

# PARAMETRIC VARIATION IN REFLEXIVE CLASSIFICATION: EVIDENCE FROM JAPANESE\*

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## 1 Introduction

This paper discusses the classification of reflexive anaphors in languages. Many languages have more than one form of reflexive anaphor: for example, Japanese has the feature (gender, number and person)-unspecified forms like *zibun* ‘self’ and *zibun-zisin* ‘self-self,’ the feature-specified form such as *kare-zisin* ‘him-self,’ and the affixal forms such as *zi-* and *ziko-* ‘self-.’ Korean also has several forms of anaphor: *caki* ‘self,’ *casin* ‘self,’ *caki-casin* ‘self-self,’ *ku-casin* ‘him-self’ and *ca-/caki-* ‘self-.’ We consider how multiple forms of anaphor differ and how these anaphors are classified in a language.

In this paper, we claim that anaphors in a language are classified into two types as “Pure reflexive anaphors” and “Near reflexive anaphors” based on their semantic difference, following Lidz (1996, 2001a,b)’s analysis of anaphor. Also, we propose that there is a parametric variation with respect to the Pure reflexive and Near reflexive classification of anaphor among languages. In some languages such as Dutch and Kannada, morphologically simplex anaphors are Pure reflexive anaphors, while morphologically complex ones are Near reflexive anaphors. On the other hand, in other languages like Japanese and Russian, affixal anaphors are Pure reflexive anaphors while non-affixal ones are Near reflexive anaphors

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## 2 Reflexivity

Before introducing Lidz's (1996, 2001a,b) analysis, we review the analysis of reflexivity proposed in Reinhart and Reuland (1993). They classify anaphors into two types based on their morphological complexity and syntactic function. Under their classification, morphologically complex anaphors, for example *zichzelf* 'selfself' in Dutch in (1), function as "reflexivizers" that add reflexivity to predicates that lexically lack reflexivity. On the other hand, morphologically simplex anaphors, such as *zich* 'self,' do not have the reflexivizing function

- (1) a. Max haat [-Ref] {*zichzelf* / \**zich*}. [Dutch]  
 Max hates {selfself / self}  
 'Max hates himself.'
- b. Max gedraagt [+Ref] {*zich* / \**zichzelf*}.  
 Max behaves {self / selfself}  
 'Max behaves.'
- c. Max wast [+/- Ref] {*zich* / *zichzelf*}.  
 Max washes {self / selfself}  
 'Max washes himself.'
- (Reinhart and Reuland, 1993, 665-666)

Reinhart and Reuland assume that predicates are specified for reflexivity in the lexicon: some predicates are specified as non-reflexive (marked with [-Ref] in (1a)), some are specified as reflexive ([+Ref] in (1b)), and others are doubly specified as reflexive and non-reflexive ([+/-Ref] in (1c)). In Dutch, to make a reflexive sentence that means 'Max hates himself,' the inherently non-reflexive predicate *haat* 'hates' in (1a) requires the reflexivizer anaphor *zichzelf* 'selfself.' If the non-reflexivizer anaphor *zich* 'self' is used, the predicate lacks reflexivity and the sentence is excluded. By contrast, to make a reflexive sentence 'Max behaves,' the lexically reflexive predicate *gedraagt* 'behaves' in (1b) that already has inherent reflexivity takes the non-reflexivizer anaphor *zich*. The verb *wast* 'washes' in (1c) has two usages: when the predicate is used as a reflexive verb, it occurs with the non-reflexivizer anaphor *zich*, while when it is used as a non-reflexive verb, it needs to be reflexivized by taking the reflexivizer anaphor *zichzelf*.

Reinhart and Reuland's (1993) approach makes an interesting prediction: the predicates in (1a) (with *zichzelf*) and (1b) (or the two usages of the verb in (1c)) form a natural class. That is, the two predicates are equally reflexive verbs in terms of semantics.

## 3 Two Types of Reflexivity

Arguing against Reinhart and Reuland (1993), Lidz (1996, 2001a,b) claims that anaphors in a language show semantic differences when locally bound and that they are classified based on their semantics, not based on their morphological complexity. Utilizing two diagnostics in (2) and (3), he demonstrates that the reflexive predicates in (1a) and (1b) semantically do not form a natural class.<sup>1</sup>

<sup>1</sup> Here, we focus on the comparison between (1a) and (1b), but the same conclusion is true in the contrast between the two usages of the verb in (1c).

The first diagnostic is (un)availability of “statue interpretations” in the Madame Tussaud context.<sup>2</sup> Imagine a situation in which the famous *Ringo Starr* is in the Madame Tussaud wax museum. He is now standing in front of the statue that depicts him. The statue has a beard, but he does not like that. If he thinks ‘I look bad with a beard!’ and he shaves the statue, then, in Dutch, this situation can be described by the sentence (2b) with *zichzelf*, but not by the sentence (2a) with *zich*. In contrast, if *Ringo* has the same thought and he shaves his face, then both (2a) and (2b) are available to describe the situation. Only when the *zichzelf* is used, the additional statue interpretation is available.

