

# Reciprocity, Binding, and Discourse in Japanese

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## Abstract

This paper is a contribution to the study of the nature and behavior of anaphoric elements in natural language. More specifically, its focus is on the Japanese element *otagai*, which corresponds, at least to a first approximation, to the reciprocal pronouns of other languages. The frame of reference for the paper is the Principles and Parameters theory of grammar, and in particular the sub-part of that theory (known as “Binding Theory”) which deals with anaphora and anaphoric elements. Several thorough treatments of *otagai* already exist in the current literature (notably Nishigauchi 1992, and Nakao 2004). While the paper is not meant to serve as a complete treatment of *otagai* (or of reciprocity, binding, or discourse), it does present the reader with basic facts and observations on the subjects, and also addresses an issue that, to my knowledge, has not been previously explored in any great detail: namely, the possibility that *otagai* can take a discourse referent when it occurs in certain syntactic positions. While others (such as Nakao 2004) have addressed this possibility, I take the exploration one step further by examining the results of consultant work designed to systematically determine in which positions discourse reference is possible.

## 1. Reciprocity

*Reciprocity* deals with reciprocal relationships between two (or more) objects. The term *reciprocal* comes from Latin *reciprocus*, which means “alternating”<sup>1</sup>. Objects in reciprocal relationships share some sort of connection, usually in terms of mutual action, status, or dependence.

In this section, we examine the basic usage of reciprocal expressions in English and Japanese.

### 1.1. Reciprocity in English

In English, reciprocal relationships are most often expressed using the phrase *each*

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1 <http://www.etymonline.com>

*other*<sup>2</sup>. For example:

- (1) [John and Mary]<sub>1</sub> love [each other]<sub>1</sub>.

The sentence in (1) describes a situation in which John loves Mary and Mary loves John. The relationship between John and Mary is reciprocal because John and Mary share the same status – that is, each of them has feelings of love for the other.

In syntactic terms, we would say that the phrase *each other* refers to *John and Mary*, indicated by the subscript number 1 on each phrase in the example.

### 1.2. Reciprocity in Japanese

In Japanese, reciprocal situations can be described using the phrase *otagai*, a verb plus the verbal phrase *-aw* (hereafter *V-aw*), or a combination of both. For example:

- (2) [Taroo to Hanako]<sub>1</sub>-ga otagai<sub>1</sub>-o aisite iru (koto)  
 Tarô and Hanako-NOM otagai-ACC loving be that
- (3) [Taroo to Hanako]<sub>1</sub>-ga ai-si-aw-te iru (koto)  
 Tarô and Hanako-NOM love-aw-ing be that
- (4) [Taroo to Hanako]<sub>1</sub>-ga otagai<sub>1</sub>-o ai-si-aw-te iru (koto)  
 Tarô and Hanako-NOM otagai-ACC love-aw-ing that  
 ‘(that) Tarô and Hanako love each other.’

(based on Nishigauchi 1992:157)

According to *Kôjien*, the phrase *otagai* means “oneself and the other” (Hôji 2006). It comes from the phrase *taga(w)-u*, which is in turn related to *tiga(w)-u*, meaning ‘to differ’. The phrase *-aw* comes from *a(w)-u*, meaning “to come together”.

The sentences in (2)–(4) each describe a situation in which Tarô loves Hanako and Hanako loves Tarô. As with *John and Mary* in (1), Tarô and Hanako have feelings of love for each other, and thus share the same status, putting them in a reciprocal relationship.

The phrase *otagai* in (2) and (4) refers to *Tarô to Hanako*. In (3) and (4), the

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2 Reciprocity in English can also be expressed using the phrase *one another*, which has been omitted here for purposes of cleanliness and simplicity.

phrase *-aw* sets up a reciprocal relationship between the agents of the verb *ai-suru*. The agents of the verb *ai-suru* in the case of (3) and (4) are *Tarô to Hanako*.

### 1.3. Summary

This section introduced the core usage of reciprocal elements in English and Japanese. In a later section, we will compare the difference in distribution between the two expressions *each other* and *otagai*. Before we do that, however, we will need to adopt a framework for analyzing their distributions. The framework we will be adopting is the Binding Theory, first proposed by Chomsky in 1981, and summarized in the following section.

## 2. Binding

In this section we will examine the basics of the Binding Theory, the purpose of which is to account for the distribution of *anaphors*, *pronominals*, and *R(eferential)-expressions*. Anaphors include *reflexives* such as *himself*, and *reciprocals* such as *each other* (and *otagai*). Pronominals include phrases such as *he*, *her*, and *them*. R-expressions include names such as *John* and *Mary*, and also regular nouns such as *apple* and *table*.

