The Long-Distance Anaphora Conspiracy: The Case of Korean*

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1 Introduction

It has been generally observed (e.g., Li and Thompson 1976) that East-Asian languages such as Korean, Japanese and Chinese present a certain cluster of common features such as following:

1. Topic-orientedness
2. Double nominative constructions
3. Long-distance anaphora

Firstly, one of the long established characteristics of languages such as Chinese, Japanese, and Korean is their context dependence; or to put it in Li and Thompson's (1976) terminology, their "topic-orientedness." Unlike other pro-drop languages (e.g., those in the Romance family) empty pronouns in East Asian languages are licensed not by strong agreement but their ability to be identified via strong contextual or discourse features. Their second common feature, double nominative constructions, represents their ability to generate two subject positions. These languages also consistently exhibit long-distance anaphoric patterns (*ziji* in Chinese, *zibun* in Japanese, and *caki* in Korean). Even though each of these common features has been a widely discussed issue, their interaction has not been thoroughly investigated. In this paper, we will sketch the interaction of the first two features in order to account for the third one.

The relevance of contextual factors in accounting for long-distance anaphora has also been repeatedly stressed in the literature in various forms (Perspective (Iida 1996), Logophoricity (Sells 1987), or Point of View (Kuroda 1973, Banfield 1982, Zribi-Hertz 1989)). On the other hand, syntactic conditions such as the subjecthood condition which states that the Japanese long-distance anaphor *zibun* allows a subject antecedent, but not a nonsubject one (Kuroda 1965, Kuno 1973) have also been put forward for the explanation of

*Research for this paper was partially supported by the Faculty of Arts at the University of Edinburgh. I am indebted to Ronnie Cann and George Tsoulas for ideas and detailed comments on earlier versions of this paper. I would also like to thank Ivan Sag and Masayo Iida for their helpful discussion. All errors are mine.

Long-Distance Anaphora. It is not, however, always clear whether these conditions are proposed in order to replace the contextual ones or to be taken in conjunction with them. In this paper, we will propose an account for long-distance anaphora in more structural and formal terms rather than depending on the contextual factors. By reconsidering data in Korean, usually cited in favour of the contextual/discourse approach to long-distance anaphora, we will argue that the phenomenon can be best explained rather in terms of the interaction of the common properties of East-Asian languages: Topic-orientedness and Double Nominative constructions. That is, *caki*-binding in Korean in the relevant data is very closely related to topicalised constructions which, as we claim, are closely related to the null topic constructions and share the same underlying structure with the double nominative construction in Korean.

2 The Basic Facts and Previous Accounts

In this section, we will observe the basic phenomenon of long-distance anaphora, especially those that are central to the accounts highly dependent on the contextual factors. By way of examining those approaches to the basic facts, we will also outline the questions we would like to raise and try to answer in this paper.

The long-distance anaphor *caki* can take an argument antecedent across a number of clause boundaries (1a),[1] but can also be bound by a *Topic* in what at first appears to be a non-argument position which contravenes the A-binding requirement for anaphors.

(1) a. John$_i$-i Bill$_j$-ekey Mary$_k$-ka caki$_{i/*j/k}$-lul cohahanta-ko
John-NOM Bill-DAT Mary-NOM self-ACC like-COMPL
malhayssta
told
'John$_i$ told Bill$_j$ that Mary$_k$ likes self$_{i/j/k}$'

b. John$_i$-un ttal-i caki$_i$-pota ki-ka te kuta
John-TOP daughter-NOM self-than height-NOM more is tall
'As for John$_i$, his daughter is taller than self$_i$'

[1] We will not discuss the examples like (1a) where the anaphor is bound by the antecedents locally or in a higher clause, for which case, a number of syntactic and non syntactic approaches are proposed. Rather, in this paper we will focus on the examples which are known to be subject to some discourse factors.

c. John$_i$-**un caki**$_i$-ka ka-ss-ta
John-**top self**-NOM go-PAST-DSE
'**As for John**$_i$, **self**$_i$-NOM went'

(1b) and (1c) show the case where a topic-marked noun phrase antecedes *caki*. The difference between the two is that in the former, *caki* occurs as a complement of the A and in the latter as a genitive-marked element within the subject NP. These examples are often considered as a case of discourse binding with an emphasis on the discourse functions of topic (see Huang 1984).