- (2) a. Ringo scheert zich. [Dutch]  
 Ringo shaves self.  
 ‘Ringo shaves himself.’ (*zich* = Ringo, \*statue)
- b. Ringo scheert zichzelf.  
 Ringo shaves selfself.  
 ‘Ringo shaves himself.’ (*zichzelf* = Ringo, statue) (Lidz, 2001a, (29))

The second diagnostic is (un)availability of non-sloppy identity readings in comparative deletion constructions. If *zich* is used as in (3a), then only the sloppy identity reading: the deleted structure contains only a local reflexive reading, is induced. By contrast, when *zichzelf* is used as in (3b), the non-sloppy identity reading: the object of the deleted structure is the same one of the matrix clause, is also available. Here again, only when *zichzelf* is used, the additional non-sloppy identity reading is available.

- (3) a. Zij verdedigde zich beter dan Peter.  
 She defended self better than  
 ‘She defended herself than Peter defended her.’ (Sloppy identity reading)  
 \*‘She defended herself than Peter defended himself.’ (\*Non-sloppy identity)
- b. Zij verdedigde zichzelf beter dan Peter.  
 She defended selfself better than  
 ‘She defended herself than Peter defended her.’ (Sloppy identity)  
 ‘She defended herself than Peter defended himself.’ (Non-sloppy identity)  
 (Lidz, 2001a, (30))

The results of the diagnostics tell us that the reflexive predicates in (1a) and (1b): the former predicate is syntactically reflexivized by *zichzelf*, while the latter one is lexically reflexive, do not form a natural class. Based on the results, Lidz (1996, 2001a,b) proposes that anaphors should be categorized based on their semantics, not on their morphological complexity and syntactic function. Under Lidz’s proposal, anaphors like *zich* in (2a) are called “Pure reflexive anaphors.” These anaphors require complete identity with their antecedents. On the other hand, anaphors like *zichzelf* in (2b) are called “Near reflexive anaphors.” This class of anaphor is referentially dependent on their antecedents, but these anaphors are not necessarily identical with

<sup>2</sup> The Madame Tussaud context is first discussed in Jackendoff (1992). He restricts what an anaphor can refer to ‘physical representations’ such as statues, pictures, recordings and portraying actors, and excludes tales or legends (they are not physical) or cars (that are not representation). We use the term ‘statue interpretations’ following Lidz (1996, 2001a,b) as a representative of ‘physical representations.’

them. Lidz claims that the two types of anaphor induce different types of reflexivity as schematized in (4).

- (4) a.  $\lambda x [x, \mathbf{x}]$  (Pure reflexive predicates)  
 b.  $\lambda x [x, f(\mathbf{x})]$  (Near reflexive predicates) (Lidz, 2001a, (15))

Pure reflexive anaphors induce Pure reflexivity schematized in (4a). This type of anaphor is thought as a variable, as indicated in bold font in (4a). Near reflexive anaphors, on the other hand, induce Near reflexivity schematized in (4b). Lidz assumes that Near reflexive anaphors have the Near reflexive function, as indicated as  $f(x)$  in (4b), that takes its antecedent as its input and returns a referential extension of the antecedent. When the Near reflexive function returns the input itself, a Pure reflexivity reading is induced. Pure reflexivity is a subcase of Near reflexivity. To regulate Pure reflexivity, Lidz proposes Condition R given in (5).

- (5) Condition R  
 $\lambda x [P(x, x)] \leftrightarrow (\theta_1 = \theta_2)$   
 Semantics  $\theta$ -grid (Lidz, 2001a, (17))

The left side of the condition shows the semantics of reflexivity: an anaphor and its antecedent must be identical. The right side indicates the theta-grid of lexically reflexive predicate: the two thematic roles of a lexically reflexive predicate must be coindexed. Condition R says that if a predicate is semantically reflexive, it must be lexically reflexive. If a predicate is lexically reflexive, it must be semantically reflexive.

Now, let us focus on the form of anaphor. In Dutch, as we have seen in the above examples, the morphological complexity of anaphor corresponds to the Pure reflexive and Near reflexive anaphor distinction: the morphologically simplex anaphor *zich* is the Pure reflexive anaphor, while the morphologically complex anaphor *zichzelf* is the Near reflexive anaphor. This pattern is observed in other languages as well. For example, in the Madame Tussaud context, the morphologically simplex anaphor *tann* in Kannada cannot refer to a statue of its antecedent *Hari* as in (6a), while the morphologically complex anaphor *tann-tanne* in (6b) can.

- (6) a. Hari tann-annu hoDe-du-koND-a. [Kannada]  
 Hari self-Acc hit-PP-Ref.past-3sm  
 ‘Hari hit himself.’ (*tann* = Hari, \*statue)  
 b. Hari tann-annu-tanne hoDe-d-a.  
 Hari self-Acc-self hit-past-3sm  
 ‘Hari hit himself.’ (*tann-tanne* = Hari, statue) (Lidz, 2001a, (12b,c))

Note, however, that not all languages with multiple forms of anaphor have only the two forms of anaphor: morphologically simplex and complex anaphors. Some of these languages have affixal reflexives: for example, Japanese has *zi-* and *ziko-* ‘self-’ as well as non-affixal anaphors like *zibun* ‘self’ and Chinese has *zi-* and *ziwo-* ‘self-’ as well as non-affixal anaphors like *ziji* ‘self.’ Doesn’t Lidz’s two-way classification analysis of anaphor apply to languages with affixal anaphors?

