• Title
  Semantic Binding of Long-distance Anaphor *Caki* in Korean

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Semantic Binding of Long-distance Anaphor *Caki* in Korean
ABSTRACT In this paper, we consider the binding theoretic status of the Korean long-distance anaphor *caki*. While *caki* has been called a long-distance anaphor, in reality its antecedent can be found locally as well as at a distance. It can also have a non-c-commanding antecedent, and an antecedent from a previous sentence. Though there are many different approaches to *caki*, what is apparent is the generalization that *caki* must be co-indexed with an NP/DP if there is a possible antecedent in the syntax. We will take this one step further and show that *caki* must be bound if there is a possible binder in the semantics, using examples where *caki* is bound by implicit arguments coming from reportative evidentials and generics/modals. We will argue that this generalization is best captured if *caki* is seen as a bound variable requiring a semantic binder, and demonstrate how this bound variable analysis can provide a unified account for local, long-distance, and discourse bound instances of *caki* as well as instances of *caki* with a non-c-commanding antecedent and those bound by an implicit argument. The residual cases where *caki* has no possible semantic binder are treated as instances of exempt anaphora, free variables, the felicity of which are subject to discourse conditions.∗

Keywords: long-distance anaphor, bound variable, semantic binding, *caki*, Korean

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1. **INTRODUCTION**  
In this paper, we consider the binding-theoretic status of the Korean long-distance anaphor *caki*. Going back to Faltz 1977 and Pica 1987, one of the core defining features of long-distance anaphors (LDAs) is that they are monomorphemic, demonstrable both in the Germanic LDAs *zich* (Dutch) and *seg* (Norwegian) as well as the East Asian *ziji* (Chinese) and *zibun* (Japanese). However, while *caki* fits among these other anaphors in terms of its morphological character, there are also some fundamental differences. For example, Reinhart and Reuland (1993) note that in monoclausal co-argument contexts, with predicates that are not intrinsically reflexive, *zich* and *seg* are ungrammatical without an accompanying reflexivizing anaphor. This is illustrated by the contrasting grammaticality judgments between 1 and 2.

(1) a. Dutch  
* Max₁ haat *zich₁.  
Max  hates self  (Reinhart and Reuland 1993)

b. Norwegian  
* Jon₁ foraktet *seg₁.  
Jon  despised self  (Hellan 1988)

(2) Dutch  
Henk₁ wees zichzelf₁ aan *zich₁ toe.  
Henk  assigned himself to self  ‘Henk assigned himself to self.’ (Reinhart & Reuland 1993)

However, *caki* allows for local antecedents in monoclausal sentences with no additional support, as in 3.

(3) John₁-i *caki₁-lul pipherha-yess-ta.  
John-NOM self-ACC criticize-PST-DECL  
‘John criticized self.’ (O’Grady 1987)

Differences emerge yet again in that although *zich* and *seg* generally cannot be bound by co-arguments, they must be bound within the minimal tensed domain (Hellan 1988; Büring 2005). This is illustrated for *seg* in 4ab.

(4) a. Jon₁ bad oss førske å få deg til å snakke pent om *seg₁.  
Jon  asked us try to get you towards to talk nicely about self  
‘Jon asked us to try to get you to talk nicely about self.’ (Hellan 1988)

b. * Jon₁ var ikke klar over at [vi hadde snakket om *seg₁].  
Jon  was not aware over that we had talked about self  
‘Jon was not aware that we had talked about self.’ (Hellan 1988)
In 5 below, however, *caki* may take any c-commanding nominal as its antecedent, even beyond the lowest finite clause. As *caki* allows for these long-distance antecedents, the possibility of ambiguity arises. In 5, the antecedent of *caki* can be the embedded subject *Mary* or the matrix subject *John* (O’Grady 1987; Yoon 1989; Cho 1994; Gill 1999; Kim 2000; Kang 2001; Sohng 2004; Kim et al. 2009).

(5) John₁-i [Mary₂-ka *caki*₁/₂-lul salangha-n-tako] sanygakha-n-ta.
    John-NOM Mary-NOM self-ACC love-PRS-COMP think-PRS-DECL
    ‘John thinks that Mary loves self.’ (Yoon 1989)

Another property noted by Pica (1987) and other researchers (Hermon 1992; Cole et al. 1990; Cole & Sung 1994; Cole et al. 2001) is that LDAs across languages are subject oriented in that they can only take subject antecedents. In contrast, a non-subject can be an antecedent of *caki* (Park 1986; Yoon 1989; Cho 1994; Sohng 2004). In 6a, the antecedent of *caki* can be the object *Tom*, and in 6b, it can be the the matrix indirect object *Mary*.¹

    John-TOP Tom-ACC self-GEN house-to send-PST-DECL
    John sent Tom to self’s house.’ (Park 1986)

    John-NOM Mary-from self-NOM cancer-be-COMP hear-PST-DECL
    ‘John heard from Mary that self has cancer.’ (Yoon 1989)

In coming to his foundational definition of an anaphor, Pica also makes the claim that anaphors must be c-commanded by an appropriate antecedent in a given domain and that this relationship cannot obtain across sentence boundaries. Again setting it apart from other LDAs, *caki* can have a non-c-commanding antecedent (O’Grady 1987; Kim 2000), as in 7, and it can even be discourse bound (Yang 1982; Park 1986; Gill 1999; Kim 2000), with its antecedent in the previous sentence, as in 8.

(7) [Suni₁-uy sinpal-un] *caki*₁-uy pal-pota hwelssin ku-ta.
    Suni-GEN shoes-TOP self-GEN foot-than a lot big-DECL
    ‘Suni’s shoes are a lot bigger than self’s feet.’ (Kim 2000)

(8) A: John₁-i salam-ul ponay-ss-ni?
    John-NOM man-ACC send-PST-INT
    ‘Did John send a man?’

    B: Ani, *caki*₁-ka cikcep o-ass-e.
    No, self-NOM in person come-PST-DECL
    ‘No, self came in person.’ (Yang 1982)
In addition to these characteristics that set caki apart from LDAs in Germanic, there are distinctions between caki and other East Asian LDAs, most notably the blocking effect commonly associated with the Chinese ziji. We discuss how caki differs from ziji in more detail in section 2.

From these observed facts, we see that while caki fits the definition of an LDA in that it is a monomorphemic form allowing for long-distance antecedents, it is not subject to the locality constraints and subject orientation familiar from studies of comparable Germanic forms. We will further see that it is equivalently not subject to the blocking effect familiar from East Asian anaphora, and challenging the core notion of what it means to be an anaphor, caki can take non-c-commanding and extra-sentential antecedents.

A common thread in the literature on caki is concerned with how the non-local relationship between caki and its antecedent is established in the syntax. Though there are many different approaches, what is apparent is the generalization that caki must be co-indexed with an NP/DP if there is a possible antecedent in the syntax. These syntactic efforts are challenged in that in some cases, the syntactic antecedent of caki can be absent. 9 and 10 from the Sejong Colloquial Corpus illustrate this point. 9 is a reportative sentence, with a reportative marker -tay on the matrix verb. The antecedent of caki in 9 is not syntactically present, but it is understood to be the contextually salient reporter of the reported proposition, Swuyen according to the discourse context in the original source. 10 is a generic/modal sentence, again with no syntactic antecedent for caki. In this case, it is impossible to identify a specific antecedent from the discourse context; instead, caki seems to function as an impersonal pronoun similar to English one.

    self-TOP producer-NOM become-AUX want-REPORT-HONOR
    ‘(Swuyen said) self wants to become a producer.’ [Sejong Colloquial Corpus]

(10) Caki swukcey-nun caki-ka ha-nun ke-ya.
    self homework-TOP self-NOM do-ADNOM FUT-DECL
    ‘In general, self should do self’s homework.’ [Sejong Colloquial Corpus]

We propose that a unified treatment of caki in examples such as in 3 and 5-8 as well as in 9-10 can be given with a novel generalization that caki must be bound in the semantics if there is a possible semantic binder. It will be shown that in 9 and 10, though binders of caki are not present in the syntax, caki is still bound by implicit arguments coming from the semantics of reportatives and generics/modals. In examples with a syntactic antecedent as in 3 and 5-7, the semantic binder trivially corresponds to the syntactic antecedent. The instances of discourse binding as in 8 can also be shown to reduce to sentence-local semantic binding, along the lines of Park 1986 and Gill 1999, which will be discussed in more detail later in the paper. We argue that this generalization about caki binding leads naturally to the conclusion that caki should be seen as a bound variable requiring a semantic binder.3
The rest of the paper is organized as follows. In section 2, we sort through what has been said about *caki*, classifying the numerous publications on *caki* into three main approaches: the approach where the restrictions on *caki* interpretation are reduced to something like Condition A or B, the approach where these restrictions take the form of an antecedent hierarchy, and the approach where they are subject to conditions of logophoricity. We then present our proposed analysis of *caki* as a bound variable in section 3. After a discussion of supporting data for viewing *caki* as a bound variable, we demonstrate how this bound variable analysis can provide a unified account for local, long-distance, and discourse bound instances of *caki* as well as instances of *caki* with a non-c-commanding antecedent and those bound by an implicit argument. In section 4, we deal with the residual cases where *caki* has no possible semantic binder. These are treated as instances of exempt anaphora, free variables, the felicity of which are subject to discourse conditions. We situate these free variable uses within a larger cross-linguistic context of bound and exempt forms, leading into a discussion on the implications for the grammatical status of LDAs within and between languages. We conclude in section 5 with a brief discussion on the place of *caki* in the larger typology of LDAs.

2. What has been said about *caki*  

The background literature on *caki* is extensive, and often contradictory. It is not uncommon to see nearly identical structures given opposing judgments by two different authors. In this section, we attempt to sort through these conflicts, identifying three major threads of discussion with regards to the interpretation of *caki*.