There is also a set of data which has been provided as the evidence of the discourse based account of long-distance anaphora. The following is one of those examples in Korean:

(2) A. Mary$_i$-ka ku pati-e kass-ni anim tarun salam-i taysin
Mary-NOM the party-to went-Q or other person-NOM instead
kass-ni?
go-Q
'Is it Mary$_i$ who went to the party or somebody else instead?'

B. Ani, **caki**$_i$-ka kasse
No, **self**$_i$-NOM went
'No, **self**$_i$ went'

(2) illustrates an exchange between two speakers A and B. In A's utterance, *Mary* is mentioned and remains a prominent topic throughout the exchange. In B's utterance, *caki* occurs without any overtly expressed antecedent in its own sentence. As the indexing indicates, *caki* is anteceded by *Mary*. This sort of example has been cited in most of the literature as a case of discourse binding (Huang 1984, Ueda 1984). In fact, *caki* in (2) looks as if it was bound in discourse. In other words, with no possible antecedent available in its own sentence, it looks for its antecedent in the previous discourse. In this case, *caki* is bound by the prominent topic *Mary* in the discourse which is introduced by the subject in the initial utterance (A).

The reason that discourse binding applies to these examples is that *topic* is viewed as a discourse function interpreted as what is being talked about or what is presupposed or understood by *the speaker*. This definition of topic is well suited for the notion of *Perspective* or *Point of View* used in the discourse based accounts of long-distance anaphora. However, this type of account describes rather than explains data. One would like to have a formal account of how the prominent topic or the level of prominence of any given topic is formally represented in order to disambiguate and decide amongst several possible topic antecedents. This is particularly obvious in the following situation:

(3) A. Mary-ka pati-ey ka-ss-ni? anim John-i ka-ss-ni?
Mary-NOM party-to go-PAST-Q or John-NOM go-PAST-Q
'Did Mary go to the party or is it John who went to the party?'

B. ***Caki**-ka ka-ss-e
self-NOM go-PAST-DC
'**Self** went'

(3) has the same structure as (2) except that in (3), *John* replaces *tarun salam* 'other person'. When there are two equally prominent entities in the discourse such as *Mary* and *John* in (3), *caki* in B's reply is not licensed. If *caki* is indeed bound by a prominent entity in discourse according to discourse approaches, then *caki*-binding should be licensed having either *Mary* or *John* as the antecedent. Unless such accounts can provide a good explanation for the ungrammaticality of B in (3), it is hard to see that the binding relation is completely dependent on the discourse. Furthermore, even if discourse approaches can deal with instances like (3), a superior account would be one which can be concretely formalised so that a legitimate antecedent can be clearly visible in relation of *caki* in some formal level, rather than leaving the prediction of the correct antecedent to the discourse context. Given this, the question we would like to ask is simple:

- Can we reduce the explanation of the phenomena to a structural account?

The answer we suggest in the next section will involve the following:

- There always exists a topic phrase either overt or covert that binds the long-distance reflexive *caki*
- The binding in such context is licensed only in double nominative constructions (DNC)

3 Topic Binding in Double Nominative Constructions

The most fundamental hypothesis is that a syntactic topic, be it overt or not, is always available and provides the, or one of the, appropriate binders of *caki.* Furthermore, we claim that this topic constituent is licensed in double nominative constructions. On the basis of this hypothesis, the actual structure of (2) is illustrated as below:

(4) A.

Mary$_i$-ka	ku	pati-e	kass-ni	anim	tarun	salam-i	taysin	kass-ni?
Mary-NOM	the	party-to	went-Q	or	other	person-NOM	instead	go-Q

'Is it Mary$_i$ who went to the party or somebody else instead?'

