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A Language Typology in Anaphoric Dependency: Evidence from Chinese, English, Japanese, Icelandic, and Korean

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Abstract

This paper reviews the Prominence Hierarchy in Kim (1998, 2000a, 2000b) that were proposed to compute a different degree of preference when there is more than one option for anaphor interpretations. Employing the parameterized definition of a potential anaphor in a given language, this paper extends its basic spirit to interpretations of anaphors in other languages such as English, Icelandic, Japanese and Chinese.

Keywords: preference, acceptability, anaphors, dependency, prominence, intervention

1. Introduction

Kim (1998, 2000a, 2000b) captures seemingly chaotic uses of anaphors by the Prominence Principle that makes use of the

Prominence Hierarchy based on grammatical function. This paper shows that the proposal based on the Prominence Hierarchy has some empirical advantages compared to earlier attempts to account for anaphor resolution in the sense that it covers various uses of anaphors in a unified manner without any distinction of types of anaphors. As is well known, the goal that has been commonly pursued in treatments of anaphors is that all anaphors are subject to a single constraint such as Condition A. However, if we pursue an approach based on structural constraints, we end up having sets of data that cannot be captured by the structural condition such as anaphors with a non-c-commanding antecedent or with an antecedent in the previous discourse. The current proposal that do not rely on the structural requirement such as c-command can capture the acceptability of the sentences without any problem. Moreover, it also captures the degree of preference, which the structural approach cannot. It employs the numerical gap value to tell the preferred interpretation from the unpreferred one. Theoretically, it crucially differentiates unacceptable interpretation from unpreferred one. Unacceptability, which is due to the violation of rules of syntax, remains constant regardless of the discourse context. In contrast, unpreferred interpretation that comes from violations of semantic and pragmatic principles can be improved by changing the discourse context.

This paper is organized as follows: Section 2 examines the Prominence Hierarchy and reviews its application to Korean in Kim (1998, 2000a, 2000b). Section 3 proposes a parameterized definition of a potential antecedent and investigates how it works in English. It also parameterized pragmatic conditions to filter out overgenerated coreferential relations. In section 4, the Prominence Principle in tandem with pragmatic filters will be expanded to anaphors in Chinese, Japanese and Icelandic.

2. The Prominence Hierarchy

2.1. Prominence Principle for Anaphors in Korean

Kim (2000a) focused on the importance of a distinction between acceptability and preference in interpretations of anaphors. Kim (2000a: 323) suggests that there is a potential antecedent (hereafter PA) for anaphors in a language and proposed the following:^{1,2}

(1) Prominence Principle for Anaphors in Korean (PP-A)

Caki must be coreferential with a potential antecedent (PA) only if there exists a PA.

N.B. 1. A PA for *caki* is a third person NP that is more prominent than *caki*.

2. α is more prominent than β iff α precedes β in the Prominence Hierarchy.

(2) Interpretation Rule for Anaphors in Korean (IR)

When there is more than one competing antecedent for *caki*, the larger the gap between an antecedent and *caki* in the

¹ PA is a term that is technically defined: In Korean, PA is a third person NP that is more prominent than a Korean anaphor *caki*. It is significant to note that a real (actual) antecedent does not necessarily have to be a PA. A PA does not have to be a real antecedent either. In other words, when there does not exist a PA in a given discourse, *caki* can refer to an NP that is not a PA as long as the NP meets other requirements such as those of morphology or pragmatics.

² R. Kayne (personal communication) mentioned one reason for employing c-command instead of the Prominence Hierarchy is that c-command is employed in other modules of the grammar, whereas the Prominence Hierarchy is not. However, insofar as there is a clear-cut preference in the interpretation of *caki* when *caki* is ambiguous, and insofar as native speakers of Korean uniformly show that preference, we need a hierarchy to explain those interpretations, implying that the Prominence Hierarchy is required in other component of a grammar. If this is the case, employing the Prominence Hierarchy to explain the distribution of anaphors is not necessarily more costly in the grammar.

- Prominence Hierarchy, the more preferred the interpretation.
- N.B. 1. The gap is the distance between the position of antecedent and that of *caki* in the Prominence Hierarchy. If the former is lower than the latter, the gap assumes a negative value.
2. A higher pair (e.g., topic antecedent and subject *caki*) is more natural than a lower pair (genitive NP antecedent and object of comparative part *caki*).

(3) Prominence Hierarchy

topic > subject > object of verb > object of postposition > genitive NP

Now let us see how (1) works. As schematically represented in (4), *caki* can be interpreted as coreferential with an NP that is not a PA if there does not exist a PA. If there is more than one third person NP and if only one NP is a PA, *caki* has to refer to the PA. If there is more than one PA, *caki* has an ambiguous interpretation with a degree of preference according to the Interpretation Rule in (2):

(4) a.NP_i..... *caki*_i.....

[-PA]

if there does not exist a PA for *caki*, then *caki* can refer to NP_i.

b.NP_i.....NP_j.....*caki*_{i/*j}.....

[+PA]

[-PA]

if NP_i is the only PA for *caki*, then *caki* must refer to the PA, NP_i.

c.NP_i.....NP_j.....*caki*_{i>j}.....

[+PA]

[+PA]

if both NP_i and NP_j are PAs for *caki* and if NP_i is more prominent than NP_j, then *caki* has an ambiguous

interpretation and *caki_i* is preferred to *caki_j*.

In other words, the Prominence Principle in (1) implies that if there does not exist a PA for *caki* in a given sentence, *caki* can refer to a less prominent NP that is not a PA. Again, there is no c-command requirement on a PA for *caki*: Any third person NP that is more prominent than *caki* can be a PA for *caki*.

2.2. Acceptability and Preference

First, let us see how the degree of preference in the antecedenthood can be computed. *Caki* in (5) (repeated here for the ease of reference) is an object and has two more potential antecedents: topic *Cheli* and subject *Yengi*. According to (1) and (2), *caki* in (5) can be coreferential with any of these two and prefers topic as its antecedent since topic is higher in the hierarchy than subject:

- (5) *Cheli_i-nun* *Yengi_j-ka* *caki_{i>j}-lul* *salanghanta-ko*
Cheli_i-Top *Yengi_j-Nom* *self_{i>j}-Acc* *love-Comp*
malhayssta.
 said
 (lit.) “*Cheli_i* said that *Yengi_j* loves *self_{i>j}*.”

- (6) the gap between *Cheli* (topic) and *caki* (object) = 2
 the gap between *Yengi* (subject) and *caki* (object) = 1

It is well known that syntactic constraints on the distribution of the Korean *caki* are loose, in the sense that *caki* can refer to almost any third person NP depending on the discourse context. These descriptions on *caki* come from the following uses of *caki* where *caki* refers to a long distance antecedent as in (7) or a non-c-commanding antecedent as in (8):

- (7) Cheli_i-uy hyung_j-I Mini_k-ekey nay-ka caki_{*i/j/*k}-lul
 Cheli-Gen brother-Nom Mini-to I-Nom self-Acc
 cohahanta-ko malhayssta.
 like-Comp said
 (lit.) “Cheli_i’s brother_j said to Mini_k that I like self_{*i/j/*k}.”
- (8) John_i-uy sinpal-un caki_i-uy pal-pota hwelssin ku-ta.
 John-Gen shoes-Top self-Gen feet-than a lot bigger-be
 “(lit.) John_i’s shoes is a lot bigger than self_i’s feet.”

