

Remarks on Anaphoric Expressions*

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1. Introduction

The distribution of anaphoric expressions in the coargument context has provoked a great deal of controversy in constructing the theory of binding. The standard binding theory advocated by Chomsky (1980,1981) is a theory of nominal types. Under this nominal approach, the distributive difference among anaphoric expressions is attributed to the difference in their inherent properties. Anaphoric expressions are classified into two types in accordance with referential defectiveness: referentially defective ones are classified as anaphors and referentially independent ones are classified as pronouns. Their distribution is constrained by the binding principles, which are formalized with special reference to the types of anaphoric expressions and the domain in which each type of anaphoric expressions should be bound or free.

Reinhart and Reuland (1993) argue against this nominal approach to the binding theory. Some languages have more than one anaphor, and in such languages the distribution of anaphors is not quite the same. Observing that the property of predicates plays a central role in determining the distribution of anaphors, Reinhart and Reuland argue that the binding theory is not a theory of the distribution of nominal expressions, but rather a theory of the reflexivity of predicates. Accordingly, the binding conditions are reformulated in terms of the reflexivity of predicates. Within this predicate-centered approach, a predicate can be reflexive-marked in two ways: by being lexically reflexive or by taking as one of its arguments an anaphor with the reflexivizing function. Anaphors are classified into two types in accordance with their ability to reflexivize a predicate: reflexivizers and non-reflexivizers. Referentially, however, they are taken to be identical.

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Lidz (2000, 2001) proposes a slightly different way to classify anaphors. Anaphors are classified in accordance with the way they receive a referent: pure-reflexives, whose referent must be purely identical to that of the antecedent, and near-reflexives, whose referent is related but not necessarily identical to that of the antecedent. Lidz further argues that there is a strict correspondence between the two ways of reflexive-marking and the semantic differences of pure-reflexivity and near-reflexivity.

Both the nominal approach and the predicate-centered approach are insufficient for explaining the fact that language has two semantically distinguished ways to reflexivize a predicate. Although Lidz's theory can explain this fact, when cross-linguistic variation is taken into consideration, it faces a problem: the strict correspondence between formal distinction and semantic distinction does not hold universally.

The aim of this paper is two fold. The first aim is to show that the correspondence between formal distinction and semantic distinction does not hold universally, providing examples from Japanese and comparing them with those from Kannada and Dutch. The cross-linguistic variation observed among these typologically different languages also reveals that there are some preferences in determining the distribution of anaphoric expressions and their interpretations. The second aim of this paper is to show that these preferences can be derived from more general principles formulated under the notion of 'economy.' In particular, it is shown that an approach that reformulates the theory of binding in terms of these economy principles is a better way to pursue.

2. Pure-Reflexivity and Near-Reflexivity

Both Kannada and Dutch have a three-way contrast in the anaphoric system: pronouns, simplex anaphors and complex anaphors. The distribution in the coargument context varies among these three types of anaphoric expressions. Consider the following Kannada sentences:

- (1) a. *Hari_i tann-annu_i hoDe-d-a.
 Hari self-ACC hit-PST-3SM
- b. Hari_i tann-annu_i hoDe-du-koND-a.
 Hari self-ACC hit-PP-REFL.PST-3SM
 'Hari hit himself'
- (2) Hari_i tann-annu-taane_i hoDe-d-a.
 Hari self-ACC-self hit-PST-3SM
 'Hari hit himself'

(Lidz (2000:248))

- (3) *Hari_i awan-annu_i hoDe-d-a
 Hari he-ACC hit-PST-3SM
 'Hari hit him'

(Lidz (2000:230))

In Kannada a particular morpheme *-koLLu* is attached to a verb to reflexivize it.¹ As illustrated in (1), the simplex anaphor *tannu* allows a coargument antecedent only when the predicate is reflexive-marked by this morpheme. The complex anaphor *tannu-taane* allows a coargument antecedent even in the absence of this morpheme, while the pronoun *awanu* disallows it. Similar facts are observed in Dutch.