2.1. *Caki*-interpretation is subject to something like Condition A or B  

One of the most influential approaches to LDAs in East Asian languages is the cyclic head movement approach developed in Cole et al. 1990 and Cole & Sung 1994. In this approach, LDAs undergo a cyclic head movement to the matrix Infl at LF, as illustrated in 11. There, the LDA enters into a local Spec-head agreement relation with the matrix subject, its syntactic antecedent. Restrictions on interpreting LDAs thus reduce to something very much like Chomsky’s (1981) Condition A: an LDA is required to be c-commanded by its antecedent within a local domain.

(11) <Insert Tree 1 Here>

The cyclic head movement analysis consequently predicts that only a subject can be the antecedent of an LDA (subject orientation). 12, taken from Cole et al. 1990, illustrates the subject orientation of Chinese *ziji*. Here, the embedded subject or the matrix subject, but not the indirect object, can be the antecedent of *ziji*.

(12) Wangwu₁ shuo [Zhangsan₂ zengsong gei Lisi₃ yipian guanyu ziji₁/₂/∗ de wenzhang]. 
    Wangwu say Zhangsan give to Lisi one about self DE article
    ‘Wangwu says that Zhangsan gave an article about self to Lisi.’(Cole and Sung 1994)
Cole et al. and Cole & Sung also predict that in languages like Chinese and Korean with no verbal agreement, a blocking effect is evident in a configuration as in 13, such that subject\(_1\) cannot be the antecedent of the LDA if subject\(_1\) and subject\(_2\) are different in person. This blocking effect is illustrated in 14 for Chinese. Here, the presence of a 1st person subject in a clause intervening between the LDA and the higher subject (Zhangsan) blocks long-distance anaphora.

(13) [subject\(_1\) ... [subject\(_2\) ... LDA ...]]

(14) Zhangsan\(_1\) renwei [wo\(_2\) zhidaow [Wangwu\(_3\) xihuan ziji\(_{1/2/3}\)]]
Zhangsan thinks I know Wangwu like self
‘Zhangsan thinks that I know that Wangwu likes self.’ (Cole et al. 1990)

But, caki is not strictly subject oriented and it is not subject to the blocking effect. Examples in 6 showed that a subject, a direct object or an indirect object can serve as an antecedent of caki. 15 shows that the matrix 3rd person subject Chelswu can be the antecedent of caki even though there is an intervening 1st person subject.

(15) Chelswu\(_1\)-nun [nay-ka caki\(_1\) -lul sarangha-n-tako] sayngkakha-n-ta.
Chelswu-TOP I-NOM self-ACC love-PRES-COMP think-PRES-DECL
‘Chelswu thinks I love self.’ (Cole et. al. 1990)

The examples in 6 are fairly representative of the instances of non-subject antecedent for caki which are seen in the literature. Particularly in the case of 6b, it is worth noting that the matrix verb is tut- ‘hear’, for which a matrix indirect object antecedent of caki is often reported. Parallel examples using malha- ‘say’, are more frequent in the literature (Cho 1994; Sohng 2004), though the judgements are less consistent, with some authors rejecting non-subject antecedents for caki in such environments.\(^4\) Han & Storoshenko 2013 addresses this issue, showing that there are indeed differences depending on the associated predicates. Specifically, non-subject antecedents are more frequently accepted with tut- ‘hear’ over malha- ‘say’.

Aware that caki is not subject to the blocking effect, and can allow non-subject antecedents, Cole and colleagues do not classify caki as an LDA. Instead, providing the example in 16, they classify caki as a pronoun that is subject to Condition B. Other linguists however do not share their judgment on such examples (O’Grady 1987; Cho 1994; Gill 1999; Kim 2000; Kang 2001; Sohng 2004; Kim et al. 2009). O’Grady (1987) for example reports that 17 (repeated from 3) is perfectly acceptable, though it should be noted that Cole and colleagues do not judge 16 to be ungrammatical, but merely degraded.

(16) ?? John\(_1\)-un caki\(_1\) -lul miweha-n-ta.
John-TOP self-ACC hate-PRES-DECL
‘John hates self.’ (Cole et. al. 1990)
The only difference between the two examples (aside from the fact that the subject is topic-marked in 16 and nominative case-marked in 17) is the type of the verbal predicate used. According to Lee (1988), *miweha-* in 16 is a physical predicate and literally means ‘do the behaviour of hating or show signs of hating,’ and *piphanha-* in 17 is a mental predicate and literally means ‘be critical.’ Lee observes that between the two types of predicate, the mental predicate type more readily allows co-argument use of *caki*, as reflected in the reported judgments in 16 and 17. Clearly, as shown by Lee, there is a subtle interaction between the lexical properties of predicates and the acceptability of *caki* with a local antecedent. This is not surprising though, as we have already seen with examples such as 6b that it appears that the predicate plays some role in the interpretation of *caki* in non-local contexts as well. Moreover, Kang (2001) reports that in examining accusative-marked forms of *caki* in KOREA-1 Corpus (Korea University Corpus of Korean, Collection I), he found just as many instances of *caki* with a local antecedent (151 tokens) as the ones with a non-local antecedent (165 tokens). It is thus safe to say that *caki* can have a local antecedent, and so it should not be classified as a pronoun that is subject to Condition B.

This issue is taken up again in Sohng 2004, where it is argued that *caki* is an LDA and that it can be made compatible with the cyclic head movement analysis. Firstly, Sohng argues that Korean *caki* has inherent $\phi$-features (3rd person), but Chinese *ziji* does not. This follows from Lee’s (1973) observation that the antecedent of *caki* is constrained to be 3rd person, while there is no such constraint on the antecedent of *ziji*. Sohng then proposes a modified version of the head movement analysis, incorporating this difference in $\phi$-features to account for the difference in subject orientation and blocking effect between *caki* and *ziji*. He proposes that because Korean *caki* has inherent 3rd person $\phi$-features, there is no need for feature checking through Spec-head agreement at LF. In Chinese, *ziji* lacks inherent $\phi$-features, and so must be checked through Spec-head agreement with each Infl node passed through at LF. This will lead to feature clash if a lower subject is different in person from the higher subject, resulting in the observed blocking effect. As for the lack of subject orientation, Sohng proposes a mechanism of chain binding, whereby a non-subject NP/DP would locally c-command a link in the movement chain of *caki* as it moves up to the matrix Infl. He argues that a c-commanding non-subject NP/DP can serve as an antecedent of an LDA iff all the members of that LDA’s chain have $\phi$-features. Chinese *ziji* does not have inherent $\phi$-features, so there will always be a member of *ziji* chain that lacks $\phi$-features and thus a non-subject DP cannot be an antecedent. Conversely, Korean *caki* has inherent $\phi$-features, so a non-subject DP can be an antecedent.
Though Sohng’s analysis brings caki in line with the head movement analysis of other LDAs, it remains unclear why there should be this correlation between the subject orientation and the $\phi$-feature property of the LDA. Furthermore, this analysis still treats caki as requiring a c-commanding syntactic antecedent. But, as we have seen in the introduction, an antecedent of caki need not c-command it, and is even retrievable from the prior discourse. Also, there are cases in which caki’s understood antecedent can be an implicit argument that is present in the semantics but not in the syntax.

2.2. Caki-INTERPRETATION IS SUBJECT TO AN ANTECEDENT HIERARCHY  An approach to caki-interpretation that does not require the antecedent to c-command caki can be found in those works adopting the view that caki-interpretation is subject to principles that make use of an antecedent hierarchy. O’Grady (1987) and Kim (2000) each develop a system using an antecedent hierarchy based on grammatical functions. O’Grady’s system is summarized in 18 and Kim’s is summarized in 19.5

(18) O’Grady 1987
   a. Preference hierarchy:
      subject > direct object, indirect object > other NPs
   b. The Priority principle:
      Caki takes as antecedent the highest eligible NP in the hierarchy, where an eligible NP is 3rd person with a human referent.

(19) Kim 2000
   a. Prominence hierarchy:
      topic > subject > object of verb > object of postposition > genitive NP > object of comparative
   b. Prominence principle for anaphors in Korean: Caki must be coreferential with a potential antecedent (PA) only if there is a PA, where a PA for caki is a 3rd person NP that is more prominent than caki.
   c. Interpretation rule for anaphors in Korean: When there is more than one competing interpretation of caki, the larger the gap between an antecedent and caki in the prominence hierarchy, the more preferred the interpretation.

Both systems predict that a genitive can serve as an antecedent of caki, as in 7, repeated here as 20. According to O’Grady, the genitive Suni is the only eligible NP and so it is the highest NP in the preference hierarchy. It therefore can be an antecedent of caki even though it does not c-command it. According to Kim, as Suni is a genitive and caki is the complement of a
comparative, *Suni* is higher in the hierarchy than *caki*. This makes *Suni* more prominent than *caki*, and so *Suni* can be the antecedent of *caki*.

(20) [Suni₁-uy sinpal-un] **caki**₁-uy pal-pota hwełssin ku-ta.
    *Suni*-GEN shoes-TOP self-GEN foot-than a lot big-DECL
    ‘Suni’s shoes are a lot bigger than self’s feet.’ (Kim 2000)

However, these analyses also predict that an NP in an island can be an antecedent of *caki*, as in 21. In O’Grady’s system, *John* in the relative clause is the only eligible NP and so it is the highest NP in the preference hierarchy. Thus, it can be an antecedent of *caki*. In Kim’s system, the only potential antecedent *John* is a subject and so it is higher in the hierarchy than *caki*, which is an object of postposition. This also results in the prediction that *John* should be a possible antecedent for *caki*.