Kim (2000a) claimed that *caki* requires to be interpreted as coreferential with a third person NP that it does not precede in the Prominence Hierarchy. In (7), direct object *caki* refers to topic *Cheli-uy hyeng* while it can neither be coreferential with genitive *Cheli* nor be with indirect object *Mini*. So-called subject orientation in long distance anaphors is due to the prominency of the subject at least in Korean. Likewise, the object of comparative part *caki* in (8) refers to genitive antecedent *John* regardless of c-commanding relations between them:

- (7’) the gap between *Cheli-uy hyeng* (topic) and *caki* (object) = 2
 the gap between *Cheli* (genitive) and *caki* (object) = -2
 the gap between *Mini* (object) and *caki* (object) = 0
- (8’) the gap between *John* (genitive) and *caki* (object of comparative part) = 1

We can see that *caki* cannot refer to an expression if the gap value between them is negative.

However, it is not always the case that *caki* cannot refer to an expression when the gap between *caki* and the expression has a negative value, as the contrast between (9a) and (9b) shows. The interpretation given in (8a) falls under the template in (4b): The

subject *caki* cannot refer to the less prominent NP *Yengi*. Why is the interpretation in (9b) acceptable, where *caki* refers to a less prominent NP *Yengi*?

- (9) a. *Cheli-nun Yengi_i-eykey caki_i-ka ikyessta-ko
 Cheli-Top Yengi_i-to self_i-Nom won-Comp
 malhayssta.
 said
 (lit.) “Cheli said to Yengi_i that self_i had won.”
- b. Na-nun Yengi_i-eykey caki_i-ka ikyessta-ko malhayssta.
 I-Top Yengi_i-to self_i-Nom won-Comp said
 (lit.) “I said to Yengi_i that self_i had won.”
- (9') a. the gap between *Cheli* (topic) and *caki* (subject) = 1
 the gap between *Yengi* (object) and *caki* (subject) = -1
 b. the gap between *Yengi* (object) and *caki* (subject) = -1

The only difference between (9a) and (9b) lies in the person feature of the topic. The former has a third person NP as a topic, whereas the latter has a first person NP that cannot be an antecedent of *caki* as a topic. *Caki* can refer to a less prominent third person NP when there does not exist a more prominent NP than it (*caki*). In (9b), *caki* does not have a more prominent third person NP than it in the given sentences. Hence, it is allowed to refer to a less prominent NP. In other words, *caki* refers to an NP yielding a negative gap value only if there are no competing antecedents yielding a positive gap value. It is now clear why *caki* in (9b) can refer to *Yengi*, whereas *caki* in (9a) cannot. In (9b), there is no PA for *caki*. Hence *caki* in (9b) is exempt and is allowed to take a less prominent antecedent. In contrast, there is a PA, *Cheli*, in (9a); and *caki* has to refer to the PA, according to the Prominence Principle in (1).

2.3. A Pragmatic Condition

According to the PP-A in (1) in the previous section, *caki* can be coreferential with any NP as long as this NP is more prominent than *caki*. If there is more than one PA, *caki* has an optimal interpretation when it refers to the most prominent NP among the PAs (cf. the Interpretation Rule in (2)). Here, we have to note that there are cases where *caki* cannot refer to a more prominent NP than it because of the presence of an intervening NP. A case in point occurs in scrambled structures of the type in (10). In (10), there are two potential antecedents of *caki* that are more prominent than *caki*. The PP-A predicts that *caki* can be coreferential with either of them. However, if we scramble the indirect object NP *Suni* in (10a) over the topic NP *Cheli-nun*, the acceptability changes, as in (10b):

- (10) a. Cheli-nun Suni_i-eykey caki_i-uy cemswu-lul
 Cheli-Top Suni_i-to self_i-Gen grade-Acc
 poye cwuessta.
 show gave
 (lit.) “Cheli showed self_i's grade to Suni_i.”
- b. ^{??/*}Suni_i-eykey Cheli-nun t_i caki_i-uy cemswu-lul
 Suni_i-to Cheli-Top t_i self_i-Gen grade-Acc
 poye cwuessta.
 show gave
 (lit.) “To Suni_i, Cheli showed self_i's grade t_i.”
- (11) a. Na-nun Suni_i-eykey caki_i-uy cemswu-lul
 I-Top Suni_i-to self_i-Gen grade-Acc
 poye cwuessta.
 show gave
 (lit.) “I showed self_i's grade to Suni_i.”
- b. Suni_i-eykey na-nun t_i caki_i-uy cemswu-lul
 Suni_i-to I-Top t_i self_i-Gen grade-Acc

poye cwuessta.
 show gave
 (lit.) “To Suni_i, I showed self_i's grade t_i.”

Interestingly, this contrast does not appear when the subject is first person *na* ‘I’, as in (11). In short, a more prominent PA, topic *Cheli*, seems to block a coreferential relation between the indirect object *Suni* and *caki* in (10b), whereas *na* ‘I’, which is not a PA, does not. To capture this, Kim (2000a) suggests the following condition:

(12) Prominence Link Condition (Tentative)

Given that A_i and B_j are PAs, when A_i is not more prominent than B_j , the acceptability of the interpretation of the anaphor is degraded.

[... A_i ... B_j ...anaphor _{i} ...]

The Prominence Link Condition defined in (12) implies that distance weakens antecedenthood: The farther away the PA is, the weaker the antecedenthood becomes. It should be noted that a violation of pragmatic filters differs from a violation of grammatical conditions: The former only degrades the acceptability, whereas the latter makes the sentence unacceptable. If we set up a discourse context where the given anaphor may well refer to a certain antecedent under an interpretation of *caki* that violates the Prominence Link Condition, that interpretation can be acceptable. For example, *caki* in (13) violates the Prominence Link Condition when it refers to *Suni*: Object *Suni* is not more prominent than subject *Cheli*. However, if we give a discourse context, as in (14), the given interpretation becomes acceptable:

(13)	Na-nun	Suni _i -eykey	Cheli-ka	caki _i -wa-uy
	I-Top	Suni _i -to	Cheli-Nom	self _i -with-Gen

salang-ey ppacyeissta-ko malhayssta.
 love-in fall-Comp said
 (lit.) “I told Suni_i that Cheli had fallen in love with self_i.”