## 4 Proposal: Parametric Variation of the Two Types

In this section, we answer to the question that came up at the end of Section 3. Our answer is that Lidz's analysis does apply to languages with affixal anaphors as well. We propose that there is a parametric variation with respect to the two-way (Pure reflexive and Near reflexive) classification of anaphor.<sup>3</sup> Our proposal is that, in languages like Dutch, Kannada and Norwegian etc., the morphological complexity of anaphor corresponds to the two-type distinction of anaphor, as in (7). On the other hand, in languages like Japanese, Russian and Korean etc., the affixal / non-affixal status of anaphor distinguishes the two types of anaphor, as in (8).

- (7) a. Morphologically simplex anaphor = Pure reflexive anaphor  
(e.g. Dutch *zich* 'self' in (2a), Kannada *tann* in (6a))
- b. Morphologically complex anaphor = Near reflexive anaphor  
(Dutch *zichzelf* 'selfself' in (2b), Kannada *tann-tanne* in (6b))
- (8) a. Affixal anaphor = Pure reflexive anaphor  
(e.g. Japanese *zi-/ziko-* 'self' in (15a), Russian *-sja* in (24a))
- b. Non-affixal anaphor = Near reflexive anaphor  
(Japanese *zibun* 'self' in (15b), Russian *sebja* in (24b))

This proposal is based on the predication made in Lidz's Condition R analysis given in (9).

- (9) If an anaphor can be bound by a coargument (in the absence of lexical reflexivity), then that anaphor is a Near-reflexive. (Lidz, 2001a, 237)

Although Lidz refers to only Near reflexive anaphors, we can paraphrase (9) as 'an anaphor is bound by a coargument in the presence of lexical reflexivity, then that anaphor is Pure-reflexive.' Lidz reports that there are several ways to mark lexical reflexivity in languages: a verb is marked as reflexive in the lexicon in some languages like Dutch (see (1), (2) and (10)), a verb takes a reflexive marker in some languages (e.g. Kannada: see the data and explanation of (13)) and a verb takes a Pure reflexive anaphor that simultaneously marks semantic reflexivity in other languages (e.g. Russian: see the data and explanation in (24)). Semantic reflexivity is, on the other hand, marked on verbs by a Pure reflexive anaphor in all languages: Condition R is operative when a predicate takes a Pure reflexive anaphor. In languages like Dutch and Kannada, lexical reflexivity marking occurs independently from semantic reflexivity marking: lexical reflexivity is marked on verbs in the lexicon or by a morphological marker and semantic reflexivity is marked by a Pure reflexive anaphor. In contrast, in languages like Russian, lexical reflexivity marking occurs simultaneously with semantic reflexivity marking: Pure reflexive anaphors mark lexical reflexivity at the same time with semantic reflexivity. So, we presume that how anaphors are classified into the Pure reflexive and Near reflexive types in a language depends on if the two types of reflexivity marking occur independently or simultaneously.

In Section 4.1., we see that the classification in (7) is borne out in Dutch, Norwegian, Danish, Kannada and Malayalam. In Sections 4.2., we see how the classification in (8) holds in a different set of languages like Japanese and Russian.

<sup>3</sup> The original ideas of our proposal here are discussed in Kishida (2009).

#### 4.1 Morphologically simplex and complex anaphors

In Dutch, lexical reflexivity is marked on verbs in the lexicon. The verb *scheert* ‘shaves’ in (10) has two usages: it is used as a reflexive verb in (10a) and used as a non-reflexive verb in (10b). In (10a), the statue reading is excluded. Condition R in (5) is operative here. This verb has both semantic and lexical reflexivity. According to the prediction in (9), the anaphor *zich* is a Pure reflexive anaphor, as it is bound by its coargument *Ringo* in the presence of lexical reflexivity. In contrast, in (10b), the statue reading is available. That Condition R is not operative suggests that the verb here lacks either reflexivity. The anaphor *zichzelf* is categorized as a Near reflexive anaphor, because it is bound by its coargument in the absence of lexical reflexivity.

- (10)a. Ringo scheert zich. (= (2))[Dutch]  
 Ringo shaves self.  
 ‘Ringo shaves himself.’ (*zich* = Ringo, \*statue)
- b. Ringo scheert zichzelf.  
 Ringo shaves selfself.  
 ‘Ringo shaves himself.’ (*zichzelf* = Ringo, statue)

This classification is consistent with the result of the (un)availability of the non-sloppy identity interpretation in the comparative deletion construction in (3): the Pure reflexive anaphor *zich* induces only the sloppy identity reading, while the Near reflexive anaphor *zichzelf* allows the non-sloppy identity reading as well. When we compare the forms of the two anaphors, the Pure reflexive anaphor is morphologically simplex, and the Near reflexive anaphor is morphologically complex.

Norwegian and Danish mark reflexivity in a similar way to Dutch. The same pattern: morphologically simplex anaphors are Pure reflexive anaphors and complex ones are Near reflexive anaphors, is predicted. Observe (11) and (12a,b).