- (4) a. Oscar_i haat zichzelf_i
 Oscar hates selfself
 b. *Oscar_i haat zich_i
 Oscar hates self
 c. *Oscar_i haat hem_i
 Oscar hates him
 'Oscar hates himself'
- (5) a. Oscar_i gedraagt zich_i
 Oscar behaves self
 b. *Oscar_i gedraagt hem_i
 Oscar behaves him
 'Oscar behaves himself'

(Reuland (2001:451-452))

As shown in (4) and (5), the distribution of the simplex anaphor *zich* is sensitive to the selection of predicates, while the complex anaphor *zichzelf* and the pronoun *hem* do not exhibit such sensitivity to the selection of predicates. Although the phonetic realization of a particular morpheme which reflexive-marks a predicate is absent in Dutch, it is assumed that some predicates are lexically specified as reflexive (Reinhart and Reuland (1993)). With this assumption, the simplex anaphor is considered to be sensitive to such intrinsic reflexivity of a predicate.

Kannada and Dutch have the following properties in common: (i) the pronoun is excluded from the coargument context; (ii) the complex anaphor allows a coargument antecedent irrespective of the reflexivity of predicate; (iii) the simplex anaphor allows a coargument antecedent only when the predicate is reflexive. Note that both languages employ two

¹ *-koNDu* in (1b) and (6b) is the past verbal participial form of the morpheme *-koLLu*.

anaphors in the coargument context, although their distribution differs. The view supported by some linguists is that there are two ways to express reflexivity (Reinhart and Reuland (1993), Lidz (2000, 2001)). One is lexical/morphological reflexive-marking: a predicate is intrinsically reflexive or morphologically reflexive-marked by a particular morpheme. The other is syntactic reflexive-marking: a predicate takes a complex anaphor which has a reflexivizing function as one of its arguments.²

Lidz (2000, 2001) observes the following contrast between lexical/morphological reflexive-marking and syntactic reflexive-marking. Consider the following sentences:

- (6) a. Hari_i tann-annu-taane_i nooD-id-a.
 Hari self-ACC-self see-PST-3SM
 b. Hari_i tann-annu_i nooD-du-i-koND-a.
 Hari self-ACC see-PP-REFL.PST-3SM
 ‘Hari saw himself’

(Lidz (2000:236))

Suppose that Hari enters into a museum which has a statue depicting him. The sentence with the syntactic reflexive-marking in (6a) allows two readings: a true identity reading (i.e. *Hari saw Hari himself*) and a statue reading (i.e. *Hari saw his statue*). The sentence with the morphological reflexive-marking in (6b), on the other hand, allows only the true identity reading. The same is true of the Dutch sentences in (7).

- (7) a. Ringo_i scheert zichzelf_i
 Ringo shaves selfself
 b. Ringo_i scheert zich_i
 Ringo shaves self
 ‘Ringo shaves himself’

(Lidz (2001:128))

The sentence with the syntactic reflexive-marking in (7a) allows both the true identity reading and the statue reading, while the sentence with the lexical reflexive-marking in (7b) allows only the true identity reading.

The semantic contrast between two ways of reflexive-marking is also observed in the comparative deletion context.

² Contrary to Reinhart and Reuland (1993), who classify complex anaphors and simplex anaphors as reflexivizers and non-reflexivizers, respectively, Lidz (2000, 2001) claims that simplex anaphors are pure-reflexives while complex anaphors are near-reflexives. In this paper, I will assume that complex anaphors have a reflexivizing function.

- (8) a. Rashmi_i Sitta-ginta cheenage tann-annu-taane_i rakshis-utt-aaLe.
 Rashmi Sita-COMP better self-ACC-self defends-NPST-3SF
 (sloppy/strict)
- b. Rashmi_i Sitta-ginta cheenage tann-annu_i rakshisi-koLL-utt-aaLe.
 Rashmi Sita-COMP better self-ACC defends-REFL-NPST-3SF
 (sloppy/*strict)
- ‘Rashmi defends himself better than Sitta’
 (Lidz (2000:234))

The sentence with the syntactic reflexive-marking in (8a) allows both the sloppy reading (i.e. *Rashmi defends Rashmi better than Sita defends Sita*) and the strict reading (i.e. *Rashmi defends Rashmi better than Sita defends Rashmi*). The sentence with the morphological reflexive-marking in (8b) allows only the sloppy reading. This contrast holds for the Dutch sentences in (9) as well.