B.

Ani,	[**e**$_i$]$_{top}$	**caki**$_i$-ka	kasse
No,		**self**$_i$-NOM	went

'No, [**e**$_i$]$_{top}$ **self**$_i$ went'

In B of (4). the topic phrase is shown to bind *caki* and it is not overt. Assuming that this is a correct representation, the question of licensing of this topic remains to be answered. We propose that the licensing of this topic is closely linked to the double nominative constructions. It is well known that Korean and Japanese allow two nominative marked NPs to occur with a one place predicate.

(5) a.

John-i/un	ton-i	issta
John-NOM/TOP	money-NOM	exist

'John has money'

b.

Mary-ka/nun	meri-ka	norahta	
Mary-NOM/TOP	hair-NOM	yellow	is

'Mary's hair is yellow'

c.

LA-ka/nun	hankukin-i	manhta
LA-NOM/TOP	Korean-NOM	many

'LA has many Koreans'

As shown in (5), the first nominative nominal can be readily topic-marked with *'-nun'*.[2] The outer nominative can be considered an argument of the complex predicate created by the combination of the inner nominative and the core predicate, very much like the topic-comment relation holding between a sentential topic and the rest of the sentence (Heycock and Lee 1990). Combining now the two observations made above, we propose that sentences where *caki* occurs without an overt antecedent are underlyingly double nominative constructions.

[2] If the second nominative nominal is marked with *'-nun',* it gives a reading of the contrastive focus (Choi 1996). Also note that in double nominative constructions the order of the two nominals is rigid, for instance, the scrambling of the two nominals is not allowed (Yoon 1987).

This proposal however is not, as it stands, really dependent on these sentences being double nominatives.[3] There is however evidence which clearly suggests that this is indeed the case. This evidence comes from the range of semantic relations that must hold between the topic that we postulate and the rest of the sentence, and the ones holding between the outer nominative and the derived predicate of which it is an argument.

The relations in question are precisely the ones of alienable possession (5a), inalienable possession (5b), part-whole (5c) and identity which are the only ones that occur between the outer and inner nominative in a double nominative construction.[4] As for the examples we have seen for *caki*-binding, the relation in (1b) is *alienable possession,* the relation in (1c) is *identity,* which is the same in B of (2). And also observe other corresponding example involving *caki*:[5]

(6) *Inalienable possession relation*
Mary$_i$-nun meri-ka caki$_i$ ekkay-kkaci tahnunta
Mary-TOP hair-NOM self shoulders-upto reach
'As for Mary$_i$, (her) hair reaches to self$_i$'s shoulders'

It then follows from the above that topic binding of *caki* can only occur in a double nominative construction.

Moreover, in the following example, as an answer to the question in (2), *caki* cannot be topic-marked itself:[6]

(7) B′. *Ani, caki$_i$-**nun** kasse
no, self-TOP went

[3]It could very well be that a phonologically null topic is simply present in the structure.

[4]It should be noted that the relations we refer to here are to be distinguished from, namely, *'aboutness relation.'* The aboutness relation is generally known to hold between a topic phrase and the following clause, whereas the relation in our discussion holds between the two nominals in double nominative constructions.

[5]As for the part-whole relation, it normally involves inanimate nominative nominals, thus, it is hard to find a context where the animate nominals involved in this relation appear to bind *caki.*

[6]This is only relevant to gapless topic constructions like those discussed in this paper. In gapped topic constructions, *caki* may be topic-marked. For the details of the two kinds of topic constructions in relation to *caki*-binding, see Moon (1994), Gill (1998). For the discussion of *caki*-binding especially in gapped topic constructions, see Gill (Forthcoming).

In a discourse approach, this example will not differ from B in (2) and there is no way of explaining the ungrammaticality of (7). However, in our hypothesis, the answer is rather straightforward. *Caki* being a topic itself, it cannot be entitled to have another topic phrase available by the condition that Korean allows only one topic per sentence (Moon 1994, Chang 1995). Thus, there is no possible antecedent (no possible topic phrase) to bind *caki.* Its ungrammaticality also shows that *caki* in (7) cannot look for its possible antecedent beyond the sentential level, that is, it cannot take any discourse antecedent.