    ‘I gave the book that John wanted to self.’ (O’Grady 1987)

In reporting this data, O’Grady himself notes that speakers sometimes do not accept examples such as 21 initially, and it is worth noting that no similar examples of *caki* with such an embedded antecedent were found in our study of the Sejong Colloquial Corpus. Moreover, a different judgment on similar examples can be found in the literature. Lee (1973) for example reports that an NP in a subject clause cannot be an antecedent of *caki* in 22. What emerges from these conflicting discussions is that while examples such as 20 are readily acceptable to native speakers, examples such as 21 and 22 are degraded. This contrast in grammaticality judgments is not expected under antecedent hierarchy approaches.

(22) * [Sue-ka Joe₁-lul palapo-nun kes-i] **caki**₁-eykey culkep-ess-ta.
    Sue-NOM Joe-ACC look at-ADNOM fact-NOM self-DAT pleasant-PST-DECL
    ‘The fact that Sue is looking at Joe was pleasing to self.’ (Lee 1973)

Another incorrect prediction the two systems make can be seen with 23. Here, they both predict that only the matrix subject can be the antecedent of *caki*. For O’Grady, the matrix subject *Cheli* is higher in the hierarchy than the indirect object *Yengi*, and so only *Cheli* can be the antecedent. For Kim, while the topic *Cheli* can be an antecedent of *caki*, the indirect object *Yengi* cannot because as *caki* is a subject, it is higher in the hierarchy than *Yengi*, but lower in the hierarchy than *Cheli*.

    Cheli-TOP Yengi-to self-NOM won-COMP say-PST-DECL
    ‘Cheli said to Yengi that self had won.’ (Kim 2000)
Again, there is conflict in the literature. Sohng (2004), in giving examples parallel to 23, indicates a preference to interpret caki with Cheli (in this case) as the antecedent, but would still maintain that the interpretation in which Yengi is the antecedent is also readily available. The availability of this interpretation is consistent with the judgments reported for 6b in the literature: that the indirect object Mary can be an antecedent for the subject caki.

The antecedent hierarchy based accounts are flexible enough to account for examples where caki takes a non-c-commanding antecedent. But they are too inclusive in that they readily allow an NP/DP in an island to be an antecedent, and at the same time they are too exclusive in that they rule out interpretations that are readily acceptable to native speakers, apparently ruling out the possibility that caki can be ambiguous. These hierarchies most likely play a role in the formation of violable pragmatic principles, rather than grammatical constraints, predicting preferred interpretations when there is more than one possible antecedent.

2.3. Caki-interpretation is subject to conditions of logophoricity Another prevalent approach to caki is that it is a logophor whose antecedent must be a logophoric centre. Adopting the tests used in Sells 1987 on the logophoric status of Japanese zibun, Yoon (1989) attempts to make a case that caki’s antecedent must be the pivot, the person from whose point of view the report is made. However, the judgments Yoon reports in building her case either do not fully support the logophoric approach or have been called into question.

Yoon reports that in 24, only John can be the antecedent of caki, as it is the source of the report, and hence the pivot. However, Yoon reports that in 5, a similar sentence as 24, the matrix subject, the source of the thought, is not the only possible antecedent of caki. Moreover, Yoon reports that in 6b, both John and Mary can serve as an antecedent of caki. In this sentence, Mary is the pivot, so it should be the only possible antecedent.

John-NOM Mary-DAT self-NOM cancer-COP-COMP say-PST-DECL
‘John told Mary that self has cancer.’ (Yoon 1989)

Yoon also reports a contrast in the grammaticality judgment between 25a and 25b. According to Yoon, the source of this contrast is in the embedded clause verbs, one with o- ‘come’, and the other with ka- ‘go’. Yoon claims that o- requires speaker empathy with the goal/destination, in this case John, making John the pivot in 25a, dictating that only he can be the antecedent for caki. Conversely, ka- requires agent empathy, making Tom the pivot, thus blocking caki from taking the matrix subject as the antecedent in 25b. Though the interpretation in which John is the antecedent of caki may be awkward, it is not completely ruled out, as Yoon herself acknowledges. This interpretation could be possible in a scenario where Tom has gone to a place John can reasonably be expected to be found, but John is not actually there at the time of utterance. Moreover,
following along Yoon’s reasoning, the pivot Tom should be the only possible antecedent for caki in 25b. But this reading is not available, as it is not sensible to say that Tom went somewhere to visit himself.

    John-NOM Mary-DAT Tom-NOM self-ACC see-come-PST-COMP say-PST-DECL
    ‘John told Mary that Tom came to see/visit self.’ (Yoon 1989)

    John-NOM Mary-DAT Tom-NOM self-ACC see-go-PST-COMP say-PST-DECL
    ‘John told Mary that Tom went to see/visit self.’ (Yoon 1989)

It should also be noted that different judgments have been reported on similar or identical sentences by different authors. For instance, Park (1986) reports ambiguity for sentences in 26. Though these examples were originally used by Park as part of an argument against the subject orientation of caki, they have interesting implications for the current discussion on logophoricity of caki. In 26a, the indirect object is ordered into motion, and in 26b, the direct object is made to undergo motion. These should be pivots according to Yoon, yet the subject remains a possible antecedent in both cases.

    John-TOP Mary-DAT self-GEN home-to go-COMP order-PST-DECL
    ‘John ordered Mary to go to self’s house.’ (Park 1986)

    John-TOP Tom-ACC self-GEN home-to send-PST-DECL
    ‘John sent Tom to self’s house.’ (Park 1986)

    It is thus doubtful that caki should be characterized as a logophor. Logophoricity may still play a role though, in choosing an antecedent when there is more than one possibility in a given context. But again, as with antecedent hierarchies, the role it plays should be cast in terms of violable pragmatic principles, and not as rigid grammatical constraints.

    In sum, we still need a grammatical account of caki that includes c-commanding arguments (subject, direct object and indirect object) as well as non-c-commanding genitives in the set of possible antecedents. This account should also allow for both local and non-local antecedents as well as binding by implicit arguments as illustrated in 9-10 and instances of discourse binding as illustrated in 8. At the same time, it should have an explanation as to why there is a contrast in the acceptability between examples with a genitive antecedent as in 20 and those with an antecedent in an island as in 21. In section 3, we argue that all these follow if we treat caki as a bound variable, recognizing that ambiguous cases may be subject to further pragmatic considerations.
3. Caki as a Bound Variable Requiring a Semantic Binder  In subsection 3.1, we present arguments for the bound variable status of caki. In subsection 3.2, we present apparent counter examples discussed in the literature that seem to support the view that caki should be interpreted through co-reference with its antecedent, not variable binding. We argue that these too can be brought in line with the bound variable treatment of caki. The exact mechanism as to how caki is bound in the semantics is presented in subsection 3.3.

3.1. The Case for the Bound Variable Status of Caki

VP-ellipsis  In sentences such as in 27 and 28, caki must be bound by the quantifier motwu ‘every’. In 27, caki is bound locally, and in 28, it is bound at a distance. In either case, it cannot be construed as a free variable referring to some contextually salient person.

(27) Motwu₁-ka  caki₁-lul salangha-n-ta.
   everyone-NOM self-ACC love-PRES-DECL
   ‘Everyone loves self.’

   everyone-NOM John-NOM self-ACC love-PRES-COMP think-PRES-DECL
   ‘Everyone thinks that John loves self.’ (Moon 1995)

Support for the view that caki is also a bound variable when its antecedent is a proper noun comes from VP-ellipsis. In English, sentences containing quantifiers, pronouns and VP-ellipsis, as in 29, are ambiguous between a strict reading and a sloppy reading.

(29) Every woman in Culver City hates her neighbor, but no woman in Los Feliz does. (Büring 2005)

Under the strict reading, her in the overt VP is a free variable and obtains its meaning by referring to some contextually salient female, and the corresponding pronoun in the elided VP is also a free variable and co-references with the same female. So, under this reading, there is a particular female whose neighbor that all Culver City women hate, but not Los Feliz women. Under the sloppy reading, her in the overt VP and the corresponding pronoun in the elided VP are bound variables, and are bound by every woman and no woman respectively. So, under this reading, every woman in Culver City hates her own neighbor, but no Los Feliz woman hates the people that she herself lives near.

Sentences with proper nouns and VP ellipsis in English show similar ambiguity, as in 30. Under the strict reading, as a free variable, his can co-refer with Felix or refer to some other contextually salient male, and the sentence means that Felix and Max both hate that male’s
neighbor. Under the sloppy reading, *his* is bound by *Felix*, and the sentence means that Felix hates Felix’s neighbor, and Max hates Max’s neighbor, the elided pronoun being bound by *Max*.

(30) Felix hates his neighbor, and Max does, too. (Büring 2005)

In contrast, only the sloppy reading is available to similar VP-ellipsis examples in Korean. For instance, 31 can only be interpreted as John trusted John too much and Mary trusted Mary too much. This indicates that *caki* should be interpreted through variable binding, and not through co-reference with its antecedent. If *caki* were merely coreferential, then the strict reading where Mary overtrusted John should also be available.

     John-NOM self-ACC overtrust-PST-and Mary-also so-do-PST-DECL
     ‘John overtrusted self, and Mary did too.’ (Cho 1996)
     = Mary overtrusted Mary. (✓ Sloppy)
     ≠ Mary overtrusted John. (* Strict)

The same facts obtain when the antecedent of *caki* is in a higher clause. In 32, only the sloppy reading is available where Tongswu thought Tongswu was a genius, indicating that *caki* is a bound variable here too.

     Cheli-TOP self-NOM genius-COMP think-PST-DECL Tongswu-also so-do-PST-DECL
     ‘Chel thought that self was a genius. Tongswu did so too.’ (Kim and Yoon 2009)
     = Tongswu thought Tongswu was a genius. (✓ Sloppy)
     ≠ Tongswu thought Cheli was a genius. (* Strict)

*Only NP/DPs* The interpretation of sentences with *only* NP/DPs, another test of bound variable readings, also support the bound variable status of *caki*. In English, sentences containing *only* and a pronoun are ambiguous, as in 33, depending on how the pronoun is interpreted.