- (14) Na-nun cinan iyoil-ey Suni-uy cip-ey
 I-Top last Sunday-at Suni-Gen house-to
 ka-se, Suni-eykey Cwngyohan sosik-ul cenhayssta.
 go-and Suni-to Important news-Acc notified
 Na-nun Suni-eykey Cheli-ka caki_i-wa-uy salang-ey
 I-Top Suni-to Cheli-Nom self-with-Gen love-at
 ppacyessta-ko malhayssta.
 fall-Comp said
 (lit.) “Last Sunday, I went to Suni’s and told the important news to her. I told Suni_i that Cheli had fallen in love with self_i.”

In short, the interpretation of the Korean anaphor *caki* is clearly accounted for by the PP-A in (1), which is defined in terms of the Prominence Hierarchy. A pragmatic condition such as one in (12) interacts with grammatical conditions (i.e., PP-A) in such a way as to degrade acceptability for a set of sentences that are otherwise grammatical.

3. The Parameterization of the Prominence Principle for Anaphors

3.1. The Parametric Definition of a Potential Antecedent: A PA in English

Pollard & Sag (1992) (hereafter, P&S) proposed an account of English anaphor binding in terms of an obliqueness hierarchy that is

based on relational obliqueness.³

(15) subject < primary object < second object < other complements

(16) Principle A: A locally o-commanded anaphor must be locally o-bound.

Principle A of P&S can be loosely interpreted as follows: When an anaphor has a coindexed NP in a subcategorization list (i.e., SUBCAT lists), it has to be more oblique (in our terms, less prominent) than the coindexed NP (i.e., its antecedent). P&S distinguished an anaphor that obeys Principle A in (16) from an exempt anaphor that does not have to be bound by a less oblique NP.

³ Definitions of local o-command and local o-binding in Pollard and Sag (1992: 287) are:

- (i) A *locally o-commands* B just in case the content of A is a referential parameter and there is a SUBCAT list on which A precedes (i.e., is less oblique than) B.
- (ii) A *locally o-binds* B just in case A and B are coindexed and A locally o-commands B. If B is not locally o-bound, then it is said to be locally *o-free*.

That is, a phrase A o-commands everything that is a more oblique complement of the same head. They assume that verbs and other lexical items that head phrases bear a lexical specification for a feature SUBCAT, which takes as its value a list of specifications corresponding to the various complements that the word in question combines with in order to form a grammatically complete phrasal projection. The order of elements on the SUBCAT list does not necessarily correspond to surface order but instead corresponds to the order of relative obliqueness, with more oblique elements appearing later than (i.e., to the right of) less oblique elements (P&S 1992, 280). Each constituent has, in addition to its syntactic category, another component called CONTENT, which contains linguistic information that is relevant to the determination of the phrase's semantic interpretation. Because their account is based on Head-Driven Phrase Structure Grammar (HPSG), I do not discuss specifically how their definition works.

Their main idea is that an anaphor must be coindexed with a less oblique coargument, if there is one. In other words, their locally o-bound requirement on anaphors is restricted to locally o-commanded anaphors. Hence, an anaphor that does not have a locally o-commanding antecedent (i.e., less oblique antecedent in its SUBCAT list) is free from Principle A of P&S in (16). P&S use the term coargument to represent NPs in the same SUBCAT list. In this section, after defining coargument as in (17), I show how P&S's analysis works:

(17) α and β are coarguments iff α and β are arguments of the same predicate.

- (18) a. John_i hates himself_i.
 b. *Bill_i thinks that John_j hates himself_i.
 c. *John_i found Bill_j's picture of himself_i.
 d. *John_i said that Bill's pictures of himself_i were on sale.
 e. John_i found a picture of himself_i.
 f. John_i said that pictures of himself_i were on sale.
 g. John_i considers himself_i intelligent.

Whenever an anaphor is more oblique than one or more referential elements on a SUBCAT list, then it must be coindexed with one of them (P&S 1992: 287). According to P&S, *himself* in (18a)-(18d) has to obey Principle A in (16) because it has a less oblique coargument: In (18a) and in (18b), *John* is less oblique than *himself*. In (18c) and in (18d), the subject of NP, *Bill*, is less oblique than *himself*. On the other hand, they regard *himself* in (18e) and in (18f), which does not have a less oblique coargument, as an exempt anaphor. In (18g), *John* and *himself* are the coarguments of a predicate *consider intelligent*.

Likewise, *each other* in (19a)-(19c) is an exempt anaphor that does not have any less oblique (more prominent) coarguments.

Following P&S and many others, I regard possessors in English as subjects. Possessor NPs are more prominent than object NPs in English.⁴ Hence, each instance is exempt from Principle A: It does not have to refer to less oblique coarguments because it does not have any less oblique coargument. *Each other* in (19d) has to refer to a less oblique argument because the subject *the agreement* and the primary object *trading rights* are present.

- (19) a. The agreement that [Iran and Iraq]_i reached guaranteed each other_i's trading rights in the disputed waters until the year 2010.
 b. [John and Mary]_i's houses appealed to each other_i's taste. (Reinhart & Reuland 1993)
 c. [John and Mary]_i's aggressive tactics weakened each other_i's positions in their arguments.
 d.* The agreement that [Iran and Iraq]_i reached gave trading rights to each other_i. (P&S 1992)

Here, we can see a striking similarity between the interpretation of English and Korean anaphors: *Each other* in (19a) is coreferential with a non-coargument, *Iran and Iraq*, because there does not exist a more prominent coargument of *each other*. On the other hand, *each other* in (19d) cannot refer to a less prominent NP because of its coarguments, *the agreement* and *trading rights*. In Korean, *caki* in (20b) can refer to a less prominent NP, *Suni*, because there does not exist a more prominent third person NP, whereas *caki* in (20a) cannot refer to less prominent *Suni* because there is a more prominent NP, topic *Cheli*:

⁴ In Korean, however, possessors that are realized as genitive NPs are less prominent than objects.

- (20) a. *Cheli-nun Suni_i-eykey caki_i-ka ikyessta-ko
 Cheli-Top Suni_i-to self_i-Nom had won-Comp
 malhayssta.
 said
 (lit.) “Cheli said to Suni_i that self_i had won.”
- b. Na-nun Suni_i-eykey caki_i-ka ikyessta-ko malhayssta.
 I-Top Suni_i-to self_i-Nom won-Comp said
 (lit.) “I said to Suni_i that self_i won.”

The difference between English and Korean lies in the definition of potential antecedents (PAs). The former has a more prominent coargument as its PA, whereas the latter has a more prominent third person NP as its PA. Hence, we can generalize the Prominence Principle for anaphors (PP-A) as follows:⁵

- (21) The Prominence Principle for Anaphors
 If there exists an anaphor α and a set of potential antecedent (PA) S, $S = \{PA_1, PA_2, PA_3, \dots\}$, α must be coreferential with a member of the set S.
- (22) A Parametric Definition of PA
 Korean: more prominent third person NP
 English: more prominent coargument

It is crucial that the term PA be used in a technical sense. For example, according to the definition of PA in (22), even *I* in (23) can be a potential antecedent for *himself* because *I* is a coargument of *himself*.