- (9) a. Zij_i verdedigde zichzelf_i beter dan Peter
 she defended selfself better than Peter
 (sloppy/strict)
- b. Zij_i verdedigde zichzelf_i beter dan Peter
 she befended self better than Peter
 (sloppy/*strict)
- ‘She defended herself better than Peter’
 (Lidz (2001:129))

Both the sloppy and strict readings are available for the sentence with the syntactic reflexive marking in (9a), while only the sloppy reading is available for the one with the lexical reflexive-marking in (9b).

These facts indicate that two ways of reflexive-marking should be semantically distinguished (Lidz (2000, 2001)). The sentence with a lexical/morphological reflexive-marking requires true identity of the referents of an anaphor and its antecedent, while the sentence with a syntactic-reflexive marking does not. Based on this fact, Lidz (2000, 2001) claims that the interpretation obtained from the lexical/morphological reflexive-marking is a pure-reflexive one, while that obtained from the syntactic reflexive-marking is a near-reflexive one. Under this theory, the interpretation of predicates depends on the semantic property of anaphoric expressions. Anaphors are classified into two types in accordance with the way they receive a referent: pure-reflexives and near-reflexives. The referent assignment to a pure-reflexive entirely depends on the referent assignment to its antecedent. Thus, in the semantic representation a pure-reflexive is

represented as a bound variable and the referent assignment occurs only once. A near-reflexive, on the other hand, is distinguished from its antecedent in the semantic representation. The referent of a near-reflexive is independently assigned, though it may happen to be the same entity as the referent of its antecedent in the actual world. A predicate which takes a pure-reflexive as its argument is semantically represented as (10a), while a predicate which takes a near-reflexive is represented as (10b).

- (10) a. $\lambda x [P(x, x)]$
 b. $\lambda x [P(x, f(x))]$

Lidz (2000, 2001) further claims that the reason why simplex anaphors exhibit sensitivity to the reflexivity of predicates is attributed to an independent principle, Condition R.

(11) Condition R

$$\begin{array}{ccc} \lambda x [P(x, x)] & \longleftrightarrow & (\theta 1 = \theta 2) \\ \text{semantics} & & \text{theta-grid} \end{array}$$

(Lidz (2000:236))

This condition requires that a semantically reflexive predicate must be lexically reflexive and that a lexically reflexive predicate must be semantically reflexive. Simplex anaphors (pure-reflexives in Lidz's term) is forced to occur with lexically/morphologically reflexive predicates, because only lexical/morphological reflexive-marking can affect the lexical specification of a predicate, specifying two θ -roles of a predicate identical. Thus, under this theory, the lexical/morphological reflexive-marking is a necessary and sufficient condition to express pure-reflexivity. The syntactic reflexive-marking always corresponds to near-reflexivity.

3. Pure-Reflexivity via Syntactic Reflexive-Marking

Unlike Kannada and Dutch, Japanese seems to lack the intrinsically reflexive two-place predicates that force the true identity of the referents of two arguments (cf. Tsujimura and Aikawa (1996)).^{3,4} In addition to this difference, there is another difference between

³ Aikawa (1993) and Noguchi (1995) take the predicate with the prefix *ziko-* as an intrinsically reflexive two-place predicate.

(i) John-ga zibun/zibun-zisin-o ziko-bengosi-ta
 John-NOM self/self-self-ACC self-defend-PST
 'Lit. John self-defended himself'

(Aikawa(1993:74))

I disagree with their treatment of this predicate, because for me and some of my informants a sentence

(12) a. (?)Junji_i-wa kare-zisin_i-o nagut-ta
 Junji-TOP him-self-ACC hit-PST
 b. Junji_i-wa zibun-zisin_i-o nagut-ta
 Junji-TOP self-self-ACC hit-PST
 c. *Junji_i-wa kare_i-o nagut-ta
 Junji-TOP him-ACC hit-PST
 d. Junji_i-wa zibun_i-o nagutta
 Junji-TOP self-ACC hit-PST
 ‘Junji hit himself’

like (i) is unacceptable. The predicate with prefix *ziko-* is most naturally accepted when the object is absent.