### 2.1. Binding Principles

The Binding Theory is centered on three major principles:

#### (5) Binding Principles

**A:** An anaphor must have a *binder* in its *binding domain*.

**B:** A pronominal must *not* have a binder in its binding domain.

**C:** An R-expression must not have a binder *anywhere*<sup>3</sup> in its binding domain.

#### (6) Definition of *binder* and *binding domain*

- A *binder* is a NP (noun phrase) that c-commands and is co-indexed with (i.e. refers to the same object as) another NP.
- A *binding domain* is the smallest constituent containing a bound NP, its

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3 This paraphrase perhaps oversimplifies the distribution of R-expressions, but should be sufficient for the purposes of the current analysis.

case assigner C (such as a verb or a preposition), and:

- i. all arguments of C (*coargument domain*)
- ii. a Subject<sup>4</sup> (*Subject domain*)
- iii. a finite clause (*tense domain*)
- iv. an entire sentence (*root domain*)

(based on Büring 2005:66)

## 2.2. c-command

The Binding Theory crucially relies on the notion of *c-command*, of which Reinhart (1976) gives the following definition:

- (7) Node A c(onstituent)-commands node B if neither A nor B dominates the other and the first branching node which dominates A dominates B.

(Reinhart 1976:32)

This definition refers to the relationship between elements plotted out in a tree diagram such as the following figure:

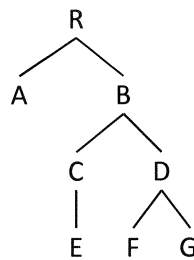


Figure 1

Based on the definition in (7), we can say the following about the tree in Figure 1: node R(oot) does not c-command any nodes because it dominates (i.e. it is located above) all the other nodes in the tree; node A c-commands B (and all the nodes below it) because neither A nor B dominates the other and the first branching node which domi-

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4 *Subjects* include syntactic subjects and possessives (e.g. *my*, *his*, *Mary's*).

nates A (node R) also dominates B; node B c-commands A for the same reason that A c-commands B; node C c-commands node D (and all the nodes below it) because neither C nor D dominate the other and because the first branching node which dominates C (node B) also dominates D; node D c-commands node C for the same reason that C c-commands D; node E does not c-command any node; node F c-commands node G because neither F nor G dominate the other and the first branching node which dominates F (node D) also dominates G; node G c-commands node F for the same reason that F c-commands G.

### 2.3. The Binding Principles in action

Consider the following example and its representative tree structure to see how the Binding Theory accounts for the distribution of the reflexive anaphor *himself*.

- (8) John<sub>1</sub> loves himself<sub>1</sub>.

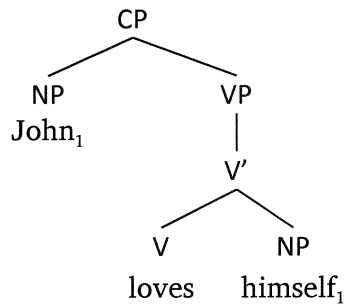


Figure 2

Example (8) is a well-formed sentence. It is well-formed because the anaphor *himself* has a binder *John* (which both c-commands and is co-indexed with *himself*) within its binding domain (which in the case of in English reflexives is understood to be the Subject domain). Inside this domain is the bound NP *himself*, its case assigner *loves* (which causes it to be *himself* and not, for example, *\*heself*), and a Subject *John*. Thus, the sentence is well-formed according to Principle A.

Now consider another example involving the pronominal expression *him*:

- (9) John<sub>1</sub> loves him<sub>\*1/2</sub>.

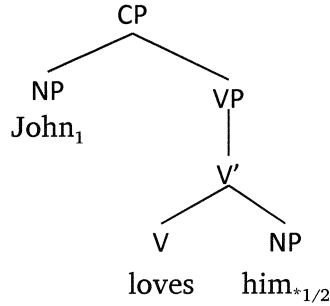


Figure 3

Example (9) is not a well-formed sentence if *him* is taken as referring to *John*. This is because the pronominal *him* has a binder *John* (which both c-commands and is co-indexed with *him*) within its binding domain (the binding domain of English pronominals is the Subject domain). Inside this domain is the NP *him*, its case assigner *loves*, and a Subject *John*. According to Principle B, the sentence is ungrammatical due to the presence of a binder within the binding domain of a pronominal.

Consider one last example, this one involving the R-expression *John*:

- (10) He<sub>1</sub> loves John<sub>\*1/2</sub>.

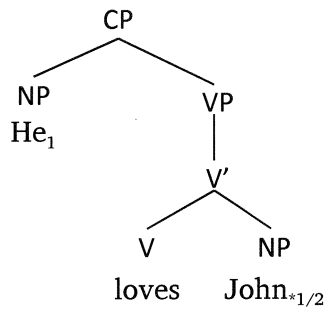


Figure 4

Example (10) is ungrammatical if *John* refers to *He* because the R-expression *John* cannot have a binder anywhere in its binding domain. In the above example, *John* has a *He* (which both c-commands and is co-indexed with *John*) within its binding domain (the Subject domain). Inside this domain are the NP *John*, its case assigner *loves*, and a Subject *He*. Because of the presence of a binder within the binding domain of an R-

expression, the sentence is ungrammatical according to Principle C.

## 2.4. Summary

In this section we established a framework for explaining the distribution of anaphors, pronominals, and referential expressions. In the following section, we will use this framework (Principle A in particular), in our analysis of the distribution of reciprocal anaphors in English and Japanese.