Furthermore, given that these relations must hold in double nominative constructions, the ungrammaticality of cases where a topic phrase inappropriately occurs, predicting wrong binding patterns as in (8), is immediately explained away with no further stipulation (e.g., (8) cannot be seen as a double nominative construction because the relation between the two nominals *John* and *Bill* does not suit any of the relations for two nominative nominals in double nominative constructions):

(8) *John$_i$-un Bill-i ku chayk-ul caki$_i$-ekey cwuessta
John-TOP Bill-NOM the book-ACC self-DAT gave
*'As for John$_i$, Bill gave the book to self$_i$'

To sum up, we argue that the binder for *caki* in (4) is not a topic in discourse, but actually a phonetically unrealised topic which originates in the outermost nominative position licensed in an double nominative structure, in other words the topic that binds *caki* in these instances is always in a legitimate argument position. The central evidence for this approach is twofold; syntactically it comes from the otherwise unexplained fact that *caki* can never be topic-marked itself, which suggests that when *caki* occupies the topic position, there is no available position that could be occupied by a potential antecedent. This also implies that *caki* cannot take an antecedent in the discourse domain, but only a sentence-internal antecedent. Furthermore, we have seen that in order for *caki*-binding to be licensed, the topic phrase seems to have a particular relation with a subsequent nominal and this is precisely the ones holding between the two nominals in double nominative constructions. Thus, this indicates that *caki*-binding in this case licensed in the double nominative constructions and the topic phrase is actually licensed in the position of the outer nominal. This confirms again that the topic phrase we postulate as an antecedent of *caki* is a syntactic one.

4 Topic-Orientedness and the Expression of Topics

The last question that remains is what allows the topic not to be expressed as in (4). The answer is related to the topic-orientedness of Korean. In a highly discourse oriented language like Korean, topic phrases are very often suppressed in sentences subsequent to the first occurrence of the topic in the discourse. Consider the following examples:

(9) A. Yong-i nuwku-hako ssawa-ss-ta-ko?
Yong-NOM who-with fight-PST-DC-Q
'Who did you say Yong fought with?'

B. Heyn-hako-yo
Heyn-with-PO
'With Hyen' (Chang 1995, p.200, ex.57(c-d))

Given the topic *Yong* in the initial dialogue A in (9), B's reply is elliptical: the topic elements are not repeated. And once the topic is introduced in an unstressed form, it is suppressed in the subsequent utterance or realised in a pronominal form. Otherwise, the same topic is repeated as shown below:

(10) Mia-nun ko-sam-i tway-yo.
Mia-TOP high-three become-SE
Nay-nyen-ey (kaya-nun/Mia-nun) tayhak-ey ka-yo.
next-year-at she-TOP/Mia-TOP college-to go-SE
Kulayse (kyay-nun/Mia-nun) Yelsimhi Kongpwuha-ko iss-e-yo
So she-TOP/Mia-TOP diligently study-ing iss-PO-DC
'Mia becomes a high school 3rd grader. She goes to college next year. So she is studying hard' (Chang 1995, p.200, ex.58)

In the above discourse setting, *Mia* is the topic in the first sentence. It continues to be the topic and it is realised by zero or the pronominal *kay-nun* 'child/she'. More importantly, the only case where the topic is obligatorily overt is when there exists some ambiguity of the topic (when there are more than one prominent topics in the given context), when the topic has been just changed from the previous one or when there is a need to reintroduce the topic for clarification. Given this, we can now explain the ungrammaticality of B in (3). In (3), *Mary* and *John* can be equally prominent in the context, in which case the reply of B should express the topic explicitly to clarify which one he/she is talking about. Despite this, the topic is still not expressed explicitly. Without such overt topic phrase, *caki*-binding cannot be licensed.