(33) I only said that TATJANA should stay in her room. (Büring 2005)

If interpreted as a free variable, *her* can co-refer with Tatjana or refer to some other contextually salient female, and the sentence implies that the speaker didn’t say anyone other than Tatjana should stay in Tatjana’s (or some other contextually salient female’s) room. If interpreted as a bound variable, *her* is bound by Tatjana, and the sentence implies that the speaker didn’t say anyone other than Tatjana should stay in his/her own room.

However, similar examples in Korean are not ambiguous and have the bound variable reading only. For instance, 34 means that John is the only one that trusts himself too much and other
people do not trust themselves too much. 35 means that Cheli is the only one that thought he was a genius and other people do not think that they are geniuses. Crucially, 34 is true if other people trusted John too much and 35 is still true if other people thought that Cheli was a genius; under a co-referential reading of caki, these examples should be judged false in such contexts.

(34) John₁-man-i caki₁-lul kwasinhay-ss-ta.
    John-only-NOM self-ACC overtrust-PST-DECL
    ‘Only John overtrusted self.’

    Cheli-only-NOM self-NOM genius-COMP think-PST-DECL
    ‘Only Cheli thought that self was a genius.’

**ABSENCE OF SUBJECT ORIENTATION**  A binder of a bound variable need not be a subject. In 36, a bound variable in English is bound by an indirect object quantifier.

(36)   a. John told every student₁ that Tom likes him₁.
       b. ∀x [x is a student] [John told x that Tom likes x]

The fact that caki can be bound by a non-subject NP/DP is then consistent with the view that it is a bound variable. We saw examples where caki is bound by a non-subject proper noun in 6, and 37 shows that caki can be bound by a non-subject quantifier.

(37) John-i motun haksayng₁-ulopwute [Tom-i caki₁-lul cohaha-n-tako]
    John-NOM every student-from Tom-NOM self-ACC like-PRES-COMP
    tul-ess-ta.
    hear-PST-DECL
    ‘John heard from every student that Tom likes self.’

**BINDING FROM THE GENITIVE**  In English, a genitive quantifier can bind a variable even though it does not c-command it, as in 38.

(38)   a. [Every senator₁’s portrait] was on his₁ desk. (Büring 2005)
       b. ∀x [x is a senator] [x’s portrait was on x’s desk]

39 shows that caki can be bound by a genitive quantifier as well.

(39) [Motwu₁-uy sinpal-un] caki₁-uy pal-pota hweissin kuta.
    everyone-GEN shoes-TOP self-GEN foot-than a lot big
    ‘Everyone’s shoes are a lot bigger than self’s feet.’

The mechanism that is responsible for variable binding in 38 and 39 can thus also account for the binding of caki by a genitive proper noun in 20.
CONTROL STRUCTURES Control structures provide an additional test for bound variable environments. In her enumeration of bound variable pronouns, Kratzer (2009) defines PRO as a bound variable whose form is dictated by the particular syntactic environment. Thus, a controlled embedded clause subject can be regarded as a bound variable, subject to construction-specific constraints. This is relevant to the discussion at hand in that, according to Madigan (2006), caki may be used as an alternative to PRO in obligatory control structures. In 40, the subjects of the most deeply embedded clauses can be realized either as a covert PRO or overt caki without any appreciable change in meaning.

   Cwuhi-NOM Inho-NOM leave-FUT-COMP promise-PST-COMP think-PST-DECL
   ‘Cwuhi thought that Inho promised to leave.’

   Cwuhi-NOM Inho-NOM self-NOM leave-FUT-COMP promise-PST-COMP think-PST-DECL
   ‘Cwuhi thought that Inho promised SELF to leave.’ (Madigan 2006)

Furthermore, Madigan provides evidence from VP ellipsis tests similar to those in subsection 3.1 showing that both the PRO and caki can only have sloppy readings in ellipsis contexts. The examples in 41 not only verify the bound variable nature of PRO in this context, but also show that this is shared by caki.⁶

   ‘Cwuhi promised Inho that she would leave. Bill did so too.’ (Madigan 2006)
   = Cwuhi promised Inho that she (Cwuhi) would leave and Bill promised Inho that he (Bill) would leave. (√ Sloppy)
   ≠ Cwuhi promised Inho that she (Cwuhi) would leave and Bill promised Inho that she (Cwuhi) would leave. (* Strict)

   ‘Cwuhi promised Inho that self would leave. Bill did so too.’ (Madigan 2006)
   = Cwuhi promised Inho that self (Cwuhi) would leave and Bill promised Inho that self (Bill) would leave. (√ Sloppy)
≠ Cwuhi promised Inho that self (Cwuhi) would leave and Bill promised Inho that self (Cwuhi) would leave. (* Strict)

An apparent challenge to using the replaceability of PRO with *caki* in control contexts as a supporting argument to the variable binding analysis for *caki* is that there is an unexpected restriction on the antecedent: *caki* can only take the subject of the controlling predicate as its antecedent in 40 and 41. Another unexpected restriction appears in 42.

    Cwuhi-NOM leave-FUT-COMP promise-PST-DECL
    ‘Cwuhi promised (Cwuhi only) to leave.’

    Cwuhi-NOM self-NOM leave-FUT-COMP promise-PST-DECL
    ‘Cwuhi promised (Cwuhi only) to leave.’ (Madigan 2006)

In 42, neither the PRO nor *caki* can have an arbitrary reading; both are obligatorily bound by the subject. This is again unexpected for *caki*, as it has been shown to possibly have a generic/arbitrary reading, as in 10. For all of these cases, it is crucial to note that the very same restrictions are present on PRO as are seen for *caki*. Throughout Madigan’s discussion, it is clear that whatever conditions are placed upon the interpretation of PRO, those same conditions are present when *caki* stands in the place of PRO in these types of control structures. What this means is that the restrictions are a function of the particular control construction, and do not constitute any far-reaching restrictions on the use of *caki*.

In sum, while it is not the case that all instances of *caki* should be taken as PRO, these data illustrate that PRO, a known bound variable, is replaceable with *caki*, further supporting our position that *caki* is restricted to a bound variable interpretation when there is a possible binder in the sentence.

### 3.2. Apparent Counterexamples

**Split antecedents**  
Plural *caki-tul* ‘self-PL’ can take two singular antecedents, as in 43. Huang (2000) uses this example as evidence that *caki* can have split antecedents. That is, *caki-tul* finds its reference from a composite of the matrix subject and the indirect object. A split antecedent reading of this type is difficult to reconcile with a bound variable treatment, and can generally be considered a diagnostic for a coreferential pronominal element, rather than a bound variable.

(43) John₁-un Mary₂-eykey [caki-tul₁⁺₂⁻ i iki-lke-lako] malha-yess-ta.
    John-TOP Mary-DAT self-PL-NOM win-FUT-COMP say-PAST-DECL
    ‘John told Mary that selves would win.’ (Huang 2000)
In Madigan & Yamada 2006, however, it is noted that when caki-tul has a singular antecedent, inclusive reference results, as in 44. Here, caki-tul refers to John, plus some other contextually-salient group.

\[(44) \text{John}_1{-i} \text{ caki-tul}_{1,+\alpha{-i}}{-ul} \text{ sokayha-yess-ta.} \]
\[\text{John-NOM self-PL-ACC introduce-PAST-DECL} \]
\[\text{‘John introduced selves.’} \]

Moreover, in 43, the split antecedent reading is not the only possible reading. It can also have the inclusive reference reading, as in 45, wherein caki-tul refers to John and some other contextually-defined group. For some native speakers, it is possible to get a reading where Mary is a part of that group, but this is not obligatory, and for other speakers this reading is not possible at all.

\[(45) \text{John}_1{-un} \text{ Mary}_2{-eykey} \{\text{caki-tul}_{1,+\alpha{-i}}{-i} \text{ iki-lke-lako}\} \text{ malha-yess-ta.} \]
\[\text{John-TOP Mary-DAT self-PL-NOM win-FUT-COMP say-PAST-DECL} \]
\[\text{‘John told Mary that selves would win.’} \]

Putting these facts together, purported split antecedent readings are therefore merely cases of inclusive reference where there is accidental overlap of another argument from the sentence in the contextually-salient group (Cho 1996; Storoshenko 2008).

**DISCOURSE BINDING** Perhaps the most difficult piece of data to reconcile with the view that caki is a bound variable is the one where caki is discourse bound, with its antecedent in the previous sentence, as in 8, repeated here as 46. Examples such as these seem to suggest that caki should be interpreted through coreference, and not through variable binding.

\[(46) \text{A: John}_1{-i} \text{ salam-ul} \text{ ponay-ss-ni?} \]
\[\text{John-NOM man-ACC send-PST-INT} \]
\[\text{‘Did John send a man?’} \]

\[\text{B: Ani, caki}_1{-ka} \text{ cikcep o-ass-e.} \]
\[\text{No, self-NOM in person come-PST-DECL} \]
\[\text{‘No, self came in person.’} \text{ (Yang 1982)} \]

An argument can be made, however, that even the discourse bound instance of caki has a sentence internal binder. Park (1986) observes that caki can be bound by the topic of the sentence. For example, in a double subject construction, where the first subject is a topic, as in 47, caki is bound by the topic.

\[(47) \text{John}_1{-un} \text{ caki}_1{-ka} \text{ cikcep o-ass-e.} \]
\[\text{John-TOP self-NOM in person come-PST-DECL} \]
\[\text{‘As for John, self came in person.’} \]
The possibility of a topic binding *caki* is also noted by Lee (1973, 1988), who discusses examples such as 48, in which a topicalized object binds the sentence subject *caki*.

(48) Tom₁-un **caki**₁-ka mangchi-ess-ta.  
    Tom-TOP self-NOM ruin-PST-DECL  
    ‘As for Tom, self ruined him.’