- (ii) John-ga ziko-bengosi-ta
John-NOM self-defend-PST
'John self-defended'

⁴ Although Aikawa (1993) and Noguchi (1995) argue that some Japanese predicates are intrinsically reflexive and that some Japanese anaphoric expressions are sensitive to the reflexivity of the predicate, I disagree with their observations. This is because most of my informants do not show that anaphors are sensitive to the intrinsic reflexivity of predicates, especially with respect to non-Sino Japanese predicates. For example, although Aikawa and Noguchi argue that *semeru* is intrinsically reflexive, while *naguru* is not, no difference is observed in the acceptability of the sentences with these predicates.

- | | | |
|------|--|-----------------------|
| (i) | Junji-wa (?)kare-zisin/zibun-zisin/zibun/*kare-o
Junji-TOP
'Junji accused himself' | seme-ta
accuse-PST |
| (ii) | Junji-wa (?)kare-zisin/zibun-zisin/zibun/*kare-o
Junji-TOP
'Junji hit himself' | nagu-tta
hit-PST |

187

- (13) a. ^{??/?}Hiroshi_i-wa kagami-no naka-ni san-nin-no kare-zisin_i-o
 Hiroshi-TOP mirror-GEN inside three-CL-GEN him-self-ACC
 mi-ta
 see-PST
- b. ^{*/??}Hiroshi_i-wa kagami-no naka-ni san-nin-no zibun-zisin_i-o
 Hiroshi-TOP mirror-GEN inside three-CL-GEN self-self-ACC
 mi-ta
 see-PST
- ‘Lit. Hiroshi saw three of himself in the mirror’

In the sentences (13a) and (13b), the existence of the numeral quantifier, *san-nin*, induces a reading according to which there are three different images of the subject *Hiroshi* in the mirror. Although the acceptability of these sentences differs slightly among speakers, the sentence with *kare-zisin* in (13a) is better than the sentence with *zibun-zisin* in (13b) under this reading.

Second *kare-zisin* allows both the sloppy and strict readings in VP-ellipsis and comparative ellipsis,⁵ while *zibun-zisin* allows only the sloppy reading.⁶

- (14) a. Junji_i-wa [Naoya yori-mo saki-ni] [_{VP} kare-zisin_i-o nagut-ta]
 Junji-TOP Naoya than early him-self-ACC hit-PST
 (sloppy/strict)
- b. Junji_i-wa [Naoya yori-mo saki-ni] [_{VP} zibun-zisin_i-o nagut-ta]
 Junji-TOP Naoya than early self-self-ACC hit-PST
 (sloppy/*strict)
- ‘Junji hit himself earlier than Naoya’
- (15) a. Junji_i-wa kare-zisin_i-ni toohyoo sita ga, Naoya-wa si-nak-atta
 Junji-TOP him-self-DAT vote-for-PST though, Naoya-TOP do-not-PST
 (sloppy/strict)

⁵ Hoji (1997, 1998) argues that the same interpretive possibilities in English VP-ellipsis are available only in Japanese comparative ellipsis. According to him, the sloppy reading obtained in Japanese VP-ellipsis is not a result of a bound-variable interpretation, but rather a result of discourse referent assignment. Although we do not go further into the discussion of an appropriate analysis of Japanese VP-ellipsis, note that the examples in (15) slightly differ from that discussed in Hoji (1997, 1998). See Hoji (1997, 1998) for the examples and his analysis.

⁶ Aikawa (1999) also points out the contrast between these two anaphoric expressions in VP-ellipsis. See Aikawa (1999: note 32).

- b. Junji-wa zibun-zisin_i-ni toohyoo sita ga, Naoya-wa si-nak-atta
 Junji-TOP self-self-DAT vote-for-PST though, Naoya-TOP do-not-PST
 (sloppy/*strict)

'Junji voted for himself, but Naoya didn't.'

