Japanese Reciprocal Constructions and Binding Theory[*]

Chizuru Nakao

University of Tokyo

sf3c-nko@asahi-net.or.jp

Abstract

This paper investigates Japanese reciprocal constructions (the otagai *construction and the V*-aw *construction), which are classified into several subtypes. As for the reciprocal pronoun* otagai, otagai *works as an anaphor in an object position and it works as a logophor in other positions. As for the verbal morpheme* aw, aw *which yields a reciprocal reading is an affix which saturates one of the arguments of the verb it attaches to, while* aw *which yields a competitive reading is a verb which selects a clausal complement. These variations can be explained within Reinhart and Reuland's (1993) Binding Theory.*

Keywords: Binding Theory, reciprocal constructions, anaphor, logophor

1. Introduction

Japanese has two different reciprocal constructions: the *otagai* construction and the V-*aw* construction. The former employs the nominal element *otagai* as in (1a) and the latter employs the verbal morpheme *aw* as in (1b) to express reciprocity.

(1)   a.   [Taro to Jiro]$_i$-ga otagai$_i$-o tatai-ta.

Taro and Jiro-NOM each-other-ACC hit-past

"[Taro and Jiro]$_i$ hit each other$_i$."

b.   [Taro to Jiro]$_i$-ga e$_i$ tataki-aw-ta.

Taro and Jiro-NOM hit-AW-past

In this paper, we will observe the basic facts of these two constructions. Based on the observations, I will show that the *otagai* construction and the V-*aw* construction are classified into several subtypes; analyses should be given for each type of *otagai* and *aw*. As for *otagai*, I will argue that *otagai* works as a reciprocal anaphor in some cases, but that it works as a logophor in other cases. As for the status of *aw*, I will give supporting evidence for Ishii (1989), who claims that it is an affix. I will also claim that there is another kind of V-*aw* construction, where *aw* is a verb which takes a clausal complement. Based on these

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[*] This paper is based on Nakao (2002).

observations, I will go on to argue that the behavior of *otagai* and *aw* can be adequately explained by Reinhart and Reuland's (1993) (henceforth, R&R) Binding Conditions.

In Section 2, we will observe the basic properties of *otagai* and discuss in what circumstances it works as an anaphor or a logophor. In Section 3, observing the properties of *aw*, I will classify the V-*aw* construction into three subtypes and show how each of them is analyzed. In Section 4, I will show that the analyses in Sections 2 and 3 are compatible with R&R's Binding Theory, but not with Chomsky's (1981) Binding Theory. I will make concluding remarks in Section 5.

2. The *Otagai* Construction

2.1. Properties of Otagai

In this subsection, let us focus on the properties of *otagai*. The nominal element *otagai* appears in various syntactic positions such as the direct object position (2a), the indirect object position (2b), the object position of a postposition (2c), and the possessor position within the object NP (2d). In these examples, *otagai* takes its antecedent within a clause.

(2) a. [Taro to Jiro]$_i$-ga otagai$_i$-o tatai-ta. (=(1a))
         Taro and Jiro-NOM each-other-ACC hit-past
         "[Taro and Jiro]$_i$ hit each other$_i$."
     b. [Taro to Jiro]$_i$-ga otagai$_i$-ni seki-o yuzut-ta.
         Taro and Jiro-NOM each-other-to seat-ACC give-past
         "[Taro and Jiro]$_i$ gave a seat to each other$_i$."
     c. [Taro to Jiro]$_i$-ga otagai$_i$-ni booru-o ket-ta.
         Taro and Jiro-NOM each-other-to ball-ACC kick-past
         "[Taro and Jiro]$_i$ kicked the ball to each other$_i$."
     d. [Taro to Jiro]$_i$-ga [otagai$_i$-no hahaoya]$_j$-o home-ta.
         Taro and Jiro-NOM each-other-GEN mother-ACC praise-past
         "[Taro and Jiro]$_i$ praised [each other$_i$'s mothers]$_j$."

As Imani and Peters (1996) point out, *otagai* in the possessor position allows readings other than the reciprocal reading. For example, (3) yields four different readings in (3a-d), depending on the situation.[1]

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[1] As C. Tancredi (p.c.) points out, (3c) and (3d) entail both (3a) and (3b); they may not be treated as completely separated readings. If we treat (3c) and (3d) as special cases of reciprocal and reflexive readings, in any case, *otagai* in (3) is different from that in (2a-c) in that it allows the reflexive reading.

(3)   [Mary to John]$_i$-ga [otagai$_i$-no kodomo]$_j$-o yuuenti-ni tureteit-ta.

        Mary and John-NOM each-other-GEN child-ACC park-LOC take-past

        a. "Mary took John's children to the park, and he took hers there." (reciprocal)

        b. "Mary took her children to the park, and John took his there." (reflexive)

        c. "Mary took her and John's children to the park, and John took the children there."
            (collective)

        d. "Mary took her children to the park and also took John's there, and he did the
            same." (distributive)   (Imani and Peters 1996: 100)

On the other hand, *otagai* in the direct object position, the indirect object position or the object position of a postposition yields only the reciprocal reading and does not allow the other readings.

    Otagai does not always obey the strict locality condition; there are cases where *otagai* takes a long-distance antecedent. First, it is observed that *otagai* in the embedded subject position can be bound by the matrix subject as in (4), although, *otagai* in the embedded object position cannot take the matrix subject as its antecedent as shown in (5).

(4)   [John to Mary]$_i$-ga [otagai$_i$-ga Bill-o seme-ta to] omow-ta.

        John and Mary-NOM each-other-NOM Bill-ACC blame-past that think-past

        "John thought that Mary blamed Bill and Mary thought that John blamed Bill."

                                                          (Nishigauchi 1992: 159)

(5)   *[John to Mary]$_i$-ga [Bill$_j$-ga otagai$_i$-o seme-ta to] omow-ta.

        John and Mary-NOM Bill-NOM each-other-ACC blame-past that think-past

        "[John and Mary]$_i$ thought that Bill$_j$ blamed each other$_i$."

Second, when *otagai* is further embedded within the object NP in the embedded clause, the acceptability increases. In the sentence in (6), *otagai* can take the matrix subject *John to Mary* (John and Mary) as its antecedent.

(6)   ?[John to Mary]$_i$-ga [Bill-ga [otagai$_i$-no kodomo]$_j$-o seme-ta to]

        John and Mary-NOM Bill-NOM each-other-GEN child-ACC blame-past that

        omow-ta.

        think-past

        "John thought that Bill blamed Mary's child and Mary thought that Bill blamed John's
        child."

Otagai normally takes a c-commanding antecedent as seen in the above examples. With the point-of-view interpretation, however, antecedent-less *otagai* sometimes occurs in the

subject position as in (7).

(7) Otagai-ga ki-o-tukeru beki-da.
      each-other-NOM be-careful should-pres
      "Each of us/them should be careful."   (Imani and Peters 1996: 102)

In this case, *otagai* denotes each individual of a group which is salient in the discourse.[2] I will term the reading which antecedent-less *otagai* yields the "each-of-us/them" reading.

2.2. Problems

   Traditionally, it has been widely held that *otagai* is a reciprocal pronoun, hence an anaphor, just like English *each other* is. At least I accept the view that *otagai* is a nominal element because as we saw in (2), *otagai* appears in a Case position; it is assigned accusative Case in (2a), dative Case in (2b), oblique Case in (2c) and genitive Case in (2d).
   However, the data in Section 2.1. show that occurrences of *otagai* in different syntactic positions behave differently. The problem arises as to whether we can treat all kinds of *otagai* in the same way or not. First, as for its syntactic behavior, *otagai* requires a local antecedent in some cases and it does not in the other cases. Second, taking a look at its meaning, we see that *otagai* sometimes yields various readings other than the reciprocal reading and sometimes yields only the reciprocal reading. In the next subsection, I will examine what properties *otagai* exhibits in what circumstances and show that some kinds of *otagai* should be treated as a logophor, rather than an anaphor.

