Condition A, Exemption, and Logophoricity in Korean*

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October 20, 2015

1 Introduction

Natural languages make an extensive use of a class of nominals often described as being referential: names, pronouns, and anaphors. Unlike names and pronouns which can occur freely on their own and refer to non-linguistic elements, anaphors must be bound by a grammatical antecedent. The standard theory of anaphor binding is as put forth in Chomsky's 1986 Binding Condition A (BCA):

(1) An anaphor must be bound within the smallest complete functional complex containing it and a possible binder.

It has long been observed that there are many types of anaphors that do not fall under the BCA of the standard theory. This section will provide a brief overview of modifications and alternatives of the BCA that have been put forth to account for such exceptions. The two main approaches to accounting for anaphors, the standard theory given above and the predicate-based theory will be compared. After discussing the two theories, it will be argued that regardless of which theory one takes, a theory of exemption is necessary to account for anaphors that do not fall under either theory. The role of logophoricity in defining exemption will be introduced, and this idea will serve as the testing case for the two studies introduced in the paper.

The outline of the paper is as follows: the end of this section will be used to lay out the basic assumptions and definitions taken in this paper in investigating the distribution of plain and exempt anaphors. Section 2 will give an overview of the three Korean anaphors that have received much attention in the past: *caki*, *casin*, and *caki-casin*. While the distribution of the first two items are relatively free in terms of allowing long-distance binding, *caki-casin* has previously been analyzed as a strictly local anaphor. I will discuss a recent study by Kim & Yoon (2009) which challenges this previous assumption with experimental data showing that *caki-casin* is actually licensed in long-distance environments. In the light of these observations, three research aims are presented: 1) to confirm Kim & Yoon's (2009) findings that *caki-casin* is exempt; 2) to investigate what the baseline for plain binding in Korean is; and 3) evaluate the effect of logophoricity in licensing exempt anaphors in Korean. Section 3 discusses an independent test used in Charnavel & Sportiche (2015) for identifying exempt anaphors: the inanimacy test. Then, I introduce a Korean inanimate anaphor *cachey*, whose anaphoric use has not been discussed prior to this paper. After establishing its anaphoric nature and its restriction to inanimate antecedents, I discuss how the inanimacy test can be applied to Korean to test for the

*This is a draft of the Second Generals Paper defended on October 6, 2015 and submitted to the Harvard Linguistics Department. I would like to thank the committee members Isabelle Charnavel (chair) and C.-T. James Huang for their advice and helpful comments. I would also like to thank all the participants of the two surveys conducted online in January, 2015. Part of this research was a joint work with Isabelle Charnavel, and was funded by the NSF grant #1424054: Typology and Theory of Anaphora (PI: Isabelle Charnavel; in collaboration with Dominique Sportiche's grant #1424336).)

baseline of Condition A in Korean. Section 4 discusses the first experimental study investigating the distribution of the inanimate anaphor *cachey*, and establishes the baseline for Korean binding of plain anaphors. Section 5 presents the second experiment looking at the distribution of *caki-casin*, discussing its exempt nature. In Section 6, I discuss the general findings of the two experiments in light of the three research questions we start out with, and discuss potential issues that need to be addressed in future investigation. Section 7 concludes.

1.1 Analyzing reflexives

Since Chomsky (1986), various exceptions to the standard BCA have been observed and analyzed. Exceptions include anaphors being co-indexed with antecedents that are not c-commanding it or occurring outside its binding domain. In accounting for these exceptions, some keep the standard BCA and make modifications to it, while some propose alternatives to the BCA. A possible modification of the BCA involves changing the binding domain (BD) of the BCA. Manzini & Wexler (1987), for example, suggest parameterizing the BD across languages, so that languages that allow long-distance (LD) binding of anaphors have larger BDs than those that do not allow LD binding. Others suggest an alternative way of formulating the distributional restriction on anaphors. Instead of formulating a condition on the property of the anaphor and its relation to the antecedent as in the standard BCA, Pollard & Sag (1992) and Reinhart & Reuland. (1993) argue that the condition must be formulated as a property of the predicate. Specifically, their formulation of the binding condition is restricted to predicates that provide a coargument for the anaphor.

(2) An anaphor must be bound by its coargument.

This theory differs from the standard theory in that the restriction on the anaphor is in the argument structure of the predicate, rather than in the structural relation between the anaphor and the antecedent.

1.2 Plain and Exempt Anaphors

A problem for any theory of binding is that exceptions exist regardless of which theory is taken or how it is modified. For example, the binding of *himself* by *John* in (3) is not accounted for by either the standard BCA or coargumenthood because *John* is neither a coargument nor in the smallest XP containing *himself*. Even modifying the BCA with a wider domain cannot account for sentences like (3), where there is no possible antecedent in the entire root sentence.

(3) John$_i$ thinks that Mary$_j$ is taller than himself$_i$. (Keenan, 1988)
(3) Physicists like yourself are rare. (adapted from Kuno 1987)

Thus, in order to account for anaphors fully, a theory must have something to say about exemption – how to identify and define exempt anaphors. The predicate-based theory allows for a distinction between exempt and plain anaphors: exemption is defined in terms of coargumenthood. While the specifics differ, the general idea behind predicate-based theories is that an anaphor that lacks a coargument is exempt and thus falls outside the boundary of syntactic binding. For example, in (4), because *herself*$_i$ lacks a coargument, it is exempt and represents a logophoric use, meaning that it is not subject to syntactic conditions of anaphoricity, but instead subject to pragmatic conditions of logophoricity. Following Clements' (1975) classification of pronouns in Ewe, logophoric pronouns are those that can be derived directly from the center of the underlying direct discourse representation. (4a) shows that *herself* in (4) corresponds to *me* in the direct discourse representation of what Mary said.

(4) Mary$_i$ said that John loved no one else but herself$_i$.
   a. Mary$_i$ said "John loves no one else but me$_i$."

However, as defining exemption in terms of coargument runs into a conceptual problem that there is no independent criterion that can be used to identify exemption. The same criterion – the existence of a coargument – is used to both define Condition A and define exemption from it, which leads to a circular argument.

Another issue as observed in Huang & Liu (2001) is that, because any anaphor that lacks a coargument is treated as falling outside the boundary of syntactic binding, many generalizations are lost. Huang & Liu list various environments in which the Chinese anaphor *ziji* is covered under the standard BCA.[1]

(5) a. When it is bound by a co-argument subject.
   b. When it is contained in an argument NP and bound by a coargument of that NP.
   c. When it is contained in an adjunct and locally bound by an argument outside.
   d. When it is locally bound by a sub-commanding NP.
   e. When it is the subject of an embedded clause, or contained in the subject of an embedded clause, and is locally bound in the matrix clause.

Unlike the standard theory, the predicate-based theory only treats (5a) and (5b) as plain binding and categorizes the rest as exempt binding. This has been shown to be too weak, as anaphors in other languages are also allowed in adjunct positions. Moreover, Charnavel & Sportiche (2015) demonstrate that the predicate-based theories are too strong and too weak to account for the distribution of French anaphors. Charnavel & Zlogar (2015) show that this applies to English anaphors as well.

While the classical BCA in Chomsky (1986) does not discuss the problem of exemption, it is possible to introduce the distinction between plain and exempt anaphors in the standard BCA as well. This is what Huang & Liu (2001) and Charnavel & Sportiche (2015) do, where they keep the basic condition intact and add that anaphors that do not have a potential antecedent in its binding domain are exempt. Thus, while argument structure provided the dividing line between plain anaphors and exempt anaphors in the predicate-based theory, the dividing line in the standard theory is the binding domain of the anaphors.