Given the contrasts between *kare-zisin* and *zibun-zisin* exemplified in (13)-(15), it is obvious that these two anaphoric expressions are interpreted in different ways: the sentence with *zibun-zisin* requires the true identity of the referents of the anaphor and its antecedent, while the sentence with *kare-zisin* does not.⁷

Recall the facts observed in the previous section. In Dutch and Kannada, pure-reflexivity is expressed by lexical/morphological reflexive-marking, while near-reflexivity is expressed by syntactic reflexive-marking. Although Japanese lacks intrinsically reflexive predicates that force the true identity of two arguments, this does not mean that the semantic distinction between pure-reflexivity and near-reflexivity does not hold universally. The semantic contrast observed between *zibun-zisin* and *kare-zisin* in (13)-(15) naturally fits into the distinction between pure-reflexivity and near-reflexivity: *zibun-zisin* is interpreted as a bound variable, while *kare-zisin* is not. What this contrast indicates is that the semantic distinction between pure-reflexivity and near-reflexivity also holds in Japanese, but pure-reflexivity is not expressed by lexical/morphological reflexive-marking. Both pure-reflexivity and near-reflexivity are expressed by syntactic reflexive-marking in Japanese, being distinguished by the use of distinct complex anaphoric expressions. Contrary to the claim made by Lidz (2000, 2001), the evidence obtained in Japanese leads to the conclusion that lexical/morphological reflexive-marking is only a sufficient but not a necessary condition to express pure-reflexivity. To put it another way, the semantic distinction between

⁷ We do not go further into the discussion of another anaphoric expression that allows a coargument antecedent, *zibun*. As Aikawa (1993) observes, the sentence with the numeral quantifier, *san-nin*, is acceptable with this anaphor.

- (i) Hiroshi-wa kagami-no naka-ni san-nin-no zibun-o mi-ta
 Hiroshi-TOP mirror-GEN inside three-CL-GEN self-ACC saw-PST

'Lit. Hiroshi saw three of himself in the mirror'

This indicates that, like *kare-zisin*, *zibun* also near-reflexivizes a predicate. It is expected that *zibun* would allow both the sloppy and strict readings in the VP-ellipsis and the comparative ellipsis context. Although this prediction is born out, there is a strong tendency for the sloppy reading. I would like to leave open the treatment of *zibun*.

- (ii) Junji-wa [Naoya yori-mo saki-ni] [_{VP} zibun_i-o nagut-ta]
 Junji-TOP Naoya than early self-ACC hit-PST

'Junji hit himself earlier than Naoya'

(sloppy/strict)

- (iii) Junji-wa zibun_i-ni toohyoo-sita ga, Naoya-wa si-nak-atta
 Junji-TOP self-DAT vote-for-PST-though, Naoya-TOP do-not-PST

'Junji voted for himself, but Naoya didn't'

(sloppy/strict)

pure-reflexivity and near-reflexivity does not strictly correspond to the formal distinction between lexical/morphological reflexive-marking and syntactic reflexive-marking.

4. Economy-Based Approach

In the previous sections, we have seen the distribution of anaphoric expressions in the coargument context. Focusing on the interpretation of sentences with anaphoric expressions, we have shown that language has two semantically distinguished ways of reflexivizing a predicate, but a one-to-one correspondence between the semantic distinction and the formal distinction does not hold universally. The observed facts indicate that the way the distribution of anaphoric expressions is determined and the way each anaphoric expression receives a referent are not absolute, but rather relative to the distinctive property each language has. More specifically, not only the inherent property of anaphoric expressions but also the number of anaphoric expressions each language has and the presence/absence of a particular lexical/morphological process are also relevant to the determination of the distribution of anaphoric expressions and their interpretations.

Because languages differ from each other with respect to the factors stated above, the distribution of anaphoric expressions and their interpretations are not determined unambiguously by their intrinsic properties nor by the reflexivity of predicates. Rather, the distinctive properties each language has yield preferences for some anaphoric expressions over others. First, consider the determination of anaphoric expressions in expressing reflexivity. The examples in (1)-(5) and (12) show that the following generalization holds in Kannada, Dutch, and Japanese: a pronoun is excluded from the coargument context, while anaphors are not.⁸ In these three languages, anaphors are differentiated from pronouns in

⁸ In this respect, English diverges from these three languages. In English, a pronoun allows coargument antecedent, given an appropriate context (Reinhart (1983)).