Park then argues that examples with a discourse bound *caki* are actually topic constructions with covert topics. This covert topic, represented as *e* in 49B, is itself coreferential, getting its reference from prior discourse, but it will serve as a sentence internal binder of *caki*.

(49) A: John₁-i salam-ul ponay-ss-ni?  
    John-NOM man-ACC send-PST-INT  
    ‘Did John send a man?’

    B: Ani, [e₁]ₜopic **caki**₁-ka cikcep o-ass-e.  
    No, self-NOM in person come-PST-DECL  
    ‘No, as for John, self came in person.’ (Park 1986)

Park motivates this by pointing out that topic marking *caki* in Speaker B’s response in 49 renders it unacceptable, as in 50. He argues that 50 is unacceptable as a response to 49A because the topic-marked *caki* would be occupying the position which should be left open for the covert topic element to serve as the antecedent for *caki*. Gill (1999) later reproduces this same analysis for similar examples.

(50) # Ani, **caki**₁-nun cikcep o-ass-e.  
    No, self-TOP in person come-PST-DECL  
    ‘No, self came in person.’ (Park 1986)

An additional argument for the postulation of a covert topic in examples such as 49B comes from relative clauses. In Korean, it has been shown that a relative clause can be formed from a double nominative clause, where the first nominative functions as the sentence topic as in 51a, by relativizing the first nominative, as in 51b. Han and Kim (2004) argue that the derivation of the relative clause in 51b involves a movement of a covert operator from the first nominative position to [Spec,CP].

    that kid-TOP puppy-NOM die-PST-DECL  
    ‘As for that kid, his puppy died.’

    b. [Op₁ [t₁ kangaci-ka cwuk-un] ai  
    puppy-NOM die-ADNOM kid  
    ‘the kid whose puppy died’
Similarly, 49B can be turned into a relative clause, as in 52. Following Han and Kim, this is possible because 49B is a double nominative clause, with the first nominative in the sentence topic position. This element, which is covert, moves to [Spec,CP] to form a relative clause.

(52) \[ Op_i \ [t_i \ [caki-ka \ cikcep \ o-n] \ namca \\
     \text{self-NOM in person come-ADNOM man} \]
     \ ‘the man who came in person (not the man who sent someone else on his behalf)’

The covert topic analysis thus predicts that discourse binding of caki is possible if examples with such caki can be turned into a topic construction with an overt topic that can serve as its binder. Examples supporting this prediction may be found in the Sejong Colloquial Corpus. For instance, in 53, caki occurs in a stage direction to the character named Won-ssi ‘Won-Mr.’ and it refers to that character. As shown in 54, this sentence can be turned into a double subject construction, with Won-ssi-nun ‘Won-Mr.-TOP’ as the topic. We can thus postulate that though this topic is covert in the syntax in 53, it is available to bind caki in the semantics.

(53) Context: Stage direction for a character named Mr. Won.

\begin{itemize}
  \item Wonssi: Caki-to mek-ko.
  \item Mr. Won: self-also eat-and
  \item ‘Mr. Won: Self also eats.’ [Sejong Colloquial Corpus]
\end{itemize}

(54) Won-ssi-nun caki-to mek-nun-ta.

\begin{itemize}
  \item Won-Mr.-TOP self-also eat-PRES-DECL
  \item ‘As for Mr. Won, he also eats.’
\end{itemize}

In 55B, caki refers to Park Tongsil sensayng ‘Park Tongsil teacher’ mentioned in the previous discourse. And as can be seen in 56, 55B can be turned into a topic construction where the topic is Park Tongsil sensayng-un ‘Park Tongsil teacher-TOP’, which originates as a genitive on the elliptical object Yelsaka-lul ‘Yelsaka-ACC’. The possibility of a genitive topicalization has been observed in Lee 1988. Again, we can then postulate that the topic is available in the semantics in 55B to create the necessary variable binding configuration.

(55) A: Park Tongsil sensayng Yelsaka-nun nwuka ...?

\begin{itemize}
  \item Park Tongsil teacher Yelsaka-Top who ...
  \item ‘Who (composed) the teacher Park Tongsil’s [the song] Yelsaka?’ [Sejong Colloquial Corpus]
\end{itemize}

B: Caki-ka mantul-ess-ciyo.

\begin{itemize}
  \item self-NOM make-PST-DECL
  \item ‘Self made it.’ [Sejong Colloquial Corpus]
\end{itemize}

(56) Park Tongsil sensayng-un caki-ka Yelsaka-lul mantul-ess-ta.

\begin{itemize}
  \item Park Tongsil teacher-TOP self-NOM Yelsaka-ACC make-PST-DECL
  \item ‘As for the teacher Park Tongsil, self made [the song] Yelsaka.’
\end{itemize}
3.3. SEMANTIC BINDING

OVERT BINDER IN THE SYNTAX  We follow the mechanism of quantification and variable binding in Heim & Kratzer 1998, assuming that quantified DPs undergo Quantifier Raising (QR). It is not necessary to use QR to interpret quantified sentences compositionally. As an example of an approach without QR, Büring’s (2005) Binder Index Evaluation Rule works just as well, but under such an approach, quantified objects would have to undergo type-shifting. To avoid this complication, we have opted to adopt QR in our implementation of the analysis. We also assume that caki bears an index which is matched by a binder index on the semantic binder. This is necessary to guarantee that caki is interpreted as a bound variable. At LF, the binder index adjoins right below the semantic binder. The LF for 27 for example can thus be represented as in 57.

\[(57) \quad [\text{Motwu-ka} \quad [1 \quad t_1 \quad \text{caki}_{1} \cdot \text{lul salangha-n-ta}]].\]

\begin{align*}
\text{everyone-NOM} & \quad \text{self-ACC} \quad \text{love-PRES-DECL} \\
\text{‘Everyone loves self.’}
\end{align*}

We adopt Heim and Kratzer’s Predicate Abstraction Rule in 58 to interpret the binder index and its sister constituent. In a nutshell, the semantic function of the binder index is to turn the sentence it is attached to into a predicate, which can then be composed with a generalized quantifier type constituent.

\[(58) \quad \text{Predicate Abstraction Rule} \]

Let \( \alpha \) be a branching node with daughters \( \beta \) and \( \gamma \), where \( \beta \) dominates only a numerical index \( i \). Then, for any variable assignment \( g \), \( [\alpha]^g = \lambda x. [\gamma]^{g[x/i]} \).

Applying the rule in 58 to 57, an instance of local binding, \( \beta \) is the binder index 1, \( \gamma \) is the constituent comprised of \( t_1 \text{caki}_{1} \cdot \text{lul salangha-n-ta} \) ‘\( t_1 \) loves self\(_1\)’, and \( \alpha \) dominates both \( \beta \) and \( \gamma \), as sketched in the left side of 59. In interpreting this structure, the binder index can be seen to contribute a \( \lambda \) operator that binds \( x \), and all constituents indexed with 1, the trace and \( \text{caki} \), map onto \( x \), and thus are bound by the \( \lambda \)-operator. This returns the \( \lambda \) expression in the right side of 59.

\[(59) \quad <\text{Insert Tree 2 Here}>\]

Using the generalized quantifier semantics for DPs, the meaning of \text{motwu-ka} ‘everyone’ and the meaning of the rest of the structure can compose, giving us the expected bound variable reading in 60.

\[(60) \quad <\text{Insert Tree 3 Here}>\]
This mechanism works equally well for local and long-distance cases. The LF for 28, an instance of long-distance binding, can be represented as in 61a, with the compositional semantics in 61b, again producing the expected bound variable reading.

\[(61)\]

\[\text{a. [Motwu-ka } [1 \text{ [John} _2 \text{-i caki} _1 \text{-lul salangha-n-tako] sayngkakha-n-ta]]].\]
\[
\text{everyone-NOM John-NOM self-ACC love-PRES-COMP think-PRES-DECL}
\]
\`
Everyone thinks that John loves self.’ (Moon 1995)
\`

b. \(\lambda P. \forall y[y \text{ is a person}][P(y)] (\lambda x[x \text{ thinks that John loves } x])\)
\[= \forall y[y \text{ is a person}][y \text{ thinks John loves } y]\]

If other nominals, such as proper nouns, are treated as generalized quantifiers that undergo QR when they are functioning as semantic binders, then they can bind caki in the same manner as in 27 and 28. The LF and the corresponding semantic forms for local binding in 17 and long-distance binding in (6b) are given in 62 and 63 respectively.

\[(62)\]

\[\text{a. [John-i } [1 \text{ caki} _1 \text{-lul piphanha-yess-ta]].}\]
\[
\text{John-NOM self-ACC criticize-PST-DECL}
\]
\`
John criticized self.’
\`

b. \(\lambda P.P(j) (\lambda x[x \text{ criticized } x])\)
\[= j \text{ criticized } j\]

\[(63)\]

\[\text{a. [Mary-lopwhthe } [2 \text{ [John} _1 \text{-i t} _2 \text{ caki} _2 \text{-ka am-i-lako] tul-ess-ta]].}\]
\[
\text{Mary-from John-NOM self-NOM cancer-be-COMP hear-PST-DECL}
\]
\`
John heard from Mary that self has cancer.’
\`

b. \(\lambda P.P(m) (\lambda x[\text{John heard from } x \text{ that } x \text{ has cancer}])\)
\[= \text{John heard from } m \text{ that } m \text{ has cancer}\]

As for the genitive binding case, we have seen that a quantified genitive DP can scope out of the containing DP in both English 38 and Korean 39. We will take this to mean that a genitive quantified DP can QR out of the containing DP. This yields the LF representation in 64a and the semantic interpretation in 64b for 39.\footnote{This mechanism works equally well for local and long-distance cases. The LF for 28, an instance of long-distance binding, can be represented as in 61a, with the compositional semantics in 61b, again producing the expected bound variable reading.