2.3. Proposal

2.3.1. *Otagai* in an object position

   As we have seen in (3), *otagai* in the possessor position of object NP yields various readings such as a reciprocal reading, a reflexive reading, a collective reading and a distributive reading. The other examples of *otagai* with a local antecedent, *otagai* in (2a-c), however, yield only a reciprocal reading.

(2) a. [Taro to Jiro]$_i$-ga otagai$_i$-o tatai-ta. (=(1a))
          Taro and Jiro-NOM each-other-ACC hit-past
          "[Taro and Jiro]$_i$ hit each other$_i$."

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[2] Because of the point-of-view restriction, these individuals must be animate objects.

b. [Taro to Jiro]$_i$-ga otagai$_i$-ni seki-o yuzut-ta.
   Taro and Jiro-NOM each-other-to seat-ACC give-past
   "[Taro and Jiro]$_i$ gave a seat to each other$_i$."

c. [Taro to Jiro]$_i$-ga otagai$_i$-ni booru-o ket-ta.
   Taro and Jiro-NOM each-other-to ball-ACC kick-past
   "[Taro and Jiro]$_i$ kicked the ball to each other$_i$."

d. [Taro to Jiro]$_i$-ga [otagai$_i$-no hahaoya]$_j$-o home-ta.
   Taro and Jiro-NOM each-other-GEN mother-ACC praise-past
   "[Taro and Jiro]$_i$ praised [each other$_i$'s mothers]$_j$."

In addition, *otagai* in (2a-c) always requires a local antecedent, while *otagai* in the possessor position of an object sometimes takes a long-distance antecedent as shown in (6); as shown in (5), *otagai* in a direct object position cannot take a long-distance antecedent and neither can *otagai* in the indirect object position or the oblique position, as shown in (8).

(8) a. *[Taro to Jiro]$_i$-ga [Hanako$_j$-ga otagai$_i$-ni seki-o yuzut-ta to] omow-ta.
        Taro and Jiro-NOM Hanako-NOM each-other-to seat-ACC give-past that think-past
        "[Taro and Jiro]$_i$ thought that Hanako$_j$ gave a seat to each other$_i$."

     b. *[Taro to Jiro]$_i$-ga [Hanako$_i$-ga otagai$_i$-ni booru-o ket-ta to] omow-ta.
        Taro and Jiro-NOM Hanako-NOM each-other-to ball-ACC kick-past that think-past
        "[Taro and Jiro]$_i$ thought that Hanako$_i$ kicked the ball to each other$_i$."

In (2a-c), *otagai* is in the object position of the main verb, while it is embedded within the object in (2d). (We can analyze the verb *keru* (kick) and the postposition *ni* (to) in (2c) as making a constituent and select *otagai* as the object. See R&R.) Let us tentatively generalize that "*otagai* in an object position forces the reciprocal reading" and that "*otagai* in an object position requires a local antecedent," and confirm the generalization by looking at other examples.

2.3.2. *Otagai* in a non-object position

Otagai in the possessor position within an object NP yields four different readings. The same four readings are available when *otagai* takes a long-distance antecedent. For example, (4), where *otagai* is in the embedded subject position, and (6), where *otagai* is in the possessor position inside the embedded object, are actually interpreted in various ways as shown in (4') and (6') depending on the situation.

(4') [John to Mary]$_i$-ga [otagai$_i$-ga Bill-o seme-ta to] omow-ta.
John and Mary-NOM each-other-NOM Bill-ACC blame-past that think-past

    a. "John thought that Mary blamed Bill and Mary thought that John blamed Bill." (reciprocal)

    b. "John thought that he blamed Bill and Mary thought that she blamed Bill." (reflexive)

    c. "John thought that he and Mary blamed Bill and Mary thought that John and she blamed Bill." (collective)

    d. "John thought that he blamed Bill and that Mary also blamed Bill, and Mary had the same thought." (distributive)

(6') ?[John to Mary]$_i$-ga [Bill-ga [otagai$_i$-no kodomo]$_j$-o seme-ta to]
John and Mary-NOM Bill-NOM each-other-GEN child-ACC blame-past that
omow-ta.
think-past

    a. "John thought that Bill blamed Mary's child and Mary thought that Bill blamed John's child." (reciprocal)

    b. "John thought that Bill blamed John's child and Mary thought that Bill blamed Mary's child." (reflexive)

    c. "John thought that Bill blamed John's and Mary's children and Mary thought that Bill blamed the children." (collective)

    d. "John thought that Bill blamed John's child and that Bill also blamed Mary's child and Mary had the same thought." (distributive)

We can see from the data in (3), (4') and (6') that *otagai* yields not only a reciprocal reading but also other readings when it resides in a non-object position. In these cases, it may not be appropriate to call *otagai* a normal "reciprocal" anaphor since its meaning is not limited to the reciprocal one; it should not be treated in the same way as *otagai* in an object position. Besides, *otagai* in the embedded subject position and *otagai* in the possessor position can take a long-distance antecedent; in this respect, too, they are different from *otagai* in an object position.

Here, I would like to propose that such a kind of *otagai* should be analyzed as a logophor, rather than a reciprocal anaphor. Logophors are defined as pronouns such that "the choice of the antecedent is not determined syntactically" (Sells and Wasow (1999)). Here, I would like to assume distribution of logophoric *otagai* is not determined by Binding Theory, which determines distributions of anaphors. This line of explanation is compatible with R&R's Binding Theory, which we will see in Section 4.

2.3.3. *Otagai* in the matrix subject position

The antecedent-less *otagai* in (7), which only allows the "each-of-us/them" reading, is at first sight problematic for our generalization; although it is in the subject position, it does not yield any of the four readings available to *otagai* in the embedded subject position. However, such a problem does not arise if we assume that this type of *otagai* is not in the canonical subject position, but rather in a focus position. In short, we can treat this type of *otagai* as a "focus logophor," which is yet another kind of a logophor.

Note that this kind of *otagai* cannot be topicalized as in (7'b), although, in Japanese, subjects frequently undergo topicalization.[3]

(7')   a.   Otagai-ga ki-o-tukeru beki-da. (=(7))
            each-other-NOM be-careful should-pres
            "Each of us/them should be careful."
       b.   *Otagai-wa ki-o-tukeru beki-da.
            each-other-TOP be-careful should-pres   (Imani and Peters 1996: 102)

We assume that *otagai* in (7) must be moved to the focus position and it cannot reside in the topic position. Indeed, antecedent-less *otagai* forces the contrastive reading such as "each of us, but not only one of us."

2.3.4. Summary

From the point of view of its syntactic behavior and meaning, *otagai* can be classified into three subtypes.

(9)   a.   *otagai* in an object position: an anaphor
       b.   *otagai* in the embedded subject position and the possessor position: a logophor
       c.   *otagai* in the matrix subject position: a focus logophor

If we treat all the types of *otagai* as a mere reciprocal anaphor, we cannot explain why it exhibits the variety of syntactic and semantic behavior observed.

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[3] *Otagai* in other examples can be topicalized, as exemplified in (ib).
(i) a.   [Taro to Jiro]$_i$-ga otagai$_i$-wa home-ta. (cf. (1a))
          Taro and Jiro-NOM each-other-TOP praise-past
          "Each other$_i$, [Taro and Jiro]$_i$ praised (but they$_i$ didn't praise the others)."
     b.   [John to Mary]$_i$-ga [otagai$_i$-wa Bill-o seme-ta to] omow-ta. (cf. (4))
          John and Mary-NOM each-other-TOP Bill-ACC blame-past that think-past
          "John thought that Mary (but not the others) blamed Bill and Mary thought that John (but not the others) blamed Bill."

