

# Indexicals and the long-distance reflexive *caki* in Korean

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## 1 Introduction

- This talk investigates indexical shift and the interactions between shifted indexicals and other elements, such as the third person pronoun and the long-distance reflexive *caki*, in Korean.
- This talk consists of two parts:
  - PART 1 shows that Korean is a language where indexicals can optionally shift under certain attitude predicates. Especially, some interesting contrasts between person and adverbial indexicals in Korean will be presented.
  - PART 2 presents novel data on the interactions between the shifted indexicals and the long-distance reflexive *caki*. A new blocking effect of the long-distance reflexive *caki* that is caused by the context-shift operator will be introduced. That is, the context-shift operators cannot intervene between *caki* and an antecedent of *caki*, which I dub the 'IS (indexical shift)-Blocking Effect.'
- **Main Claims:**
  - In PART 1, I will propose that there are two different monsters, i.e. context-shift operators, for person and adverbial indexicals, given the different properties of the two types of indexicals. This analysis will correctly capture how shifted

indexicals interact with the 3<sup>rd</sup> person pronoun.

- In PART 2, based on the assumption that there are different routes to *de se* of shifted indexicals and *caki*, I will argue that the 'IS-Blocking Effect' occurs since the context-shift operator forces the syntactic operator for *caki* in the same embedded clause to bind the LD *caki* under its scope.

- **Roadmap:**

- Indexical shift in indirect speech
- Two context-shift operators for person and adverbial indexicals
- The long-distance reflexive *caki*
- Interactions between the shifted indexicals and LD reflexive *caki*

## PART 1

### 2 Indexical Shift in Korean

- It is well known that the meanings of indexicals, such as *I, you, here, today, etc.*, are dependent on the context of utterance (Kaplan 1989).

- However, it has been found that indexicals in the complements to attitude verbs can be interpreted with respect to the reported context instead of the actual speech context in many languages, such as Amharic (Schlenker 1999), Navajo (Speas 2000), Zazaki (Anand and Nevins 2004), Uyghur (Sudo 2012), Nez Perce (Deal To appear), etc.
- In Korean, both person and adverbial indexicals in an embedded clause of an attitude predicate can be interpreted in two ways, relative to either the context of utterance or the reported context.

(1) Mary-ka **nay**-ka ceyil pwuca-lako malhayssta.  
 Mary-Nom I-Nom most rich.person-C said  
 ‘Mary said that {**I am, Mary is**} the richest person.’

(2) *Utterance in Brussels*  
 Amherst-eyse Mary-ka John-i **yeki**-eyse  
 Amherst-at Mary-Nom John-Nom here-at  
 thayenassta-ko malhayssta.  
 be.born-C said  
 ‘Mary said in Amherst that John was born in {**Brussels, Amherst**}.’

- **Question:**  
 How is the ambiguity shown in (1)-(2) derived in Korean?
- **Possible Analyses:**
  - Sentential quotation
  - Partial quotation (Maier 2007)
  - Indexical shift (Anand and Nevins 2004, Anand 2006)
- In this section, I will show that indexicals can optionally shift in an indirect speech in Korean and present the basic properties of shifted indexicals.

## 2.1 Indexical shift in indirect speech

- In Korean, the 1<sup>st</sup>/2<sup>nd</sup> person pronouns and temporal/locative adverbials, e.g. *yeki* ‘here’, *cikum* ‘now’, *onul* ‘today’, *ece* ‘yesterday’,

etc., are identified as indexicals, given the fact that they do not covary with a quantifier (Kaplan 1989, Deal To appear). See the examples (39)-(42) in the Appendix for details.

- All these indexicals can get the shifted-like interpretations under certain attitude predicates, as shown in (1) and (2).
  - **Question:** Are the shifted-like readings of indexicals merely the results of direct or partial quotations?
  - **Answer:** No! We can see that indexicals in an indirect report can still be interpreted relative to the reported speech, given the following facts:<sup>1</sup>
    - The shifted interpretation of an indexical is derivable even when the wide scope interpretation of the in-situ *wh*-phrase in the embedded clause is available (Anand 2006, Sudo 2012).
- (3) Mary-ka **nwuka na**-lul coahanta-ko malhayss-ni?  
 Mary-Nom who I-Acc like-C said-Q  
 ‘Who did Mary say like {me, Mary}?’
- The partial quotation approach is insufficient to explain why indexicals of the same type in an embedded clause must shift together.
  - The indexicals can get the shifted interpretation only in a CP complement clause, but not in an NP complement clause.

## 2.2 Shift Together

- Anand and Nevins (2004) and Anand (2006) propose a cross-linguistic constraint on indexical shifting, i.e. **SHIFT-TOGETHER CONSTRAINT**.
- (4) **SHIFT-TOGETHER CONSTRAINT** (Anand and Nevins 2004)  
 All indexicals within a *speech-context domain* must pick up reference from the same context.

<sup>1</sup>These issues are discussed further in the Appendix.

- This constraint holds for both the person and adverbial indexicals in Korean as well. Thus, only the interpretations where both of the person/adverbial indexicals shift or none of them shift are possible in (5) and (6).

(5) *Context:* John and Mary are having a conversation.

John: Tom-i Sue-eykey **nay-ka ne-lul** cohahanta-ko  
 Tom-Nom Sue-to I-Nom you-Acc like-C  
 malhayssta.  
 said

Lit. 'Tom said to Sue that I like you.'