⁵ The parametric definition of the potential antecedent (PA) in (22) apparently seems to be heterogeneous: The PA of Korean involves agreement and (under-) specification in terms of ϕ -features restricting its candidate to third person NPs. On the other hand, the PA of English involves domains, as shown in the term coargument.

(23) * I_i like himself _{i} .

On the other hand, as we can see in (19a-c) and in (20b), the antecedent of an anaphor is not a PA. A PA is not necessarily an expression that is morphologically a possible antecedent of a specific anaphor; neither is a PA a real antecedent of an anaphor. A PA is simply a coargument that is more prominent than the relevant anaphor in English, and a third person NP that is more prominent than *caki* in Korean.

There is another important similarity in the interpretation of anaphors in Korean and English. There is a difference in the degree of preference when the interpretation of an anaphor is ambiguous. Consider (24):⁶

(24) $Mary_i$ talked to $Jane_j$ about herself _{$i>j$} .

(24') the gap between *Mary* (subject) and *herself* (object of PP) = 2
 the gap between *Jane* (object) and *herself* (object of PP) = 1

The sentence in (24) has an ambiguous interpretation since there is more than one PA that is more prominent than the reflexive. The reflexive *herself* in (24) can be and must be coreferential with either of its coarguments because it is the object of a preposition, which is less prominent than an (in)direct object or subject. As an Interpretation Rule in (2) predicts, *Mary* is clearly preferred to *Jane* as an antecedent of *herself*.

By defining PA as in (22), we can distinguish an anaphor that has to obey the PP-A from one that is not subject to the PP-A. In English, an anaphor that does not have a more prominent coargument will not violate the PP-A. Likewise, in Korean, when

⁶ There may be some speakers who do not see the clear-cut deference in the preference regarding the interpretation of *herself*. It can be due to the fact that the gap value between the two interpretations in (24') is trivial.

there is not a more prominent third person NP in a given discourse, an anaphor can be coreferential with any NP as long as the coreferential relation obeys the rules of other subcomponents of grammar such as pragmatics, semantics, and morphology.

3.2. Parametric Definition of the Prominence Link Condition

Compared to the standard Binding Theory of Chomsky (1981), the PP-A in (21) is loose enough to allow unacceptable coreference relations of the type in (25).

- (25) a. *Tom_i said that Bill_j thought that pictures of himself_i would be on sale.
 b. *They_i made sure that we_j would prevent each other_i's pictures from being on sale.

In other words, once we allow an anaphor that does not have a more prominent coargument to be exempt from the PP-A, we permit the coreferential relations in(25). The coreferential relations represented in (25) seem to be blocked by the presence of another PA, *Bill* and *we*.⁷

The unacceptable relations in (25) seem to be similar to the Korean cases. For instance, when there is a more prominent PA *Cheli* between an anaphor and its antecedent (*Suni*), acceptability is degraded, as in the following:

- (26) a. Cheli-nun Suni_i-eykey caki_i-uy cemswu-lul
 Cheli-Top Suni_i-to self_i-Gen grade-Acc
 poye cwuessta.

⁷ P&S suggested that the Intervention Constraint of Grinder (1970) might account for the overgeneration in (25). In the same vein, Kuno (1987: 96) modified Langacker's chain-of-command Condition and argued that it applies with varying degree of strength, depending upon the relative strength as a controller for reflexives.

- show gave
 (lit.) “Cheli showed Suni_i self_i's grade.”
- b. ??/* Suni_i-eykey Cheli-nun t_i caki_i-uy cemswu-lul
 Suni_i-to Cheli-Top t_i self_i-Gen grade-Acc
 poye cwuessta.
 show gave
 (lit.) “To Suni_i, Cheli showed self_i's grade t_i.”

- (26') the gap between *Cheli* (topic) and *caki* (Genitive) = 3
 the gap between *Suni* (indirect object) and *caki* (Genitive) = 1

There are two PAs, *Cheli* and *Suni*, for *caki* in (26). *Cheli* is more prominent than *Suni* because *Cheli* is a topic, which is ranked in the highest position of the Prominence Hierarchy. In (26a), where *Suni* is closer to *caki* than *Cheli* is, the coreferential relation between a relatively less prominent PA *Suni* and *caki* is acceptable.⁸ If we change the word order in (26b), the acceptability is degraded: *Cheli*, which is a more prominent PA, intervenes between indirect object *Suni* and *caki*. In contrast, the acceptability of the coreferential relation in (27a) is not affected by a change in word order: The topic-marked NP *na* ‘I’ in (27), which is not a PA in Korean, does not intervene in the coreferential relation. We see that a more prominent PA acts as an intervener in Korean.

- (27) a. Na-nun Suni_i-eykey caki_i-uy cemswu-lul
 I-Top Suni_i-to self_i-Gen grade-Acc
 poye cwuessta.
 Show gave
 (lit.) “I showed Suni_i self_i's grade.”
- b. Suni_i-eykey na-nun t_i caki_i-uy cemswu-lul
 Suni_i-to I-Top t_i self_i-Gen grade-Acc

⁸ It is not an optimal interpretation, due to the Interpretation Rule in (2).

poye cwuessta.
 show gave
 (lit.) “To Suni_i, I showed self_i's grade t_i.”

Let us consider the English sentences in (28). In English, more prominent NPs do not intervene in the coreferential relation. Instead, animacy is a factor in such an intervention:

- (28) a. *They_i made sure that we_j would not prevent each other_i's pictures from being on sale.
 b. They_i made sure that nothing would prevent each other_i's pictures from being on sale.

Each other in (28) does not have a PA, a more prominent coreferent: Any coreferential relation is possible as far as the PP-A is concerned.⁹ However, the coreferential relation in (28a) is unacceptable, whereas that in (28b) is acceptable. In English, the animate NP *we* in (28a) disrupts the coreferential relation between *they* and *each other*, whereas the inanimate NP *nothing* does not.

Kuno and Takami (1993) claimed that semantic transparency is a relevant factor for intervener status: The specific semantic import that an intervener carries affects the coreferential relation between NPs. Their claim is significant in that the unacceptability caused by the presence of an intervener is shown as a continuum rather than a clear-cut difference. However, given the following example, where a semantically nontransparent NP does not block coreferential relations, I retain the proposal that animacy is a factor in determining the intervener:¹⁰

⁹ In the Korean case that we discussed, the Prominence Link Condition applies to a sentence where there is more than one PA for the anaphor. In the English data in (28), the Prominence Link Condition applies to sentences where a PA for the anaphor does not exist.

¹⁰ I am indebted to S. Kuno (personal communication) for these examples. If there is a speaker who judges (29a) as unacceptable as (29b) is, semantic transparency

- (29) a. (?) They_i made sure that these two events that would take place around the same time would not prevent each other_i's pictures from being on sale.
 b. * They_i made sure that Mary's pictures on sale would not prevent each other_i's pictures from being on sale.

In our terms, *Mary*, which is an animate subject, blocks the coreferential relation between *they* and *each other*, which was allowed by the PP-A. On the other hand, the subject of the intermediate clause *two events* in (29a) does not disrupt the coreferential relation.