- (11) Per oppdaget Kari like ved {seg selv / \*seg} påbildt. [Norwegian]  
 Per discovered Kari close by himself self in picture-Def  
 ‘Per discovered Kari close by himself in the picture.’ (Lødrup, 2007, (20))
- (12) a. Bill Clinton barbered sig. [Danish]  
 Bill Clinton shaved self  
 ‘Bill Clinton shaved himself.’ (*sig* = Bill, \*statue)
- b. Bill Clinton barbered sig selv.  
 Bill Clinton shaved self self  
 ‘Bill Clinton shaved himself.’ (*sig selv* = Bill, statue)  
 (based on Bergeton, 2004, 19, (25))

In Norwegian, the morphologically simplex anaphor *seg* cannot refer to a statue of its antecedent, while the complex *seg selv* can. This pattern is true in Danish too: the morphologically simplex anaphor *sig* cannot refer to a statue of its antecedent, while the complex *sig selv* can. In these languages as well, the morphological complexity of anaphor corresponds to the Pure reflexive and Near reflexive anaphor type distinction.

In Kannada, lexical reflexivity is marked by the verbal reflexive marker *-koND* (past tense form) / *-koLL* (present). In (13a), the anaphor *tann* ‘self’ is bound by its coargument *Hari* in the presence of lexical reflexivity. The anaphor is a Pure reflexive anaphor. On the other hand, in (13b), the anaphor *tannu-tanne* ‘self-self’ is bound by the same argument without lexical reflexivity. This anaphor is categorized as a Near reflexive anaphor. In this language as well, the Pure reflexive anaphor is morphologically simple, while the Near reflexive one is morphologically complex.

- (13)a. Hari tann-annu hoDe-du-koND-a. (=6)[Kannada]  
 Hari self-Acc hit-PP-Ref.past-3sm  
 ‘Hari hit himself.’ (*tann* = Hari, \*statue)
- b. Hari tann-annu-tanne hoDe-d -a.  
 Hari self-Acc-self hit-past-3sm  
 ‘Hari hit himself.’ (*tann-tanne* = Hari, statue)

In Malayalam, any verbs lack lexical reflexivity. Condition R, given in (5), excludes coargument binding of the anaphor *tan* ‘self,’ as (14a) indicates. In contrast, in (14b), the anaphor *tan-tanne* ‘self-self’ is bound by its coargument *Raaman* in the lack of lexical reflexivity. This anaphor is classified as a Near reflexive anaphor, according to (9). In fact, in (14b), this anaphor can refer to a statue of its antecedent. Although this language does not have a Pure reflexive anaphor, Malayalam has a Near reflexive anaphor. Note that this anaphor is morphologically complex.

- (14)a. \*Raaman tan-ne kshauram ceytu [Malayalam]  
 Raaman self-Acc shaving did  
 ‘Raaman shaved.’
- b. Raaman tan-ne-tanne kshauram ceytu  
 Raaman self-Acc-self shaving did  
 ‘Raaman shaved himself.’ (*tan-tanne* = Raaman, statue) (Lidz, 2001a, (32))

In the above five languages, lexical reflexivity marking and semantic reflexivity marking occur separately and the Pure reflexive and Near reflexive anaphor distinction corresponds to the morphological complexity of anaphors.

## 4.2 Affixal and non-affixal anaphors

In Section 4.2.1, we compare two types of Japanese anaphors: the affixal anaphor *ziko-* ‘self-’ and the non-affixal anaphor *zibun* ‘self.’<sup>45</sup> We have that subsection for Japanese, separating from

<sup>4</sup> This work does not focus on other types of non-affixal anaphors in Japanese: *zibun-zisin* ‘self-self’ and the feature-specified type such as *kare-zisin* ‘him-self.’ Kishida (to appear) compares these anaphors with *zi-/ziko-* and *zibun*.

<sup>5</sup> Japanese has another type of affixal anaphor: *zi-*. This affix as well as the *ziko-* affix are used in Sino-Japanese origin morphologically complex verbs, known as ‘*zi-*verbs’ and ‘*ziko-*verbs,’ such as *zi-satu-suru* ‘self-killing do, kill oneself’ in (i) and *ziko-hihan-suru* ‘self-criticism do, criticize oneself’ in (15a).

other languages in Section 4.2.2, because we test if the affixal and non-affixal difference of items applies to a different type of anaphors, namely reciprocal anaphors, as well as reflexive anaphors.

#### 4.2.1 Japanese

Here we assume that, both the affixal anaphor *ziko-* and the non-affixal *zibun* are the internal arguments of the verb *hihan-suru* ‘criticism-do, criticize,’ following Kishida and Sato (2011). We apply the two diagnostics used in Lidz (1996, 2001a,b) to the two types of anaphor.<sup>6</sup> First, compare the two sentences and their interpretations in (15) under a Madame Tussaud context.