- a. 'I' = John, 'you' =Mary (No Shift)
- b. 'I' = Tom, 'you' =Sue (Both Shift)
- c. \*'I' = Tom, 'you' =Mary (Speaker Shift)
- d. \*'I' = John, 'you' =Sue (Addressee Shift)

(6) *Context:* John and Mary are having a conversation in Boston on the January 3<sup>rd</sup>.

John: Tom-i ece cenyek Amherst-eyse Sue-ka  
 Tom-Nom yesterday night Amherst-at Sue-Nom  
**ece yeki-ey** wassta-ko malhayssta.  
 yesterday here-at came-C said

Lit. 'Tom said last night in Amherst that Sue came here yesterday.'

- a. 'here' = Boston, 'yesterday' = January 2<sup>nd</sup> (No Shift)
- b. 'here' = Amherst, 'yesterday' = January 1<sup>st</sup> (Both Shift)
- c. \*'here' = Boston, 'yesterday' = January 1<sup>st</sup> (Temp. Shift)
- d. \*'here' = Amherst, 'yesterday' = January 2<sup>nd</sup> (Loc. Shift)

- However, notice that the indexicals that must shift together in (5) and (6) are of the same class, either person or adverbial.

### 2.3 Obligatory *de se* interpretation

- It has been proposed that shifted indexicals receive obligatory *de se* readings in many languages, e.g. 1st and 2nd person pronouns

in Amharic, both 1st/2nd person pronouns and temporal/locative indexicals in Zazaki, etc (Schlenker 1999, 2003, Anand 2006).<sup>2</sup>

- In Korean, as in Zazaki, both the person and adverbial shifted indexicals receive obligatory *de se* interpretations, as shown from (7) to (10).

(7) **1st person pronoun**

S1: John says, "I am the smartest."

S2: John took an exam, and later saw the top 10 scorers with the respective ID numbers. He forgot his own ID number, so didn't know who is who. Pointing to the top score, he remarked "This guy is the smartest!" But it turned out that he was talking about himself. (context from Sudo (2012))

John-i **nay-ka** ceyil ttoktokhata-ko malhayssta.  
 John-Nom I-Nom most smart-C said

'John said that he is the smartest.' [S1, #S2]

(8) **2nd person pronoun**

S1: John says to Tom, "You should leave."

S2: John is hosting a party. He hears that a certain waiter named Tom is being a nuisance. John tells the nearest waiter, "Tom should go home." Unbeknownst to him, he's talking to Tom. (context from Sudo (2012))

John-i Tom-eykey **ne-ka** ttena-ya hanta-ko  
 John-Nom Tom-to you-Nom leave shoud-C  
 malhayssta.  
 said

'John said to Tom<sub>i</sub> that he<sub>i</sub> should leave.' [S1, #S2]

(9) **Locative adverbial**

S1: John says in Seoul, "Mary was born here."

S2: John visited his friends in Seoul, and he and his friends

<sup>2</sup>Sudo (2012) shows that the shifted 2nd person pronoun does not get obligatorily *de se* (or *de te* reading in Uyghur). However, he argues that the optional *de te* reading of the second person pronoun is due to the fact that the 2nd person pronoun is a definite description rather than an indexical. Deal (To appear), on the other hand, argues that the locative adverbial in Nez Perce, which is indeed an indexical, does not have to be interpreted *de se* unlike the person indexicals.

were looking at old photos of various cities. John pointed at an old photo of a city, and he said "I recognize this building in this photo! Mary was born in this city.", without knowing that the city he pointed at was actually the same city as he was in, i.e. Seoul.

John-i Seoul-eyse Mary-ka **yeki**-eyse  
 John-Nom Seoul-at Mary-Nom here-at  
 thayenassta-ko malhayssta.  
 be.born-C said

'John said is Seoul that Mary was born there.' [S1, #S2]

(10) **Temporal adverbial**

S1: Last Monday John said, "Mary is leaving today."  
 S2: John knew that Mary was going to leave on Monday last week. On that day, John somehow thought it was Sunday rather than Monday, and said "Mary leaves tomorrow, on Monday."

John-i cinan.cwu welyoil-ey Mary-Nom **onul**  
 John-Nom last.week Monday-on Mary-Nom today  
 ttenanta-ko malhayssta.  
 leave-C said

'John said last Monday that Mary leaves that day.' [S1, #S2]

### 3 Proposal: Two monsters for person & adverbial indexicals

- To account for the different properties of person and adverbial indexicals, I argue that there are two separate context-shift operators,  $OP_{PER}$  and  $OP_{ADV}$ , for person and adverbial indexicals in Korean.

#### 3.1 Person vs. Adverbial indexicals

- This section presents some key contrasts between person and adverbial indexicals in Korean.
- **Shift Independently:**  
 Although person indexicals must shift together with other person indexicals (5) and adverbial indexicals must shift together with

other adverbial indexicals (6), person indexicals can shift independent of adverbial indexicals (and vice versa). Thus, there is a four-way ambiguity in (11).

(11) *Context:* John and Mary are having a conversation in Seoul.

John: Tom-i Amherst-eyse **nay**-ka **yeki**-eyse  
 Tom-Nom Amherst-at I-Nom here-at  
 thayenassta-ko malhayssta.  
 be.born-C said

Lit. 'Tom said in Amherst that I was born here.'