## 3. Distribution of reciprocals in English and Japanese

In this section we will compare and contrast the respective distributions of *each other* and *otagai*. We will see that the distribution of *otagai* includes some syntactic positions that *each other* does not occupy.

### 3.1. Distribution of *each other*

First we will examine the distribution of *each other*, which has been widely studied in the literature on anaphoric elements. In general, *each other* behaves as predicted by Principle A of the Binding Theory. Consider the following examples:

- (1) [John and Mary]<sub>1</sub> love [each other]<sub>1</sub>.
- (11) a. [John and Mary]<sub>1</sub> gave presents to [each other]<sub>1</sub>.  
b. [John and Mary]<sub>1</sub> gave [each other]<sub>1</sub> presents.
- (12) [John and Mary]<sub>1</sub> blew kisses at [each other]<sub>1</sub>.
- (13) [John and Mary]<sub>1</sub> love [each other]<sub>1</sub>'s parents.

Each of the examples above represents a well-formed sentence containing *each other*. In example (1) (repeated for convenience), *each other* occurs as the direct object of a transitive verb. In (11), it is the oblique (i.e. indirect) object of a transitive verb. In (12), *each other* is the object of a preposition. In (13) we see *each other* occur in a possessor position. In all of these examples, *each other* is c-commanded by and co-indexed with another NP within its binding domain, obeying Principle A of the Binding Theory.

Now consider some examples involving ungrammatical distribution of *each other*:

- (14) \* $[\text{John and Mary}]_1$  think that  $\text{Bill}_2$  loves  $[\text{each other}]_1$ .  
 (15) a. \* $[\text{John and Mary}]_1$  thought that  $\text{Bill}_2$  gave presents to  $[\text{each other}]_1$ .  
       b. \* $[\text{John and Mary}]_1$  thought that  $\text{Bill}_2$  gave  $[\text{each other}]_1$  presents.  
 (16) \* $[\text{John and Mary}]_1$  thought that  $\text{Bill}_2$  blew kisses at  $[\text{each other}]_1$ .  
 (17) \* $[\text{John and Mary}]_1$  think that  $\text{Bill}_2$  loves  $[\text{each other}]_1$ 's parents.

Each of these examples has several interpretations. One intended reading for (14) is that John and Mary think that Bill loves John and Bill also loves Mary. Likewise, an intended reading for the sentences in (15) is that John and Mary thought that Bill gave presents to John and also to Mary. Sentence (16) is intended to describe a situation in which John and Mary thought that Bill blew kisses at both John and Mary. And finally, (17) is meant to express that John and Mary think that Bill loves John's parents and Bill also loves Mary's parents.

Each of the sentences above is ungrammatical for the same reason: the presence of *Bill* as the subject of an embedded clause containing *each other*. The phrase *each other* needs to be bound in its binding domain. However, *Bill*, denoting a singular object, is not a plausible binder for the inherently plural *each other*, and so *each other* is left without a binder in its binding domain, resulting in an ungrammatical construction.

Note that if we replace *Bill* with a plausible binder for *each other*, the sentences become grammatical:

- (18)  $[\text{John and Mary}]_1$  think that  $[\text{Bill and Sue}]_2$  love  $[\text{each other}]_{*1/2}$ .  
 (19) a.  $[\text{John and Mary}]_1$  thought that  $[\text{Bill and Sue}]_2$  gave presents to  $[\text{each other}]_{*1/2}$ .  
       b.  $[\text{John and Mary}]_1$  thought that  $[\text{Bill and Sue}]_2$  gave  $[\text{each other}]_{*1/2}$  presents.  
 (20)  $[\text{John and Mary}]_1$  thought that  $[\text{Bill and Sue}]_2$  blew kisses at  $[\text{each other}]_{*1/2}$ .  
 (21)  $[\text{John and Mary}]_1$  think that  $[\text{Bill and Sue}]_2$  loves  $[\text{each other}]_{*1/2}$ 's parents.

Each of these sentences is well-formed. However, in none of these sentences is it possible for *each other* to refer to *John and Mary*. This shows us that *each other* "prefers" the most local binder it can find. When no binder exists within the local clause, *each other* can be bound from outside its local clause, as in the following examples:



- (22) [John and Mary]<sub>1</sub> knew (that) [each other]<sub>1</sub> was special.  
 (23) [John and Mary]<sub>1</sub> wanted (for) [each other]<sub>1</sub> to be happy.  
 (24) [John and Mary]<sub>1</sub> asked what [each other]<sub>1</sub> wanted for dinner.

In (22), it occurs as the subject in a finite (“*that...*”) clause. In (23), it is the subject in a non-finite (“*for...to*”) clause. Finally, in (24), it appears as the subject in a “*wh-*” clause headed by *what*. Each of these cases is allowed because the only Subject accessible to *each other* in each example is the matrix (i.e. main) subject. All of these sentences are grammatical.