The standard theory allows us to capture the structural generalizations of reflexives better than the predicate-based theory. The theory of exemption that is added in the recent adaptations of the standard theory as found in Huang & Liu (2001) and Charnavel & Sportiche (2015) also allows us to draw a clear distinction between plain and exempt anaphors. The remainder of the paper will thus follow them in assuming the following:

(6) a. Condition A: An anaphor must be bound within its binding domain.
   b. Exemption: An anaphor that falls outside this binding domain is exempt.

What constitutes an anaphor's binding domain still remains controversial. While Huang & Liu (2001)

[1]Note that the account for sub-commanding in (5d) is not directly from the standard BCA but from the modified version given in Huang & Liu (2001). Whether sub-commanding should be added to the strict Condition A is discussed later in the paper. I show that the case of sub-commanding discussed in Huang & Liu (2001) can be recast as subcase of an exempt binding licensed by logophoricity.

takes the BD defined in Chomsky (1986), Charnavel & Sportiche (2015) differs from these two in arguing that the binding domain can be no larger than a tensed TP. In other words, a tensed TP is opaque to the search for antecedent (Charnavel & Sportiche, 2015). This is further investigated in the studies discussed in this paper.

1.3 Logophoricity and exemption

The theory of reflexives we have built so far allows us to give a structural restriction on binding plain anaphors and to draw a line between plain and exempt anaphors. What is left is to account for the behavior of exempt anaphors. While exempt anaphors fall outside the boundary of syntactic binding, they are not completely unrestrained. In accounting for exempt anaphors, the concept of logophoricity is widely taken to restrict the behavior of exempt anaphors.

The term logophoricity comes from pronouns in West African languages that refer to an antecedent "whose speech, thought, or general state of consciousness are reported" (Clements 1975). However, the idea of linking exempt anaphors to logophoricity was introduced even before the term came into use. Kuno (1972) was the first to argue that embedded anaphors whose antecedents appear in the matrix clause should be analyzed as deriving from direct-discourse formation. For example, the anaphor *he* in (7a) is seen as deriving from the first-person pronoun *I* in (7b).

(7) a. Ali claimed that he was the best boxer in the world.
b. Ali claimed, "I am the best boxer in the world."

Logophoricity is grammaticalized not only in West African languages bust also in languages like Italian (Chierchia, 1989), where the possessive reflexive pronoun *proprio* is distinguished from the pronoun *suo* in that *proprio* is only acceptable in a *de se* environment, ie. the antecedent is aware that the antecedent is he himself.

Sells (1987) argues that the notion of logophoricity plays a crucial role in understanding the felicity conditions of exempt anaphors. Sells divides logophoricity into three subtypes:

(8) a. Source: the one who is the intentional agent of the communication.
b. Self: the one whose mental state or attitude the proposition describes.
c. Pivot: the one with respect to whose (time-space) location the content of the proposition is evaluated.

He also argues that languages differ with regard to which types of logophoricity are required for an exempt anaphor to be felicitous. That languages may be sensitive to different subtypes of logophoricity has been nicely illustrated in Cole et al. 2001 where two Chinese dialects Mandarin and Teochew formed a minimal pair with respect to the type of logophoricity their exempt anaphors required: while Teochew required the antecedent to be either SELF or SOURCE, Mandarin allowed all three subtypes.

The exact definition of logophoricity, however, remains vague. Sells' (1987) subtypes have also been put into question: for example, Cole et al. (2001) illustrates that Sells' SELF and SOURCE can come from a single more abstract notion of Chierchia's (1989) *de se* requirement. Charnavel & Zlogar (2015) also combine SELF and SOURCE into a single subtype Attitude Holder, and divide PIVOT into two separate subtypes, Empathy Locus and Deictic Center.

(9)

Sells (1987)	SOURCE	SELF	PIVOT	
C&Z (2015)	Attitude Holder		Empathy Locus	Deictic Center

Leaving the comparison between the two categorizations for future investigation, we take Charnavel & Zlogar's (2014) definition of logophoricity as "perspective holders" and assume the following hypothesis:

(10) Exempt anaphors must be anteceded by **perspective holders** in order to be felicitous.

1.3.1 LDA and exemption

The assumptions and the hypothesis taken in this paper are summarized in (11):

(11) a. An anaphor must be bound within its binding domain.
b. An anaphor that falls outside this binding domain is exempt
c. An exempt anaphor must be anteceded by a perspective holder.

There is a two-way distinction between plain anaphors and exempt anaphors; while plain anaphors follow the structural condition of the Chomskian-type Condition A, exempt anaphors follow the logophoricity requirement. A three-way distinction is also possible for reflexives. For example, Cole et al. (2006) distinguishes between plain anaphors that abide by Condition A, long-distance anaphors (LDA) that abide by different structural conditions such as monomorphemicity, subject-orientation, and c-commanding antecedents, and true exempt anaphors that are unbound and fall outside of any structural constraints.

While we follow Charnavel and Sportiche in assuming a two-way distinction throughout this paper, we will come back to this distinction between a grammatically-restricted LDA and a logophoric exempt anaphor in Section 6.4.2 looking at the results of a study of *cakicasin*. Noting a systematic difference in the rating of *cakicasin* in embedded subject positions and other non-local positions, we discuss a possible distinction between *cakicasin* – a true exempt anaphor – and *caki-casin* – an LDA *caki* with *casin* as an intensifier.

2 Korean anaphors

Korean has a rich inventory of reflexives, and the three most-studied reflexives are *caki*, *casin*, and the complex *caki-casin*. Section 2.1 will give a brief overview of what has been previously claimed about these three anaphors. While there has been much discussion on the distribution of the simplex reflexives *caki* and *casin*, the status of the complex reflexive *caki-casin* has been assumed to be settled. Section 2.2 will discuss a recent study that challenges this assumption: Kim & Yoon (2009) show in an experimental study that *caki-casin* can be long-distance bound.

2.1 Previous claims

The distributions of *caki*, *casin*, and *caki-casin* are complicated. While all three can have a local antecedent, as shown in (12), they differ in whether they allow long-distance binding.

(12) *John$_i$-un caki/casin/caki-casin-ul joahan-ta.*
John-TOP self-ACC like-DECL
'John$_i$ likes self$_i$.'

(13) *John$_i$-un [Mary$_j$-ka caki$_{i>j}$/casin$_{i<j}$/caki-casin$_{*i/j}$-ul coahan-ta]-ko senggakhan-ta.*
John-TOP Mary-NOM self-ACC like-DECL-COMP think-DECL
'John thinks that Mary likes self.'

As shown in (13), the embedded simplex anaphors *caki* and *casin* allow binding by antecedents in the matrix clause. They are, however, not interchangeable. Reading time studies show that while *caki* prefers the long-distance binding over the local binding, while *casin* is said to be more neutral in terms of which antecedent it prefers (Choi & Kim, 2007).

A lot of research has focused on *caki* and *casin*, but we will not elaborate on these topics further. On the other hand, *caki-casin* has not received much attention since it has been analyzed as a strictly local anaphor. Specifically it has been assumed that *caki-casin* has the same binding domain as that specified in the classical Condition A, meaning that if the anaphor appears in the subject position of an embedded clause, it can be anteceded by a matrix element (Huang & Liu, 2001). This has been called the Tensed-Subject Condition (TSC), and I will call this possibility of an anaphor to be anteceded by a matrix element when in the subject position the TSC-violation. The standard assumption is that Korean and Mandarin allow TSC-violation of their strictly local anaphors. The standard theory, in adding the availability of a 'potential subject' in the binding domain, also allows TSC-violation.

(14)

caki	simplex	local and long-distance
casin	simplex	local and long-distance
caki-casin	complex	strictly local; TSC-violation possible

2.2 *caki-casin*: Local or exempt?