- a. 'I' = John, 'here' = Seoul (No Shift)
- b. 'I' = John, 'here' = New York (Location Shift)
- c. 'I' = Tom, 'here' = Seoul (Person Shift)
- d. 'I' = Tom, 'here' = New York (Both Shift)

- **Attitude predicates:**

While the person indexicals can be shifted only under the predicates of communication, e.g. 'say', 'tell', 'claim', etc., the adverbial indexicals are shiftable under other attitude verbs as well, such as 'think', 'believe', etc.

(12) a. Mary-ka John-i **na**-lul coahanta-ko  
 Mary-Nom John-Nom I-Acc like-C  
**malhayssta.**  
 said

'Mary said that John likes {me, Mary}.'

b. Mary-ka John-i **na**-lul coahanta-ko  
 Mary-Nom John-Nom I-Acc like-C  
**sayngkakkhassta.**  
 thought

'Mary thought that John likes {me, \*Mary}.'

(13) a. Amherst-eyse Mary-ka John-i **yeki**-eyse  
 Amherst-at Mary-Nom John-Nom here-in  
 thayenassta-ko **malhayssta.**  
 be.born-C said

'Mary said in Amherst that John was born {here, in Amherst}.'

- b. Amherst-eyse Mary-ka John-i **yeki**-eyse  
 Amherst-at Mary-Nom John-Nom here-in  
 thayenassta-ko **sayngkakayssta**.  
 be.born-C thought  
 'Mary thought in Amherst that John was born {here,  
 in Amherst}.'

### 3.2 Two context-shift operators

- First, I assume that contexts are represented as tuples of coordinates, as  $\langle \text{author}, \text{hearer}, \text{time}, \text{location}, \text{world} \rangle$  (Kaplan 1989, Schlenker 1999).
- Following Anand and Nevins (2004) and Anand (2006), I assume that indexical shift is the result of a context-shift operator that overwrites the context parameter on the interpretation function,  $k$ , with the index,  $j$ .

$$(14) \quad \llbracket \text{OP } \alpha \rrbracket^{k,j} = \llbracket \alpha \rrbracket^{j,j} \quad (\text{Anand and Nevins 2004})$$

- **Question:** If there is only one operator that overwrites every coordinate of the context parameter, i.e. speaker, addressee, time, location, etc., how can person and adverbial indexicals shift independently in Korean?
- According to Deal (To appear), person indexicals and the locative indexical do not have to shift together in Nez Perce. Deal (To appear) proposes two operators for person and locative indexicals.
- Along this, I also argue that there are two separate operators,  $\text{OP}_{PER}$  and  $\text{OP}_{ADV}$ , for person and adverbial indexicals in Korean.

#### (15) Semantics of the two context-shift operators

- a.  $\llbracket \text{OP}_{PER} [\alpha] \rrbracket^{\langle A_c, H_c, T_c, L_c \rangle, i} = \llbracket \alpha \rrbracket^{\langle A_i, H_i, T_c, L_c \rangle, i}$   
 b.  $\llbracket \text{OP}_{ADV} [\alpha] \rrbracket^{\langle A_c, H_c, T_c, L_c \rangle, i} = \llbracket \alpha \rrbracket^{\langle A_c, H_c, T_i, L_i \rangle, i}$

- $\text{OP}_{PER}$  only overwrites the author and hearer coordinates of the context parameter with those of the index parameter, while  $\text{OP}_{ADV}$  overwrites the location and time coordinates. All of the coordinates are overwritten when the two operators co-occur.

- Therefore, whenever there is more than one person or adverbial indexical under  $\text{OP}_{PER}$  or  $\text{OP}_{ADV}$ , respectively, the indexicals with the same type must shift together.
- For example, under the existence of  $\text{OP}_{PER}$  in (16a), both the speaker and addressee must be interpreted relative to the reported context.

#### (16) Illustrations of the two-way ambiguity

- a. **Both Shift**  
 $\llbracket \text{OP}_{PER} [\text{I like you}] \rrbracket^{c,j}$   
 $= \llbracket [\text{I like you}] \rrbracket^{j,j} = 1$  iff.  $\text{AUTH}(j)$  likes  $\text{ADDR}(j)$  in  $\text{WORLD}(j)$ .
- b. **No Shift**  
 $\llbracket [\text{I like you}] \rrbracket^{c,j}$   
 $= 1$  iff.  $\text{AUTH}(c)$  likes  $\text{ADDR}(c)$  in  $\text{WORLD}(j)$ .

- On the other hand, the different types of indexicals do not have to shift together if there is only one type of context-shift operator.

#### (17) Illustrations of the four-way ambiguity

- a. **Both Shift**  
 $\llbracket \text{OP}_{PER} \text{OP}_{ADV} [\text{I was born here}] \rrbracket^{c,j}$   
 $= \llbracket [\text{I was born here}] \rrbracket^{j,j} = 1$  iff.  $\text{AUTH}(j)$  was born in  $\text{LOC}(j)$  in  $\text{WORLD}(j)$ .
- b. **Person Shift**  
 $\llbracket \text{OP}_{PER} [\text{I was born here}] \rrbracket^{c,j}$   
 $= \llbracket [\text{I was born here}] \rrbracket^{j,j} = 1$  iff.  $\text{AUTH}(j)$  was born in  $\text{LOC}(c)$  in  $\text{WORLD}(j)$ .
- c. **Adverbial Shift**  
 $\llbracket \text{OP}_{ADV} [\text{I was born here}] \rrbracket^{c,j}$   
 $= \llbracket [\text{I was born here}] \rrbracket^{j,j} = 1$  iff.  $\text{AUTH}(c)$  was born in  $\text{LOC}(j)$  in  $\text{WORLD}(j)$ .
- d. **No Shift**  
 $\llbracket [\text{I was born here}] \rrbracket^{c,j}$   
 $= 1$  iff.  $\text{AUTH}(c)$  was born in  $\text{LOC}(c)$  in  $\text{WORLD}(j)$ .