\[(61)\]

\[\text{a. [Motwu-ka } [1 \text{ [John} _2 \text{-i caki} _1 \text{-lul salangha-n-tako] sayngkakha-n-ta]]].\]
\[
\text{everyone-NOM John-NOM self-ACC love-PRES-COMP think-PRES-DECL}
\]
\`
Everyone thinks that John loves self.’ (Moon 1995)
\`

b. \(\lambda P. \forall y[y \text{ is a person}][P(y)] (\lambda x[x \text{ thinks that John loves } x])\)
\[= \forall y[y \text{ is a person}][y \text{ thinks John loves } y]\]

If other nominals, such as proper nouns, are treated as generalized quantifiers that undergo QR when they are functioning as semantic binders, then they can bind caki in the same manner as in 27 and 28. The LF and the corresponding semantic forms for local binding in 17 and long-distance binding in (6b) are given in 62 and 63 respectively.

\[(62)\]

\[\text{a. [John-i } [1 \text{ caki} _1 \text{-lul piphanha-yess-ta]].}\]
\[
\text{John-NOM self-ACC criticize-PST-DECL}
\]
\`
John criticized self.’
\`

b. \(\lambda P.P(j) (\lambda x[x \text{ criticized } x])\)
\[= j \text{ criticized } j\]

\[(63)\]

\[\text{a. [Mary-lopwhthe } [2 \text{ [John} _1 \text{-i t} _2 \text{ caki} _2 \text{-ka am-i-lako] tul-ess-ta]].}\]
\[
\text{Mary-from John-NOM self-NOM cancer-be-COMP hear-PST-DECL}
\]
\`
John heard from Mary that self has cancer.’
\`

b. \(\lambda P.P(m) (\lambda x[\text{John heard from } x \text{ that } x \text{ has cancer}])\)
\[= \text{John heard from } m \text{ that } m \text{ has cancer}\]

As for the genitive binding case, we have seen that a quantified genitive DP can scope out of the containing DP in both English 38 and Korean 39. We will take this to mean that a genitive quantified DP can QR out of the containing DP. This yields the LF representation in 64a and the semantic interpretation in 64b for 39.\footnote{Similarly, caki can be bound by a proper noun genitive, as in 20, by QRing the genitive and treating it as a generalized quantifier. The LF representation and the semantic interpretation for 20 are given in 65a and 65b.\textsuperscript{11}}
(65)  

\[
\begin{align*}
\text{(a) } & \quad \{\text{Suni-uy} \quad [1 \quad \text{t1 sinpal-un]} \quad \text{caki}_1 \text{-uy pal-pota hwe\text{ll}s\text{sin ku-ta}]}. \\
& \quad \text{Suni-GEN shoes-TOP self-GEN foot-than a lot big-DECL} \\
& \quad \text{‘Suni’s shoes are a lot bigger than self’s feet.’}
\end{align*}
\]

\[(b) \quad \lambda P. P(s) (\lambda x [x’s shoes are a lot bigger than x’s feet])
\]

\[
= s’s shoes are a lot bigger than s’s feet
\]

**COVERT BINDER IN THE SYNTAX**  

The examples in which \textit{caki} is bound by a topic, whether covert or overt, can be handled as well. We assume that a topic phrase is in an A’ position in the left periphery, either through movement or base-generation, a position similar to that occupied by a quantified DP after QR. For instance, the LF of 47, an example where \textit{caki} is bound by an overt topic, can be represented as in 66.

(66) \[
\begin{align*}
\{\text{John-un} \quad [1 \quad \text{caki}_1 \text{-ka cikcep o-ass-e}]}. \\
& \quad \text{John-TOP self-NOM in person come-PST-DECL} \\
& \quad \text{‘As for John, self came in person.’}
\end{align*}
\]

We further assume that from this A’ position, the topic will compose with the rest of the structure in a similar fashion as the way a quantified DP composes with the rest of the structure. In particular, we propose that a topic phrase has a similar semantics as a generalized quantifier, but with an extra predicate explicitly stating that it is the topic of the sentence. We thus assign the semantics in 67a to the topic phrase \textit{John-un ‘John-TOP’} in 66. This phrase composes with the rest of the structure, yielding the reading in which it binds \textit{caki}, as in 67b.\textsuperscript{12}

(67)  

\[
\begin{align*}
\text{(a) } & \quad \lambda P. \text{Topic}(j) \land P(j) \\
& \quad \lambda P. \text{Topic}(j) \land P(j) (\lambda x. x \text{ came in person}) \\
& \quad = \text{Topic}(j) \land j \text{ came in person}
\end{align*}
\]

A covert topic can bind \textit{caki} in the exact same manner, except that in this instance, the covert topic itself is a free variable whose reference is determined by the discourse context. Using an assignment function \(g\) to interpret free variables, the LF of (49B) in 68a can be given a semantic interpretation as in 68b. The topic \(g(1)\) refers to \textit{John} in this context.

(68)  

\[
\begin{align*}
\text{(a) } & \quad \{e \quad [1 \quad \text{caki}_1 \text{-ka cikcep o-ass-e}]}. \\
& \quad \text{self-NOM in person come-PST-DECL} \\
& \quad \text{‘As for John, self came in person.’}
\end{align*}
\]

\[
\begin{align*}
\text{(b) } & \quad \lambda P. \text{Topic}(g(1)) \land P(g(1)) (\lambda x. x \text{ came in person}) \\
& \quad = \text{Topic}(g(1)) \land g(1) \text{ came in person}
\end{align*}
\]
IMPLICIT ARGUMENT BINDER IN THE SEMANTICS

In all the cases we have discussed so far, an antecedent of caki is explicitly present in the syntax, corresponding to the semantic binder of caki. We now turn to cases where the antecedent of caki is not syntactically present, reportatives and generic/modal sentences, as in 9 and 10. For these examples, we cannot simply postulate covert topics in the syntax that can function as a binder, as both of them already contain topic-marked phrases: caki-nun ‘self-TOP’ in 9, and caki swukcey-nun ‘self homework-TOP’ in 10. Instead, we argue that in each case, the binder is introduced as an implicit argument in the semantics.

We propose that the reportative sentence in 9 has the LF in 69. We postulate that the reportative particle introduces an implicit argument (Bhatt and Pancheva 2006) that refers to the reporter of the proposition, the exact reference of which is determined by the discourse context. We implement this idea by adopting the expression in 70a as the meaning of -tay- ‘REPORT-’. Here, \((g(1))\) represents the reporter, the exact reference of which is determined by context. 70a is composed with the meaning component of the rest of the sentence in 70b, yielding the meaning in 70c, which can be paraphrased as in 70d. This gives us the desired effect of caki being bound by the reporter, whoever that may be. According to the discourse context in the Sejong Colloquial Corpus, the reporter of the reported proposition is Swuyen.

As for the generic/modal sentence in 10, we adopt the LF structure in 71, and postulate that the modal expression ke has the meaning in 72a. As with the reportative, the semantics of the modal expression provides an implicit argument that corresponds to everyone, which in turn binds caki in the semantics. The composition of 72a with the meaning component of the rest of the structure in 72b yields 72c. As can be seen in the paraphrase in 72d, caki is appropriately bound.

(70) a. \(\lambda Q. \forall w' \in \text{Report}_{g(1)}(w)[Q(g(1))(w')]\)
b. \(\lambda x. \lambda w. x \text{ wants to become a producer in } w\)
c. \(\forall w' \in \text{Report}_{g(1)}(w)[g(1) \text{ wants to become a producer in } w']\)
d. ‘In all possible worlds \(w'\) compatible with \(g(1)\)’s reports in the world of evaluation \(w\), \(g(1)\) wants to become a producer in \(w'\).’

(71) [[1 [Caki₁ swukcey-nun caki-ka ha-nun]] ke-ya].
    self homework-TOP self-NOM do-ADNOM FUT-DECL
    ‘In general, self should do self’s homework.’ [Sejong Colloquial Corpus]

(72) a. \(\lambda Q. \forall w' \in \text{normative}(w)[\forall y[\text{person}(y) \text{ in } w'][Q(y)(w')]]\)
b. \(\lambda x. \lambda w. x \text{ does } x\text{’s homework in } w\)
c.  $\forall w' \in \text{normative}(w)[\forall y [\text{person}(y) \in w'][y \text{ does } y\text{'s homework in } w']]$

d. ‘In all possible worlds $w'$ that adheres to all the normatives in the world of evaluation $w$, everyone does his own homework in $w'$.’

IMPOSSIBLE BINDERS  At this point, it is worth noting that while our approach allows for $caki$ to be bound by many different types of nominals, including local, non-local, non-subject, topic, genitive, and implicit arguments, it also predicts that certain types of nominals cannot be possible binders. First, it predicts that $caki$ should not be bound by a nominal that is within a subject clause island, as QR is typically clause-bound. As shown in 73, the prediction is borne out, as neither Tom nor Mary may bind $caki$. Under our analysis, 21 and 22 are also ruled out for the same reason.\textsuperscript{13}

(73)  
\begin{verbatim}
[ Tom-i Mary2-lul salangha-n-ta-nun] sasil-i caki$_{1/2}$-lul
   Tom-NOM Mary-ACC love-PRES-DECL-ADNOM fact-NOM you-ACC
   nollaykh-yess-ta.
   surprise-PAST-DECL.
   ‘The fact that Tom loves Mary surprised self.’
\end{verbatim}

It also predicts that a nominal that is structurally located below $caki$ cannot be a possible binder. This is because the nominal would have to QR across $caki$ to bind it, resulting in a crossover configuration. This is illustrated in 74.

(74)  
\begin{verbatim}
* Caki$_{1}$-uy emma-ka Mary$_{1}$-lul piphanha-yess-ta.
   self-GEN mother-NOM Mary-ACC criticized-PAST-DECL
   ‘Self’s mother criticized Mary.’
\end{verbatim}

One exception to this restriction is found in examples with psych predicates, as in 75a and 75b. In both examples, $caki$ is in a clause embedded in the subject of the sentence. Nevertheless, it can be bound by the object of the sentence which appears to be structurally located lower than the subject.