The crucial difference between the three sentences above and the sentences in (14)-(21) is that the sentences above lack an accessible subject within the local clause of the phrase *each other*. The only possible binder for *each other* in each of these sentences is the matrix subject *John and Mary*.

We can conclude from this that, as long as we consider the binding domain of *each other* to be one that contains an accessible (and plausible) Subject, we can use Binding Principle A to account for the distribution of *each other*.

### 3.2. Distribution of *otagai*

Now we will examine the distribution of *otagai*. For the most part, *otagai* behaves as would be expected according to Principle A. Consider the following examples:

- (2) [Taroo to Hanako]<sub>1</sub>-ga otagai<sub>1</sub>-o aisite iru (koto)  
 Tarô and Hanako-nom otagai-acc loving be *that*  
 ‘(that) Tarô and Hanako love each other.’
- (25) [Taroo to Hanako]<sub>1</sub>-ga otagai<sub>1</sub>-ni purezento-o ageta (koto)  
 Tarô and Hanako-NOM otagai-DAT present(s)-ACC gave that  
 ‘(that) Tarô and Hanako gave a present/presents to each other.’
- (26) [Taroo to Hanako]<sub>1</sub>-ga otagai<sub>1</sub> ni seki-o yuzutta (koto)  
 Tarô and Hanako-NOM otagai to seat(s)-ACC yielded that  
 ‘(that) Tarô and Hanako offered seats to each other.’
- (27) [Taroo to Hanako]<sub>1</sub>-ga otagai<sub>1</sub>-no-ryoosin-o sonkeesite iru (koto)  
 Tarô and Hanako-NOM otagai-GEN-parents-ACC respecting be that  
 ‘(that) Tarô and Hanako respect each other’s parents.’

The examples above show the basic distribution of *otagai*. In example (2) (repeated for the sake of convenience), *otagai* occurs with the ACCUSATIVE suffix *-o*, and is as the direct object of a transitive verb. In (25), it appears DATIVELY-marked with *-ni* as the oblique object of a transitive verb. In (26), it is the object of the preposition<sup>5</sup> *ni*. In (27) it appears in a possessor position, marked with the GENITIVE suffix *-no*. In each of these examples, *otagai* is c-commanded by and co-indexed with another NP within its binding domain, in accordance with Principle A of the Binding Theory.

Like *each other*, *otagai* can be bound from outside its local clause. Consider the following examples:

- (28) [Taroo to Hanako]<sub>1</sub>-wa [kono ziken]<sub>2</sub>-ga otagai<sub>1/\*2</sub>-o kizutuketa to omotta.  
 Tarô and Hanako-TOP this\_incident-NOM otagai-ACC hurt that thought  
 ‘Tarô and Hanako both thought that this incident would hurt the other.’
- (29) [Taroo to Hanako]<sub>1</sub>-wa ziroo<sub>2</sub>-to otagai<sub>1/?2</sub>-ni seme(aw)ta to omotta.  
 Tarô and Hanako-TOP Jirô-COM otagai-DAT blame-(aw)-PAST that thought  
 ‘Tarô and Hanako both thought that Jirô blamed the other.’
- (30) ?[Taroo to Hanako]<sub>1</sub>-wa otagai<sub>1/\*2</sub>-ga ziroo-o semeta to omotta.  
 Tarô and Hanako-TOP otagai-NOM Jirô-ACC blamed that thought  
 ‘Tarô and Hanako both thought that the other blamed Jirô.’

Each of the three sentences above is grammatical, with some caveats. For (28) to be ungrammatical it must be understood that the *incident* in question is somehow connected to both *Tarô and Hanako*. The sentence describes a situation in which both Tarô and Hanako think that both of them got hurt by that incident. In (29), Tarô and Hanako are a pair, and both of them think that there was blaming going on between themselves (as a pair) and *Jirô*. One reading of the marginally acceptable<sup>6</sup> (30) is that both Tarô

5 There is a well-known ambiguity in Japanese between the DATIVE case marker *ni* and the preposition *ni*. Sentences such as (25) and (26) show a lexical contrast between verbs such as *ageru*, which take a DATIVE-marked complement, and verbs such as *yuzuru*, which take a PP complement headed by the preposition *ni*.

6 My Japanese consultants inform me that (30) would be better were *otagai* replaced by, for example, *hutari* ([the] two of them).

thinks that Hanako blamed Jirô, and Hanako thinks that Tarô blamed Jirô.

### 3.3. Differences in distribution between *each other* and *otagai*

There are some significant differences in distribution between *each other* and *otagai*. *Otagai* offers usage possibilities that are unavailable to *each other*. For example, consider again examples (28) to (30). It is only possible to render these sentences in English using *both...the other* (or *each...the other*) constructions. We cannot render them using *each other*, as in the ungrammatical examples below:

- (31) \*‘Tarô and Hanako thought that this incident would hurt each other.’
- (32) \*‘Tarô and Hanako thought that Jirô blamed each other.’
- (33) \*‘Tarô and Hanako thought that each other blamed Jirô.’
- (14) \*[John and Mary]<sub>1</sub> think that Bill<sub>2</sub> loves [each other]<sub>1</sub>.