(i) I know that Mary and Bill have in common. Mary adores him and Bill adores him too.

(Reinhart (1983:169))

In this structured-meaning context, it is possible to interpret the pronoun *him* to refer to *Bill*. Recently, Heim (1998) reformulates Reinhart's theory, introducing the notion of "guise". In Heim's theory, the coreferential interpretation differs from the bound variable interpretation in the identity requirement on the referents. Under the coreferential interpretation, the referents of the antecedent and the anaphoric expression are not strictly identical. They refer to different guises of the same entity in actual world. The intuition behind Heim's formalization of the coreferential interpretation and the bound variable interpretation is the same as that behind Lidz's (2000) distinction between near-reflexivity and pure-reflexivity. A question to ask is why a pronoun allows a coargument antecedent only in English. The three factors discussed above would be also crucial here. Unlike Dutch, Kannada, and Japanese, English has only a two-way contrast in the anaphoric system. Furthermore, it has no anaphoric expression without full ϕ -feature specification. Thus English would be forced to express pure-reflexivity by the anaphor (e.g. *himself*) with a reflexivizing function, and near-reflexivity by the pronoun without a reflexivizing function. This explanation, however, gives a wrong prediction on the interpretive possibility of the following English sentences.

their ϕ -feature specification: anaphors lack full ϕ -feature specification, while pronouns have it. More specifically, the ϕ -features of anaphors in Kannada (*tanmu* and *tanmu-taane*), Dutch (*zich* and *zichzelf*) and Japanese (*zibun* and *zibun-zisin*) are not fully specified, while those of pronouns in Kannada (*awanu*), Dutch (*hem*) and Japanese (*kare*) are fully specified. The fact that pronouns are excluded from the coargument context indicates that there is a preference for an anaphoric expression without full ϕ -feature specification over the one with full ϕ -feature specification.

The fact observed in Japanese suggests the existence of another preference. Unlike Dutch and Kannada, Japanese has another anaphoric expression with full ϕ -feature specification, namely, *kare-zisin*. Given the preference for an anaphoric expression without full ϕ -feature specification over the one with full ϕ -feature specification, it is expected that this anaphoric expression would be also excluded from the coargument context. Contrary to this expectation, *kare-zisin* allows a coargument antecedent as the example in (12a) shows. The behavioral difference between *kare* and *kare-zisin* indicates that the morphological difference between them plays a crucial role. What distinguishes *kare-zisin* from *kare* is that the former is morphologically complex, being affixed by *-zisin*. If we assume that the complex anaphoric expressions have a reflexivizing function while the simplex ones do not (Reinhart and Reuland (1993)), we can conclude that there is a preference for an anaphoric expression with a reflexivizing function over the one without a reflexivizing function.

Now, let us turn to the interpretive possibilities. As discussed in the previous sections, language has two semantically distinguished ways of reflexivizing a predicate. The sentence with anaphoric expressions is given a pure-reflexive interpretation or a near-reflexive interpretation. The way an anaphoric expression receives a referent differs in these two interpretations. In pure-reflexive interpretation, the referent assignment to an anaphoric expression depends on that to its antecedent: an anaphoric expression is interpreted as a bound variable. In near-reflexive interpretation, the referent assignment to an anaphoric expression is independent from that to its antecedent. The widely accepted view (e.g. Reinhart (1983), Grodzinsky and Reinhart (1993)) is that a bound variable interpretation is a natural way to express referential identity between two expressions. The identity as a result of the independent discourse referent assignments is considered to be a special case. Following this view, we can say that pure-reflexivity is more natural than near-reflexivity in expressing

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- (ii) Ringo falls on himself

(Jackendoff (1997:73))

- (iii) John defended himself better than Bill did.

(strict/sloppy)
(Hestvik (1995:213))

Against the prediction that the true identity of the referents of an antecedent and an anaphoric expression would be required in (ii) and (iii), the sentence (ii) marginally allows the statue-reading and the sentence (iii) allows both the strict and sloppy readings. I would like to leave open the precise

reflexivity.