Kim & Yoon (2009) present an experimental study that challenges the long-standing assumption that *caki-casin* is strictly local. Using grammaticality judgment tasks, they show that Korean speakers accept sentences where *caki-casin* is long-distance bound in logophoric contexts. Using Sells' (1987) categorizations, they also show that the rating of long-distance bound *caki-casin* is higher when the antecedent is SELF and SOURCE, rather than PIVOT. This is consistent with Sells' hierarchy.

Furthermore, using preference judgment tasks about strict/sloppy readings in VP-ellipsis, they find that *caki-casin* exhibits properties of an exempt anaphor (availability of strict reading) even when occurring within the subject position of a tensed complement clause, i.e. when obeying the classical Condition A. This is problematic because, as mentioned in the previous section, TSC-violation is assumed to be allowed for Korean and Mandarin anaphors. Thus we predict anaphors appearing in the subject position of a tensed complement clause to be plain, and not exempt. Kim & Yoon (2009) acknowledge that this is an unexpected result to be further investigated.

2.3 Research questions

We have seen that, unlike the previous assumption, *caki-casin* does not seem to be strictly local. It allows binding by antecedents that appear outside its binding domain. Crucially, Kim & Yoon (2009) showed that long-distance binding was only possible when the antecedent was a logophoric center. This supports Charnavel & Zlogar's (2015) hypothesis that an exempt anaphor needs to be anteceded by a perspective holder. The first research goal is to confirm the findings of Kim & Yoon (2009).

An interesting finding in Kim & Yoon (2009) is that *caki-casin* shows signs of an exempt anaphor even when it is predicted to abide by Condition A. While Kim & Yoon (2009) call this a "puzzle", it is only a puzzle under the assumption that TSC-violation is indeed allowed for Korean anaphors, and that the strict/sloppy test they used reliably identifies exempt anaphors. While Huang & Liu (2001) provides arguments for why they believe the Mandarin anaphor *ziji* can violate TSC, there has not been a strong argument made for the Korean anaphor *caki-casin*, so it might very well be that *caki-casin* cannot violate TSC. Charnavel & Sportiche (2015) show that French anaphors cannot violate TSC, and thus argue that the standard Condition A must be modified so that the binding domain is the smallest tensed TP. It is possible that *caki-casin* is like the French anaphors studied in Charnavel & Sportiche (2015). The second research goal is to investigate what binding domain Korean anaphors require; specifically, whether Korean anaphors can violate TSC.

Also, the strict/sloppy test may not be a reliable test for exemption. The strict/sloppy test is used in Cole et al. (2001, 2006) to identify exempt anaphors. They argue that exempt anaphors allow strict readings in contexts of VP-ellipsis. For example, in (15a), the anaphor *himself* is bound within its binding domain, and therefore is a plain anaphor. In the VP-ellipsis sentence that follows, only a sloppy interpretation is possible: Bill defended himself, not John. On the other hand, in (15b), the anaphor is exempt, and it allows the strict interpretation: Bill may think that of himself or of John.

(15) a. John defended himself against the committee's accusations. So did Bill.
(plain: sloppy/*strict)
b. John thinks that an article written by himself caused the uproar. So does Bill.
(exempt: sloppy/strict)

The availability of a strict reading is seen as the characteristic property of exempt anaphors, and Kim & Yoon (2009) take this as a diagnostic for exemption. However, Hestvik's (1995) counterexamples using subordinate clauses question the reliability of the strict/sloppy test. In (16), the anaphor is clearly plain, but the strict interpretation is available, and even preferable over the sloppy interpretation.

(16) John defended himself better than his lawyer did.

Moreover, Kim & Yoon (2009) does not repeat the strict/sloppy test for *caki-casin* appearing in strictly local positions. If the availability of a strict reading is not a reliable diagnostic, the conclusion that *caki-casin* is exempt in the TSC-violating position is less strong, especially without the data on local positions serving as a baseline for comparison.

Thus, the third research goal is to find another independent test to determine whether the TSC-violating *caki-casin* is in fact exempt. In order to execute the second and the third research goals – determining the binding domain of Korean plain anaphors and investigating whether *caki-casin* in embedded subject position is exempt – we make use of the Korean inanimate anaphor *cachey*. Adopting Charnavel & Sportiche's (2015) strategy to distinguish between plain and exempt anaphors, we argue that the distribution of *cachey* can help us determine the scope of Condition A and identify conditions for exemption.

3 Korean inanimate anaphor *cachey*

3.1 Inanimacy test

Charnavel & Sportiche (2015) use animacy as a strategy to identify exempt anaphors from plain

anaphors. The reasoning behind this strategy is that logophoricity has to do with perspective centers. While there is no consensus on the exact definition of a perspective center, one thing that crucially holds is that, under any definition of logophoricity, inanimates cannot be logophoric centers since they lack a mental state. Thus, inanimates are necessarily plain anaphors and are a precious tool for determining the scope of Condition A without the confound of logophoricity. Drawing on this idea, we first examined the behavior of the understudied inanimate Korean anaphor *cachey* to use it as a baseline for plain anaphor-hood.

3.2 *cachey* is an inanimate anaphor

Cachey is similar to the English anaphor 'itself' in its meaning and usage. In addition to the anaphoric use shown in (17), *cachey* has an intensifier use like its English counterpart. The emphatic use of *cachey* shown in (18) can be translated as 'the thing *itself*'.

(17) *ku kenmwul-un cachey-uy mwukey-lul mos kyentyessta.*
that building-NOM self-GEN weight-ACC not.able endured
'The building could not endure self's weight.'

(18) *ku kenmwul cachey-nun mwuncey-ka epsta.*
that building self-TOP problem-NOM not.exist
'That building itself does not have any problem.'

Note that when used as an intensifier, it can also attach to animate nouns as in (19):

(19) *ku salam cachey-nun mwuncey-ka epsta.*
that person self-TOP problem-NOM not.exist
'That person himself/herself does not have any problem.'

However, when it is used as an anaphor, it is strictly restricted to inanimate antecedents. This can be seen from *cachey*'s inability to refer to an animate antecedent *John*. (20a) is ungrammatical because the intensifier use of *cachey* is not available without the host noun, in contrast to (20b), where *cachey* is used to intensify the host noun *il* 'work'.

(20) a. **John-un cachey-lul silhehan-ta.*
John-TOP self-ACC hate-DECL
'John hates self.'
b. *John-un il cachey-lul silhehan-ta.*
John-TOP work self-ACC hate-DECL
'John hates the work itself.'

There are other ways to express inanimate reflexivity in Korean. For example, it is possible to simply repeat the inanimate noun as shown in (21). A similar strategy is used to express reflexivity with inanimate nouns in Mandarin, which lacks inanimate anaphors (p.c. Yimei Xiang).

(21) *ku kenmwul-un ku kenmwul-uy mwukey-lul mos kyentyessta.*
that building-NOM that building-GEN weight-ACC not.able endured
'The building could not endure self's weight.'

However, sentences like (21) where the inanimate noun is repeated often sound contrastive in that it suggests that the building could not endure its own weight rather than something else's weight. This

is not the case for the sentence with the inanimate anaphor *cachey*, possibly indicating that it is the more basic strategy of inanimate reflexivity.

That *cachey* is restricted to inanimate antecedents when used as an anaphor is further investigated and confirmed in the first experimental study we conducted, looking at the distribution of *cachey*.

4 Study 1: Distribution of *cachey*

4.1 Goal 1: Is *cachey* really an inanimate anaphor?

Looking at *cachey* and its anaphoric properties in relation to Condition A was first discussed in Ahn (2013a). While there is growing attempt to expand the study of Korean anaphors that are understudied compared to the main three, this is the first experimental study looking at *cachey*. Thus, we first wanted to confirm that *cachey* is indeed taken as an anaphor by Korean speakers, and more crucially, that it is restricted to inanimate antecedents when taken as an anaphor.