Based on these observations, we can apply to English the Prominence Link Condition, which I have proposed for Korean, by parameterizing the definition of intervener:¹¹

- (30) Prominence Link Condition
 a. [...A_i...B_j...anaphor_i...]
 b. [...A_i...]_{B_j}...

When B_j is an intervener and A_i is not more prominent than B_j, then the acceptability of the interpretation of the anaphor is degraded.

- (31) A Parametric Definition of Intervener
 Korean: third person NP
 English: animate NP

seems to play a role in intervention for the speaker.

¹¹ Interestingly, when there is an inanimate anaphor, inanimate NPs can be an intervener:

(i) * [[The book_i's] reviews] provided a useful critique of itself_i.
 Since *itself* is an inanimate anaphor, inanimate NP *reviews* intervenes the coreferential relations between *the book* and *itself*. If it is the case, we can suggest [α animate NP] is an intervener for [α animate anaphor].

In (28a), both *they* and *we* are subjects. (28a) fits the template in (30a): *they* is not more prominent than *we*. Hence, the animate NP *we* blocks the coreferential relation between *they* and *each other* in (28a). In contrast, the inanimate subject NP *nothing* in (28b) does not disrupt the coreferential relation between the matrix subject and the anaphor in the embedded clause. The unacceptable coreferential relations in (25) can be explained by the same manner. In (25), *Tom* and *they* are not more prominent than *Bill* and *we* respectively. Hence the inanimate subject in the embedded clause blocks the coreferential relation in (25).

The template in (30b) is suggested for cases like the following:

- (32) a. Their_i brothers_j like each other_{*i/j}'s toys.
 b. Their_i unfriendliness angered each other_i's wives.
 c. Their_i brothers_j' unfriendliness angered each other_{*i/j}'s wives.

Recall that genitives in English are ranked as high as subjects in the Prominence Hierarchy.¹² The reciprocals in (32) do not violate the PP-A, because they do not have a more prominent coargument. According to (30), *their brothers* in (32a) is an intervener in the coreferential relation between *their* and *each other* because *their* is not more prominent than *their brothers*. In (32b), on the other hand, *their unfriendliness* cannot be an intervener because it is inanimate. Finally, we can see why *their brothers* in (32c) is the only possible antecedent for *each other*: *their brothers' unfriendliness* is an inanimate NP that does not qualify as an intervener. *Their brothers*

¹² This means that genitives are ranked as high as subjects regardless of their semantic function. For instance, *their* in (i) is not more prominent than an objective possessor *their friends* since both of them are genitives that are ranked as high as subjects.

(i) Their_i friends_j' defeat angered each other_{*i/j}'s mothers.

is an intervener in the coreferential relation between *each other* and *their* according to (30b), because *their* is not more prominent than *their brothers*. Hence, only *their brothers* can be an antecedent for *each other* in (32c). Note that *their brothers* in (32c) is not a PA but an antecedent. As we saw earlier, PA is a technical term and does not imply capacity for antecedenthood.

Finally, the PP-A and the Prominence Link Condition can account for the following contrast:^{13, 14}

- (33) a. John_i's campaign requires that pictures of himself_i be placed all over the town.
 b. * John_i's father requires that pictures of himself_i be placed all over the town.

¹³ The minimal pair in (33) can imply that the agenthood be the relevant factor here. However, the following sentence favors the animacy as a relevant factor to agenthood.

- (i) John_i's father_j is guilty by the fact that pictures of himself_{*i/j} were found on the victim.

¹⁴ On independent grounds, Huang & Tang (1991:270) suggested the following generalization to capture the Blocking Effect in Chinese, which will be discussed in section 4.2:

- (i) The set of potential blockers of long-distance *ziji* is exactly the set of its potential local, or less remote, binders.
 (ii) Zhangsan_i shuo [[ni_j zuo shi de taidu] du ziji_{*i/j} bu hao]
 Zhangsan say you do work Rel attitude to self not good
 "Zhangsan_i said that the attitude with which you_j work is not good for self_{*i/j}."

By suggesting (i), they tried to solve problems of an LF-movement analysis. Of course, their motivation differs from ours; they needed (i) to account for the fact that an intervening person NP (*ni* in (ii)), which does not agree in its ϕ -features with a more remote potential binder (*Zhangsan* in (ii)), blocks a long distance binding relation. Even though we cannot explain at this point why there is no Blocking Effect when an intervening NP agrees in its ϕ -features with a remote PA, it must be noted that the general idea in (i) is similar to ours.

Because *himself* in (33) does not have a PA, it does not violate the PP-A. The PP-A allows *himself* to refer to *John* in both (33a) and (33b). In (33b), however, an animate NP, *John's father*, disrupts the coreferential relation between *John* and *himself*: *John's father* is an animate NP and *John* is not more prominent than *John's father*. According to the Prominence Link Condition in (30b), the interpretation is degraded. *John's campaign* in (33a) does not act as an intervener because it is inanimate.

4. A Language Typology in Anaphor Interpretations

4.1. Icelandic

Now let us examine how the Prominence Principle in (21) accounts for other anaphors such as Icelandic *sig*. *Sig* is well known as a reflexive that can have a long distance antecedent under certain conditions. Interestingly, *sig* differs from other long distance anaphors in that *sig* with a local antecedent behaves differently from *sig* with a long distance antecedent.

First of all, *sig* must have a subject antecedent when it refers to a long distance antecedent:

- (34) Jón_i sagði Haraldi_j að María elskaði sig_{i/*j}.
 John_i told Harold_j that Mary likes(subj) self_{i/*j}
 ‘John_i told Harold_j that Mary likes (subj) self_{i/*j}.’

However, when *sig* is coreferential with an expression within a clause, as in (35), it can refer to an object.

- (35) Ég skammaði Maríu_i fyrir bókina sína_i.
 I reprimanded Mary_i for book self's

‘I reprimanded Mary_i for self_i’s book.’

Before defining PAs in Icelandic, we need to note that a structural requirement such as c-command plays a role only when *sig* has a local antecedent:¹⁵

- (36) a. Jón gaf Haraldi_i fot á sig_i.
 John gave Harold clothes for self
 ‘John gave Harold_i clothes for self_i.’
 b. *Ég ræddi við Maríu_i um bókina sína_i.
 I talked to Mary about book self_i’s
 ‘I talked to Mary_i about self_i’s book.’

Sína cannot refer to the object *Maríu* in (36b), whereas *sig* in (36a) can refer to the object *Haraldi*. The same phenomena are observed when *sig* refers to a subject NP:^{16, 17}

- (37) a. Skoðun Jóns_i er að sig_i vanti hæfileika.
 opinion John_i’s is that self lack talent
 ‘John_i’s opinion is that self_i lacks talent.’
 b. *Skoðun Jóns_i varð sér_i til skammar.
 Opinion John_i’s became self to shame
 ‘John_i’s opinion became a shame on self_i.’