As illustrated in (6)-(9), pure-reflexivity is expressed via lexical/morphological reflexive-marking, while near-reflexivity is expressed via syntactic reflexive-marking in Dutch and Kannada. This fact indicates that lexical/morphological reflexive-marking is more natural than syntactic reflexive-marking to express reflexivity. The lexical/morphological reflexive-marking, however, is not a deterministic way to express pure-reflexivity. As we have seen in section 3, the lack of lexical/morphological reflexive-marking in Japanese does not mean that Japanese cannot express pure-reflexivity. It is expressed by syntactic reflexive-marking in this language. This fact indicates that the use of lexical/morphological reflexive marking in naturally expressing reflexivity is not deterministic, but rather a result of preference: if language has lexical/morphological reflexive-marking, it is preferred to syntactic reflexive-marking. Furthermore, Japanese examples in (13)-(15) show that, although both pure-reflexivity and near-reflexivity are expressed via syntactic reflexive-marking, the anaphoric expression without full ϕ -feature specification appears in the former, while the anaphoric expression with full ϕ -feature specification appears in the latter. This fact again indicates the preference for an anaphoric expression without full ϕ -feature specification over the one with full ϕ -feature specification.

From the cross-linguistic variation observed in Kannada, Dutch and Japanese, we can conclude that the following three preferences exist.

- (16) a. An anaphoric expression without full ϕ -feature specification is preferred to an anaphoric expression with full ϕ -feature specification
- b. An anaphoric expression with a reflexivizing function is preferred to an anaphoric expression without a reflexivizing function.
- c. Lexical/ morphological reflexive marking is preferred to syntactic reflexive marking.

A question we should ask is what kinds of principles give rise to the preferences in (16). At this point, an approach that derives the theory of binding from economy principles is worth seeking (Reinhart (1983), Grodzinsky and Reinhart (1993), Richards (1997), Reuland (2001)). Under this approach, all anaphoric expressions are, in principle, freely allowed to take any NP as their antecedent. The issue under this approach is how under certain circumstances a particular interpretation is blocked. The previous studies mentioned above settle this issue by assuming that economy principles are at work in determining the interpretive possibilities. The issue can be restated here in terms of the preferences. In other words, the issue is how under certain circumstances a preference arises for some anaphoric expressions over others.

explanation of the distribution of English anaphoric expressions.

The answer that will be provided is that certain economy principles are at work and their existence results in the preference.

The preference in (16a) can be attributed to a number of cross-modular operations suggested by Reuland (2001). Reuland claims that the relation established in the syntactic module (via checking in the sense of Chomsky (1995)) is more economical than that established in the semantic or discourse module, because the former reduces the number of cross-modular operations. The preference in (16c) can be ascribed to the number of operations included in the syntactic or semantic derivation. If we assume that the complex anaphor undergoes some operation in order to reflexivize a predicate (e.g. cliticization in Chomsky (1993)), this will increase the number of operations involved. Then, the derivation without this operation, namely the one with lexical/morphological reflexive-marking, will be more economical than the one with this operation. Given this assumption about complex anaphors, the preference in (16b) is attributable to the number of cross-modular operations. If the relation between an antecedent and an anaphor with a reflexivizing function is established in the syntactic or semantic module while that between an antecedent and an anaphoric expression without a reflexivizing function is established in the discourse module, the former relation will be more economical than the latter relation.

Although this way of explanation is quite speculative and should be properly formalized, the cross-linguistic variation observed here could be the epiphenomena of the solution each language takes to assign a particular form to a meaning in the most economical way.

5. Concluding Remarks

Through the cross-linguistic observation, it has turned out that languages have two semantically distinguished ways to reflexivize a predicate, but the semantic distinction between pure- and near-reflexivity does not strictly correspond to the formal distinction between lexical/morphological and syntactic reflexive-marking.

I have shown a possible way to explain the observed facts, along the line of an economy-based approach to the binding theory. I have pointed out that not only the inherent property of anaphoric expressions, but also the number of anaphoric expressions each language has and the presence/absence of a particular morphological/lexical process should be taken into consideration. All of the observed facts could be explained along this line, but I would like to leave the proper formalization of the theory for the future.

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