4.2 Goal 2: Establishing a baseline for Condition A

If *cachey*'s inanimate anaphor-hood is confirmed, we can use the distribution of *cachey* to establish the baseline for Condition A in Korean. This follows the logic in Charnavel & Sportiche (2015) that inanimacy is a sufficient condition for plain anaphor-hood: inanimate anaphors cannot have perspective holders as antecedents, and therefore, logophoric conditions cannot interfere. This means that the distribution of *cachey* can be used to delimit the boundary of Condition A for plain anaphors. If *cachey* is not allowed in certain positions, this is seen as a position that falls outside Condition A. If another anaphor is actually licensed in a position where *cachey* is not allowed, we can conclude that the anaphor is exempt.

In investigating the distribution of *cachey*, we included cases where *cachey* was the subject of an embedded clause with an antecedent appearing in the matrix clause. This was to test for the TSC-violation puzzle in Kim & Yoon (2009). We have seen that while Kim & Yoon (2009) assumed that TSC-violation was possible in Korean like Mandarin (Huang & Liu, 2001), *caki-casin* behaved like an exempt anaphor in TSC-violating – embedded subject with antecedent in the matrix – positions. Using an independent test using inanimacy, we investigated whether *cachey* is allowed in TSC-violating positions. If so, we can conclude that Korean allows TSC-violation by plain anaphors. If not, we can conclude that Korean does not allow TSC-violation, and support (Kim & Yoon, 2009) that *caki-casin* is indeed exempt in embedded subject positions.

4.3 Study

Thirty-nine native Korean speakers were asked to perform online grammaticality judgment tasks of 54 items. All sentences contained *cachey* and its antecedent in various positions. The sentences were divided into three subgroups A, B, and C based on the syntactic positions. In group A, *cachey* had a clausemate, c-commanding antecedent, as shown in (22):

(22) *[i senpak]$_i$-un cachey$_i$-uy chwucinlyek-ulo wumcikil swu-iss-ta.*
this ship-TOP self-GEN momentum-INST move able-DECL
'[This ship]$_i$ can move using its$_i$ momentum.'

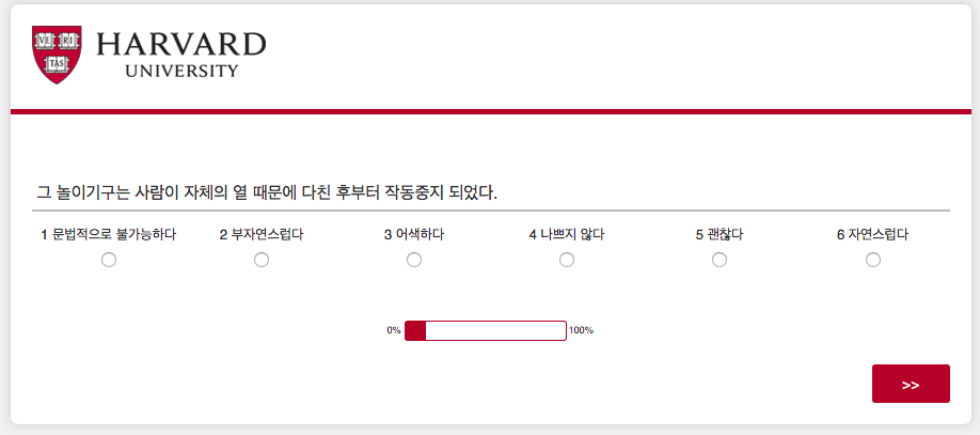

Figure 1: Screenshot of the survey.

Group B had *cachey*'s antecedent appear in the same clause, but the antecedent did not c-command *cachey*. An example is shown below:

(23) **[i kwail]$_i$-uy caypayca-nun cachey$_i$-uy khentisyen-ul cacwu hwakinhan-ta.*
this fruit-GEN grower-TOP self-GEN condition-ACC often check-DECL
'[This fruit]$_i$'s grower checks its$_i$ condition often.'

Group C had bi-clausal sentences with *cachey* appearing in the embedded clause. The antecedent c-commanded *cachey*, but it appeared outside the embedded clause, thus testing for long-distance binding. This group crucially included cases where the anaphor was (within) the subject of the embedded clause, testing for TSC-violation. An example of a TSC-violating *cachey* is given below:

(24) **[i sosel]$_i$-un [[**cachey**$_i$-uy ceca]-ka apu-ta]-nun kes-ul poyecwun-ta.*
this novel-TOP cachey-GEN author-NOM sick-DECL-RC fact-ACC show-DECL
'[This novel]$_i$ shows that self's$_i$ author is sick.'

These sentence items were presented on the Harvard Qualtrics site and distributed online. The 6-point Likert scale was used for the ratings. Figure 1 shows a sample page of the questionnaire. The sentences were presented to the participant in an randomized order, and they were allowed to take a break at any point. Only the results of those who returned to complete the survey were considered.

4.4 Results

Overall, speakers found sentences with *cachey* slightly odd, but acceptable under anaphoric readings.

Group A was rated significantly higher than group B ($p<0.0001$) and group C ($p<0.0001$). Furthermore, within group C, anaphors within the subject position behaved like anaphors in other positions: they also received significantly lower scores than anaphors of Group A ($p<0.0001$), thus indirectly corroborating Kim and Yoon's (2009) empirical findings about the exempt status of Korean anaphors in that configuration. This supports Charnavel and Sportiche's (2015) formulation of the binding domain for anaphors, which restricts the binding domain to the smallest XP containing the anaphor and no

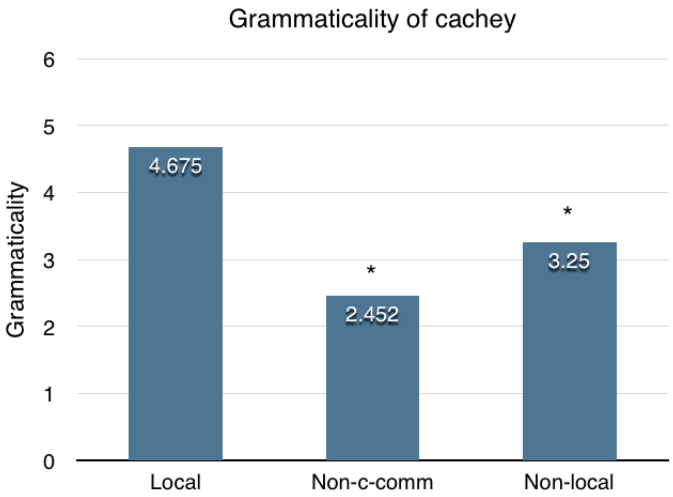

Figure 2: Average rating of *cachey* in groups A, B, and C.

larger than a TP.

4.5 Discussion

There were two research questions for Study 1. The first was to investigate whether *cachey* is considered an inanimate anaphor by native Korean speakers. The overall rating and the drop in the rating score when *cachey* is anteceded by animate individuals confirm that *cachey* is indeed considered an anaphor and it is restricted to inanimate antecedents.[2]

The second goal was to determine the binding domain of *cachey*. The low ratings on sentences in groups B and C show that *cachey* requires a local, c-commanding antecedent, as specified by the classical Condition A. In addition, the low rating (mean score = 3.445, significantly different from the local condition $p<0.0001$) of sentences with embedded subject *cachey* anteceded by an element in the matrix clause suggest that TSC-violation is not allowed for plain anaphors in Korean. This indirectly supports Kim & Yoon's (2009) data that suggest exemptness of *caki-casin* in this position. This issue will be more closely investigated in the next study looking at *caki-casin*.

[2]The drop in the score with animate individuals was only indirectly observed. That is, we did not test whether animate nouns can antecede *cachey* using sentences like (ia), but only with sentences in Group B as in (ib), where the intended inanimate antecedent is not c-commanding *cachey* and what does c-command *cachey* is an animate intervener.