3. The V-*aw* Construction

3.1. Properties of Aw

Let us consider the properties of the V-*aw* construction next. (10a-d) are examples of the V-*aw* construction and have roughly the same meaning as (2a-d).

(10)   a. [Taro to Jiro]$_i$-ga e$_i$ tataki-aw-ta. (=(1b))
           Taro and Jiro-NOM hit-AW-past
           "[Taro and Jiro]$_i$ hit each other$_i$."
     b. [Taro to Jiro]$_i$-ga e$_i$ seki-o yuzuri-aw-ta.
           Taro and Jiro-NOM seat-ACC give-AW-past
           "[Taro and Jiro]$_i$ gave a seat to each other$_i$."
     c. [Taro to Jiro]$_i$-ga e$_i$ booru-o keri-aw-ta.
           Taro and Jiro-NOM ball-ACC kick-AW-past
           "[Taro and Jiro]$_i$ kicked the ball to each other$_i$."
     d. [Taro to Jiro]$_i$-ga [e$_i$ hahaoya]$_j$-o home-aw-ta.
           Taro and Jiro-NOM mother-ACC praise-AW-past
           "[Taro and Jiro]$_i$ praised [each other$_i$'s mothers]$_j$."

As Nishigauchi (1992) points out, there must be a gap in the reciprocalized argument position in the V-*aw* construction. For example, the verb *tataku* (*hit*) usually has one internal argument, that is, a direct object. When the reciprocal morpheme *aw* is attached to the verb as in (10a), the object of *tataku* must not be overtly expressed and there must be a gap (*e*) in the potential object position. The gap licensed by *aw* can appear in various syntactic positions: the direct object position (10a), the indirect object position (10b), the object position of a postposition (10c), and the possessor position inside an object NP (10d). In this respect, the distribution of the gap is similar to that of *otagai* which takes a local antecedent.

When the reciprocalized argument is a possessor NP as in (10d), the number of the verb's argument is not affected even when *aw* is attached to the verb; the direct object of the verb *homeru* (praise) is overtly expressed as the noun *hahaoya* (mother) in (10d). In this case, the object of Taro's praising is Jiro's mother, not Jiro himself (and vice versa), unlike the normal reciprocal sentences in (10a-c). Thus, we will call the reciprocal construction exemplified in (10a-c) "the direct reciprocal V-*aw* construction" and that in (10d) "the indirect V-*aw* reciprocal construction."

It is observed that unlike *otagai*, *aw* obeys the strict locality condition; when *aw* is attached to the matrix verb, it does not license a gap in the embedded subject position (11a) or the embedded object position (11b).

(11) a. *[Taro to Jiro]$_i$-ga [$_{IP}$ e$_i$ sensei-o home-ta to] omoi-aw-ta.

   Taro and Jiro-NOM teacher-ACC praise-past that think-AW-past

   "[Taro and Jiro]$_i$ thought that each other$_i$ praised the teacher."

   b. *[Taro to Jiro]$_i$-ga [$_{IP}$ sensei-ga e$_i$ home-ta to] omoi-aw-ta.

   Taro and Jiro-NOM teacher-NOM praise-past that think-AW-past

   "[Taro and Jiro]$_i$ thought that the teacher praised each other$_i$."

Even when *aw* is attached to the embedded verb, the gap licensed there does not behave like *otagai* in the embedded clause; the embedded subject NP cannot be the reciprocalized argument.[4]

(12) a. #[Taro to Jiro]$_i$-ga [$_{IP}$ e$_i$ Hanako-o home-aw-ta to] omow-ta.

   Taro and Jiro-NOM Hanako-ACC praise-AW-past that think-past

   "[Taro and Jiro]$_i$ thought that each other$_i$ praised Hanako."

   b. *[Taro to Jiro]$_i$-ga [$_{IP}$ Hanako-ga e$_i$ home-aw-ta to] omow-ta.

   Taro and Jiro-NOM Hanako-NOM praise-AW-past that think-past

   "[Taro and Jiro]$_i$ thought that Hanako praised each other$_i$."

The V-*aw* construction with a reciprocal reading needs a gap in the reciprocalized argument position. However, the gap-less V-*aw* construction is allowed under different readings. In examples in (13), the morpheme *aw* gives the readings different from the reciprocal reading, while all of the examples of the V-*aw* construction with a gap require a reciprocal reading.

(13) a. [Taro to Jiro]-ga yorokobi-aw-ta.

   Taro and Jiro-NOM be-pleased-AW-past

   "Taro and Jiro showed the joy together."

   b. [Taro to Jiro]-ga ookina oto-de sutereo-o kake-aw-ta.

   Taro and Jiro-NOM loud sound-in stereo-ACC play-AW-past

   "Taro and Jiro competitively/collaboratively played stereos at a high volume."

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[4] # indicates that the sentence is not acceptable in the intended reading. (12a) is only grammatical in the competitive reading. In this case, the null element in the embedded subject position is assumed to be *pro*. Thus, (ia) can be paraphrased as (ib).

(i) a. [Taro to Jiro]$_i$-ga [$_{IP}$ *pro*$_i$ Hanako-o home-aw-ta to] omow-ta.

   Taro and Jiro-NOM teacher-ACC praise-AW-past that think-past

   b. [Taro to Jiro]$_i$-ga [$_{IP}$ karera$_i$-ga Hanako-o home-aw-ta to] omow-ta.

   Taro and Jiro-NOM they-NOM teacher-ACC praise-AW-past that think-past

   "Taro and Jiro thought that they competitively/collaboratively praised Hanako."

There is no reciprocalized argument in these sentences, but the V-*aw* construction is still allowed. (13a) means that Taro and Jiro showed joy at the same time. (13b) means that Taro and Jiro played stereos competitively, or in collaboration. The readings of the gap-less V-*aw* construction are classified into three: (i) a simultaneous reading, (ii) a collaborative reading, and (iii) a competitive reading. Let us term this gap-less reciprocal construction "the competitive V-*aw* construction."[5]

3.2. Previous Analyses and Problems

As for the direct reciprocal V-*aw* construction, there are two opposing hypotheses to explain the nature of the morpheme *aw* and the gap it licenses. Nishigauchi (1992) claims, adapting the analysis of *each other* in Heim, Lasnik and May (1991) to Japanese, that the V-*aw* construction involves two operators: the distributor and the reciprocator. More specifically, *aw* works as the distributor and the gap is the trace of the null reciprocator.

(14) [$_{IP}$ [John to Mary]$_i$-ga [$_{IP}$ t$_i$ [$_{VP1}$ t$_i$ [$_{VP1}$ Op$_j$ [$_{VP2}$ t$_i$ [$_{V'2}$ t$_j$ aisi]] aw]] te-iru]]
      John and Mary-NOM   love-AW-prog
      "[John and Mary]$_i$ love each other$_i$."

Under this hypothesis, the gap position is syntactically active as an A'-trace.

Ishii (1989), however, argues that *aw* is an affix that saturates a syntactic position of the verb it attaches to.

(15) [$_{IP}$ [John to Mary]$_i$-ga [$_{VP}$ t$_i$ [$_{V'}$ aisi-aw]] te-iru]

In his view, the V-*aw* construction is different from the *otagai* construction in that the former does not have any reciprocalized argument position which is syntactically active.

In order to see which of the two hypotheses is empirically adequate, we should test the V-*aw* construction for the syntactically visible reciprocalized argument position. In Section 3.3.1, I will give supporting evidence for Ishii (1989) and show that the gap position in the V-*aw* direct reciprocal construction is not syntactically active, and that *aw* is an affix which saturates one argument position of the verb it attaches to.