- (15)a. John-wa ziko-hihan-si-ta. [Japanese]  
 John-Top self-criticism-do-Past  
 ‘John criticized self.’ (*ziko-* = John, \*statue)
- b. John-wa zibun-o hihan-si-ta.  
 John-Top self-Acc criticism-do-Past  
 ‘John criticized self.’ (*zibun* = John, statue)

In (15a), the statue interpretation is excluded. Condition R is operative. On the other hand, in (15b), the statue reading is available and the condition is not operative. This means that the verb in (15a) has both semantic and lexical reflexivity, while the verb in (15b) lacks both. According to the prediction of Condition R in (9), the anaphor *ziko-* in (15a) is categorized as a Pure reflexive anaphor, as it is bound by its coargument *John* in the presence of lexical reflexivity. That *ziko-* refers only to its antecedent naturally follows if this anaphor is a Pure reflexive anaphor that functions as a variable. The anaphor *zibun* in (15b), in contrast, is bound by its coargument in the absence of lexical reflexivity, so this anaphor is categorized as a Near reflexive anaphor. The Near reflexive function ( $f(x)$ ) of *zibun* takes its antecedent *John* as input and returns a referential extension of it, namely ‘the statue of John.’

This categorization is consistent with the result in the comparative deletion construction test. (16a) with the Pure reflexive anaphor *ziko-* has only the sloppy identity reading. In contrast, if the Near reflexive *zibun* is used as in (16b), either the sloppy identity reading or the non-sloppy identity reading is available.

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- (i) John-ga zi-satu-si-ta.  
 John-Nom self-killing-do-Past  
 ‘John killed himself.’

We emphasize that not all *zi-/ziko-*verbs take the affix as their internal argument. The same affixes function as adjuncts in some *zi-/ziko-*verbs: for example, *ziko-sinsei-suru* means ‘apply ... by oneself,’ not ‘apply oneself (to ...).’ Here, we assume that *ziko-*verbs such as *ziko-syookai-suru* ‘introduce oneself,’ *ziko-suisen-suru* ‘nominate oneself,’ *ziko-giman-suru* ‘deceive oneself,’ and *ziko-keihatu-suru* ‘enlighten oneself’ take the *ziko-*affix as their internal arguments, as does *ziko-hihan-suru* ‘criticize oneself’ in (15a).

<sup>6</sup> We share the judgments in (15) and (16) with Shimada (2006) and Miura (2008) who also apply these diagnostics to Japanese anaphors and propose different analyses.

- (16)a. Mary-wa John yorimo hagesiku ziko-hihan-si-ta.  
 Mary-Top John than severely self-criticism-do-Past  
 ‘Mary criticized herself more severely than John criticized himself.’ (Sloppy)  
 \*‘Mary criticized herself more severely than John criticized her.’ (\*Non-sloppy)
- b. Mary-wa John yorimo hagesiku zibun-o hihan-si-ta.  
 Mary-Top John than severely self-Acc criticism-do-Past  
 ‘Mary criticized herself more severely than John criticized himself.’ (Sloppy)  
 ‘Mary criticized herself more severely than John criticized her.’ (Non-sloppy)

The Pure reflexive anaphor *ziko-* is a variable, so the semantic structure of the comparative deletion construction sentence (16a) is (17). The reference of anaphor of the embedded sentence has to be identical with the subject, so the sloppy identity reading is obligatorily induced.

- (17) [criticize (Mary,Mary)] better than [criticize (John,John)]

On the other hand, in (16b), the Near reflexive anaphor *zibun* is not a variable and can have its own index. There are two possible semantic representations for the sentence as in (18a) and (18b). If the structure is (18a), the sloppy identity reading is induced. When the structure is (18b), the non-sloppy identity reading is yielded.<sup>7</sup>

<sup>7</sup> In addition to the (un)availabilities of statue readings and non-sloppy identity readings, the affixal anaphor *ziko-* and the non-affixal anaphor *zibun* show a different pattern with respect to the (un)availability of non-local binding. In (i), *ziko-* allows only the local antecedent *John*. On the other hand, *zibun* in (ii) allows the non-local antecedent *Mary* as well as the local *John*. The locality requirement of the *ziko-* affix would be attributed to its bound-morpheme nature. The availability of the non-local antecedent of *zibun* is one of the prolonged discussions in the Japanese generative grammar literature. We do not review any analyses as this issue is beyond the topic of this paper.

- (i) Mary-wa John-ga ziko-hihan-si-ta to omot-ta.  
 Mary-Top John-Nom self-criticism-do-Past that think-Past  
 ‘Mary<sub>i</sub> thought that John<sub>j</sub> criticized self<sub>\*i/j</sub>.’
- (ii) Mary-wa John-ga zibun-o hihan-si-ta to omot-ta.  
 Mary-Top John-Nom self-Acc criticism-do-Past that think-Past  
 ‘Mary<sub>i</sub> thought that John<sub>j</sub> criticized self<sub>i/j</sub>.’

Also, *ziko-* and *zibun* behave differently in another aspect. When they take plural subjects, they induce different readings. With the plural subject *John to Mary* ‘John and Mary,’ the *ziko-* example (iii) allows the collective reading: the *John* and *Mary* pair did an own-pair criticizing event, while the *zibun* example (iv) does not allow this reading. The latter allows only the distributive reading: *John* and *Mary*, respectively, did a self-criticizing event. This reading is available in (iii) too.