The unacceptable interpretation of *sér* in (37b) shows that it cannot be coreferential with a non-c-commanding NP (*Jón*) when

¹⁵ I am indebted to H. Thráinsson (personal communication) for these examples and for invaluable discussions about Icelandic anaphora.

¹⁶ Just as in English, a possessive NP in Icelandic is ranked as high as subject in the Prominence Hierarchy. Note that in Korean, a possessive NP is treated simply as a genitive NP, which is less prominent than a subject.

¹⁷ R. Kayne (personal communication) suggested the possibility that (37a) is a case of extraposition and that, at some level of representation, *sig* is c-commanded by its antecedent.

the antecedent is within the same clause.¹⁸ Note that *sig* can refer to a non-c-commanding NP when the antecedent is not within the same clause, as shown in (37a). However, it is not the case that any long distance subject can be an antecedent of an anaphor in the embedded clause.¹⁹

- (38) a. *Jón_i kemur ekki nema María kyssi sig_i.
 John_i comes not unless Mary kisses(subj) self_i
 ‘John_i does not come unless Mary would kiss self_i.’
 (Kuno 1987)
- b. Jón_i heldur að Maríu_j hafi verið sagt
 John thinks that Maria has been told
 að þú talaðir um sig_{i/*j}.
 that you talked about self
 ‘John_i thinks that Maria_j has been told that you talked
 about self_{i/*j}.’ (Hellan 1991:35)

Sig can refer to a long distance antecedent such as *Jón* in (37a). However, *sig* in (38a) cannot be coreferential with the long distance subject *Jón*_i; nor can *sig* in (38b) be coreferential with *Maríu*. To explain these data, it has been claimed that Icelandic anaphors are constrained by conditions involving logophoricity, point of view, or perspective holding (see Thráinsson 1976; Maling 1984; Sells 1987; Sigurðsson 1990 among others).

Now let us see how the Prominence Principle works in accounting for Icelandic reflexives. Recall that PA is a technical term designed for the Prominence Principle: A PA is not a real antecedent of an anaphor. If we defined PA as a subject in Icelandic, we could not account for the fact that an anaphor can have a local

¹⁸ For this reason, Thráinsson (1991) proposed that we have to distinguish a locally bound *sig* from a LDA *sig*.

¹⁹ H. Thráinsson (personal communication) judges (38b) with *sig_j* as marginally acceptable.

object as its antecedent even when its subject is present (e.g., (34)). If we defined PA in Icelandic as a more prominent coargument, we would face a problem regarding *sig* with a long distance antecedent: *sig* can have a long distance antecedent despite the presence of a local coargument:

- (39) a. Skoðun Jóns_i er að þú hafir svikið sig_i.
 Opinion John_i's is that you have betrayed self_i
 ‘John_i's opinion is that you have betrayed self_i.’
 (Thráinsson 1991)
- b. Tilfinning Jóns_i er að þeir treysti sér_i ekki.
 Feeling John_i's is that they trust(subj) self_i not
 ‘John_i's feeling is that they do not trust self_i.’

Despite the fact that *sig* in (39) has a more prominent coargument, *sig* refers to a long distance antecedent. Therefore I propose that there are two types of PAs in Icelandic:²⁰

(40) PA in Icelandic: subject, coargument

If there is a subject in the given discourse or a more prominent coargument, anaphors in Icelandic must obey the Prominence Principle.²¹ As expected, the Prominence Principle with a PA

²⁰ The definition of Icelandic PA in (40) does not mean that a PA must be a subject and a coargument of a reflexive at the same time. It simply means that any NPs that function as subject and any coargument of a reflexive can be a PA in Icelandic.

²¹ The emphatic reflexive in Icelandic can be in the subject position:

- (i) Sjálfur_i hefur Jón_i aldrei lesið þetta.
 Himself has John never read this
 ‘John_i himself_i has never read this.’

It is not clear to me whether we have to treat this emphatic reflexive differently from other reflexives in Icelandic.

defined as in (40) will allow unacceptable coreferential relations. For example, the PP-A allows the coreferential relations in (37b) and (38b) (repeated here as (41a) and (41b), respectively):

- (41) a. *Skoðun Jóns_i varð sér_i til skammar.
 Opinion John_i's became self to shame
 ‘John_i's opinion became a shame on self_i.’
- b. *Jón heldur að Maríu_j haf verið sagt að þú talaðir um sig_j.
 John thinks that Maria has been told that you talked about self
 ‘John thinks that Maria_j has been told that you talked about self_j.’

Sér in (41a) satisfies the PP-A since it refers to a PA, the subject *Jóns*.²² Likewise, the interpretation under which *sig* in (41b) refers to the subject *Maríu* satisfies the PP-A. Based on these, conditions like the following are suggested for Icelandic *sig*:²³

²² As was mentioned in endnote 16, a possessive NP in Icelandic is regarded as a subject. Because Icelandic *sig* does not have any animacy restriction, as shown in (i), the reflexive in (41) should be allowed to refer to *skoðun Jóns*:

(i) Skuldinar_i hlaxa síellt utan á sig_i.
 The debts load constantly on themselves
 ‘The debts are constantly increasing.’

²³ The c-command condition in (42) on a local antecedent for reflexive *sig* runs contrary to the goals of this paper: We have tried to show that a structural requirement such as c-command is not required to account for the coreferential possibilities of the range of anaphors. The analysis in this section shows that we cannot completely abandon the c-command requirement on anaphora. I leave this question open, focusing in this subsection on the manner in which the PP-A, which is motivated by Korean anaphora and supported by English anaphora, applies similarly to anaphora in various languages.

(42) A local antecedent must (PP-visible) c-command its anaphor in Icelandic.

(43) A long distance antecedent of an anaphor must be a logophoric subject in Icelandic.

N.B. α is a *logophoric subject* iff the embedded clause of the matrix verb that α is the subject of represents the thought, speech, and perception of α other than the speaker-narrator. (Clements 1975: 169)

According to (42), *sér* in (41a) cannot refer to *Jóns* because *Jóns* does not c-command *sér*. (43) predicts that *Mariú* cannot be an antecedent of *sig*, because it is not a logophoric subject.^{24, 25}

Before closing this section, I briefly discuss the apparent subjunctive mood requirement for long distance anaphors in Icelandic. It has been assumed that *sig* can refer to remote subjects only when

²⁴ H. Thráinsson observed that when an antecedent of *sig* is embedded, as in (i), it becomes worse:

- (i) ??Tilfinninginsem Jón_i hefur er að þeir treysti sér_i ekki.
 the feeling that John_i has is that they trust(subj) self_i not
 ‘The feeling that John_i has is that they did not trust self_i.’

Hence, we need other conditions to account for (i), because Icelandic *sig* is more restricted than we expect it to be. R. Kayne (personal communication) suggested that if (37a) is a case of extraposition, (i) would be marginal because the extra relative clause makes it marginal as extraposition.