### 3.3 Person indexicals and the 3<sup>rd</sup> person pronoun

- The analysis of the two context-shift operators in (15) can further account for the interactions between the shifted indexicals and the 3<sup>rd</sup> person pronoun.
- If any person indexical is shifted, then a third person pronoun in the same embedded clause cannot refer to the author or hearer of the embedded context. In (18), therefore, when ‘you’ gets the shifted interpretation, *Sue*, the 3<sup>rd</sup> person pronoun *ku* must refer to someone else but not *Tom*, the speaker of the reported context.

(18) *Context:* John and Mary are having a conversation.

John: Tom-i Sue-eykey **ku**-ka **ne**-lul  
 Tom-Nom Sue-to he-Nom you-Acc  
 cohahanta-ko malhayssta.  
 like-C said.

‘Tom<sub>i</sub> said to Sue that he<sub>j</sub> likes you (=Sue).’

- On the other hand, if an adverbial indexical is shifted, then a 3<sup>rd</sup> person pronoun *can* refer to the author or hearer of the reported context. Thus, in (19), both the adverbial indexical *yeki* ‘here’ and the 3<sup>rd</sup> person pronoun *ku* ‘he’ can find their referent from the same context, i.e. the reported context.

(19) *Context:* John and Mary are having a conversation in Seoul.

John: Tom-i Amherst-eyse **ku**-ka **yeki**-eyse  
 Tom-Nom Amherst-at he-Nom here-at  
 thayenassta-ko malhayssta.  
 be.born-C said

‘Tom<sub>i</sub> said in Amherst that he<sub>i</sub> was born here (=Amherst).’

- I propose that the analysis in (15) predicts the contrast between (18) and (19), under the assumption that the 3<sup>rd</sup> person pronoun carries the presupposition: they cannot refer to the author or the hearer of the context *c* (Schlenker 2003).
- Only under the OP<sub>PER</sub>, then, the 3<sup>rd</sup> person pronouns cannot refer to the speaker or the hearer of the reported context, since the *speaker* and *hearer* coordinates in the context parameter are overwritten.

#### • *Summary in PART1:*

- The shifted interpretations of person and adverbial indexicals in Korean are the results of indexical shift by the context-shift operator.
- All of the shifted indexicals are *de se* elements in Korean.
- There are two context-shift operators for person indexicals and adverbial indexicals respectively so that the two types of indexicals can shift independently.
- The restriction of the shifted person indexicals and the 3<sup>rd</sup> person pronoun is due to a presupposition borne by the 3<sup>rd</sup> person pronoun.

## PART 2

### 4 The long-distance reflexive *caki*

#### 4.1 Backgrounds on the LD reflexive *caki*

- Among various facts about the long-distance reflexive in Korean that have been introduced in the previous literature, I will point out a few basic facts that are relevant for discussion (Yang 1983, Yoon 1989, Kang 1998, Kim 2009, a.o.).

- *Caki* allows both local and long-distance binding.

(20) John-un Tom-i **caki**-lul silhehanta-ko sayngkakhanta.  
 John-Top Tom-Nom self-Acc dislike-C think  
 ‘John<sub>i</sub> thinks that Tom<sub>j</sub> dislikes him<sub>i</sub>/himself<sub>j</sub>.’

- Regardless of whether it is either local binding or long-distance binding, the first or second person pronoun cannot be an antecedent of *caki*.

(21) a. **Na**-nun Tom-i **caki**-lul silhehanta-ko  
 I-Top Tom-Nom self-Acc dislike-C  
 sayngkakhanta.  
 think  
 ‘I think that Tom dislikes himself/\*me.’

- b. Tom-un **ne-ka** **caki-lul** silhehanta-ko  
 Tom-Top you-Nom self-Acc dislike-Comp  
 sayngkakhanta.  
 think  
 'Tom<sub>i</sub> thinks that you dislike him<sub>i</sub> / \*yourself.'

- As it has been proposed that the LD reflexive *ziji* in Chinese must be interpreted *de se* (Pan 1997, 2001, Huang and Liu 2001, Anand 2006, a.o.), the long-distance *caki* under attitude predicates is also obligatorily interpreted *de se* in Korean.

- (22) S1: John says, "That thief stole my purse!"  
 S2: John says, "That thief stole that purse!" (not aware that it was his purse) (Huang and Liu 2001, Anand 2006)

John-i somaychiki-ka caki-uy cikap-ul  
 John-Nom pickpocket-Nom caki-Gen purse-Acc  
 hwumchy-ess-tako malhay-ss-ta.  
 steal-Past-C say-Past-Decl

'John said that the pickpocket stole his purse.' [✓S1, #S2]

- Multiple long-distance *cakis* in an embedded clause must find the same antecedent, as observed in Chinese (Pan 1997, Huang and Liu 2001).