Then, another question arises as to how we should analyze *aw* in the indirect reciprocal V-*aw* construction and the competitive V-*aw* construction. As we have seen, *aw* in these constructions does not reduce the number of the arguments of the verb it attaches to. To answer the question, I will propose the analysis of the indirect reciprocal V-*aw* construction

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[5] Tonoike (1991) terms this kind of construction "kyousou sougobun" (competitive reciprocals) in Japanese.

and the competitive V-*aw* construction. In Section 3.3.2, I will claim that *aw* in the indirect reciprocal V-*aw* construction is the same affix as *aw* in the direct reciprocal V-*aw* construction, showing that the gap in the indirect reciprocal V-*aw* construction is indeed in an argument position of the verb V. In Section 3.2.2, I will argue that *aw* in the competitive V-*aw* construction is a verb which selects a clausal complement. Postulating the two *aw*s of different categories, we can account for many behavioral differences between them.

3.3. Proposals

3.3.1. Supporting evidence for Ishii (1989)

In this section, I will give two pieces of supporting evidence for Ishii's (1989) analysis that *aw* in the direct reciprocal V-*aw* construction is an affix which saturates one of the argument positions of the verb it attaches to.

3.3.1.1. Distributive reading versus collective reading

The first argument concerns the interpretation of the reflexive pronoun *zibun* (self) and its plural form *zibun-tati* (self-pl). Japanese is a language without overt number agreement; a bare NP such as *hon* (book) can mean "a/the book" or "(the) books," depending on the situation where it is used. However, Japanese optionally allows the plural marker *tati* when the plural NP is animate. For example, while *sensei* (teacher) can mean either "a/the teacher" or "(the) teachers," *sensei-tati* (teacher-pl) can only refer to more than one teacher.[6]

Interestingly, although the plural marker *tati* is optional, *zibun* and *zibun-tati* give different interpretations when they have plural antecedents; *zibun* must always take an atomic individual as the antecedent. Consider (16).

(16) a. [Taro to Jiro]$_i$-ga [$_{PP}$ zibun$_i$-no heya-de] benkyoosi-ta.
   Taro and Jiro-NOM self-GEN room-in study-past
   "[Taro and Jiro]$_i$ studied in self$_i$'s room."

   b. [Taro to Jiro]$_i$-ga [$_{PP}$ zibun-tati$_i$-no heya-de] benkyoosi-ta.
   Taro and Jiro-NOM self-pl-GEN room-in study-past
   "[Taro and Jiro]$_i$ studied in their$_i$ room."

(16a) and (16b) illustrate different situations. (16a) means that Taro studied in Taro's room

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[6] The expression such as *sensei-tati* (teacher-pl) has another interpretation where it denotes a group consisting of "the teacher(s) and others." This interpretation is irrelevant here, so I discuss only *tati* as a plural marker.

and Jiro studied in Jiro's room, while (16b) means that Taro and Jiro studied together in the same room which they own jointly. In other words, (16a) yields the distributive reading and (16b) yields the collective reading of the plural subject. The same is true in the case of transitive verbs as seen in (17).

(17)　a.　[Taro to Jiro]$_i$-ga [$_{PP}$ zibun$_i$-no heya-de] hon-o yon-da.
　　　　　 Taro and Jiro-NOM self-GEN room-in book-ACC read-past
　　　　　 "[Taro and Jiro]$_i$ read books in self$_i$'s room."
　　　b.　[Taro to Jiro]$_i$-ga [$_{PP}$ zibun-tati$_i$-no heya-de] hon-o yon-da.
　　　　　 Taro and Jiro-NOM self-pl-GEN room-in book-ACC read-past
　　　　　 "[Taro and Jiro]$_i$ read books in their$_i$ room."

When we use an inherently reciprocal intransitive verb such as *kenkasuru* (fight), however, the distributive reading is blocked, as in (18a), because the subject NP of the verb *kenkasuru* is obligatorily plural; one cannot fight by oneself.

(18)　a.　*[Taro to Jiro]$_i$-ga [$_{PP}$ zibun$_i$-no heya-de] kenkasi-ta.
　　　　　 Taro and Jiro-NOM self-GEN room-in fight-past
　　　　　 "[Taro and Jiro]$_i$ fought in self$_i$'s room."
　　　b.　[Taro to Jiro]$_i$-ga [$_{PP}$ zibun-tati$_i$-no heya-de] kenkasi-ta.
　　　　　 Taro and Jiro-NOM self-pl-GEN room-in fight-past
　　　　　 "[Taro and Jiro]$_i$ fought in their$_i$ room."

Bearing in mind the difference between the singular and plural forms of *zibun*, let us turn now to the relevant examples of the reciprocal constructions. In the case of the *otagai* construction, the distributive reading is possible as the acceptability of (19a) indicates.

(19)　a.　[Taro to Jiro]$_i$-ga [$_{PP}$ zibun$_i$-no heya-de] otagai$_i$-o tatai-ta.
　　　　　 Taro and Jiro-NOM self-GEN room-in each-other-ACC hit-past
　　　　　 "[Taro and Jiro]$_i$ hit each other$_i$ in self$_i$'s room."
　　　b.　[Taro to Jiro]$_i$-ga [$_{PP}$ zibun$_i$-tati-no heya-de] otagai$_i$-o tatai-ta.
　　　　　 Taro and Jiro-NOM self-pl-GEN room-in each-other-ACC hit-past
　　　　　 "[Taro and Jiro]$_i$ hit each other$_i$ in their$_i$ room."

However, the corresponding example of the V-*aw* reciprocal construction does not allow the distributive reading; the plural subject NP cannot be the antecedent of the singular *zibun* as shown in (20a).

(20) a. *[Taro to Jiro]$_i$-ga [$_{PP}$ zibun$_i$-no heya-de] e$_i$ tataki-aw-ta.

       Taro and Jiro-NOM self-GEN room-in hit-AW-past

       "[Taro and Jiro]$_i$ hit each other$_i$ in self$_i$'s room."

    b. [Taro to Jiro]$_i$-ga [$_{PP}$ zibun-tati$_i$-no heya-de] e$_i$ tataki-aw-ta.

       Taro and Jiro-NOM self-tati-GEN room-in hit-AW-past

       "[Taro and Jiro]$_i$ hit each other$_i$ in their$_i$ room."

As shown in (19b) and (20b), the collective reading is obtained in both the *otagai* construction and the V-*aw* construction.

In this respect, the complex verb *tataki-aw* (hit-AW) is similar to inherently reciprocal verbs such as *kenkasuru* (fight), *deaw* (meet) and *kakkonsuru* (marry). This leads us to claim that *aw* is an affix. If, the gap in (20a) were syntactically visible, the internal structure of the embedded VP would be no different from the VP *otagai-o tataku* (hit each other) in (19a).

3.3.1.2. Object comparison readings

The second argument concerns the possibility of an object comparison reading in a comparative deletion sentences. Darlymple, Mchombo and Peters (1994) argue that the Chicheŵa reciprocal morpheme should be treated as an intransitivizing affix. One basis of their claim is that an object comparison reading in comparative deletion sentences is allowed in the case of reflexive verbs, but not in the cases of reciprocal verbs, as shown in (21).[7]

(21)   a. Alenje$_i$ á-ma-*dzí*-nyóz-á kupósá asodzi$_j$

          2-hunters 2SM-hab-REFL-despise-FV exceeding 2-fishermen

          "The hunters$_i$ despise themselves$_i$ more than the fisherman$_j$."

                                        (subject comparison/object comparison)

     b. Alenje$_i$ á-ma-nyóz-*án*-á kupósá asodzi$_j$

          2-hunters 2SM-hab-despise-RECIP-FV exceeding 2-fishermen

          "The hunters$_i$ despise each other$_i$ more than the fisherman$_j$."