- (iii) [John to Mary]-ga ziko-hihan-si-ta.  
 [ J and M ]-Nom self-criticism-do-Past  
 ‘John and Mary criticized themselves.’ (distributive / collective)
- (iv) [John to Mary]-ga zibun-o hihan-si-ta.  
 [ J and M ]-Nom self-Acc criticism-do-Past  
 ‘John and Mary criticized themselves.’ (distributive /\*collective)

Interestingly, in Chinese as well, the non-affixal anaphor *ziji* ‘self’ that occurs with a plural subject induces only the distributive reading as in (vi). If the affixal anaphor *ziwo-* is used as in (v), the collective reading is also available.

- (18) a.  $\lambda x[\text{criticize}(x, f(x))](\text{Mary}_i)$  better than  $\lambda x[\text{criticize}(x, f(x))](\text{John})$   
 b.  $\lambda x[\text{criticize}(x, f_i(x))](\text{Mary}_i)$  better than  $\lambda x[\text{criticize}(x, f_i(x))](\text{John})$

Now, in order to see if the classification of items based on the affixal and non-affixal status difference is extendable to a different type of anaphor, namely reciprocal anaphors, let us apply the two diagnostics to Japanese reciprocal anaphors.<sup>8</sup> This language has three types of reciprocal anaphors: the affixal anaphor *sougo-* and the non-affixal forms *sougo* and *otagai*, all mean ‘one another.’ In (19), the Madame Tussaud context diagnostic is applied. The affixal *sougo-* cannot refer to statues as in (19a), while the non-affixal forms *sougo* in (19b) and *otagai* in (19c) can.

- (19) a. [Ringo to John]-wa *sougo*-hihan-si-ta.  
 [Ringo and John]-Top one.another-criticism-do-Past  
 ‘Ringo criticized John and John criticized Ringo.’ (Actual reading)  
 \*‘Ringo criticized the statue of John and John criticized the statue of Ringo.’  
 (\*Statue reading)
- b. [Ringo to John]-wa *sougo*-o hihan-si-ta.  
 [Ringo and John]-Top one.another-Acc criticism-do-Past  
 ‘Ringo criticized John and John criticized Ringo.’ (Actual reading)  
 ‘Ringo criticized the statue of John and John criticized the statue of Ringo.’  
 (Statue reading)
- c. [Ringo to John]-wa *otagai*-o hihan-si-ta.  
 [Ringo and John]-Top one.another-Acc criticism-do-Past  
 ‘Ringo criticized John and John criticized Ringo.’ (Actual reading)  
 ‘Ringo criticized the statue of John and John criticized the statue of Ringo.’  
 (Statue reading)

In the comparative deletion construction, in (20), the three items show different patterns. If the affixal form *sougo-* is used as in (20a), only the sloppy identity reading is induced. In contrast, if the non-affixal forms *sougo* and *otagai* are used as in (20b) and (20c), the non-sloppy identity readings are also available.

- (20)a. Mary-tati-wa John-tati yorimo hagesiku *sougo*-hihan-si-ta.  
 Mary-Pl-Top John-Pl than severely one.another-criticism-do-Past  
 ‘Members of the Mary group criticized themselves more severely than members  
 of the John group criticized themselves’ (Sloppy)

- 
- (v) Zhangsan he Lisi zai ziwo-piping.  
 Zhangsan and Lisi at self-criticize  
 ‘Zhangsan and Lisi are criticizing themselves.’ (distributive /collective)
- (vi) Zhangsan he Lisi zai piping ziji.  
 Zhangsan and Lisi at criticize self  
 ‘Zhangsan and Lisi are criticizing themselves.’ (distributive /\*collective)  
 (based on Huang, 2001, (32a) and (12a))

Why only affixal anaphors allow collective readings and why non-affixal anaphors strictly require distributive ones in languages like Japanese and Chinese should be worked out. We leave these issues for future research.

<sup>8</sup> I am indebted to Hajime Hoji for pointing out the applicability of the proposed classification to reciprocals.

- \*‘Member of the Mary group criticized themselves more severely than the John group criticized the Mary group.’ (\*Non-sloppy)
- b. Mary-tati-wa John-tati yorimo hagesiku sougo-o hihan-si-ta.  
 Mary-PI-Top John-PI than severely one.another criticism-do-Past  
 ‘Members of the Mary group criticized themselves more severely than members of the John group criticized themselves’ (Sloppy)  
 ‘Member of the Mary group criticized themselves more severely than the John group criticized the Mary group.’ (Non-sloppy)
- c. Mary-tati-wa John-tati yorimo hagesiku otagai-o hihan-si-ta.  
 Mary-PI-Top John-PI than severely one.another criticism-do-Past  
 ‘Members of the Mary group criticized themselves more severely than members of the John group criticized themselves’ (Sloppy)  
 ‘Member of the Mary group criticized themselves more severely than the John group criticized the Mary group.’ (Non-sloppy)

We need more evidence before we conclude that there are ‘Pure reciprocal anaphors’ and ‘Near reciprocal anaphors’ in languages and that the affixal *sougo-* is a Pure reciprocal and the non-affixal *sougo* and *otagai* are Near reciprocals in Japanese. What is interesting here is that the affixal and non-affixal difference corresponds to semantic difference of items in both reflexive anaphors and reciprocal anaphors. The relation between differences in morphology and semantics of anaphors is intriguing and important. We leave this issue for future research.