- (23) John-i [Bill-i [caki-uy emma-ka **caki-lul**  
 John-Nom Bill-Nom caki-Gen mother-Nom caki-Acc  
 silhehanta]-ko sayngkakhanta]-ko malhayssta.  
 hate-C think-C said
- 'John<sub>i</sub> said that Bill<sub>j</sub> thought that **his<sub>i</sub>** mother hates **him<sub>i</sub>**.'
  - 'John<sub>i</sub> said that Bill<sub>j</sub> thought that **his<sub>j</sub>** mother hates **him<sub>j</sub>**.'
  - \*'John<sub>i</sub> said that Bill<sub>j</sub> thought that **his<sub>i</sub>** mother hates **him<sub>j</sub>**.'
  - \*'John<sub>i</sub> said that Bill<sub>j</sub> thought that **his<sub>j</sub>** mother hates **him<sub>i</sub>**.'

#### 4.2 Person indexicals and *caki*

- Person and adverbial indexicals interact with *caki* in a different way when an indexical and *caki* co-occur in an embedded clause: Person indexicals cannot pick up reference from the same context as *caki*, but adverbial indexicals can.

- (24) *Context*: John and Mary are having a conversation.

John: Tom-i Sue-eykey **caki-ka** **ne-lul**  
 Tom-Nom Sue-to caki-Nom you-Acc  
 cohahanta-ko malhayssta.  
 like-C said.

'Tom<sub>i</sub> said to Sue that he<sub>i</sub> likes you (=Mary, \*Sue).'

- (25) *Context*: John and Mary are having a conversation in Seoul.

John: Tom-i Amherst-eyse **caki-ka** **yeki-eyse**  
 Tom-Nom Amherst-at caki-Nom here-at  
 thayenassta-ko malhayssta.  
 be.born-C said

'Tom<sub>i</sub> said in Amherst that he<sub>i</sub> was born here (=Seoul, Amherst).'

- This is the same contrast we have seen between the person and adverbial indexicals with respect to the 3<sup>rd</sup> person pronoun.
- Given the fact that *caki* cannot have a 1<sup>st</sup> or 2<sup>nd</sup> person pronouns as its antecedent, I argue that *caki* has the third-person feature.
- Consequently, due to the same presupposition as the 3<sup>rd</sup> person pronoun, *caki* is unable to refer to the speaker or hearer of the reported context under the OP<sub>PER</sub>.

#### 4.3 Previous analysis on the LD reflexive: Anand (2006)

- Anand (2006) explores the mechanisms for *de se*, and proposes three different ways of the *de se* ascription, as shown in (26).

- (26) a. Default (*de re* ascription): pronouns  
 b. Semantic (context-overwriting): shifted indexicals, Mandarin<sub>1</sub> *ziji*, Malayalam *taan*  
 c. Syntactic (binding by operator): Yoruba *oun*, English dream-selves, Icelandic *sig*, Japanese *zibun*, Mandarin<sub>2</sub> *ziji* (Anand 2006, p.11)

- According to him, context-overwriting is responsible for shifted indexicals, while some *de se* pronouns need to be bound by a syntactic operator, e.g. the logophoric operator shown in (27).

(27) OP-LOG:  $[[OP-LOG_j [\alpha]]^i \&= \lambda i'. [[\alpha]]^i \& \text{AUTH}(i')]$

- **Question:**  
 What do we predict, then, if one language has two *de se* elements that are derived by the semantic operator and syntactic operator, respectively?

(28) **Prediction:**  
 As the syntactic and semantic mechanisms for *de se* ascription are independent from each other, no restriction on the co-occurrence of the two elements derived by each operator is predicted.

## 5 Interactions between the shifted indexicals and LD reflexive *caki*

- In this section, I present a new blocking effect of the long-distance reflexive *caki* caused by shifted indexicals, i.e. ‘IS-Blocking effect’.
- That is, any context-shift operator cannot intervene between *caki* and its antecedent.
- I will propose that the ‘IS-blocking effect’ is due to the [+log] feature on the context-shift operators that forces the syntactic operator for *caki* to carry the same feature when they co-occur in the same embedded clause. Consequently, *caki* must be bound by that operator but not by any other operators in the higher clauses.

### 5.1 IS (Indexical Shift)-Blocking Effect

- Unlike the prediction presented in (28), there is an interesting interaction between shifted indexicals and the long-distance reflexive *caki* in Korean.
- The interaction between the shifted indexicals and *caki* can be described as in (29).

(29) **IS-BLOCKING EFFECT**  
 If *caki* and its antecedent are separated by more than one clause, a context-shift operator cannot intervene between them.

$$*[\text{CP}_1 \overbrace{NP_1 \dots [\text{CP}_2 \overbrace{NP_2 \dots [\text{CP}_3 \text{ OP}_{\text{PER/ADV}} \dots \text{caki}_1 \dots \text{ind}_2 \dots]}]}^{\text{X}} \dots]]$$

- First, let’s consider the interpretations of the sentence where a person indexical and *caki* co-occur in the most embedded clause under multiple embeddings.