Examples (31) and (32) are ungrammatical<sup>7</sup> for the same reason as sentences such as (14) (repeated above): the presence of an unsuitable Subject in an embedded clause containing *each other*. However, example (33) requires a different explanation. The sentence is ungrammatical because *each other* occurs as the subject of an embedded clause. This position is associated with subject-verb agreement, and so is predicted to be ungrammatical according to the *Anaphor-Agreement Effect*, as postulated by Rizzi (1990). Rizzi concludes that “anaphors cannot appear in positions associated with verb agreement”. With this in mind, we might account for our observations by stating that in English, subject position is associated with verb agreement, and so the anaphor *each other* is prohibited from occurring in subject position. However, since Japanese lacks verb agreement, the Anaphor-Agreement Effect would not apply, and thus *otagai*, the rough equivalent of *each other*, is free to occur in subject position.

But now consider again examples (22)–(24):

- (22) [John and Mary]<sub>1</sub> knew (that) [each other]<sub>1</sub> was special.
- (23) [John and Mary]<sub>1</sub> wanted (for) [each other]<sub>1</sub> to be happy.

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7 The status of (31), which contains an embedded subject that is inanimate, is actually somewhat debatable. It is arguably better than (32), which contains an animate subject in the embedded clause.

(24) [John and Mary]<sub>1</sub> asked what [each other]<sub>1</sub> wanted for dinner.

In each of these examples, *each other* appears as the subject of an embedded clause, and each example is grammatical. This would appear to conflict with what we would predict based on the Anaphor-Agreement Effect. We can readily account for (23), since the embedded clause is non-finite, and there is no verb agreement in non-finite clauses. However, we cannot explain the other examples using the same logic.

There seems to be some evidence that verb agreement usage varies when *each other* occurs as the subject of an embedded clause. As of this writing, a Google search of the string “each other was” returns about 4 million hits, and a search of “each other were” returns about 400,000. This shows that, while an overwhelming number of people consider “was” to be the proper form of *be* to use with *each other*, the large number of hits for “were” seem to show that there is at least some confusion about proper agreement when *each other* occurs as an embedded subject. Also, the fact that “each other want” and “each other wants” return about the same number of hits would seem to lend support to this analysis. The conclusion we might draw from this is that *each other* can in certain instances occur in embedded subject position, but when it does, it can have an effect on verb agreement.

### 3.4. Summary

In this section we examined the distributions of *each other* and *otagai*, and observed that their distribution differs in some significant ways. For instance, *otagai* can take a binder outside its local clause when it occurs in object positions, which *each other* generally cannot do. *Otagai* can also occur in positions associated with verb agreement (such as embedded subject position) due to the lack of verb agreement in Japanese. While *each other* can also occur in embedded subject position, these occurrences can apparently lead to confusion over proper verb agreement.

In the next section, we will look at a particular characteristic of *otagai*, and we will see that, because of this characteristic, the interpretation of *otagai* must in some instances rely on discourse.

## 4. Discourse

Under general usage, the term *discourse* means something like “a lengthy discussion”. In linguistics, the term usually refers to a unit of language that is longer than a sentence. Discourse is basically a collection of sentences that contain the context for interpreting the sentences that follow it, which in turn become a part of the discourse.

Discourse is responsible for certain phenomenon in English, for instance the use of *a(n)* versus *the*:

- (34) Once upon a time, there lived an old man<sub>1</sub> and an old woman.  
\*A/The old man<sub>1</sub> was a woodcutter.

The choice of *the* over *a* is completely dependent on the context provided by the discourse. The *old man* is introduced into the discourse with *a*, after which he is referred back to using *the*.

Discourse also allows for certain shortcuts in language. It makes it possible to use pronominals to refer back to objects previously mentioned in the discourse. For example:

- (35) [*John, Bill, Mary, and Sue*]<sub>1</sub> were sitting on a bench.  
*They*<sub>1</sub> were happy.

Interpretation of the pronominal *they* is impossible without knowing the preceding context. That is, its interpretation relies not on the context provided by the sentence in which it occurs, but on the entire discourse, which in this case is only two sentences.

In this section, we will look at cases in which the interpretation of *otagai* depends on its preceding discourse. We will see that in some instances, discourse reference is possible, while the possibility diminishes in others.

### 4.1. Discourse and the binding domain of *otagai*

In many cases, the discourse that precedes *otagai* must be understood in order to pinpoint the elements that bind *otagai*. This is primarily due to one especially peculiar fea-

ture of *otagai*: that it can in certain cases occur in matrix subject position, as in the following examples:

- (36) *otagai*<sub>1</sub>-wa *otagai*<sub>1</sub>-o doo mite iru ndarooka.<sup>8</sup>  
*otagai*-TOP *otagai*-ACC how viewing be CONTEMPLATIVE\_EXPR  
 ‘[I] wonder how each [of them] views the other?’
- (37) *saikin* *otagai*<sub>1</sub>-ga *otagai*<sub>1</sub> ni tumetaku natta.<sup>9</sup>  
 recently *otagai*-NOM *otagai* to coldly became  
 ‘Each [of us] grew cold towards the other recently.’
- (38) *kono* *otagai*<sub>1</sub>-wa *aihan* suru mono desu (kara)<sup>10</sup>  
 these\_*otagai*-TOP conflict do things COPULA because  
 ‘Each [of these] is in conflict with the other (, so...)’