(i) a. *John$_i$-un cachey$_i$-lul coahanta.*
John-TOP self-ACC likes
'John$_i$ likes self$_i$.'

b. **[i kwail]$_i$-uy caypayca-nun cachey$_i$-uy khentisyen-ul cacwu hwakinhan-ta.*
this fruit-GEN grower-TOP self-GEN condition-ACC often check-DECL
'[This fruit]$_i$'s grower checks its$_i$ condition often.'

4.5.1 non-local vs. non-c-commanding antecedents

One interesting observation is that the rating of sentences in group B and that of sentences in group C are significantly different from each other. Specifically, group C, the non-local condition, was rated significantly higher than group B, the non-c-commanding condition. While this difference was not expected, it is not necessarily surprising or unexpected, because locality and c-command are two separate parameters of Condition A. While c-command specifies how the anaphor is bound by an antecedent, locality delimits the domain in which the binding must occur. Thus, it may very well be that these two parameters entail different violations.

5 Study 2: Distribution of *caki-casin*

5.1 Goal 1: Can we show the exempt use of *caki-casin* experimentally?

Our second study looked at the distribution of *caki-casin*. The first goal of Study 2 was to confirm the exempt nature of *caki-casin*. The exempt nature of *caki-casin* has already been suggested in Kim & Yoon (2009), and this study would confirm this further using a different method, namely the inanimacy test. We have seen that *cachey* is not licensed in non-c-commanding conditions and non-local conditions, including TSC-violating conditions. If *caki-casin* is allowed in any of these conditions, that would suggest that *caki-casin* is exempt in those conditions.

5.2 Goal 2: How does logophoricity affect exempt *caki-casin*'s distribution?

The second goal was to test for the effect of logophoricity in licensing of *caki-casin*. Kim & Yoon (2009) have shown that logophoric antecedents raise the overall rating of sentences containing LD-bound *caki-casin*. Carefully controlling for logophoric effects, we aimed to come up with a more systematic test of how logophoric antecedents helped with the licensing of exempt anaphors in Korean.

5.3 Study

Study 2 included 38 Korean speakers and 69 sentence items. We adopted the same 3 structural distinctions as in Study 1 but added another variable, namely logophoricity. There were two conditions predicted to violate Condition A by Study 1: the non-c-commanding condition of group B, and the non-local condition of group C. In group C, all sentences had verbs that we classified as [+log]. For example, all matrix verbs in group C contained verbs of propositional attitude such as *think* as in (25), *said* or *believe* to create an attitude holder context. Note that this example is crucially different from the LD binding example from (13) repeated in (26) because the intervening subject in (26) is animate, thus a potential antecedent. All sentence items tested in group C contained an inanimate subject in the embedded clause as in (25) to avoid confounds resulting from animate interveners, as exemplified in (26), where it is impossible for the matrix subject *John* to antecede the embedded anaphor.

(25) *Cina$_i$-nun [kkwucwunhan wuntong-i cakicasin$_i$-ul pakkwuko issta]-ko sayngkakhanta.*
CN-TOP regular exercise-NOM self-ACC change exist-COMP thinks
'CN$_i$ thinks that regular exercise is changing self$_i$.'

(26) *John$_i$-un [Mary$_j$-ka caki-casin$_{*i/j}$-ul coahan-ta]-ko senggakhan-ta.*
John-TOP Mary-NOM self-ACC like-DECL-COMP think-DECL
'John thinks that Mary likes self.'

Condition B was further divided based on whether it was the noun or the verb that created the logophoric context. We incorporated [+log] and [-log] nouns as well as [-log] verbs and [anti-log] verbs. We elaborate on these conditions in turn.

[±log] nouns We labeled nouns [+log] if it introduced a context in which the antecedent is interpreted as a logophoric center, specifically an empathy locus. For example, the noun 'thought' in (27a) creates a logophoric context where the perspective of the antecedent *Kangwu* is invoked. Compare this to the [-log] counterpart 'bike' in (27b), which does not invoke the antecedent's perspective.

(27) a. *Kangwu$_i$-uy* ***sayngkak****-un cakicasin$_i$-ul wihem-ey ppattulyessta.*
KW-GEN **thoughts**-TOP self-ACC danger-DAT put
'KW$_i$'s thoughts put self$_i$ in danger.'
b. *Kangwu$_i$-uy* ***cacenke****-nun cakicasin$_i$-ul wihem-ey ppattulyessta.*
KW-GEN **bike**-TOP self-ACC danger-DAT put
'KW$_i$'s bike put self$_i$ in danger.'

Can we be sure that nouns like *thoughts* are indeed creating a logophoric context, specifically invoking an empathy locus interpretation? Charnavel & Zlogar (2015) describe "empathy" as the sentence taking the mental perspective of the antecedent. There are various independent tests that can be used to identify an empathy locus context. Some languages encode empathy lexically. Kuno & Kaburaki (1977) for example discusses two ways of encoding an event of giving in Japanese: *yaru* and *kureru*. When the former is used, the nominative argument is the empathy locus, meaning that the event is described from the mental perspective of the giver. When the latter is used, on the other hand, the dative argument is the empathy locus, with the event being described from the mental perspective of the recipient. This is supported by the contrast shown in (28), where the choice of the giving verb used in the sentence depends on which argument denotes the speaker. Kuno & Kaburaki (1977) argue that the degree of speaker's empathy is directly related to the sentence's grammaticality, suggesting a Speech Act Empathy Hierarchy as shown in (29). Because choosing the verb *kureta* in (28a) goes against this hierarchy, the sentence is ungrammatical.

(28) a. *boku-wa Taroo-ni okane-o yatta/*kureta.*
I-NOM Taroo-DAT money-ACC give
'**I** gave Taroo money.'
b. *Taroo-wa boku-ni okane-o *yatta/kureta.*
Taroo-NOM I-DAT money-ACC give
'Taroo gave **me** money.'

(29) **Speech Act Empathy Hierarchy**: E(speaker)> E(others)
The speaker cannot empathize with someone else more than with himself/herself

Other tests of empathy locus include the English 'his dear' test, which builds on the intuition that 'dearness' is only intrinsically evaluated by the mental perspective holder. In (30), for example, the empathy locus is Lucy because the son's 'dearness' can only be evaluated from the perspective of Lucy.

(30) Anonymous posts about her dear son on the internet hurt Lucy's feelings.

To confirm that the contexts presented in the experiment were encoding Empathy locus, I implemented a new test that was introduced in Ahn (2013b). This test, which I call the 'sibling test', builds on the observation that Korean shows lexical encoding of empathy information in sibling terms. Unlike the Japanese giving verbs which encode the argument type of its empathy locus, the Korean sibling terms

encode the gender of its empathy locus. Thus, instead of a two-way distinction shown in English as in (31), there is a four-way distinction in Korean.

(31)

Term	Gender of referent
brother	male
sister	female

(32)

Term	Gender of referent	Gender of empathy locus
hyung	male	male
oppa	male	female
nuna	female	male
unni	female	female

Korean sibling terms are restricted to referring to older, and not younger, individuals, but it is not necessary that the individuals are actually related. For example, the term is general in that it is used to refer to any older individual in a reasonably close in age. Thus, if John has an older sister, and John's friend Mary wants to refer to that sister, she can use the word *unni* to refer to her. In fact, there are two ways Mary can refer to John's sister:

(33) a. John-ney **unni**
Empathy locus: Speaker
b. John-ney **nuna**
Empathy locus: John

The particle *ney* that attaches to *John* in the examples above is similar to a possessive, but it encodes a more specific information: that there is a family relation between the two arguments it takes. Thus, (33a) can be paraphrased as 'the older female friend in John's household', while (33b) can be paraphrased as 'the older sister in John's household'.