(30) **Blocking with OP<sub>PER</sub>**  
 [John-i [Bill-i [caki-uy emma-ka na-lul  
 John-Nom Bill-Nom caki-Gen mom-Nom I-Acc  
 silhehanta]-ko malhayssta]-ko malhayssta.]  
 hate-C said-C said  
 Lit. \*‘John<sub>i</sub> said that Bill<sub>j</sub> said that self (=John)’s mother hates me (=Bill)’

$$*[\text{CP}_1 \overbrace{\text{John} \dots [\text{CP}_2 \overbrace{\text{Bill} \dots [\text{CP}_3 \text{ OP}_{\text{PER}} \dots \text{caki}_1 \dots \text{me}_2 \dots]}]}^{\text{X}} \dots]]$$

- In (30), if the 1<sup>st</sup> person pronoun is interpreted as ‘Bill’, entailing the presence of OP<sub>PER</sub> at CP<sub>3</sub>, then *caki* cannot have ‘John’ as its antecedent.<sup>3</sup>

<sup>3</sup>It also cannot have ‘Bill’ as its antecedent due to the fact that *caki* is third person (Section 3.3).



(31) *No Blocking with OP<sub>PER</sub>*

[John-i [Bill-i [caki-uy emma-ka na-lul  
John-Nom Bill-Nom caki-Gen mom-Nom I-Acc  
silhehanta]-ko malhayssta]-ko malhayssta.]  
hate-C said-C said

Lit. 'John<sub>i</sub> said that Bill<sub>j</sub> said that self (=Bill)'s mother hates me (=John)'

[<sub>CP1</sub> John... [<sub>CP2</sub> OP<sub>PER</sub> Bill... [<sub>CP3</sub> ...caki<sub>2</sub> ...me<sub>1</sub>...]]]

- However, in (31), if the 1<sup>st</sup> person pronoun is interpreted as 'John', entailing the presence of OP<sub>PER</sub> at CP<sub>2</sub>, then *caki* can have 'Bill' as its antecedent.
- The same blocking effect is shown with the shifted adverbial indexicals, too (32)-(33).

(32) *Blocking with OP<sub>ADV</sub>*

[Seoul-eyse John-i [Bill-i Amherst-eyse [caki-ka  
Seoul-in John-Nom Bill-Nom Amherst-in caki-Nom  
yeki-se thayenassta]-ko malhayssta]-ko malhayssta.]  
here-at be.born-C said said

Lit. 'John said in Seoul that Bill said in Amherst that self (=John) was born here (=Amherst).'

\* [<sub>CP1</sub> John...inSeoul... [<sub>CP2</sub> ...inAmherst... [<sub>CP3</sub> OP<sub>ADV</sub> ...caki<sub>1</sub>...here<sub>2</sub>...]]]

(33) *No Blocking with OP<sub>ADV</sub>*

[Seoul-eyse John-i [Bill-i Amherst-eyse [caki-ka  
Seoul-in John-Nom Bill-Nom Amherst-in caki-Nom  
yeki-se thayenassta]-ko malhayssta]-ko malhayssta.]  
here-at be.born-C said said

Lit. 'John said in Seoul that Bill said in Amherst that self (=Bill) was born here (=Seoul).'<sup>4</sup>

<sup>4</sup>*Caki* can also refer to 'John' since the OP<sub>ADV</sub> does not manipulate the speaker or hearer coordinates of the context parameter (Section 3.3).

[<sub>CP1</sub>... inSeoul... [<sub>CP2</sub> OP<sub>ADV</sub> Bill... [<sub>CP3</sub> ...caki<sub>2</sub> ...here<sub>1</sub>...]]]

- **Key Question:** How can we account for this one-way blocking effect between the shifted indexicals and *caki*?

## 5.2 Analysis

- Following Anand (2006), I will also assume that there are separate routes to *de se* of shifted indexicals and the LD reflexive.
- **Basic assumptions** (based on previous studies (Chierchia 1989, Kratzer 1998, 2009, Percus and Sauerland 2003, Stechow 2003, Anand 2006, Charlow 2010, Sundaresan 2012, a.o.))
  - The long-distance reflexive is a *de se* element that is bound by a syntactic operator within the scope of the attitude predicate.
  - The shifted indexicals are *de se* elements that are derived by context-shift operators.
  - The *de se* elements like *caki* always bear the syntactic feature [+log].
  - The *de se* elements that bear [+log] must be bound by the closest operator that also takes the [+log] feature.
- In order to account for the interaction between the shifted indexicals and *caki*, I propose the following additional assumptions.
- **Additional assumptions:**
  - The syntactic operator, which is a simple abstractor, can take either [+log] or [−log].
  - The context-shift operators always bear [+log].
  - Whenever the abstractor and the context-shift operator are selected by the same attitude predicate, they must agree in the feature [log].
- **Consequences:**
  - Given the assumptions made above, a syntactic operator must bear [+log] when it co-occurs with a context-shift operator in a same embedded clause .

– Therefore, the existence of the context-shift operator in the most embedded clause forces the syntactic operator in the same clause to be an obligatory binder of *caki*.

- In (34), the blocking effect occurs since *caki* is not bound by the closest binder with [+log], i.e.  $\lambda_k^{+log}$ , but by one in the higher clause, i.e.  $\lambda_j^{+log}$ .

(34) **Deriving the IS-blocking effect**

\*John said [ $\lambda_j^{+log}$  Bill<sub>i</sub> said [ $\lambda_k^{+log}$  OP<sub>PER</sub><sup>+log</sup> *caki*<sub>j</sub><sup>+log</sup>'s mother hates me<sub>i</sub>] ]

- In (35) where the context-shift operator is posited in the intermediate clause, *caki* can refer to the intermediate subject ‘Bill’ by being bound by the closest binder, while the first person pronoun is interpreted as the matrix subject ‘John’.