Proper interpretation of *otagai* in each of the three examples above crucially relies on context. A person encountering sentences such as those above would have to be familiar with the discourse preceding them in order to know which elements each *otagai* refers to.

Example (36) comes from a blog in which a writer describes a scene outside the Imperial Palace in Tokyo. The context for (36) is shown below:

- (39) *dentoo yasiki tari ni genkaku de, nanhun oki ni sayu o kootai sitari suru zidaisa-  
 kugo to mo omoeru yoo na bansin no sisen no saki de, kinyuugai ga rieki o  
 oimotomete ugoite iru sono koozu ga, monosugoku syoutyouteki ni omoeta.  
 otagai wa, otagai o, doo mite iru n daroo ka.*

‘The **[imperial] guard** could almost be thought of as anachronistic, alternating left and right every few minutes or so in his strict adherence to traditions and customs. In his line of sight was the **business district**, bustling in its pursuit of wealth. I considered this scene to be extraordinarily symbolic.

I wonder how **each** [of them] views **the other**.’

8 <<http://www.iwagoro.net/archives/travel/>>

9 <<http://yaplog.jp/pink151a/2>>

10 <[http://www.mars.dti.ne.jp/~hiroko/radio/news\\_history/history2000.html](http://www.mars.dti.ne.jp/~hiroko/radio/news_history/history2000.html)>

With the above context in mind, it becomes clear that *otagai* in (36) refers to an *imperial guard* and a *business district*.

Consider now the context for (37), which comes from a personal blog. The author of the blog describes a recent breakup (as of 2006):

- (40) *atasi to ano hito wa awanai to omotta.*  
*ano hito wa risoo o ue ni ue ni tukutteru.*  
*atasi wa, sore ni oitukenai.*  
*kenka mo ooi.*  
*saikin, otagai ga otagai ni tumetaku natta.*

I didn't think **he and I** were a good match.  
**He** [kept] upping his expectations.  
**I** couldn't keep up.  
**We** had a lot of fights, too.  
**Each** [of us] grew cold towards **the other** recently.'

The context for (37) makes clear that *otagai* refers to *atasi* (i.e. the writer of the blog) and *ano hito*, whom one can probably assume is her ex-boyfriend.

Finally, consider the context for example (38). This example comes from a blog about Internet radio:

- (41) *kaigai-zaijuusya-muke no nyuuzu tte 2 syurui ni bunbetu dekiru n desu yo ne.*  
*“zyunsui ni nihon no funiki o siru”*  
*“kaigai de mo nihon to onazi yoo ni tanosimu”*  
*to iu kanzi de.*  
*kono otagai aihan suru mono desu kara...*

'We can split news aimed at [Japanese] people living in foreign countries into **two categories**, I'd say. Something like:  
**“Experience the unadulterated atmosphere of Japan”** and  
**“Enjoy things overseas exactly as you would in Japan”**.  
**Each** [of these] is in conflict with **the other**, so...'

The context in (41) gives us the information we need to interpret *otagai*. It refers to two ideas that are in conflict with each other.

By observing these examples we see that, when *otagai* occurs as a matrix subject, its interpretation is impossible (or at least extremely difficult) without a salient context. We might conclude from this that *otagai* can be bound by elements in the discourse when it occurs in matrix subject position. This might lead us to wonder whether *otagai* can take a discourse binder when it occurs in other positions as well.

An interesting feature of examples (36)–(38) is that they show behavior of *otagai* that we would not predict if we assume that *otagai* is an anaphor that is subject to Condition A of the Binding Theory. That line of thinking would lead us to expect that *otagai*, like *each other*, must have a binder in their binding domain, and thus we would not expect *otagai* to appear in matrix subject position, which is a position generally associated with pronominals. Pronominals are subject to Condition B of the Binding Theory, and therefore they must *not* have a binder in their binding domain.

One way we could rule in sentences such as those in (36)–(38) would be to hypothesize that the binding domain of *otagai* is not the local sentence (as is the case with *each other*), but is rather the entire discourse (at least when *otagai* occurs in certain syntactic positions). In order to test that hypothesis, we need to find out in which syntactic positions *otagai* can be bound from outside its local sentence.

#### 4.2. Tests

So far, we have seen *otagai* occur in a variety of positions. We have seen *otagai* occur in direct object position, as in (2); oblique object position, as in (25); as a prepositional object, as in (26); in a possessor position, as in (27); as the subject of an embedded clause, as in (30); and as a matrix subject, as in (37). The relevant examples are repeated below.