²⁵ Note that the interpretation of the Icelandic reflexive *sig* does not seem to be affected by the Intervention Condition. Consider the following:

- (i) Skoðun Jóns_i er að María hafi svikið sig_i.
 opinion John_i's is that Mary have betrayed self_i.
 ‘John_i's opinion is that Mary had betrayed self_i.’
 (ii) Tilfinning Jóns_i er að María treysti sér_i ekki.
 feeling John_i's is that Mary trust(subj) self_i not
 ‘John_i's feeling is that Mary does not trust self_i.’

the embedded clause is in the subjunctive mood:

- (44) a. Jón_i segir að María elski sig_i.
 Jon says(ind.) that Mary loves(subj) self
 ‘John_i says that Mary loves self_i.’ (Sigurðsson 1990: 310)
- b. ?Jón_i veit að María elskar sig_i.
 Jon knows(ind.) that Mary loves(ind.) self
 ‘John_i knows that Mary loves self_i.’ (Sigurðsson 1990: 311)

Structure-based approaches such as the parametric approach of Wexler and Manzini (1987) and the LF-movement approach of Pica (1987; 1991) identify the subjunctive mood (more precisely, nonindicative mood) as a necessary condition for *sig* to refer to remote antecedents. However, Sigurðsson (1990:313) mentioned that there are some speakers, including himself, who find indicative clauses containing a long distance anaphor *sig* acceptable or marginally acceptable as in (44b). For those speakers, subjunctive mood is not a necessary condition for the long distance interpretation of *sig*.

We have also seen that subjunctive mood is not a sufficient condition for the long distance interpretation of *sig* (e.g., (38)). Thráinsson (1976) was the first to mention that there are cases where *sig* in a subjunctive clause cannot refer to a remote subject when the clause containing *sig* is adverbial (see also Hellan 1991; Maling 1984; Sells 1987; Thráinsson 1990, among others).

- (45) a. *Jón_i er hér enn þó að ég skammi sig_i.
 John is here still although I scold(subj.) self
 ‘John_i is still here, although I scold (subjunctive) self_i.’
- b. María_i segir að Jón sé hér enn
 Mary says(ind.) that John is (subj.) here still
 þó að ég skammi sig_i.

although I cold(subj.) self
 ‘Mary_i says that John is (subjunctive) still here, although
 I scold (subjunctive) self_i.’

Sig in (45a) cannot refer to *Jón* despite the subjunctive mood. Note that when the whole clause (the matrix and the adverbial clause in (45a)) is embedded under a verb of saying, as illustrated in (45b), *sig* in the embedded clause can refer to the remote subject *María*. Now, it becomes clear that the subjunctive mood is neither a sufficient nor a necessary condition for long distance interpretations of *sig*. The factor that controls long distance coreferential relations between *sig* and its antecedent seems to derive from the logophoricity condition mentioned in (43).

4.2. Chinese

Now let us examine how the Prominence Principle for Anaphors accounts for other anaphors such as Chinese *ziji*. *Ziji*, which can refer to any NP regardless of person morphologically, seems to have at least two conditions on its interpretation. First of all, the antecedent of *ziji* has to be an animate NP:

- (46) a. *Yanjing_i diao-dao dishang, dapo-le ziji_i.
 glasses drop-to floor break-Asp self
 ‘The glasses_i dropped on the floor, and broke self_i.’
 (Huang & Tang 1991: 265)
- b. [Lisi_i de chenggong]_j zengjia-le ziji_{i/*j} de xinxin.
 Lisi's success increase-Asp self 's confidence
 ‘Lisi_i's success_j increased self_{i/*j}'s confidence.’ (Wu
 1992: 192)

Second, *ziji* shows a strong subject orientation.²⁶ Unlike Icelandic *sig*, which can refer to a nonsubject NP if the antecedent is in the same clause, *ziji* cannot refer to a local object:

- (47) a. Wo_i gaosu Lisi_j ziji_{i/*j} de fenshu.
 I tell Lisi self 's grade
 “I_i told Lisi_j self_{i/*j}'s grade.” (Huang and Tang 1991: 265)
- b. Wangwu_i shuo Zhangsan_j song gei Lisi_k yipian guanyu
 Wangwu say Zhangsan give to Lisi one about
 ziji_{i/j/*k} de wenzhang.
 self DE article
 “Wangwu_i says that Zhangsan_j gave an article about
 himself_{i/j/*k} to Lisi_k.” (Cole and Sung 1994: 370)

In (45a), *ziji* can refer only to the subject *wo* ‘I’. Likewise, *ziji* in (45b) cannot refer to the indirect object *Lisi*.

Now let us consider how the PP-A can apply to Chinese *ziji*. Based on the properties mentioned here, we suggest that a PA in Chinese is an animate subject.²⁷ The PP-A predicts that if animate subjects are present, *ziji* has to refer to one of them. Since a

²⁶ According to Cole & Sung (1994), the polymorphemic reflexive (X^{\max}) *ta ziji* in (i) can refer to *Lisi*:

- (i) Wangwu_i shuo Zhangsan_j song gei Lisi_k yipian guanyu ta ziji_{i/j/k} de
 Wangwu say Zhangsan give to Lisi one about him self DE
 wenzhang.
 article
 “Wangwu_i says that Zhangsan_j gave an article about himself_{i/j/k} to Lisi_k.”
 (C&S 1994:361)

Any properties that differ between monomorphemic and polymorphemic reflexives will be a problem for the proposal in this paper.

²⁷ In Chinese, the relative notions of more / less prominent do not seem to play a role. However, there is no undesirable result when we leave the notion more / less in the definition of PP-A.

possessive NP such as *Lisi* in (44b) is regarded as a subject of NP in Chinese just as in English, *ziji* in (44b) refers to the only PA, *Lisi*. When there is more than one PA, *ziji* will have an ambiguous interpretation (e.g., (45b)).

As in other languages, the PP-A in Chinese will allow unacceptable coreferential relations illustrated in (48), i.e., *ziji*. The examples in (48) show the so-called Blocking Effect in Chinese:

- (48) a. Zhangsan_i renwei wo_j zhidao Wangwu xihai ziji_{*i/j}.
 Zhangsan thinks I know Wangwu likes self_i.
 “Zhangsan_i thinks that I_j know that Wangwu likes self_{*i/j}.”
- b. Zhangsan_i shuo [Wo_j de jiaobao] hai-le ziji_{*i/j}.
 Zhangsan say I 's pride hurt-Asp self_{*i/j}.
 “Zhangsan_i said that my_j pride hurts self_{*i/j}.” (Huang & Tang 1992)

In an LF-movement approach to long distance anaphors, it is claimed that the Blocking Effect derives from a feature conflict. However, the Blocking Effect shown in (48b) is a problem in an LF-movement approach: It can neither explain why *ziji* cannot refer to *Zhangsan* nor account for why *ziji* can refer to *wo* because there cannot be any person agreement between when *ziji* adjoins to the embedded Infl in (48b). Even if there were, it could not be the first person feature because *wo* ‘I’ is not the subject of the embedded clause. Recall that both Korean and English have the Prominence Link Condition as a filter that applies to overgenerated coreferential relations. If we define the intervener in Chinese as any animate NP with different ϕ -features from the antecedent of *ziji*, the Prominence Link Condition in Chinese (49) will explain the unacceptable interpretations in (48):

(49) Prominence Link Condition in Chinese

- a. [...A_i...B_j...anaphor_i...]
 b. [...A_i...]_{B_j}... anaphor_i...