(35) **No blocking effect**

John said [ $\lambda_j^{+log}$  OP<sub>PER</sub><sup>+log</sup> Bill said [ $\lambda_k^{+log}$  *caki*<sub>k</sub><sup>+log</sup>'s mother hates me] ]

### 5.3 Multiple *cakis*

- The proposal related to the [log] feature on the syntactic operator that is responsible for binding *caki* correctly captures the interaction between multiple *cakis*.
- Since *caki* must be bound by the closest operator that carries the [+log] feature, more than one *caki* in the *same* clause ends up being bound by the same operator.

(36) **Multiple *cakis***

- a. John said [ $\lambda_j^{+log}$  Bill said [ $\lambda_k^{+log}$  *caki*<sub>k</sub><sup>+log</sup>'s mother hates *caki*<sub>k</sub><sup>+log</sup>] ]
- b. \*John said [ $\lambda_j^{+log}$  Bill said [ $\lambda_k^{+log}$  *caki*<sub>k</sub><sup>+log</sup>'s mother hates *caki*<sub>j</sub><sup>+log</sup>] ]
- c. \*John said [ $\lambda_j^{+log}$  Bill said [ $\lambda_k^{+log}$  *caki*<sub>j</sub><sup>+log</sup>'s mother hates *caki*<sub>k</sub><sup>+log</sup>] ]

d. John said [ $\lambda_j^{+log}$  Bill said [ $\lambda_k^{-log}$  *caki*<sub>j</sub><sup>+log</sup>'s mother hates *caki*<sub>j</sub><sup>+log</sup>] ]

- As in (36d), both *cakis* in the most embedded clause can take the matrix subject as its antecedent only when the closer binder does not carry [+log] so that the one in the higher clause can bind them.

### 5.4 Obligatory *de re* interpretation of the 3<sup>rd</sup> person pronoun

- Lastly, I point out one further interaction between shifted indexicals and the 3<sup>rd</sup> person pronoun under multiple embedding.
- The 3<sup>rd</sup> person pronoun is different from *caki* in that it can refer to the matrix subject in (37), while the 1<sup>st</sup> person pronoun is shifted to the intermediate subject ‘Bill’.

(37) [John-i [Bill-i [ku-uy emma-ka na-lul  
John-Nom Bill-Nom he-Gen mom-Nom I-Acc  
silhehanta]-ko malhayssta]-ko malhayssta.  
hate-C said-C said  
'John<sub>i</sub> said that Bill<sub>j</sub> said that his<sub>i</sub> mother hates me (=Bill).'

- Interestingly, however, the 3<sup>rd</sup> person pronoun must be interpreted as (non-*de se*) *de re* in (37), unlike that the 3<sup>rd</sup> person pronoun can usually be interpreted either *de se* or *de re* in Korean as in English. Thus, (37) is infelicitous in a situation where John says: "Bill said that **my** mother hates him."
- I argue that this is another case where the ‘IS-blocking effect’ occurs, so it can be explained by the same analysis we have for *caki*: the *de se* 3<sup>rd</sup> person pronoun also carries [+log] as *caki*, and it must be bound by the closest binder with [+log].

(38) **The IS-blocking effect of the *de se* 3<sup>rd</sup> person pronoun**

\*John said [ $\lambda_j^{+log}$  Bill<sub>i</sub> said [ $\lambda_k^{+log}$  OP<sub>PER</sub><sup>+log</sup> he<sub>j</sub><sup>+log</sup>'s mother hates me<sub>i</sub>] ]

## 6 Conclusions

- Having established that Korean is a language where indexicals can optionally shift under certain attitude predicates, I have argued that there are two different context-shift operators for person and adverbial indexicals in Korean to account for the different properties of the two types of indexicals.
- I have also introduced a new blocking effect of the LD reflexive *caki* as well as the *de se* third person pronoun that is caused by the context-shift operators.
- The interactions between shifted indexicals and other *de se* elements shown in Korean shed some light on the general understanding of *de se* ascription:
  - There are indeed different routes to *de se* of shifted indexicals and other *de se* elements, but the two mechanisms interact with each other rather than be independent, given the same property that both of them derive *de se*.
  - The Korean data can argue for the analysis on the dedicated LF for *de se*, which is distinct from the one for *de re*, of the *de se* pronouns (Percus and Sauerland 2003).

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## Appendix

### Identifying indexicals in Korean

- Indexicals cannot co-vary with a quantifier unlike the ordinary descriptions with similar meanings (Kaplan 1989, Deal To appear).

(39) ‘I’ vs. ‘the speaker’

- Obama-ka malhal ttyay.mata **hwaca**-nun  
Obama-Nom speak whenever speaker-Top  
taythonglyeng-ita.  
president-be  
‘Whenever Obama speaks, the speaker is president.’
- #Obama-ka malhal ttyay.mata **na**-nun taythonglyeng-ita.  
Obama-Nom speak whenever I-Top president-be  
‘#Whenever Obama speaks, I am president.’

(40) ‘you’ vs. ‘the hearer’

- Obama-ka Biden-kwa malhal ttyay.mata **chengca**-nun  
Obama-Nom Biden-with speak whenever hearer-Top  
pwutaythonglyeng-ita.  
vice.president-be  
‘Whenever Obama speaks with Biden, the hearer is vice president.’
- #Obama-ka Biden-kwa malhal ttyay.mata **ne**-nun  
Obama-Nom Biden-with speak whenever you-Top  
pwutaythonglyeng-ita.  
vice.president-be  
‘#Whenever Obama speaks with Biden, you are vice president.’