- (2) [Taroo to Hanako]<sub>1-ga</sub> otagai1-o aisite iru (koto)  
 Tarô and Hanako-NOM otagai-ACC loving be that
- (25) [Taroo to Hanako]<sub>1-ga</sub> otagai1-ni purezento-o ageta (koto)  
 Tarô and Hanako-NOM otagai-DAT present(s)-ACC gave that  
 ‘(that) Tarô and Hanako gave a present/presents to each other.’



- (26) [Taroo to Hanako]<sub>1-ga</sub> otagai1 ni seki-o yuzutta (koto)  
 Tarô and Hanako-NOM otagai to seat(s)-ACC yielded that  
 ‘(that) Tarô and Hanako offered seats to each other.’
- (27) [Taroo to Hanako]<sub>1-ga</sub> otagai1-no-ryoosin-o sonkeesite iru (koto)  
 Tarô and Hanako-NOM otagai-GEN-parents-ACC respecting be that  
 ‘(that) Tarô and Hanako respect each other’s parents.’
- (30) ?[Taroo to Hanako]<sub>1-wa</sub> otagai1/\*2-ga ziroo-o semeta to omotta.  
 Tarô and Hanako-TOP otagai-NOM Jirô-ACC blamed that thought  
 ‘Tarô and Hanako both thought that the other blamed Jirô.’
- (37) saikin otagai1-ga otagai1 ni tumetaku natta.  
 recently otagai-NOM otagai to coldly became  
 ‘Each [of us] grew cold towards the other recently.’

We have seen *otagai* occur as an **ACCUSATIVE**-marked direct object, as in (2); a **DATIVE**-marked oblique object position, as in (25); a prepositional object, as in (26); a **GENITIVE**-marked element in a possessor position, as in (27); as the **NOMINATIVE**-marked subject of an embedded clause, as in (30); and as a **TOPICALIZED** matrix subject, as in (37).

We can test the positions in which *otagai* can take a discourse referent by first creating sentences that contain no plausible binder for *otagai*, but that are each accompanied by a context which *does* contain a suitable binder, and then getting judgments about the sentences from native speakers of Japanese.

We begin by testing *otagai* in direct object position, marked with *-o*:

- (42) [Hanako to Taroo]-wa okotteita.  
 [Hanako and Tarô]-TOP were\_angry  
 dareka-ga otagai-o ijimeteita kara.  
 someone-NOM otagai-ACC had\_been\_making\_fun\_of because  
 ‘Hanako and Tarô were upset.  
 Someone had been teasing *otagai*.’

The sentence in example (42) is meant to describe a situation in which Hanako and Tarô were upset because someone had been teasing Hanako, and that same person had also been teasing Tarô. None of the native Japanese speakers who I consulted with

reported this sentence to be grammatical. Many of them suggested that *otagai* be replaced with a pronominal such as *hutari* ('the two of them'). This appears to show that *otagai* cannot refer to the discourse from direct object position.

Next we will test *otagai* in oblique object position, marked with *-ni*:

- (43) [Hanako to Hitomi]-wa yorokondeita.  
 [Hanako and Hitomi]-TOP were\_happy  
 dareka-ga otagai-ni purezento-o ageta kara.  
 someone-NOM otagai-DAT present(s)-ACC gave because  
 'Hanako and Hitomi were happy.  
 Someone had given *otagai* presents.'

Example (43) is intended to describe a situation in which Hanako and Hitomi were happy because someone had given a present (or presents) to each of them. This sentence was also judged to be ungrammatical by my native Japanese-speaking consultants. Here also my informants suggested *hutari* as a substitute for *otagai*. This would seem to show that discourse reference is not possible when *otagai* occurs in oblique object position.

Next is a test of *otagai* as the object of the preposition *ni*:

- (44) [Hanako to Hitomi]-wa yorokondeita.  
 [Hanako and Hitomi]-TOP were\_happy  
 dareka-ga otagai ni raburetaa-o okutta kara.  
 someone-NOM otagai to love\_letter(s)-ACC sent because  
 'Hanako and Hitomi were happy.  
 Someone had sent *otagai* a love letter.'

Example (44) is supposed to describe a situation in which Hanako and Hitomi were happy because someone had sent a love letter (or multiple love letters) to each of them. My informants judged this sentence to be ungrammatical as well, and suggested *futari* as a replacement for *otagai*. This would seem to be evidence that *otagai* cannot take a discourse referent when it occurs as the object of a preposition.

Next is *otagai* as the subject of an embedded sentence, marked with *-ga*:

- (45) [Hanako to Hitomi]-wa yorokondeita.  
[Hanako and Hitomi]-TOP were\_happy  
dareka-ga otagai-ga tensai da to itta kara.  
someone-NOM otagai-NOM genius COP C said because  
'Hanako and Hitomi were happy.  
Someone had said that *otagai* was/were a genius.'

The sentence in example (45) is intended to express that Hanako and Hitomi were happy because somebody had told each of them that they were each geniuses. My native consultants also reported (45) as ungrammatical, and this time some of them suggested that *otagai* be replaced with *futaritomo* (roughly, 'the two of them together'). This appears to show that *otagai* cannot refer to elements in the discourse when it occurs as the subject of an embedded sentence.

