooi recommended all the students except {zibuni/zibunzisini}.”

No NSU effect of *zibunzisin* is found in this environment.

(44) Hanako-wa [Tarooi-ga [|zibun/|zibunzisin,|-o nozoi-ta]
   [subete-no gakusee]-o suisensi-ta] to i-tta.
   "Hanako, said that Tarooi recommended all the students except
   {zibuni/zibunzisini}.”
No NSU effects are found for Japanese pronouns.

   "Taroo excluded him, from the candidates’ list."

   b. Taroo-wa [Ziroo-ga [kare i/o nozoi-ta [subete-no gakusee]-o
      suisensi-ta] to i-tta.
      "Taroo said that [Ziroo recommended all the students except him/i]."

In the following examples, an NSU effect is found for the Japanese reciprocal. (46b) shows that the reciprocal cannot take the antecedent next higher up.

(46) a. [Taroo-to Hanako]-w a otagai-ni kooohosha-no risuto-kara aite-o
   -and -top each candidates-gen list-from the=other-acc
   nozoi-ta.
   exclude-pst
   "[Taroo and Hanako] excluded [each other], from the candidates’ list.”

   b. [Taroo-to Hanako]-w [[sono hutari-no gakusee]-ga otagai-ni
      aite/*j-o nozoi-ta [subete-no gakusee]-o suisensi-ta] to i-tta.
      the=other-acc exclude-pst all-gen students-acc recommend-pst cp say-pst
      "[T&H] said that [the two students], recommended all the students except [each other]/.""

In this section, we have shown that NSU effects are found for the local anaphor and the reciprocal, but not for pronouns.

2.4. Summary of Results

First, I will summarize the result of coindexing between subjects and complements of Japanese contrastive predicates in the following chart. # indicates that the sentence is semantically odd due to tautological or contradictory interpretation.
Next, the following chart summarizes how the binding domains are extended in Japanese:

(47) coindexing between subjects and complements in Japanese

<table>
<thead>
<tr>
<th></th>
<th>zibun</th>
<th>zibunzin</th>
<th>reciprocal</th>
<th>pronouns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similarity</td>
<td># (34)</td>
<td># (34)</td>
<td>acceptable</td>
<td>* by PrincipleB (37a)</td>
</tr>
<tr>
<td>predicates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exclusion</td>
<td>acceptable (43a)</td>
<td>acceptable (43a)</td>
<td>acceptable (46a)</td>
<td>* by Prin. B (45a)</td>
</tr>
<tr>
<td>predicates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparatives</td>
<td># (39a)</td>
<td># (39a)</td>
<td># (40a)</td>
<td>* by Prin. B (42a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the next section, I will compare these results in Japanese with Safir’s empirical results in English.

3. Conclusion

Examining (47) and (48), we find the exceptional behavior of exclusion predicates in Japanese. They do not show the effect of implied non-coreference defined in (30). In that sense, the fact that in Japanese exclusion predicates extend the binding domain does not either refute or support Safir’s analysis.

Japanese local anaphor does not extend its binding domain in contrastive predicates. The speculation is that if a language has two kinds of reflexives (i.e. a long distance reflexive and a local reflexive), a long distance one is used instead of extending the domain of the local one.

The long distance anaphor zibun does extend its binding domain. However, as the past studies have shown (cf. Shibatani (1978), Inoue (1976), Sakaguchi (1985), 1996, etc.), potentially it can take an antecedent beyond the NSU domain, not only in contrastive predicates but also in non-contrastive predicates.
In the Japanese reciprocal *otagai-ni ...aite*, the binding domain extensions are most extensively observed in all three of the contrastive predicates. This is surprising when we look at the behavior of English reciprocal *each other* in (29). At the present moment I do not have an account for this difference between the behavior of the English reciprocal and that of the Japanese reciprocal. I will leave this problem for future research.

Japanese pronouns behave uniformly in that they do not show any extension of binding domains. On the other hand, the acceptability judgments on English pronouns does not seem to be clear. Further study is needed on the behavior of English pronouns.

*I am very grateful to Dr. Robert Waring for suggesting improvement on English styles in my paper. I am the only one responsible for any mistakes.*

**Notes**

1. Safir (1992:32) discusses apparent counterexamples to his analysis of exclusion predicates. *#John in addition to himself* and *#John except himself* are semantically odd. But the following examples seem to be acceptable.

   (i) a. John, [excluded/excepted] himself, from the candidates’ list.
   
   b. John, added himself, to the candidates’ list.

2. Chomsky’s (1986:171) reformulation of Binding Principles A and B in terms of BT-compatibility are as follows. I stands for the indexing.

   (i) I is BT-compatible with (x,Y) if:

   A) x is an anaphor bound in Y under I

   B) x is a pronominal and is free in Y under I

   (ii) For some Y such that 1) I is BT-compatible with (x,Y)

   2) X is an anaphor or pronominal and Y is the least CFC containing the governor of x for which there is an indexing J BT-compatible with (x,Y)

3. Following examples with a comparative predicate show that these two kinds of reciprocals are different.

   (i) a. *[Taroo-to Hanako]-wa [e, _otagai-yori se-ga takai] to i-tta.

   -and     -top e.o.-than height-nom tall cp say-pst

   “*[Taroo-to Hanako], said [e, are taller than each other].”

   b. *[Taroo-to Hanako], -wa _otagai-ni [e, aite-yori se-ga takai] to i-tta.

   -and     -top each the=other-than height-nom tall cp say-pst

   “Taroo-to Hanako, said [e, are taller than each other].” (T said T is taller than H & H said H is taller than T.)

   At the present moment I cannot explain why there is a difference shown in (ia) and (ib).
References