(41) ‘now’ vs. ‘the speech time’

- Obama-ka malhal ttyay.myun manhun salamtul-i  
Obama-Nom speaks when many people-Nom  
**palwha sikan**-ey pakswuchinta.  
speech time-at clap  
‘When Obama speaks, many people clap at the speech time.’
- #Obama-ka malhal ttyay.myun manhun salamtul-i  
Obama-Nom speaks when many people-Nom  
**cikum** pakswuchinta.  
now clap  
‘#When Obama speaks, many people clap now.’

(42) ‘here’ vs. ‘the speech location’

- Obama-ka malhal ttyay.mata manhun salamtul-i  
Obama-Nom speaks whenever many people-Nom  
**palhwa cangso**-ey issta.  
speech location-at be  
‘Whenever Obama speaks, many people are at the speech location.’
- #Obama-ka malhal ttyay.mata manhun salamtul-i  
Obama-Nom speaks whenever many people-Nom  
**yeki**-ey issta.  
here-at be  
‘#Whenever Obama speaks, many people are here.’

- Given these tests, the following 1<sup>st</sup>/2<sup>nd</sup> person pronouns and temporal/locative adverbials are all indexicals in Korean: *na* ‘I’, *ne* ‘you’, *yeki* ‘here’, *cikum* ‘now’, *onul* ‘today’, *ece* ‘yesterday’, etc.

## Arguments against the direct/partial quotation analyses

- *Not always a direct quotation*: The shifted interpretation in (43) and (44) cannot be due to direct quotation, given the fact that the wide scope interpretation of the in-situ *wh*-phrase in the embedded clause is available (Anand 2006, Sudo 2012).

(43) *Person indexicals*

- a. Mary-ka **nwuka na**-lul coahanta-ko malhayss-ni?  
Mary-Nom who I-Acc like-C said-Q  
'Who did Mary say like {me, Mary}?'  
b. Mary-ka John-eykye **nwuka ne**-lul coahanta-ko  
Mary-Nom John-to who you-Acc like-C  
malhayss-ni?  
said-Q  
'Who did Mary say to John like {you, John}?'  
(44) *Adverbial indexicals*

- a. *Context*: John asks the following question in Seoul.  
John: Amherst-eyse Mary-ka **nwuka yeki**-eyse  
Amherst-at Mary-Nom who-Nom here-in  
thayenassta-ko malhayss-ni?  
be.born-C said-Q  
'Who did Mary say was born in {Seoul, Amherst} in Amherst?'  
b. *Context*: John asks the following question on the January 3rd:  
John: Ece Mary-ka **nwuka ece**  
yesterday Mary-Nom who-Nom yesterday  
ttenassta-ko malhayss-ni?  
left-C said-Q  
'Who did Mary say left on the {January 2nd, January 1st} yesterday?'

- *Not a partial/mixed quotation*: Also, it cannot be explained under the mixed quotation approach (Maier 2007) for at least two reasons. First, only CP complements allow indexical shift, while NP complement clauses do not, as in Uyghur and Japanese (Sudo 2012).

(45) a. *CP complement clause*

Mary-ka **nay**-ka John-ul ttaylyessta-ko malhayssta.  
Mary-Nom I-Nom John-Acc hit-C said

'Mary said that {I, Mary} hit John.'

b. *NP complement clause*

Mary-ka **nay**-ka John-ul ttaylyessta-nun sasil-ul  
Mary-Nom I-Nom John-Acc hit-NM fact-Acc  
malhayssta.  
said

'Mary said the fact that {I, \*Mary} hit John.'

- Second, indexicals of the same type in an embedded clause must shift together (Shift-Together Constraint). Thus, both (46) and (47) are two-way ambiguous: either both shift or neither shifts.

(46) *Context*: John and Mary are having a conversation.

John: Tom-i Sue-eykey **nay**-ka **ne**-lul cohahanta-ko  
Tom-Nom Sue-to I-Nom you-Acc like-C  
malhayssta.  
said

Lit. 'Tom said to Sue that I like you.'

- a. 'I' = John, 'you' = Mary (No Shift)  
b. 'I' = Tom, 'you' = Sue (Both Shift)  
c. \*'I' = Tom, 'you' = Mary (Speaker Shift)  
d. \*'I' = John, 'you' = Sue (Addressee Shift)

(47) *Context*: John and Mary are having a conversation in Boston on the January 3<sup>rd</sup>.

John: Tom-i ece cenyek Amherst-eyse Sue-ka  
Tom-Nom yesterday night Amherst-at Sue-Nom  
**ece yeki**-ey wassta-ko malhayssta.  
yesterday here-at came-C said

Lit. 'Tom said last night in Amherst that Sue came here yesterday.'

- a. 'here' = Boston, 'yesterday' = January 2<sup>nd</sup> (No Shift)  
b. 'here' = Amherst, 'yesterday' = January 1<sup>st</sup> (Both Shift)  
c. \*'here' = Boston, 'yesterday' = January 1<sup>st</sup> (Temp. Shift)  
d. \*'here' = Amherst, 'yesterday' = January 2<sup>nd</sup> (Loc. Shift)

- In summary, indexicals inside an *indirect report* can be interpreted with respect to the reported speech in Korean.