When B_j is an animate subject with a different ϕ -feature from A_i, and when A_i is not more prominent than B_j, then the acceptability of the interpretation of the anaphor is degraded.

In (48a), the subject *wo* ‘I’ intervenes in the coreferential relation between *Zhangsan* and *ziji*. Even when an intervener is embedded in the subject NP, as in (48b), a coreferential relation between *Zhangsan* and *ziji* is banned: Because *wo* in (48b) is an animate subject, *ziji* refers to *wo*.²⁸ The fact that (49) is a pragmatic condition explains certain issues raised by an LF-movement approach: First of all, regardless of a c-command relation, an animate subject NP in (48b) intervenes in the coreferential relations, according to the Prominence Link Condition in (49). Second, because (49) is a pragmatic condition, a violation of the condition in (49) does not lead to as severe a deviance as does a violation of the structural condition, especially when an appropriate pragmatic context is given. Therefore, in a context where *Lisi*’s use of herself is not plausible, the following coreferential relation is marginally allowed, despite the violation of (49):

- (50) Wo_i zhidao Lisi_j zhi xiang liyong ziji_{i/*j}.
 I know Lisi only think use self
 ‘I_i know that Lisi_j only wants to use self_{i/*j}.’

In sum, Chinese also supports the proposal in this paper:

²⁸ If we regarded the possessive NP as a nonsubject that cannot be a PA in Chinese, we could not explain the coreferential relation between *wo* and *ziji* in (48b). The PP-A would predict that *ziji* has to refer to the animate subject *Zhangsan* in (48b), regardless of the existence of the nonsubject NP *wo*.

Structural constraints need to be weakened in explaining the interpretations of anaphors. Pragmatic filters rule out syntactically permitted coreferential relations.

4.3. Japanese

It has been assumed that only a subject can be an antecedent of *zibun* in Japanese.²⁹

- (51) Taroo_i-ga Hanako_j-o zibun_{i/*j}-no tomodati to
 Taroo-Nom Hanako-Acc self_{i/*j}-of friend with
 Karakatta.
 teased
 “Taroo_i teased Hanako_j with self_{i/*j}'s friend.”

However, as pointed out in McCawley (1976) (see also Iida 1992), subjecthood is neither a sufficient nor a necessary condition for *zibun* binding:

- (52) a. Zibun_i-ga hisoka ni koi o motte iru musume-no
 self-Nom secretly in love is girl's
 yasasii hohoemi-ga Hiroshi_i-ni koi-no subarasisa-o
 gentle smile-Nom Hiroshi-to love's splendid-Acc
 osieta.
 taught
 “The gentle smile of the girl whom self_i had been
 secretly in love with taught Hiroshi_i how splendid love
 is.” (McCawley 1976: 95)
- b. [[Zibun_i-no hatumeisita] omoty_a]-ga kyoozyu_i-ni
 self_i-of invented toy-Nom professor-to
 bakudai-na zaisan-o motarasita.

²⁹ Like *ziji* in Chinese, morphologically *zibun* can refer to first person, second person, and third person NPs.

big fortune-Acc brought
 “The toy that self_i invented brought an unexpected
 fortune to the professor_i.”

Zibun referring to a nonsubject in (52) demonstrates that subjecthood is not a necessary condition for an antecedent of *zibun*.

Sells (1987) compared Icelandic *sig* and Japanese *zibun*, regarding the logophoricity requirement. Sells cited the following examples from Kameyama (1984; 1985),³⁰ who claimed that the antecedent of *zibun* must be a subject or a logophoric NP:

- (53) a. Taroo_i-wa [Yosiko-ga zibun_i-ni
 Taroo-Top Yosiko-Nom self-Dat
 aitagatteiru]-to iwareta.
 visit-was-wanting-Comp was-told
 “Taroo_i was told that Yosiko wanted to visit self_i.” (Sells
 1987: 453)
- b. *Honum_i var sagt [að sig_i vantaði hfileika].
 He was told that self lacked (subj.) ability
 “He_i was told that self_i lacked ability.” (Sells 1987: 450)

Unlike Icelandic *sig* in (53b), which does not allow a remote subject to be an antecedent of an anaphor unless it is a logophor, the nonlogophoric subject *Taroo* in (53a) can be an antecedent of *zibun*. *Zibun* can have a remote nonsubject antecedent if the antecedent is a logophoric NP, as shown in the following example:

- (54) Taroo-wa Takasi-kara [Yosiko-ga zibun_i-o
 Taroo-Top Takasi-from Yosiko-Nom self-Acc
 nikundeiru]-to kiita.
 be-hating-Comp heard

³⁰ This claim is first made in Kuno (1972).

“Taroo heard from Takasi_i that Yosiko hated self_i.” (Sells 1987: 454)

Nonsubject *Takasi* in (54) can be an antecedent of *zibun* when it is logophoric, that is, when the whole clause that contains *zibun* represents speech of *Takasi*. On the basis of these data, I propose that a PA for Japanese *zibun* is any subject or logophoric NP. If there is neither a subject nor a logophoric NP, *zibun* can refer to an expression that is neither of these (c.f., (52)).

In Japanese, too, logophoricity (Sells 1987), deitic perspective (Iida 1992), or empathy (Kuno 1987) plays a role, but its role is different from that in Icelandic. In Icelandic, logophoricity is a condition that renders some coreferential relations unacceptable. In Japanese, logophoricity is a property that enables an NP to be a PA. Again, Japanese *zibun* supports the claim that syntactic conditions have to be weakened enough to allow all acceptable sentences as well as some unacceptable ones in the interpretation of an anaphor. Overgenerated sentences are filtered out by pragmatic conditions.

5. Conclusion

This paper considered how the preference in the interpretation of anaphors and their distribution properties could interact and be best explained. In order to reach the goal, this paper first reviewed Prominence Hierarchy in Kim (1998, 2000a, 2000b) for computing a different degree of preference when there is more than one option for anaphor interpretations. Following Kim, this paper also argued that the coreferential possibility between Korean anaphor *caki* and its antecedent is determined by the Prominence Principle which is stated in terms of the Prominence Hierarchy: *caki* must be coreferential with a more prominent antecedent only if there exists such an antecedent. One of the key arguments of this paper included

extension of the proposal in Kim (1998, 2000a, 2000b) to anaphors in other languages such as English, Icelandic, Japanese and Chinese. In doing so, this paper questioned the role that c-command plays in the domain of anaphora. As an alternative, it argued that the prominence of an expression based on its grammatical function plays a role in anaphor resolution.

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