#### 4.2.2 Other languages

Korean, Chinese, Turkish, Russian and Italian, like Japanese, have both affixal and non-affixal anaphors: Korean has *caki-* and *caki* ‘self’ as in (21), Chinese has *ziwo-* and *ziji* ‘self’ as in (22), Turkish has *-ni* and *kendi* ‘self’ as in (23), Russian has *-sja* and *sebja* ‘self’ as in (24), and Italian has *se-* and *se stesso* ‘self’ as in (25). These items show the exact same patterns with *ziko-* and *zibun*, respectively.

In (21)-(25), in the Madame Tussaud context, if the affixal anaphors: *caki-*, *ziwo-*, *-ni*, *-sja* and *se-*, are used as in the (a) examples, Condition R is operative and the statue readings are excluded. In contrast, when the non-affixal anaphors: *caki*, *ziji*, *kendi*, *sebja* and *se stesso*, are used, as the (b) examples show, Condition R vacuously applies and the statue interpretations are available. In these languages, the verbs lexically lack any reflexivity, and reflexivity is marked by the affixal anaphors. Affixal anaphors are Pure reflexive anaphors that are bound by their coarguments in the presence of lexical reflexivity, while non-affixal ones are Near reflexive anaphors that are bound by their coarguments in the lack of lexical reflexivity.

- (21) a. Chelswu-ka caki-piphan-ha-yss-ta. [Korean]  
 Chelswu-Nom self-criticism-do-Past-Dec  
 ‘Chelswu criticized himself.’ (*caki-* = Chelswu, \*statue)
- b. Chelswu-ka caki-lul piphan-ha-yss-ta.  
 Chelswu-Nom self-Acc criticism-do-Past-Dec  
 ‘Chelswu criticized himself.’ (*caki* = Chelswu, statue)

(based on Kang (2001, (18)))

- (22) a. Lisi zao ziwo-piping.<sup>9</sup> [Chinese]  
 Lisi at self-criticize  
 ‘Lisi criticized himself.’ (*ziwo-* = Lisi, \*statue)
- b. Lisi zao piping ziji.  
 Lisi at criticize self  
 ‘Lisi criticized himself.’ (*ziji* = Lisi, statue)
- (23) a. Ahmet yika-n-di.<sup>10</sup> [Turkish]  
 Ahmet wash-self-Past.  
 ‘Ahmet washed himself.’ (*-ni* = Ahmet, \*statue)
- b. Ahmet kendi yikadi.  
 Ahmet self-acc wash-Past  
 ‘Ahmet washed himself.’ (*kendi* = Ahmet, statue)
- (24) a. Yeltsin zastrelil-sja. [Russian]  
 Yeltsin shot-self  
 ‘Yeltsin shot himself.’ (*-sja* = Yeltsin, \*statue)
- b. Yeltsin zastrelil sebja.  
 Yeltsin shot self  
 ‘Yeltsin shot himself.’ (*sebja* = Yeltsin, statue) (Lidz, 2001a, (26))
- (25) a. Gianni si-lava. [Italian]  
 Gianni self-washes  
 ‘Gianni washes himself.’ (*si-* = Gianni, \*statue)
- b. Gianni lava se stesso  
 Gianni washes self same  
 ‘Gianni washes himself’ (*se stesso-* = Gianni, statue) (Giorgi, 2007, (15, 18))

Some languages have only affixal forms of anaphor. The proposed classification in (8) is borne out in these languages as well. Anaphors in these languages are Pure reflexive anaphors. Spanish is such a language. In the Madame Tussaud context in (26), the affixal anaphor *se-* ‘self’ never refers to a statue.

- (26) El zorro se-lavó. [Spanish]  
 The zorro self-washed  
 ‘Zorro washed himself.’ (*se-* = Zorro, \*statue) (Based on Shimada (2006, 60))

It seems that the proposed classification in (8) holds in languages that has only non-affixal anaphors. These anaphors are Near reflexive anaphors under the proposed classification. English is such a language.<sup>11</sup> In the Madame Tussaud context in (27), the English anaphor *himself* can refer to a statue of its antecedent. *Himself* behaves as a Near reflexive anaphor.

<sup>9</sup> The Chinese data and judgement in (22) are from Angela He and Wing Yee Chow.

<sup>10</sup> The Turkish data and judgement in (23) are from Ilknur Oded.

<sup>11</sup> English has several adjectives and nouns that morphologically incorporate *self-* such as *self-destroying*, *self-explanatory* and *self-delusion*, *self-portrait*, but this language has few verbs with *self-*. *Self-inflict* in (i) is an example of ‘*self-verb*.’ We, however, do not regard *self-* in adjectives, nouns and verbs as an equivalent of the *ziko-*

- (27) Reagan dressed himself in the museum. (*himself* = Reagan, statue)  
(Lidz, 2001a, (22b))

However, recall that the parametric variation in anaphor classification in (7) and (8) is based on how reflexivity marking occurs. Then, in English, it is not clear how semantic reflexivity and lexical reflexivity are marked on verbs because this language does not have a Pure reflexive anaphor that marks semantic reflexivity.