The failure of licensing *caki*-binding can be also found when there is more than one prominent topic in the discourse and when the topic is not properly reintroduced to disambiguate between those prominent topic. Such a case can be shown in (3) we saw above, where *Mary* and *John* are equally prominent in discourse and the reply of B failed to reintroduce a proper topic to disambiguate between the two, thus *caki*-binding is not properly bound. All the more, topic being a pronominal element of a particular kind, it disallows split antecedents.[7] In this way, the chain of an overt or covert topic is rather systematic. Understanding this chain of the topics, which is structurally accommodated by double nominative constructions, provides a rather neat way of predicting the observed binding patterns.

5 HPSG Approach

In the last section, we saw that the outer nominal can take the topic marker *-nun* as well as the nominative marker. It may be argued that the topic-marked nominal should not be included in the argument structure, as *topic* is not a selected argument. For example, Yoon (1987) argues that the DNC should be analysed as a gapless topic/focus construction such that the outer nominal may be licensed by the same principles that license *as for* phrases and other parentheticals in English. In fact, the analysis of the outer nominal as a pure topic is not uncontroversial. There is plenty of evidence that the outer nominal has legitimate argument status (see, for examples, Doron and Heycock (1999)). Our view of DNC is in line with the latter and the outer nominal is treated as a subject member of ARG-ST. The fact that it occurs in the left most position identifies it as the most prominent element as is common in other languages. This simply explains why the nominative case of the outer nominative nominal can freely alternate with the topic marker as shown in (5).

In this paper, we adopt the hypothesis of Manning (1996) and Manning and Sag (1998) that binding principles are stated on a level of syntacticized argument structure. On the basis of this, the constraint on double nominative constructions is presented as follows:

[7] Perhaps the pronominal in question is akin to PRO, which also needs to be bound and cannot take split antecedents. However, we will leave that issue open for the time being.

(11) DOUBLE NOMINATIVE CONSTRUCTION LEXICAL RULE

$$\begin{bmatrix} \text{VAL} \begin{bmatrix} \text{SUBJ} \left\langle \boxed{3}\text{NP}_{\boxed{4}} \right\rangle \end{bmatrix} \\ \text{ARG-ST} \left\langle \boxed{3}\text{NP}_{\boxed{4}} \right\rangle \oplus \left(\left\langle \boxed{5} \right\rangle \right) \end{bmatrix} \Longrightarrow$$

$$\begin{bmatrix} \text{VAL} \begin{bmatrix} \text{SUBJ} \left\langle \boxed{1}\text{NP}_{\boxed{2}}, \boxed{3}\text{NP}_{\boxed{4}} \right\rangle \end{bmatrix} \\ \text{CONT} \begin{bmatrix} \text{R} \left\langle \text{NP}_{\boxed{2}}, \text{NP}_{\boxed{4}} \right\rangle \end{bmatrix} \\ \text{CONX} \begin{bmatrix} \text{TOPIC } \boxed{1}\text{NP} \end{bmatrix} \\ \text{ARG-ST} \left\langle \boxed{1}\text{NP}_{\boxed{2}}, \boxed{3}\text{NP}_{\boxed{4}} \right\rangle \oplus \left(\left\langle \boxed{5} \right\rangle \right) \end{bmatrix}$$

As for the basic mechanism of this lexical rule, the input of the rule should take a lexical entry with a single subject (indicated by $\boxed{1}$), which returns the output with the two subjects ($\boxed{1}$ and $\boxed{3}$) resulting in double nominative constructions. Also, the ARG-ST of the input shows that it takes one subject as an argument and this is followed by an appending list of other arguments ($\boxed{5}$) if any, whereas, he ARG-ST of the output, then, has two subjects. What DNC states for long-distance anaphora is that Double Nominative Constructions can be licensed only if they satisfy the semantic and discourse constraints for the two nominative-marked nominals to take a appropriate position in the ARG-ST in order to constitute legitimate binders for *caki.* The CONT attributes checks the appropriate semantic relation between the two nominatives, that is, inalienable, relational possession, identity etc., which we will refer to as R-relations. At the same time, the CONX attribute indicates what the prominent element in the discourse is. That is, the CONX has a topic feature whose value should be instantiated with a prominent element in the given discourse or an element provided as a topic explicitly with *nun* making. With these two features appropriately satisfied, the two nominals are placed as the first elements in the ARG-ST. These positions guarantee that the two nominative nominals will be the optimal binder of *caki.* More importantly, however, it is only when the topic value is explicitly provided that the outer nominal is allowed to be covert. The covert element can be understood as an empty pronominal which can be recovered through a given context in languages that freely allow pro-drop and lack a rich inflectional system like Korean.[8] Thus, the ungrammaticality of