                                        (subject comparison/*object comparison)

                                        (Darlymple, Mchombo and Peters 1994: 155)

When a reflexive verb is used in the comparative deletion sentence as in (21a), the sentence allows two different readings: the subject comparison reading and the object comparison reading. On the other hand, the object comparison reading is not obtained in (21b). This indicates that there is no syntactic object in the first sentence and the verb *despise* becomes intransitive when the reciprocal marker is attached to it.

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[7] The numbers in the Chicheŵa glosses indicate the gender classes of the nouns.

The same discussion also holds of the Japanese verbal morpheme *aw*. The V-*aw* construction does not allow the object comparison reading in comparative deletion sentences.

(22) a. Sensei-tati$_i$-ga seito-tati$_j$-yorimo sakini otagai$_i$-o hihansi-ta.
   teacher-pl-NOM student-pl-than earlier each-other-ACC criticize-past
   "The teachers$_i$ criticized each other$_i$ earlier than the students$_j$."
   (subject comparison/object comparison)

   b. Sensei-tati$_i$-ga seito-tati$_j$-yorimo sakini e$_i$ hihansi-aw-ta.
   teacher-pl-NOM student-pl-than earlier criticize-AW-past
   (subject comparison/*object comparison)

This leads us to claim that the object of *hihansuru* (criticize) is not syntactically visible in this case, and *aw* is attached to the verb as an affix.

3.3.2. The indirect reciprocal V-*aw* construction as an EPC

3.3.2.1. The structure

Having made clear the status of *aw* in the direct reciprocal V-*aw* construction, let us move on to the next question, that is, "How should the indirect reciprocal V-*aw* construction and the competitive V-*aw* construction be analyzed?" First, I propose in this subsection that we should analyze the indirect reciprocal V-*aw* construction as an External Possessor Construction (EPC). Under this analysis, indirect reciprocal *aw* is explained as the same type of *aw* as direct reciprocal *aw*; it is an intransitivizing affix which saturates an argument position of the attached verb.

Thus far, we have assumed that the indirect reciprocal V-*aw* construction licenses a gap in the possessor position of an argument NP, as shown in (23a). In this subsection, however, I would like to argue that the indirect reciprocal sentence (10d) has the internal structure in (23b), where the gap is in another argument position external to the possessee NP *hahaoya* (mother).

(23) a. *[Taro to Jiro]$_i$-ga [e$_i$ hahaoya]$_j$-o home-aw-ta.
   Taro and Jiro-NOM mother-ACC praise-AW-past

   b. [Taro to Jiro]$_i$-ga e$_i$ [hahaoya]$_j$-o home-aw-ta.
   Taro and Jiro-NOM mother-ACC praise-AW-past

In (23b), [*Taro to Jiro*]$_i$ and the gap are realized as coarguments of the verb *homeru* (praise); the gap licensed by *aw* is in an argument position of the verb. Thus, indirect reciprocal *aw* is

analyzed as a morpheme that turns one of its arguments into a gap, exactly as direct reciprocal *aw* is.

Note that in (23b), the gap is interpreted as the possessor of the object NP *hahaoya* (mother), but the gap is not realized in the possessor position of this NP. In this respect, (23b) is much the same as the structure of so-called External Possessor Constructions (EPCs), which are observed in many languages.[8] In EPCs, the possessor NP is realized as another argument which is external to the possessee NP. In order to show that the indirect reciprocal V-*aw* construction has the structure as in (23b), I would like to show that it is analyzed as a kind of EPC.

In the following subsections, I will take up Vergnaud and Zubizarreta's (1992) study of the French EPC (henceforth, V&Z). In V&Z, the differences between the EPC and the Internal Possessor Construction (IPC) are discussed in detail. I will compare Japanese indirect reciprocal constructions with the French EPC and show that the indirect reciprocal V-*aw* construction, but not the indirect reciprocal *otagai* construction, exhibits the properties similar to those of the French EPC. Thus we can support the hypothesis that the gap in (10d) resides in a position external to the possessee NP as illustrated in (23b).

3.3.2.2. The French IPC and EPC

V&Z discuss two inalienable constructions in French: the IPC and the EPC. The EPC and the IPC are exemplified in (24) and (25), respectively.

(24) a. Le medicine a radiographié [l'estomac] aux enfants. (EPC)
    the doctor has X-rayed [the-stomach] to-the children
    "The doctor has X-rayed the children's stomachs."

b. Le medicine leur$_i$ a radiographié [l'estomac] t$_i$. (EPC with cliticization)
    the doctor them has X-rayed [the-stomach]
    "The doctor has X-rayed their stomachs."   (V&Z: 597)

(25) Le medicine a radiographié [leur estomac]. (IPC)
    the doctor has X-rayed [their(sg) stomach]
    "The doctor has X-rayed their stomachs."   (V&Z: 602)

In (24a, b), an inalienable noun *estomac* (stomach) is interpreted as a part of another NP *enfants* (children) or *leur* (them). As shown in (24a), the inalienable noun is in the direct object position and the possessor NP is expressed as another dative argument of the verb in the EPC. This dative object can be cliticized as in (24b). (25) is an example of the IPC, where the possessor NP *leur* (them) is realized within the NP headed by the inalienable noun

_____

[8] For the cross-linguistic variation in EPCs, see Payne and Barshi (1999), among others.

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estomac.[9]

Inalienable nouns such as body-part nouns are dependent entities; they must be inherently defined as a part of another NP. There are other nouns, such as kinship nouns, which function as inalienable nouns by extension. In the IPC, an inalienable noun and another NP which it depends on are represented within one argument position as shown in (25). On the other hand, the EPC is a construction in which an inalienable object NP is interpreted as a possessee of another argument that is external to it as shown in (24). The EPC is allowed only when the possession of an inalienable noun is involved.

V&Z point out that there are three differences between the EPC and the IPC in French. First, as Kayne (1975) notes, the inalienable noun in the EPC must be singular even when it is associated with a plural possessor NP. The examples (26a, b) illustrate this point. In contrast, the inalienable noun in the IPC may be singular as in (25) or plural as in (26c) when the possessor NP is plural. This is the first difference between the EPC and the IPC.

(26) a. *Le medicine a radiographié [les estomacs] aux enfants. (EPC)
       the doctor has X-rayed [the(pl) stomachs] to-the children
       "The doctor has X-rayed the children's stomachs."
   b. *Le medicine leur$_i$ a radiographié [les estomacs] t$_i$. (EPC with cliticization)
       the doctor them has X-rayed [the(pl) stomachs]
       "The doctor has X-rayed their stomachs."
   c. Le medicine a radiographié [leurs estomacs]. (IPC)
       the doctor has X-rayed [their stomachs]
       "The doctor has X-rayed their stomachs."   (V&Z: 602)

Second, although *l'estomac* (the stomach) in the EPC examples (24a, b) is realized in the singular form, it is implied that the total number of the stomachs is plural because this noun is associated with a plural possessor NP. The singular inalienable noun in (24b) can be the antecedent of a plural pronoun as in (27).

(27) Le medicine leur$_i$ a radiographié [l'estomac]$_j$ t$_i$
    the doctor them has X-rayed [the-stomacs]
    et il a constaté qu'ils$_j$ abaient des images normal.
    and he has seen that they had DET images normal
    "The doctor has X-rayed [their$_i$ stomachs]$_j$
    and he saw that they$_j$ looked normal."   (V&Z: 599)

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[9] The pronoun *leur* (their) in (25) cannot cliticize as in (i).
(i) *Le medicine leur$_i$ a radiographié [t$_i$ estomac].
   the doctor their has X-rayed stomach
   "The doctor has X-rayed their stomachs."