(75)  
\begin{verbatim}
a. [Sue$_{1}$-ka caki$_{2}$-lul palapo-nun] kes-i Joe$_{2}$-eykey cilkep-ess-ta.
   Sue-NOM self-ACC look at-ADNOM fact-NOM Joe-DAT pleasant-PST-DECL
   ‘Sue’s looking at self was pleasing to Joe.’ (Lee 1973)

b. [Caki$_{1}$-ka ssu-n chayk-i] John$_{1}$-ul kippukeyha-yess-ta.
   self-NOM write-ADNOM book-NOM John-ACC please-PST-DECL
   ‘The book that self wrote pleased John.’ (O’Grady 1987)
\end{verbatim}

These examples actually fall out from the syntax of psych predicates. Belletti and Rizzi (1988) argue that the surface subject of a psych predicate originates from a position c-commanded by the surface object in Italian and English. If we adopt this approach to psych predicates in Korean,
then it follows that the subjects in 75a and 75b are placed in a position c-commanded by the object at some point in the derivation, making available the LF where caki is appropriately bound.14

4. **SUMMARY AND CONSEQUENCES** We have argued that caki is restricted to a bound variable reading in the presence of a possible semantic binder. We have shown how this semantic approach to caki binding accounts for the fact that it can be bound by a local or non-local antecedent, as well as a non-c-commanding genitive, overt/covert topic, or implicit argument.

A question arises at this point about the status of those instances of caki that do not have a possible semantic binder. We found two cases in the literature. In the first case, caki is referring to a nominal in the same sentence but the nominal cannot be its semantic binder. An example that belongs to this case was already given in 21, repeated below as 76. Here, there is no possible semantic binder for caki because nay-ka ‘I-NOM’ is 1st person, and John-i ‘John-NOM’ is in a relative clause to which QR is restricted.

‘I gave the book that John wanted to self.’ (O’Grady 1987)

In the second case, caki is referring to a nominal in a previous sentence in the discourse. An example can be found in Kim (2000). In 77, a covert topic binder for caki cannot be postulated because there is already a topic in the sentence, ku chayk-un ‘that book-TOP’.

(77) Na-nun Suni₁-eykey chayk-ul pilye cwu-ess-ta. Kulendey sasil ku chayk-un
I-TOP Suni-DAT book-ACC lend give-PST-DECL. and yet in fact that book-TOP
 caki₁ oppa-ka ceney nay-key pilye cwun kes ita.
self elder brother-NOM before me-DAT lend give thing be
‘I lent a book to Suni. But the fact is that self’s brother had lent it to me before.’ (Kim 2000)

Under our analysis, such instances of caki are predicted to be exempt anaphors, free variables, the felicity of which are subject to discourse conditions. O’Grady reports that examples such as 76 are accepted by his consultants only after some thought. This suggests that caki requires a lot of discourse context to be felicitous as an exempt anaphor, and when the appropriate discourse context is not provided, speakers need to accommodate such a context to make caki felicitous.

A reviewer suggests that empathy, in the sense of Kuno 1987, may play a role in the interpretation of caki. As described by Kuno, empathy refers to the speaker’s variable degree of identification with a person (potential antecedent) participating in the event or state described by the sentence. Sells 1987 treats this empathy more literally in his concept of pivot placing the speaker literally in the shoes of the pivot individual. We agree inasmuch as it could be the case
that empathy is the key to describing these exempt cases; the discourse context required to make caki acceptable in these marginal cases would be exactly those cases where the speaker has a high degree of empathy with the intended antecedent. For 76, the reviewer correctly notes that caki can be replaced with the pronoun ku ‘he’. When the pronoun is used, there is a sense of detached reference to John, whereas using caki gives a sense of the speaker adopting the antecedent’s point of view. The choice of predicate in 76 can also play a role, as the relative clause uses a psych predicate, which is known to play a role in the resolution of caki binding (Lee 1988; Lee 2001).

Connecting to empathy, the use of a psych predicate in this case brings the antecedent’s mental state more clearly to the forefront than a non-psych predicate would. That the lexical context provided by a predicate can influence the resolution of an exempt instance of caki lacking a semantic binder echoes the view that the lexical semantics of predicates can have an impact on the resolution of ambiguous caki with multiple possible antecedents in a sentence. This consideration of empathy may be why examples such as 76 and 77 are rejected by native speakers initially, and yet some speakers accept them after some thought. It is not so much an exercise in re-evaluating the structure of the sentence, as it is an effort to interpret these anomalous cases from just the right point of view so that they can be seen as acceptable.

We also found comparable examples from the Sejong Colloquial corpus that seem highly compatible with empathy-based accounts. Read out of context, the sentences in 78 and 79 are quite degraded because caki has no sentence internal binder. These sentences however are part of a narrative. 78 is uttered by a speaker who is describing the content of a letter he received from a student, and 79 is uttered by a speaker who is telling a story about a friend of his who volunteered to follow a girl he (the speaker) liked. In 78, caki refers to the student, and in 79, it refers to the friend. Both sentences are thus reports of thoughts or desires of individuals from whose point of view the reports are made, and these individuals are serving as antecedents of caki.

(78) Context: The speaker is talking about a letter he received from a student.

Caki-nun yeksa  sikan-i cham silh-ess-ta.
self-Top history time-Nom very dislike-Past-Decl
‘(The student said) self disliked history very much.’ [Sejong Colloquial Corpus]

(79) Context: The speaker is talking about a friend of his who volunteered to follow a girl he (the speaker) liked.

Caki-ka  ttalaka cwu-keyss-ta.
self-Nom follow give-Fut-Decl
‘(My friend said) self will follow (her)’ [Sejong Colloquial Corpus]

Across languages, a bound variable being used as an exempt anaphor is well attested. For instance, as observed in Pollard & Sag 1992 and Reinhart & Reuland 1993, self-anaphors in English, quintessential bound variables, can be used as exempt anaphors when there is no
co-argument that can serve as a possible binder. So, it is not surprising to find exempt usage of *caki* in Korean as a bound variable. The interaction between exemptness and empathy or point-of-view is also not surprising, as Zribi-Hertz (1989) calls upon the same concepts to account for Condition A violations in English reflexives. The connection here is so close in fact that Zribi-Hertz herself makes the direct link between her English data and O’Grady’s *caki* data with non-c-commanding antecedents. Often in her examples, an individual whose mental state, thoughts, or desires are being reported in a narrative emerges as the antecedent for a self-anaphor which has no Condition A-compliant antecedent. In these cases, just as in 78-79, the narrator is reporting from the point of view of the relevant character, a clear example of Sells’ pivot, and Kuno’s empathy.

One fact about *caki* worth noting is that though *caki* can be bound by a non-subject, when there is more than one possible binder, native speakers prefer the interpretation where *caki* is bound by the subject of the sentence. This intuition has been noted again and again in the literature (Lee 1973; Lee 1976; Chang 1977; Moon 1995), and confirmed in an experimental setting. In Han *et al.* 2011, evidence from both eye-tracking and forced choice testing is reported, showing that when given sentences such as 80, speakers predominantly chose the subject Congwu over the indirect object Yuli as the antecedent of *caki*.

tell-PRES-DECL
‘Congwu tells Yuli beside the blackboard that self did well on the test.’

This subject preference of *caki* is something seen with bound variables in other languages as well. Cole and Sung (1994) for example report on Read and Chou Hare (1979) who have found that in English there is a preference for subject antecedent for reflexives in ditransitives in an experimental setting. It may be that when the sentence contains more than one possible binder for *caki*, extra-grammatical principles conspire with the grammatical status of *caki* as a bound variable to most readily generate a reading where *caki* is bound by the subject. We have already noted that the lexical semantics of neighbouring predicates may also play a role here, and empathy can be added to this list of extra-grammatical influences on *caki* as well. The notion that *caki* is sensitive to adjacent predicates is further shored up by Madigan’s (2006) observations on the behaviour of *caki* in control environments. In a sense, the varying degrees of empathy which impact upon the interpretation of *caki* could be seen as originating in the choice of predicates.

It is in the extra-grammatical principles influencing *caki* that the lines of research which propose antecedent hierarchies and logophoric approaches find their footing. The proposals by O’Grady and Kim provide an important piece of the overall picture with respect to *caki* in that
they bring to the forefront the idea that there are factors beyond strictly the syntax or the semantics which can have an impact on the interpretation of *caki*. What we take from this is that while the grammar makes available multiple potential interpretations for a given instance of *caki*, ranging from overt antecedents to covert ones, or even possibly exempt uses, the interaction between grammar and pragmatic principles determine the final interpretation of *caki*. We believe that it is a failure to acknowledge this interaction which leads to much of the contradiction that can be found in the literature with respect to *caki*. Variations in judgments between speakers (or indeed between linguists) are to be expected in a system which layers these subtle context-dependent pragmatic effects on top of a more formal semantic binding foundation.

Finally, our proposal that *caki* is a bound variable has more wide-reaching implications for the grammatical status of long-distance anaphors in East Asian languages as a whole, particularly *ziji* in Chinese and *zibun* in Japanese. Though there are many similarities between the three anaphors, each has its own unique characteristics. The distinction between syntactic binding versus semantic binding is most relevant when comparing *caki* with *ziji*. As noted by Cole and colleagues, *ziji* shows a blocking effect, which is not present for *caki*. This blocking effect can be seen as an indication that *ziji* requires a syntactic binder; that is, that *ziji* requires a locally c-commanding antecedent, exactly as described in the original Cole et al. analysis. For *caki*, the requirement is only that there be a semantic binder, which explains the greater flexibility in antecedents. It is worth noting that we are not proposing that the syntactic versus semantic binding dichotomy applies between LANGUAGES, but rather between individual ANAPHORS. Our claim is not that Chinese lacks semantic binding while Korean lacks syntactic binding, but rather that *ziji* requires a co-indexed c-commanding antecedent in the syntax while *caki* requires a lambda-binder in the semantics, which may or may not also happen to fit the criteria of a syntactic binder. Likewise, we are not using *caki* as the basis of an argument along the lines of Hornstein 2006 that Conditions A and B (essentially syntactic binding) should be discarded completely. Rather, we propose that different anaphors within and between languages will make use of one or the other mechanism.