[8]This, however, should not be understood as a missing element or a *gap* as that of Sag (1997).

(12) below is due to the fact that the topic is underspecified, and the outer nominal is covert.

(12) * Caki-ka kasse
Self-NOM went
* 'Self went'

(13)

$$*\left[\begin{array}{l}
\text{VAL}\left[\text{SUBJ}\left\langle \boxed{2}\text{NP}_{\boxed{3}ref} \right\rangle\right] \\
\text{CONT}\left[\text{R}\left\langle [\,],\ \text{NP}_{\boxed{3}} \right\rangle\right] \\
\text{CONX}\left[\text{TOPIC}\left\langle\right\rangle\right] \\
\text{ARG-ST}\left\langle \text{PRO},\ \boxed{2}\text{NP}_{\boxed{3}ref} \right\rangle
\end{array}\right]$$

Furthermore, as the outer nominal is covert there is no way of ensuring that the DNC-relevant relations (R-relations) are properly satisfied.

Turning back to (12), observe that it becomes fully grammatical when a context where a topic can be identified is supplied, as is also the case for (4), whose feature structure is illustrated in (14):

(14)

$$\left[\begin{array}{l}
\text{VAL}\left[\text{SUBJ}\left\langle \boxed{3}\text{NP}_{\boxed{2}} \right\rangle\right] \\
\text{CONT}\left[\text{R}\left\langle \text{NP}_{\boxed{2}},\ \text{NP}_{\boxed{2}} \right\rangle\right] \\
\text{CONX}\left[\text{TOPIC}\ \boxed{1}\text{NP}\right] \\
\text{ARG-ST}\left\langle \boxed{1}\text{PRO}_{\boxed{2}},\ \boxed{3}\text{NP}_{\boxed{2}ref} \right\rangle \oplus \boxed{5}\text{NP}
\end{array}\right]$$

In this case, even though the outer nominal is covert, there is a contextual back-up which allows the recovery of the content of the missing element as indicated in $\boxed{1}$. With the outer nominal properly identified, the CONT attribute indicates that the two nominals are in a proper R-relation. Furthermore, on the basis of the DNC lexical rule, the example in (8) we observed earlier is straightforwardly explained. In (8), the topic maker is licensed only from DNC constructions and the first two nominals *John* and *Bill* do not hold any of R-relations. Therefore DNC is not licensed, let alone any caki-binding.

6 Conclusion

In this paper, we have looked closely at the data of long-distance anaphora, which have been widely treated by discourse accounts, and tried to reduce the explanation of the phenomena to a more formal and structural account. We have argued that the data in question is an instance of topic binding where the topic phrase is licensed in an outer nominative nominal position in double nominative constructions. Also, exploiting the fact that Korean is a highly topic oriented language, the topic antecedent of *caki* can be either covert and not be repeated, or overt to disambiguate or reintroduce a topic. This proves to be adequate to predict a correct binding relation, and furthermore, having been implemented in HPSG, it turns out to be a more formal account in comparison to discourse approaches.

In conclusion, we brought together a set of seemingly unrelated properties of a particular set of languages under a special mode of interaction of the syntactic, semantic and pragmatic components of linguistic theory and showed that this set of properties instead of being a mere curious and interesting set of "areal features" in fact represents a tightly knit network and one of the best (perhaps the optimal) solution to the long-distance anaphora question.

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