Next we test *otagai* in possessor position, marked with *-no*:

- (46) [Hanako to Taroo]-wa okotteita.  
[Hanako and Tarô]-TOP were\_angry  
otagai-no kodomo-ga kenka-o site kegasita kara.  
otagai-GEN child-GEN fight-ACC do got\_hurt because  
'Hanako and Tarô were upset.  
*Otagai*'s children got hurt from fighting each other.'

Example (46) was judged by my informants to be a grammatical construction. It describes a situation in which Hanako and Tarô were upset because their children fought each other and got injured as a result. According to my consultants, the use of *otagai* implies that Hanako and Tarô do not have children together, but it could be implied that Hanako and Tarô have children together were *otagai* replaced with *hutari*. This shows that *otagai* can take a discourse binder when it occurs in possessor position.

Finally we test *otagai* in matrix subject position, marked with *-ga*:

- (47) [Hanako to Hitomi]-wa yorokondeita.  
[Hanako and Hitomi]-TOP were\_happy

otagai-ga ziroo-to purezento-o kookan dekita kara.  
 otagai-NOM Jirô-COM present(S)-ACC exchange were\_able\_to because  
 ‘Hanako and Hitomi were happy.  
*Otagai* was/were able to exchange (a) present(s) with Jirô.’

The sentence in (47) describes a situation in which Hanako and Hitomi were happy because each of them was able to exchange a present (or multiple presents) with Jirô. My consultants judged the sentence to be acceptable (although not as acceptable as (46)). Some speakers suggested replacing *otagai-ga* with *hutaritomo* to increase acceptability (with no change in meaning). Thus, it would appear that *otagai* can take a discourse binder when it occurs in matrix subject position.

### 4.3. Summary

In this section, we discussed the role of discourse in the interpretation of pronominals such as *them* and reciprocal anaphors such as *otagai*. We determined through tests involving native Japanese speakers that *otagai* can take a discourse referent when it occurs in possessor or matrix subject position, and that this option is unavailable when *otagai* occurs elsewhere.

Of note is that when *otagai* occurs in possessor or matrix subject position, it may be replaced by a pronominal such as *hutari*. We would ordinarily expect anaphors such as *each other* and pronominals to occur in complementary distribution (i.e. never in the same positions). However, the examples seen in this section show that anaphors and pronominals can sometimes occur in contrastive distribution (i.e. in the same positions).

Finally, it is also worth noting that, although it has been generally accepted in the literature (e.g. Imani and Peters 1996 and Nakao 2004) that *otagai* cannot be topicalized (i.e. marked with *-wa*), examples such as (36) and (38) show that topicalization actually is possible. This might be a worthy topic for future study.

## 5. Conclusion

In section 1 of this paper we looked at the basics of reciprocal constructions in English and Japanese. In section 2, we introduced a framework for analyzing the distribution of reciprocal elements and found that reciprocals basically behave according to

Principle A of the Binding Theory. In section 3 we examined the distribution of reciprocals in English and Japanese, and observed that their distribution differs in some unexpected ways. Finally, in section 5, we explored the role of discourse in the interpretation of *otagai*.

This paper brings to light two important observations. The first is that *otagai* can be topicalized, which has been previously reported to be impossible. The second (and perhaps more significant) is that *otagai* can take a discourse referent when it appears in possessor position or as a matrix subject.

The first observation regarding topicalization of *otagai* raises issues that are beyond the scope of this paper, but may be an interesting topic for future pursuit.

The second observation may be consistent with the treatments of anaphors by other linguists such as Pollard and Sag (1992) and Reinhart and Reuland (1993). They claim that some anaphors are in certain syntactic positions “exempt” from the Binding Conditions, and in those instances the anaphors may be discourse bound.

However, Reinhart (1996) points out that care must be used not to rely on the concept of exempt anaphors as an “escape hatch” – or in other words, as a catch-all term to explain occurrences of anaphors that appear to violate Condition A of Binding Theory. The problem, as Reinhart argues, it may be possible to apply the concept of exempt anaphors so liberally that it may lead to making unfalsifiable claims, betraying the central tenets of scientific study.

For the time being, it seems safe to conclude that *otagai* is at its core a reciprocal anaphor that is subject to Condition A in a standard treatment of the Binding Theory. Its binding domain is not limited to its local sentence, but it can include the discourse when *otagai* occurs in possessor or matrix subject position.

Finally, I should point out that, while this paper is not meant as an argument against the reliability of the Binding Theory as a framework for analyzing anaphoric elements in natural language, the data presented in this paper show that the Binding Theory cannot account for the entire range of behavior that *otagai* exhibits without making special exemptions, so more work is needed to extend the Binding Theory so that it can account for the idiosyncratic behavior seen with anaphors such as *otagai*.

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As a final note, I feel that I should point out that any claims or observations I may have inadvertently made about linear algebra in this paper are, in fact, false – particularly those regarding eigenvalues.

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