In (27), the distributive reading is yielded within the EPC. V&Z call this phenomenon the "distributivity effect," which is only seen in the EPC.[10]

Third, as Kayne (1975) notes, there is a restriction on the sort of modifiers which modify the inalienable noun in the EPC. The inalienable noun in the IPC can be modified by any modifier. To be concrete, the inalienable noun in the EPC cannot be modified by an appositive modifier as shown in (28a), while the same noun in the IPC example (28b) can.

(28) a. *Pierre lui a lavé les mains sales. (EPC)
          Pierre to-him past washed the hands dirty
          "Pierre washed his dirty hands."
      b. Pierre a lavé ses mains sales. (IPC)
          Pierre past washed his hands dirty   (V&Z: 603)

The adjective *sale* (dirty) in (28) is appositive; the plurality of the inalienable noun *mains* (hands) indicates that both of the two hands are dirty. The inalienable noun in the EPC must not be modified by such a modifier.

To summarize, the EPC in French shows three properties which are not seen in the IPC. First, the inalienable noun in the EPC must always be realized in the singular form. Second, the EPC shows the distributivity effect. Third, the inalienable noun in the EPC cannot be modified by appositive modifiers. From now on, I would like to use these three properties as diagnostics for the EPC.

3.3.2.3. The indirect reciprocal V-*aw* construction

I would like to show in this subsection that the indirect reciprocal V-*aw* construction, but not the indirect reciprocal *otagai* construction, exhibits the three properties of the EPC. This supports the view I have proposed in (24b) that the gap in the indirect reciprocal V-*aw* construction is not in the possessor position of the object NP, but in another argument position of the verb.

First, let us consider the data concerning grammatical number. In *otagai* indirect reciprocals such as (29a), the plural marker *tati* can optionally be attached to the NP [*otagai-no hahaoya*] (each other's mothers).

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[10] The first and the second differences between the EPC and the IPC are correlated. Because of the distributivity effect, body-part nouns such as *estomac* must not have the plural form in the EPC, because the plural *estomacs* (stomachs) cannot be distributed to each members of the group-denoting NP; one person cannot have more than one stomach. Thus the first difference is derived from the second difference.

(29) a. [Taro to Jiro]$_i$-ga otagai-no$_i$ hahaoya$_j$(-tati)-o kenasi-ta.
         Taro and Jiro-NOM each-other-GEN mother(-pl)-ACC speak-ill-of-AW-past
         "Taro and Jiro spoke ill of each other's mothers."
     b. [Taro to Jiro]$_i$-ga e$_i$ hahaoya$_j$(??-tati)-o kenasi-aw-ta.
         Taro and Jiro-NOM mother(-pl)-ACC speak-ill-of-AW-past

On the other hand, in indirect reciprocal V-*aw* construction such as (29b), when the plural marker is attached to the inalienable noun *hahaoya* (mother), the sentence is awkward; the inalienable noun should be singular even when there are two mothers, that is, Taro's mother and Jiro's mother, in the context (Taro and Jiro are assumed not to be brothers).

Second, the indirect reciprocal V-*aw* construction shows the distributivity effect. For example, look at (30).[11]

(30) [Taro to Jiro]$_i$-ga e$_i$ hahaoya$_j$-o home-aw-ta ga,
      Taro and Jiro-NOM mother-ACC praise-AW-past but
      kanozyora$_j$-wa sore-o kii-te-i-nakat-ta.
      they(fem)-TOP that-ACC hear-prog-not-past
      "[Taro and Jiro]$_i$ praised [each other's mothers]$_j$, but they$_j$(fem) didn't hear that."

The singular *hahaoya* (mother) in (29b) can be the antecedent of the plural pronoun *kanozyora* (them) as shown in (30); the inalienable noun is distributed to both *Taro* and *Jiro* in this example.

Third, let us examine what kind of modifiers can modify the inalienable nouns in the two indirect reciprocal constructions. Compare the indirect reciprocal V-*aw* sentences in (31b) and with the indirect reciprocal *otagai* sentences in (31a).

(31) a. [Taro to Jiro]$_i$-ga [otagai-no$_i$ [erumesu-no yoohuku]]$_j$-o kenasi-ta.
         Taro and Jiro-NOM each-other-GEN Hermes-GEN clothes-ACC speak-ill-of-past
         "Taro and Jiro spoke ill of each other's Hermes clothes."
     b. ??[Taro to Jiro]$_i$-ga e$_i$ [erumesu-no yoohuku]$_j$-o kenasi-aw-ta.
         Taro and Jiro-NOM Hermes-GEN clothes-ACC speak-ill-of-AW-past

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[11] The corresponding *otagai* sentence employs the plural pronoun *kanozyora* (they(fem)), too, but for the different reason.
(i) [Taro to Jiro]$_i$-ga [otagai-no$_i$ hahaoya]$_j$-o home-aw-ta ga,
    Taro and Jiro-NOM each-other-GEN mother-ACC praise-AW-past but
    kanozyora$_j$-wa sore-o kii-te-i-nakat-ta.
    they(fem)-TOP that-ACC hear-prog-not-past
    "[Taro and Jiro]$_i$ praised [each other's mothers]$_j$, but they$_j$(fem) didn't hear that."
As we saw in (29a), the *hahaoya* in this example is considered to be grammatically plural from the first place.

In (31a), the only possible interpretation is that both Taro and Jiro are wearing Hermes clothes and they spoke ill of each other's Hermes clothes. However, in (31b), the sentence is degraded under the same interpretation, and the competitive reading is preferred that Taro and Jiro competitively spoke ill of some (contextually salient) Hermes clothes, which may be Taro's or Jiro's or someone else's, or of Hermes clothes in general. The modifier in (31) is an appositive modifier, not a restrictive modifiers, because one person usually wears only one set of clothes at the same time.[12] Therefore, these data show that the indirect reciprocal V-*aw* construction is not compatible with appositive modifiers. In this respect, too, the indirect reciprocal V-*aw* construction is similar to the French EPC.

As we have seen thus far, all the three diagnostics show that the indirect reciprocal V-*aw* construction is a kind of EPC, while the indirect reciprocal *otagai* construction is not. Besides, both the indirect reciprocal V-*aw* construction and the French EPC are allowed only when a kind of inalienable possession is involved.[13] Given these facts, one may say that the indirect reciprocal V-*aw* construction is an EPC, and hence, has an internal structure as in (24b), not the structure in (24a).

Under this analysis, we can analyze the affix *aw* in the direct reciprocal construction and *aw* in the indirect reciprocal construction uniformly, because *aw* licenses a gap in one argument position of the attached verb in both constructions. In the direct reciprocal sentence (32a), the direct object position is a gap. In the indirect reciprocal sentence (32b), the argument position in which the possessor NP of the inalienable noun resides is a gap.

(32) a. [Taro to Jiro]$_i$-ga e$_i$ tataki-aw-ta.
        Taro and Jiro-NOM hit-AW-past
        "Taro and Jiro hit each other."

      b. [Taro to Jiro]$_i$-ga e$_i$ [hahaoya]$_j$-o home-aw-ta. (=(10))
        Taro and Jiro-NOM mother-ACC praise-AW-past
        "Taro and Jiro praised each other's mothers."

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[12] Restrictive modifiers are compatible with this construction. For example, in (i), it is indicated that only one of the two shoulders of each person was hit.
(i) [Taro to Jiro]$_i$-ga e$_i$ [hidari-no kata]$_j$-o tataki-aw-ta.
    Taro and Jiro-NOM left-GEN shoulder-ACC hit-AW-past
    "[Taro and Jiro]$_i$ hit each other$_i$'s left shoulders$_i$."
[13] (i), where the possession of an alienable noun *hon* (book) is involved, allows reciprocal reading only marginally.
(i) #??[Taro to Jiro]$_i$-ga e$_i$ hon$_j$-o yomi-aw-ta.
    Taro and Jiro-NOM book-ACC read-AW-past
   "[Taro and Jiro]$_i$ read [each other$_i$'s books]$_j$."