Our conclusion is thus that *caki* is correctly NOT given the same analysis as *ziji* in Cole et al., but we also do not treat *caki* as a pronoun, which has generally been taken to be the only alternative to an LDA analysis. Turning to Japanese *zibun*, here it seems to be the case that pragmatic effects, which have been argued to play a role in the interpretation of *caki*, apply even more strongly to *zibun*. The logophoric effects which Sells reports to be quite strong for *zibun* are present, but in a weakened form, for *caki*. It could be that the variation between Korean *caki* and Japanese *zibun* is best accounted for by postulating different ways in which extra-grammatical principles interact with the unified grammar of LDAs. Determining exactly how the interaction can be modeled remains as our future research.
5. **CONCLUSION**  After summarizing the existing literature and sorting through decades of apparently contradictory data, we have arrived at the conclusion that Korean *caki* is a variable whose binding conditions are met in the semantics rather than the syntax. Adopting this view allows us to account for some instances of *caki* binding which are not readily captured under a standard syntactic definition of anaphora in terms of a c-commanding antecedent. In so doing, we account for the distinctions between *caki* and those LDAs of Germanic and other East Asian languages which share core morphological properties with *caki*, but are more dependant upon syntax for their final interpretations. Liberated, in a sense, from syntax, *caki* becomes more subject to extra-grammatical factors such as lexical semantics of the adjacent predicates and considerations such as empathy. For those exempt cases of *caki*, where it functions as a free variable lacking any semantic binder, these extra-grammatical factors take over. The context dependence of these factors in both exempt and ambiguous cases, we have argued, is the source of some apparent contradictions in the reported data. Having arrived at a formal analysis of the core cases, we leave for future work more investigation into the interactions between various other influences on *caki* binding.
REFERENCES


NOTES

1 A reviewer notes that a direct object or an indirect object can be considered to be a subject under the vP/VP shell analysis. The same reviewer also notes that ponay- ‘send’ is a causative verb and as such its surface object is interpreted as a secondary agent with consciousness within the early Generative Semantics and Jackendoff’s (1996) Conceptual Grammar. S/he points out that this fits in with Lee’s (1973, 2001) proposal that the antecedent of caki is constrained to be the agent of consciousness, a notion which, we think, is similar to Sells’ (1987) SELF. We thank the reviewer for bringing this dimension of viewing the data to our attention.

2 The Sejong Colloquial Corpus is published by the National Korean Language Institute and the Department of Tourism and Culture in Korea (www.sejong.or.kr). The corpus is a collection of transcribed recordings of radio/TV interviews, plays, soap operas, news and talk shows.

3 Caki can have a 2nd person reference, also called an inherent reference. 2nd person caki does not require an antecedent, as shown in (i), and it generally has the function of intimate address, with its use more prevalent in younger generations.

   (i) Caki-ka chakha-ta.
       you-NOM good-DECL
       ‘You are good.’ (Sohng 2004)

Following Lee 1973, we regard such usage of caki as exceptional, and simply observe that 2nd person caki is a deictic element that is not subject to binding.

4 A reviewer likens the indirect object interpretation of caki in examples such as in (i), where caki is replaceable by a 2nd person pronoun in a corresponding direct speech, to the use of caki as a form of 2nd person address, observing that both uses of caki are more popular among younger generations.

       John-TOP Mary-to self-NOM win-PST-COMP say-PST-DECL
       ‘John said to Mary that self won.’
       ‘John said to Mary “You won.”’

Conflicting views in the literature on such examples could therefore also be an artifact of generational differences.

5 A reviewer points out that Kim’s (2000) antecedent hierarchy is similar to Lee’s (1973) topicalization hierarchy and Keenan and Comrie’s (1977) relativization hierarchy.

6 A reviewer correctly notes that although the referential function of PRO and caki may be the same in control contexts, caki has a contrastive focus effect, which PRO lacks. We think this is part of a larger phenomenon attested across languages where overt and covert pronominals that have the same truth-conditional meaning differ in discourse functions.
A reviewer points out that nominative case marker on caki in 49B is also responsible for a contrastive focus effect, generating the implicature that John came in person instead of sending somebody else (Lee 2003).

Parallel to these efforts, Lee (1988, 2001) develops an analysis that topicality, along with an optimality scale, is at the core of caki binding. Though we agree that topics may be construed as possible semantic binders, we maintain that topicality alone cannot predict the antecedent for caki. Our view is supported by Han et al. 2011 that demonstrates that discourse salient entities are not always selected for the antecedent of an ambiguous caki in matrix clause malha- ‘say’ sentences. Also, we have already seen in cases such as 6 that with certain predicates, a non-topic object can be the antecedent of caki, and as noted in section 2.1, Han & Storoshenko 2013 shows that non-topic antecedents of caki are possible when embedded under tut- ‘hear’ in the matrix clause. In sum, topicality alone cannot be the determining factor. A reviewer suggests that perhaps the determining factor is not topicality but rather topicalizability: that is, a nominal can be an antecedent of caki if it is topicalizable, though it may not be the topic itself in the sentence at hand.

A reviewer points out that Keenan (2007) also provides a system of anaphoric interpretation which relates to generalized quantifiers, treating the anaphors themselves as valence reducing functions on predicates. However, Keenan’s work is restricted to object (accusative) anaphors, and it is not immediately clear how applicable this will be to caki, which we have seen numerous times in (embedded) subject positions.

Contrary to the treatment given here for the genitive binding in Korean, Büring (2004, 2005) takes the pronoun in 38 to be an E-type pronoun, and not a bound variable. The E-type pronoun analysis is not viable for Korean caki. In Korean, examples corresponding to Evans’ (1980) congressmen-sentence and Jacobson’s (2000) paycheck-sentence must contain pro, ku ‘he’ or kunye ‘she’, and not caki.

(i) Soswu-uy kwukhoyuywon-un Kennedy-lul conkyengha-n-ta.
small number-GEN congressman-TOP Kennedy-ACC admire-PRES-DECL.
Ku-tul-un/*Caki-tul-un acwu celm-ta.
he-PL-TOP/*self-PL-TOP very young-DECL
‘Few congressmen admire Kennedy. They (= the congressmen that admire Kennedy) are very young.’

(ii) Phathne-lul teliko o-n motun salam-tul-un pro/ku-lul/*caki-lul
partner-ACC with come-ADNOM every person-PL-TOP pro/he-ACC/*self-ACC
sacang-eykey sokayha-yess-ta.
boss-to introduce-PST-DECL
‘Everyone_x who came with a partner introduced him (= the partner he_x brought) to the boss.’
Pronouns in such examples cannot possibly be analyzed as bound variables but as E-type pronouns (Jacobson 2000, Elbourne 2001). Thus, the fact that caki cannot occur in such context is highly suggestive that it cannot be an E-type pronoun generally, and the bound meaning in examples such as 39 must obtain through a mechanism other than the E-type strategy.

11 A reviewer notes that the genitive possessive facts have been analyzed previously in the literature as an instance of sub-command in the syntax (Tang 1989; Sung 1990; Cole et al. 2001). For example, Tang (1989) proposes that Chinese anaphor ziji can have a sub-commander as its antecedent, where a sub-commanding antecedent is defined as a nominal that is contained in an NP that c-commands the anaphor. This definition of sub-command can apply to the Korean genitive binding examples in 20 and 39. Even so, we still need a mechanism to interpret the bound variable caki in the semantics. This can be done by QRing the genitive antecedent and treating it as a generalized quantifier, as we have done here, or by type-shifting the genitive antecedent so that it can compose with a possessed nominal in-situ.

12 Another possibility is to treat the topic phrase John-un ‘John-TOP’ as a typical proper name, assigning the λ-expression in (i), in the semantics.

\[
(i) \quad \lambda P. P(j)
\]

Under this treatment, its function as the topic of the sentence can follow from the principles of information structure in pragmatics.

13 Although QR itself is a local phenomenon, a quantifier can bind a variable non-locally as long as it scopes over the variable after it has undergone QR. This happens when QR takes place in the matrix clause and the bound variable is in an embedded clause. The long-distance interpretation of caki, as in 5, 15, and 28, is thus possible. In contrast, in 73, QR is restricted to the embedded clause. In this configuration, caki, which is in the matrix clause, cannot be in the scope of a quantifier and so cannot be bound.

14 Lee’s (1973) analysis of 75a relies on the fact that it contains a psych predicate, though the syntax of psych predicates that Lee assumes is not the same as that proposed by Belletti and Rizzi (1988). Lee argues that 75a is derived from an underlying form in which Joe originates as a sentence initial topic. The observed word order is a result of a transformational operation available for psych predicates which allows the dative-marked topic to be moved rightward, across the subordinate clause. O’Grady does not make a connection to the syntax of psych predicates in his analysis of 75b. For him, 75b is grammatical because it adheres to his preference hierarchy and the priority principle.

15 The same observation can be made with respect to 77.
Special Matter
Tree 1 for Example 11
Tree 2 for Example 59
\[
\begin{align*}
TP & \quad DP \\
\text{everyone} & \quad 1 (\beta) \\
& \quad TP (\gamma) \\
& \quad t_1 \text{ loves self}_1
\end{align*}
\]

\[
= \lambda P. \forall y [y \text{ is a person}] [P(y)] (\lambda x [x \text{ loves } x])
\]

\[
= \forall y [y \text{ is a person}] [y \text{ loves } y]
\]

< Tree 3 for Example 60 >