Using this phi-feature restriction of Korean sibling terms, I tested whether the sibling term placed any restriction on the antecedent's gender. *Nuna* is the term for an older sister or an older female friend that carries the restriction that the empathy locus be a male. To test this, I took the sentences in (27), and replaced the anaphor with *nuna*, as shown below.

(34) a. *Kangwu-uy **sayngkak**-un NUNA-ul wihem-ey ppattulyessta.*
KW-GEN **thoughts**-TOP nuna-ACC danger-DAT put
'KW's thoughts put his/my sister in danger.'
b. *Kangwu-uy **cacenke**-nun NUNA-lul wihem-ey ppattulyessta.*
KW-GEN **bike**-TOP nuna-ACC danger-DAT put
'KW's bike put *his/my sister in danger.'

The contrast between (34a) and (34b) shows that in the non-logophoric context, the gender restriction of *nuna* cannot fall on *Kangwu*. Thus, (34b) will be degraded if the speaker of the sentence is a female because *Kangwu* is not a possible empathy locus of the sentence. On the other hand, (34a) is fine even if the speaker is a female, because while the speaker cannot be the empathy locus, *Kangwu* can serve as the empathy locus of the sentence. Using this test, we confirmed that all cases of [+LOG] in Group B were cases of empathy locus.

(35) [+log] and [-log] nouns we used in group B sentences:

[+log]:	thoughts, personality, values, comments
[-log]:	bike, job, house, food, toy, book

[±log] verbs Sentences in group B were also divided into [-log] and [anti-log] verb conditions. The [-log] condition included verbs like 'show' in (36a) which does not invoke the perspective of the antecedent. The [anti-log] condition included verbs like 'scared' in (36b), which shifts the perspective away from the antecedent. (36a) stays neutral as to which perspective the sentence is valued against, while (36b) invokes the perspective of *Hengswu*'s friends in evaluating the sentence.

(36) a. *Hengswu$_i$-uy sengkyek-un cakicasin$_i$-uy hyengphyen-ul* ***poyecwunta.***
HS-GEN personality-TOP self-GEN circumstances-ACC **shows**
'HS's personality shows his circumstances.'

b. *Hengswu$_i$-uy sengkyek-un cakicasin$_i$-uy chinkwutul-ul* ***mwusepkey-hayssta.***
HS-GEN personality-TOP self-GEN friends-ACC **scared**.
'HS's personality scared his friends.'

Note that the sentences in (36) both also include a [+log] noun 'personality'. Thus, these sentences were labeled [+log N, -log V] and [+log N, anti-log V], respectively. Other [-log] and [anti-log] verbs we used in group B sentences are listed below:

(37) [-log] and [anti-log] verbs used in group B:

[-log]:	show, worsen, stop,
[anti-log]:	scare, concern, inspire

5.4 Results

Overall, sentences containing *caki-casin* received higher ratings than those containing *cachey*, but they were still not scoring at ceiling. Speakers commented that *caki-casin* sounded a bit too formal in the given sentences and they would prefer the simplex anaphor *caki* or *casin* in place of *caki-casin*.

Sentences in group A, the local, c-commanding condition, did not differ significantly from the ratings in the same condition for *cachey*. However, in groups B and C, the ratings of sentences containing *caki-casin* were significantly higher than those containing *cachey*.

A closer look at the results in group B, however, revealed a significant effect of logophoricity. There was no significant difference between *cachey* and *caki-casin* in non-logophoric conditions ($p>0.1$) such as [-log N] condition in (27b) or [±log N, anti-log V] condition in (36b). Crucially, the higher rating of sentences containing *caki-casin* was only detected in conditions we labeled [+logophoric].

The average ratings are summarized in the table below:

anaphor\antecedent	A: clausemate c-commanding	B: clausemate non-c-commanding	C: non-clausemate
cachey	4.675	2.452	3.25
caki-casin	4.771	3.527 [-LOG]: 2.724 [+LOG]: 3.694	4.726 [+LOG]

5.5 Discussion

That the average rating of sentences containing *caki-casin* did not differ significantly from *cachey* sentences in non-logophoric conditions supports the formulation of Condition A we established based on

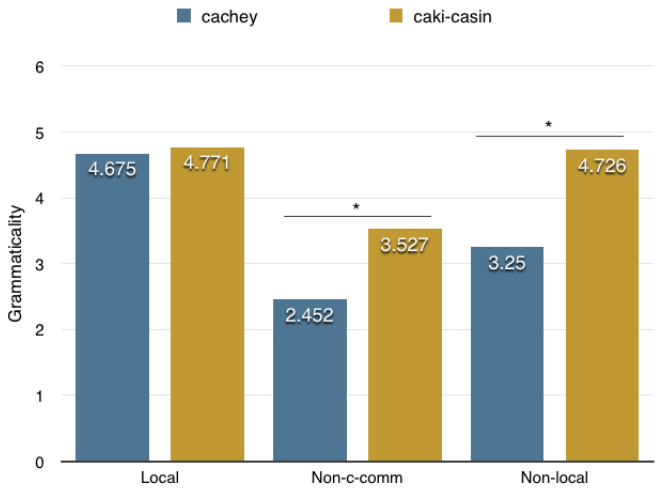

Figure 3: Ratings of *caki-casin* compared to *cachey*.

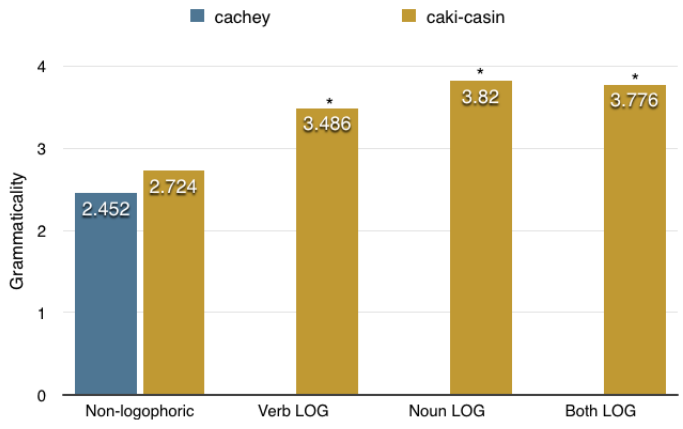

Figure 4: Ratings of sentences in group B decomposed.

the distribution of *cachey*. The significantly higher ratings that result from logophoric contexts also verify our hypothesis that exempt anaphors are licensed when anteceded by perspective holders.

Caki-casin is licensed in group C sentences, suggesting that it can be LD-bound. Specifically, *caki-casin* appearing in TSC-violating conditions such as (38) also received a high rating of 4.946.

(38) *Tomincwun-un [**cakicasin**-i oykyey-eyse wassta]-ko cwucanghanta*
TMC-TOP cakicasin-NOM outer.world-from came-COMP argues
'TMC argues that self is from the outer world.'

Because *cachey* was shown to be not licensed in the same position, we can conclude that *caki-casin* is indeed exempt in the TSC-violating position. Because we only had [+log] conditions for group C, however, we were not able to find a systematic contrast between [-log] and [+log] conditions in this case. The results in group B suggested that our hypothesis that exempt anaphors are only licensed when anteceded by perspective holders is on the right track. Under this assumption, our prediction is that if we come up with a TSC-violating sentence containing *caki-casin* in a [-log] environment, the rating should not be significantly higher than the rating of *cachey* counterparts.

6 Discussion: *cachey* vs. *caki-casin*

6.1 Condition A in Korean

As suggested in the distribution of *cachey* in Study 1 and confirmed by the patterns of *caki-casin* in Study 2, Korean anaphors are restricted to local, c-commanding antecedents. That *cachey* appearing in the embedded subject position was rated significantly lower than local cases suggested that TSC-violation is not allowed for anaphors, unlike the Mandarin *ziji* (Huang & Liu, 2001). The classical Condition A in Chomsky (1986) allows TSC-violation, but Charnavel & Sportiche (2015) argue for a more restricted version based on their study of French inanimate anaphors. Their version of Condition A restricts the domain to a tensed-TP, arguing that the antecedent search cannot cross a TP boundary.