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3.3.3. Competitive *aw* as a verb

3.3.3.1. Competitive *aw* and reciprocal *aw*

Next, let us consider the status of *aw* in the competitive V-*aw* construction. Unlike *aw* in direct and indirect reciprocal sentences, competitive *aw* does not yield a reciprocal reading. As seen in Section 3.1, it requires the reading where each individual in the group does the same thing (i) simultaneously, (ii) competitively, or (iii) collaboratively. Since it is not a "reciprocal" morpheme, I would like to assume that this kind of *aw* is a different lexical item from *aw* in the direct and indirect reciprocal V-*aw* constructions.

Let us assume that *aw* in the competitive V-*aw* construction is a non-affixal verb, which θ-selects a group-denoting subject NP and a clausal complement. The structure of (33a) is represented as (33b).

(33) a. [Taro to Jiro]-ga yorokobi-aw-ta. (= (13a))
        Taro and Jiro-NOM be-pleased-AW-past
   "Taro and Jiro showed the joy together."

b.
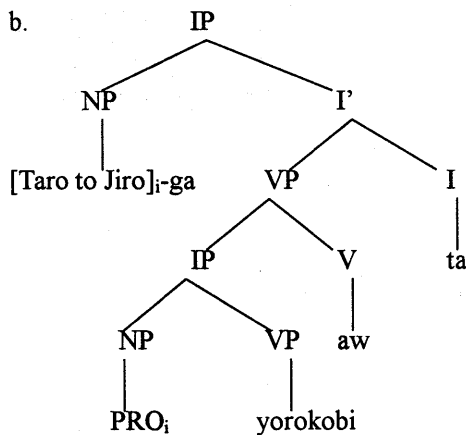
In the structure in (33b), the subject *Taro to Jiro* is the θ-subject of the verb *aw* and thus its semantic properties are selectionally constrained by *aw*.[14] More specifically, the subject in (33b) has to be, say, "synchronizers," "collaborators," or "competitors." The embedded subject is the agent of the verb *yorokobu* (be pleased), and is interpreted as coreferential with the "synchronizers," etc. Let us take it to be a *PRO* that is controlled by the matrix subject.

On the other hand, our claim that the reciprocal *aw* is an affix indicates the structure of (34a) is represented as (34b). Thus we postulate two kinds of *aw*.

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[14] I would like to specify the name of the θ-role given here in future research.

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(34) a. [Taro to Jiro]-ga tataki-aw-ta. (=(8b))

      Taro and Jiro-NOM hit-RARE-past.

      "Taro was hit by Jiro."

b.
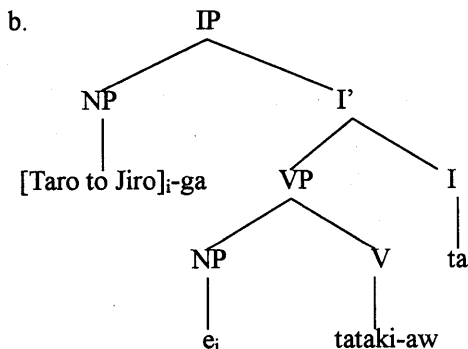
3.3.3.2. Animacy constraint

In Sections 3.3.3.2. and 3.3.3.3, I will give two pieces of evidence for my claim that competitive *aw* θ-selects the subject but direct/indirect reciprocal *aw* does not.

Imani and Peters (1996) note that in the V-*aw* constructions, some predicates allow inanimate subjects while others do not. For example, when *aw* attaches to the verb *tatu* (stand), the inanimate noun *ki* (tree(s)) cannot be the subject of this verb as in (35a), while the animate noun *heisi* (soldier(s)) can be its subject as in (35b).

(35) a. *Ki-ga 300-meter-okini tati-aw-te-iru.

      tree-NOM 300-meter-at-the-interval stand-AW-pres

      "The trees (competitively/collaboratively) stand at interval 300 meters."

   b. Heisi-tati-ga 300-meter-okini tati-aw-te-iru.

      soldier-pl-NOM 300-meter-at-the-interval stand-AW-pres

      "The soldiers stand at interval 300 meters."   (Imani and Peters 1996: 108)

The verb *tatu* (stand) itself of course allows an inanimate subject as shown in (36).

(36) Ki-ga 300-meter-okini tat-te-iru.

     tree-NOM 300-meter-at-the-interval stand-pres

     "The trees stand at interval 300 meters."

Besides, the inanimate noun *ki* (tree(s)) can be the subject of *yorikakari-aw* (lean-AW) as in (37).

(37) Ki$_i$-ga e$_i$ yorikakari-aw-te-iru.
      tree-NOM lean-AW-pres
      "The trees lean against each other."   (cf. Imani and Peters 1996: 108)

In our view, (37) is an example of the direct reciprocal V-*aw* construction, while (35a-b) are examples of the competitive V-*aw* construction. This is indicated by the fact that *yorikakaru* (lean) is a two-place predicate and *tatu* (stand) is a one-place predicate. If we turn (37b) into a indirect reciprocal V-*aw* sentence as in (38), where the gap is located in the possessor position of the dative object, the sentence is still acceptable with an inanimate object.

(38) Ki$_i$-ga [e$_i$ miki]-ni yorikakari-aw-te-iru.
      tree-NOM trunk-DAT lean-AW-pres
      "The trees lean against each other's trunks."

These facts show that only the competitive V-*aw* construction prohibits inanimate subjects.

Since the subject of the competitive V-*aw* construction is θ-selected by *aw*, this is due to the inability of inanimate nouns to be assigned the role of "synchronizer," "collaborator," or "competer." If we analyze competitive *aw* on a par with reciprocal *aw*, we cannot explain the facts about inanimate subjects.

3.3.3.3. Historical data

Another piece of evidence is based on Japanese historical data: the two types of *aw* came to be used in different periods. Before we consider *aw* in the V-*aw* construction, let me draw your attention to *aw* which is not accompanied with another verb. *Aw* is also used as a main verb, which has several meaning such as "meet," "match," and "agree/be the same."[15] The sentences in (39) are several examples of the main verb *aw*.

(39) a. [Taro to Jiro]-ga aw-ta.
          Taro and Jiro-NOM meet-past
          "Taro and Jiro met."
      b. [Sono huku to sono kutu]-ga yoku aw.
          the clothes and the shoes-NOM well match
          "The clothes and the shoes match."

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[15] *Aw* with the meaning "meet" is represented by a different *kanji* from *aw* with other meanings in Modern Japanese. Nevertheless, they are originally the same word and Japanese dictionaries treat them within one lexical entry.

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c. [Taro to Jiro-no kotae]-ga aw-ta.
   Taro and Jiro-GEN answer-NOM agree-past
   "Taro's answer and Jiro's answer agreed."