We believe that English is a language that classifies anaphors based on their affixal / non-affixal difference. English has lexically reflexive verbs that express reflexive meanings without taking reflexive anaphors, such as *wash* in *John washes* (= *John washes himself*), *behave* and *dress*. Lidz (2001a) shows that these lexically reflexive predicates induce Pure reflexivity, giving the data in (28).

- (28) Reagan dressed in the museum. (Actual reading / \*Statue reading)  
(Lidz, 2001a, (22a))

In (28), the predicate *dress* does not take any reflexive anaphor. In the Madame Tussaud context, the sentence is interpreted as ‘Reagan did a self-dressing in the museum,’ but not as ‘Reagan dressed the statue that depicts him in the museum’ (Cf. (27) with *himself*). The predicate *dress* in this example has both semantic reflexivity and lexical reflexivity because Condition R is operative in the sentence. One possible account for this case is that this language has a covert Pure reflexive anaphor that is in the form of an affix. We assume that this affix marks both semantic reflexivity and lexical reflexivity in the lexicon. Notice that what is done in the lexicon in English is both semantic reflexivity marking and lexical reflexivity marking, while what is done in the lexicon in languages like Dutch in (10) is only lexical reflexivity marking. For, in Dutch, semantic reflexivity is marked by the Pure reflexive anaphor *zich*. Thus, English is a language that categorizes anaphors based on the affixal / non-affixal difference, not a language like Dutch that categorizes anaphors based on their morphological complexity.

Further, in English, the reduced form of anaphors such as *'mself* is also available, and this form of anaphor behaves like a Pure reflexive anaphor: in (29), *'mself* cannot refer to a statue of its antecedent.<sup>12</sup> This case also needs to be explained.

- (29) Reagan dressed *'mself* in the museum. (*'mself* = Reagan, \*statue)

Reduced forms of anaphor have many similarities with affixes: for example, both cannot be stressed on them. A possible and simple explanation in this case is that English has both the affixal Pure reflexive anaphor *'mself* and the non-affixal Near reflexive anaphor *himself*. If the above two accounts are available, we can simply say that, in English, the ‘affixal anaphors’: covert affixal anaphors or reduced forms of anaphor like *'mself*, are Pure reflexive anaphors,

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affix in *ziko*-verbs like *ziko-hihan-suru* ‘criticize oneself’ in (15a): *self*- behaves like an adjunct, while *ziko*- behaves as an argument. Thus, we do not think English has *self*- as an affixal reflexive anaphor.

(i) By self-inflicting these wounds, they tried to win our sympathy. (Huang, 2001, (31a))

<sup>12</sup> I thank Norbert Hornstein for suggesting the stressability analysis and giving the data and judgement in (29).

while the non-affixal anaphors like *himself* are Near reflexive anaphors, in accordance with the classification in (8).

The data in Japanese and other languages supports our proposal in (8): affixal anaphors are Pure reflexive anaphors and non-affixal ones are Near reflexive anaphors in some languages.

## 5 Concluding remarks

In this paper, we have claimed that reflexive anaphors in languages are classified based on their reflexivity (semantic) differences as Pure reflexive and Near reflexive anaphors, as proposed in Lidz (1996, 2001a,b). Also, we have proposed that there is a parametric variation in classification of reflexives into the two types: while in some languages (e.g. Dutch, Kannada, Norwegian etc.), morphologically simplex anaphors are Pure reflexive anaphors and morphologically complex anaphors are Near reflexive anaphors, affixal reflexives are Pure reflexive anaphors and non-affixal reflexives are Near reflexive anaphors in other languages (e.g. Japanese, Russian, Turkish, Spanish etc.). This proposal is based on the prediction in (9) that is made by Condition R (Lidz, 1996, 2001a,b: given in (5)). We have claimed that this parametric variation is due to the ways of the two types of reflexivity marking in languages. Table 1 is the summary of our proposal.

	Pure reflexive anaphors	Near reflexive anaphors	reflexivity marking
	morphologically simplex	morphologically complex	
Dutch	<i>zich</i>	<i>zichzelf</i>	lexical reflexivity and semantic reflexivity marked independently
Norwegian	<i>seg</i>	<i>seg selv</i>	
Danish	<i>sig</i>	<i>sig selv</i>	
Kannada	<i>tann</i>	<i>tann-tanne</i>	
Malayalam	<i>tan</i>	<i>tan-tanne</i>	
	affix	non-affix	
Japanese	<i>ziko-</i>	<i>zibun</i>	lexical reflexivity and semantic reflexivity marked simultaneously
Russian	<i>-sja</i>	<i>sebja</i>	
Korean	<i>caki-</i>	<i>caki</i>	
Spanish	<i>se-</i>	n/a	
English	covert affix. <i>'mself</i>	<i>himself</i>	

Table 1

It is interesting that the present proposal that affixal anaphors are Pure reflexive anaphors and non-affixal ones are Near reflexive anaphors holds not only in some Altaic languages but also in some Romance languages. Also, as the Japanese data in Section 4.2.1 shows, it seems that the affixal and non-affixal distinction corresponds to the type difference of items holds not only in reflexive anaphors but also in reciprocal anaphors. The parametric variation analysis of anaphor classification sheds a new light on the typological research of reflexivity and coreference in generative grammar.

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