The data with *cachey* supports Charnavel & Sportiche's formulation of the binding domain for plain anaphors because the restriction to the smallest tensed TP would explain why the embedded subject *cachey* cannot be anteceded by a matrix material.

6.2 The two parameters of Condition A

The appeal to phase theory to explain the restricted binding domain (Charnavel & Sportiche, 2015) can also provide explanations to the different ratings on groups B and C. We have seen that, in both studies, group C, the non-local condition, was rated significantly higher than group B, the non-c-command condition. If it is somehow possible for Korean speakers to retain information from the previous phase, the non-local problem may be avoided, while non-c-command does not have such an escape route.

6.3 Logophoric effects and exemption

The hypothesis we adopted from Charnavel & Zlogar (2015) was that exempt anaphors must be anteceded by perspective holders to be licensed. The results in Study 2 provided direct support for this hypothesis: sentences containing *caki-casin* in conditions that did not license *cachey* were rated as low

as the *cachey* counterparts if no logophoric environment was created. When either the host noun or the verb in the sentence provided some logophoric context, the ratings of *caki-casin* were significantly higher, thus supporting that logophoricity licenses exempt anaphors.

In Study 2, we only tested one type of logophoricity in each group: empathy locus in Group B, and attitude holder in Group C. Kim & Yoon (2009) showed in their experiment that the rating of sentence items containing *caki-casin* in SELF conditions received the highest rating, then SOURCE and PIVOT in order, supporting Sells' hierarchy of logophoricity:

(39) a. SOURCE > SELF > PIVOT (Sells, 1987)
b. Attitude Holder > Empathy Locus > Deictic Center (Charnavel & Zlogar, 2015)

Because we used a different categorization proposed in Charnavel & Zlogar (2015), it would be important to investigate whether different logophoric centers have different effects on licensing *caki-casin*. As we discussed in the introduction, Charnavel & Zlogar's (2015) 'Attitude Holder' combines Sells' (1987) SOURCE and SELF. It would thus be useful to test the licensing of *caki-casin* in Attitude Holder contexts and compare its rating in Group B. While a way of creating an Attitude Holder context in Group B was not clear to the author at the time of designing the experiments, it was suggested by Isabelle Charnavel (p.c.) that it can be done by embedding an anaphor inside some content of what the antecedent writes, makes, or says. A possible sentence is shown in (40). While there is no experimental data on sentences of this type yet, (40) does not sound any more degraded than other exempt cases of *caki-casin* to the author.

(40) *John$_i$-uy pyenci-nun [caki-casin$_i$-uy hengtong-ul pangeohass-ta.*
John-GEN letter-TOP self-gen behavior-ACC defended
'John's letter defended self's behavior.'

Another crucial gap in this experiment's design is data testing [-LOG] contexts in Group C. However, because Group C involves an embedded clause where the antecedent appears in the matrix, it is not clear as of now how a non-Attitude Holder context can be created.

6.4 Closer look at the TSC-violating condition

6.4.1 TSC-violation with *cachey*

In Study 1, we saw that an embedded subject *cachey* bound by a matrix material was rated significantly lower than the same anaphor in local conditions. This led us to conclude that Korean does not allow TSC-violation of plain anaphors. However, the issue is not as simple because while the TSC-violating condition is rated significantly lower than in local condition, it is also rated significantly higher than non-local, non-subject conditions. This means that there is a three-way contrast among local, non-local subject, and non-local non-subject conditions, instead of the non-local subject condition lining up with the rest of non-local conditions.

(41)

local	>*	non-local subject (TSC-violation)	>*	non-local, non-subject
4.675		3.445		2.858

There are at least two possible ways to account for this three-way contrast in licensing *cachey*. The significant difference between local and non-local subject conditions clearly suggests that it is less easy to license *cachey* in TSC-violating conditions. This may be due to a) the binding domain being

restricted to smallest tensed TPs (Charnavel & Sportiche, 2015); or b) an external factor that causes processing difficulties. We elaborate on these two possibilities in turn:

a) Binding domain is restricted to TP, but distance matters. It may be that the binding domain for Korean is restricted to the smallest TP as in French (Charnavel & Sportiche, 2015), and that accounts for the significantly lower rating in the TSC-violating condition. Additionally, there might be a processing difficulty added when there is more distance between the antecedent and the anaphor. This may be an independent factor that accounts for the significant difference between the subject and non-subject conditions within the non-local condition. **This suggests that exemption is also subject to locality in certain ways.**

To test this hypothesis, we will need to test sentences that contain *cachey* in more embedded positions. The prediction is that the more embedded *cachey* is, the lower the rating.

b) Binding domain includes embedded subjects, but the subject is a topic. It may be that the binding domain for Korean anaphors does include embedded subjects. Then, why is the non-local subject condition rated significantly lower than the local condition? Huang & Liu (2001) assume that the subject of embedded clauses in Mandarin is a topic, and therefore it is positioned higher than usual subjects. If we adopt this analysis of embedded subjects for Korean as well, we can account for the lower rating by processing difficulties that may accompany construing embedded subjects as topics.

In order to evaluate this hypothesis, we will need to test sentences where non-subject elements are topicalized in the embedded clause. For example, *cachey* in the object position in (42) can be topicalized as in (43):

(42) *i os-un [cwuin-i **cachey**-lul culkye ipnun-ta]-nun kes-ul poyecwunta*
this clothing-TOP owner-NOM cachey-ACC enjoy wear-DECL-RC fact-ACC shows
'This clothing shows that the owner likes to wear it often.'

(43) *i os-i [**cachey**-mankhum-un cwuin-i culkye ipnun-ta]-nun kes-ul*
this clothing-NOM cachey-at.least-TOP owner-NOM enjoy wear-DECL-RC fact-ACC
poyecwunta
shows
'This clothing shows that, at least self, the owner likes to wear.'

Another way to test these hypotheses is to look at the TSC-violation pattern in *caki-casin*. If the three-way contrast is caused by processing difficulties such as distance or interpretation of topic, *caki-casin* would be subject to them as well. Thus, we can investigate whether *caki-casin* shows either of the two processing difficulties posited by the hypotheses, as summarized below.

(44)

Hypothesis	Explains...	Processing difficulty posited
(a) BD is TP	local >* TSC	Distance between antecedent and anaphor (→ TSC >* non-local/subj)
(b) BD includes topic	TSC >* non-local/subj	Processing of topic difficult (→ local >* TSC)

What we see with *caki-casin* is that the TSC condition (non-local condition where the anaphor is (within) subject) is rated significantly higher than the non-local, non-subject condition. In fact, unlike *cachey*, the TSC condition is rated the highest:

(45)

non-local subject (TSC-violation)	>*	local	>*	non-local, non-subject
5.120		4.771		4.445

This aligns with the processing difficulty posited by Hypothesis A, in which the BD is TP and the non-local, non-subject is rated worse than TSC because there is added processing difficulty from the distance. This is, however, only an indirect way to test for the processing difficulty. Thus, it will be necessary to conduct the tests proposed above for testing each hypothesis independently.

6.4.2 TSC-violation with *caki-casin*

We have used the grammaticality contrasts of *caki-casin* to evaluate the two hypotheses on the binding domain of Korean anaphors. Because *caki-casin* does not reveal evidence of processing difficulty associated with topic interpretation, we concluded that this supports Hypothesis A where the binding domain is TP and distance between the antecedent and the anaphor add processing difficulties. The contrast in (45), however, introduces an additional puzzle: the TSC condition is rated even higher than the local condition. While logophoricity complicates the interpretation of contrasts, this order is more surprising than, for example, *caki-casin* following the same pattern as that of *cachey* in (41).