From the discussion thus far, we can see that there are three types of *aw*, and that competitive *aw* yields three meanings. The types of aw are summarized in (40).[16]

(40) a. main verb *aw*; meet, match, agree, etc.
     b. competitive *aw*;
        (i) the simultaneous meaning
        (ii) the collaborative meaning
        (iii) the competitive meaning
     c. direct/indirect reciprocal *aw*; the reciprocal meaning

Now, let us see when each type of *aw* came to be used. Main verb *aw* (40a) is attested in *Manyousyuu*, the oldest Japanese anthology in 8c. *Aw* in the competitive V-*aw* construction with the simultaneous meaning (40bi) is also attested in this anthology. On the other hand, the V-*aw* construction with collaborative and competitive meaning (40bii, iii) appeared later. These meaning are attested in the literature in 10-11c. The reciprocal meaning of the V-*aw* construction (40c) is not attested until about 14c. (41a-e) are examples of the five types of *aw* listed in (40).[17, 18]

(41) a. Suso-no utikae awa-ne-domo… (Manyousyuu; 8c)
        hem-GEN front of the kimono AW-not-though
        "Though the front hem of the *kimono* does not fit well, …"
     b. Himo-no o-no itugari-ai-te… (Manyousyuu; 8c)
        string-GEN life-NOM be linked-AW-te
        "The strings of life were linked together, and…"
     c. Dainagon-o sosiri-ai-tari. (Taketori Monogatari; 10c)
        Dainagon-ACC speak ill of-AW-complete
        "(They) spoke ill of Dainagon collaboratively."

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[16] As for the reciprocal pronoun *otagai*, it came to be used in about 9c. It is derived from the deverbal noun *tagai* "difference," which is in turn derived from the inherently reciprocal verb *tagau* "differ."
[17] The examples in (41) are taken from Japanese dictionaries. (41a-c) are from *Shogakukan Kokugo Daijiten*, (41d) is from *Kojien 4th edition*, and (41e) is from *Jidaibetsu Kokugo Daijiten: Muromachi-jidai hen 1*.
[18] An auxiliary verb *te* in (41b) is used to connect the sentence to another sentence.

    d. Kakemono-domo nado ni-naku-te idomi-ae-ri.[19] (Genzi Monogatari; 11c)
       prize-pl euphemistic two-not-te challenge-AW-complete
       "The prizes were peerless and (they) competitively challenged (for them)."
    e. Tada ko-wa oya-o sute kiri-ai... (Taiheiki; 14c)
       just child-TOP parent-ACC abandon slay-AW
       "The child just abandoned the parent and (they) slew each other..."

When we assume that competitive *aw* is a verb and reciprocal *aw* is an affix, it can be said that the former is closer to the main verb *aw* because it has its own θ-role structure. Reciprocal *aw* is closer to functional items such as auxiliaries in that it does not assign any θ-roles to the arguments. Given that the derivation of a functional item from a lexical item is a common process of grammaticalization, the fact that competitive *aw* appeared earlier than reciprocal *aw* supports our view; the two types of *aw* in the V-*aw* construction are different items and the reciprocal *aw* has a more functional nature than competitive *aw*.

3.4. Summary

In this section, I have shown that the V-*aw* construction is classified into three subtypes, which are summarized in (42).

(42) a. the direct reciprocal V-*aw* construction
      b. the indirect reciprocal V-*aw* construction
      c. the competitive V-*aw* construction

Among these subtypes, *aw* in the direct reciprocal V-*aw* construction and the indirect reciprocal V-*aw* construction can be analyzed as an affix which saturates an argument position of the verb V, and *aw* in the competitive V-*aw* construction can be analyzed as a verb which selects a clausal complement.

4. Binding Theory

The properties of reciprocal elements have traditionally been accounted for by Chomsky's (1981, 1986) Binding Condition A. However, interestingly, the observations in Section 2 and Section 3 cast doubt on the adequacy of the traditional Binding Conditions in (43).

(43) a. Binding Condition A: An anaphor must be bound in its governing category.
      b. Binding Condition B: A pronominal must be free in its governing category.

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[19] The postposition of euphemism *nado* is used to express the speaker's politeness.

40

Adopting the Binding Condition A in (43a) to account for Japanese reciprocal constructions, one empirical problem and one theoretical problem arise. First, it is empirically problematic because (43a) does not explain the fact that the reciprocal pronoun *otagai* sometimes takes a long-distance antecedent and it sometimes takes no syntactic antecedent. We have to say that it can be exempt from the Binding Condition A in some cases, but it is not clear at all how to account for these exceptions while still maintaining a Binding Theoretic analysis as in (43) in the core cases.

Second, Binding Condition A in (43a) is a condition on anaphors, that is, nominal elements, and not reciprocal elements in general. It is theoretically undesirable because the reciprocal verbal affix *aw* cannot be in the scope of the Binding Conditions, although it yields many of the same reciprocal reading as reciprocal pronouns do.

Instead, I would like to propose extending Reinhart and Reuland's (1993) Binding Conditions to the reciprocal predicate. R&R redefine the Binding Condition as conditions imposed on predicates, not on arguments. They proposed the Binding Condition in (45) on the basis of the notions defined in (44).

(44) a. A predicate is reflexive iff two of its arguments are coindexed.
　　 b. A predicate is reflexive-marked iff either P is lexically reflexive or one of P's argument is a self-anaphor.　　　　　　　　　　　　　(R&R: 663)
(45) a. Binding Condition A: A reflexive-marked predicate is reflexive.
　　 b. Binding Condition B: A reflexive predicate is reflexive-marked.　　(R&R: 670-671)

Let us refer to this kind of treatment of reflexive constructions as "the predicate-centered approach" to reflexive constructions, as opposed to "the argument-centered approach" such as (43).

In order to extend the predicate-centered approach to reciprocal constructions, let us reformulate R&R's Binding Condition in (45), replacing the notions "reflexive" and "reflexive-marked" with "reciprocal" and "reciprocal-marked," respectively.[20]

(46) a. A predicate is reciprocal iff
　　　　 (i) two of its arguments are coindexed, and
　　　　 (ii) these arguments refer to a group-denoting NP.
　　 b. A predicate is reciprocal-marked iff either P is lexically reciprocal or one of P's arguments is a reciprocal anaphor.

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[20] When the subject is a group-denoting NP, a predicate with two or more coindexed coarguments is interpreted as either a reflexive predicate (44a) or a reciprocal predicate (46a). I would like to discuss the precise condition on which a predicate is interpreted as reciprocal, not reflexive, in future research.

(47) a. Binding Condition A: A reciprocal-marked predicate is reciprocal.
     b. Binding Condition B: A reciprocal predicate is reciprocal-marked.

If we adopt the definition in (47), the problems with Chomsky's (1981) Binding Condition do not arise. First, in this R&R style framework, a predicate P is not reciprocal-marked unless a reciprocal anaphor is in P's argument position or a reciprocal affix, which turns P into a lexically reciprocal predicate, is attached to the verb. Reciprocal anaphors in other positions are automatically interpreted as logophors. Thus we can naturally explain the fact that *otagai* in object position is an anaphor and *otagai* in the possessor position inside an object NP or a focus position is a logophor.

Second, with predicate-centered Binding Conditions in (47), we can treat both the reciprocal pronoun *otagai* and the reciprocal affix *aw* as reciprocal markers; distributions of both the reciprocal pronoun *otagai* construction and the reciprocal verbal affix *aw* are accounted for by the same principle.[21]

5. Conclusion

In this paper, I have discussed the Japanese *otagai* construction and the V-*aw* construction. These constructions should be classified into subtypes and analyses should be given for each of the subtypes. The reciprocal pronoun *otagai* and as an anaphor in the object position of the main verb, works as a logophor in the possessor position of an NP and the subject position. The V-*aw* constructions are classified into three. *Aw* in the direct reciprocal V-*aw* construction and the indirect reciprocal V-*aw* construction is an affix, as Ishii (1989) claims. *Aw* in the competitive V-*aw* construction is a verb which selects a clausal complement. The distributions of the reciprocal pronoun *otagai* and the reciprocal affix *aw* can be together explained under R&R's (1993) Binding Theory, which treats verbal reciprocal elements on a par with nominal reciprocal elements.

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[21] The competitive V-*aw* construction is not in the scope of the Binding Theory because competitive *aw* is a different lexical item from reciprocal *aw* and it does not yield the reciprocal reading.

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