In explaining this, we need to adjust our terminology: until now we have used *caki-casin* to discuss the anaphor traditionally analyzed as a local anaphor that is shown in Kim & Yoon (2009) and in this paper to be logophoric in appropriate contexts. We propose that this anaphor is ambiguous between a local anaphor and an intensified version of *caki*. The complex local anaphor, *cakicasin* without the hyphen, is a strictly local anaphor. We posit in addition to *cakicasin* *caki-casin* which is actually *caki* with the intensifier use of *casin*.[3] It is well-known that *casin* can be used as an intensifier following nominal phrases as in (46). The crucial difference between *cakicasin* and *caki-casin* is that *caki-casin* retains the long-distance preference of *caki* while *cakicasin* has lost such preference.

(46) a. ku-casin: he himself
b. John-casin: John himself

Many studies have shown that *caki* has a preference for long-distance binding (Choi & Kim, 2007). If the anaphor appearing in TSC conditions is *caki-casin* and not *cakicasin*, the prefence for TSC condition over strictly local condition can be explained. This requires the assumption that the LD-bound *caki-casin* is preferred over locally bound *cakicasin*. This assumption is not unreasonable, if we consider that *cakicasin* in general is not used as often as *caki* or *casin*. It could be that *cakicasin* is always somewhat odd for speakers, and this ambiguity between *cakicasin* and *caki-casin* is present at all times. In the strictly local condition, the ambiguity causes processing difficulty. In the TSC condition, because *cakicasin* is not allowed as a strictly local anaphor, there is no ambiguity and it is analyzed as *caki-casin*. The lack of ambiguity results in the higher rating. The non-local, non-subject condition is still rated the lowest due to the added processing difficulty from the distance.

This hints at a slightly different way of analyzing the data presented in this paper. What we have argued so far is that while *cachey* is strictly local, *caki-casin* can be licensed as an exempt anaphor in logophoric contexts. Another way to interpret the data is that what we tested in Study 2 actually involved two anaphors: *cakicasin* which is strictly local and *caki-casin*, which has the potential to be exempt. It has been suggested that *caki* is sensitive to logophoricity. This study, then, may have shown

[3]We continue to use the hyphen in the remainder of the paper, but we call for more investigation on the possibility of this ambiguity in future research.

that *caki*, not *caki-casin*, can only be licensed non-locally when a logophoric context is provided. This distinction between a strictly local anaphor and its exempt-able counterpart may be extended to other languages as well. When we argue that a plain anaphor can be exempt, it could mean that the anaphor itself can become exempt, or it is interpreted as a separate element that shares its form but has the property of exemptness. This does not alter the hypothesis in Charnavel & Zlogar (2015) in any way, but simply adds a different way of realizing the logic. If this is on the right track, Korean is showing evidence for this: the exempt counterpart of *cakicasin* is reanalyzed as *caki-casin*, thus resulting in the contrast in (45).

6.5 Explaining sub-command effects of ziji

The Mandarin *ziji* has been observed to allow sub-commanding antecedents (Tang 1989). Huang & Liu (2001) argue that subcommanding is a case of plain binding when it is local. As shown in (47) and (27a) repeated in (48), the examples discussed in Huang & Liu (2001) are identical to the items in our group B.

(47) *Zhangsan$_i$-de jiaoao hai-le ziji$_i$.*
Zhangsan's arrogance hurt-ASP self
'Zhangsan$_i$'s arrogance harmed him$_i$.'

(48) *Kangwu$_i$-uy* ***sayngkak****-un cakicasin$_i$-ul wihem-ey ppattulyessta.*
KW-GEN **thoughts**-TOP self-ACC danger-DAT put
'KW$_i$'s thoughts put self$_i$ in danger.'

Huang & Liu (2001) argue that (47) is allowed because the only potential antecedent – the c-commanding noun – is inanimate. This, however, is problematic because it does not explain why such an option is available for non-c-command conditions but not non-local conditions. Huang & Liu (2001) argue that (47) must be an instance of plain binding because if *ziji* in (47) were exempt, they would predict all subcommanding instances to be felicitous, and that is not the case. For example, *ziji* is not licensed in (49). The argument is that, if *ziji* was simply exempt, locality should not interfere with its acceptability. Therefore, *ziji* in (47) is plain, and subcommanding is argued to be possible for plain anaphors in Mandarin.

(49) **Zhangsan$_i$ de shibai biaoshi tamen dui ziji$_i$ mei xinxin.*
Zhangsan DE failure indicate they to self no confidence
'Zhangsan's failure indicates that they have no confidence in him.' [HL'01 (79)]

A closer look, however, reveals that what causes the infelicitousness in (49) is not the violation of locality but the [anti-logophoric] environment introduced by the verb 'indicate'. We have seen in Study 2 that [anti-log] verbs like 'scare' shift the perspective away from the antecedent, and *caki-casin* is not licensed in those conditions. Because the verb 'indicate' in (49) is [anti-log] and necessarily shifts the perspective toward the speaker's evaluation, even if *ziji* were exempt, it would not be licensed. The local subcommanding examples as in (47), on the other hand, only make use of [+log] nouns such as 'pride'.[4] That *ziji* is allowed in non-c-commanding conditions when there is a [+log] noun and that it is not allowed when there is an [anti-log] verb resonate with *caki-casin*'s results in Study 2 and explain away the sub-commanding phenomenon. It is not that *ziji* is local and allows sub-commanding antecedents; it is that *ziji* is exempt in non-c-commanding conditions like other plain anaphors and requires logophoric environments to be rescued. It may be worthwhile to go back to all examples of

[4]Using [-log] nouns such as 'bike' actually makes the same sentence much less felicitous (Huang, p.c.).

sub-commanding *ziji* in previous studies and re-evaluate the data in light of the experimental results presented in this paper.

7 Conclusion

This paper presented two studies looking at the distribution of Korean anaphors *cachey* and *caki-casin*. From the first study looking at *cachey*, we have confirmed *cachey*'s status as an inanimate anaphor and used it to delimit the binding domain for Korean. Specifically, seeing that *cachey* appearing as the embedded subject is rated significantly lower than strictly local conditions, we argued that the binding domain for Korean does not include the subject. From the second study looking at *caki-casin*, we showed that *caki-casin* behaves differently from *cachey* only in logophoric conditions: its rating in non-local, non-logophoric conditions did not differ significantly from that of *cachey* in the same condition. However, in conditions where [+log] nouns were added, *caki-casin*'s ratings were significantly higher. From this we concluded that *caki-casin* can be exempt as Kim & Yoon (2009) suggests, and that the exempt *caki-casin* is only licensed when the antecedent is a perspective center.

Because Group C – non-local condition – did not have a non-logophoric control to really test the effect of logophoricity on *caki-casin*, a follow-up study with such controls is necessary. Also, as we discussed in the last section, it may be possible that *caki-casin* is actually ambiguous between the strictly local *cakicasin* and the intensified *caki*. More investigation of this possibility is called for.

In sum, this paper makes several theoretical contributions. First, it adds to the inventory of Korean anaphors the study of the inanimate anaphor *cachey*, which in turn allowed us to define Condition A more precisely for Korean. We also used the distribution of *caki-casin* to strengthen the link between exempt anaphors and logophoricity, in support of the hypothesis brought forth in Charnavel & Zlogar (2015) that exempt anaphors can only be licensed when the antecedent is the perspective center. Methodologically, it verifies the inanimacy test introduced in Charnavel & Sportiche (2015) for identifying exempt anaphors. Empirically, we confirmed the suggestion brought forth in Kim & Yoon (2009) that *caki-casin* is exempt. We also suggested the possibility that the sub-command condition discussed for the Mandarin anaphor *ziji* may be a specific instance of the exempt use of *ziji* in the presence of a [+LOG] noun.

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