Semantic Differences between *Caki 'self'* and *Caki-casin 'self-self'*

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The ultimate goal of this paper is to provide five types of evidence that the Korean reflexives *caki* 'self' and *caki-casin* 'self-self' are synonymously used, but they are not semantically equivalent. First, when *caki* 'self' and *caki-casin* 'self-self' have the only NP and even NP as their antecedent, the truth condition becomes different. Second, local *caki* 'self' is construed as simply coreferential with its antecedent, whereas local *caki-casin* 'self-self' is construed as associated with its antecedent by variable binding. Third, *caki* 'self' reveals the demonstrative effect and acts as a free variable, whereas *caki-casin* 'self-self' shows neither the demonstrative effect nor the function of a free variable. Fourth, *caki* 'self' admits direct thoughts and *caki-casin* 'self-self' attributes indirect thoughts. Fifth, *caki* 'self' is associated with its antecedent by common reference, whereas *caki-casin* 'self-self' inherits anaphoric reference from its antecedent.

Key words: binding, coreferential, bound variable, anaphoric reference, common reference

1. Introduction

The main purpose of this paper is to verify that in some environments, the Korean reflexives *caki* 'self' and *caki-casin* 'self-self' are synonymously used, but they are not semantically equivalent. In this paper, we provide five types of evidence that *caki* 'self' and *caki-casin* 'self-self' are not semantically equivalent. In section 2.1, we show that when the Korean reflexives *caki* 'self' and *caki-casin* 'self-self' have the only NP as their antecedent, the truth condition becomes different. Also, we show that when *caki* 'self' and *caki-casin* 'self-self' take the even NP as their antecedent, the truth condition becomes different. In section 2.2, we contend that local *caki* 'self' is construed as simply coreferential with its antecedent, whereas local *caki-casin* 'self-self' is construed as associated with its antecedent by variable binding. In section 2.3, we point out that *caki* 'self' reveals the demonstrative effect and functions as a free variable, whereas *caki-casin* 'self-self' shows neither the demonstrative effect nor the function of a free variable. In section 2.4, we maintain that *caki* 'self' admits direct thoughts and *caki-casin* 'self-self' attributes indirect thoughts. In section 2.5, we argue that local *caki* 'self' is associated with its antecedent by common reference, whereas local *caki-casin* 'self-self' inherits anaphoric reference from its antecedent.

2. Semantic Differences between *Caki 'self'* and *Caki-casin 'self-self'*

2.1. Truth Condition

This section is devoted to the semantic difference between *caki* 'self' and *caki-casin* 'self-self'. We will start by looking more closely at the following sentences:

(1) John-mani caki-casin-ul pinanhayssta.
      only self-self-ACC criticized
  (Only John criticized self-self.)
(2) John-mani caki-lul pinanhayssta.
      only self-ACC criticized
  (Only John criticized self.)

When an anaphor has the only NP as its antecedent, the truth condition becomes different (Evans 1980, Reinhart 1986, Richards 1997, Hiraga & Nissenbaum 2006). In some environments, the Korean reflexives *caki-casin* 'self-self' and *caki* 'self' are interchangeable, but the following state of affairs suggests the opposite:

(3) (1) = 1

JohnJohn
TomTom
BillBill
MaryMary

In (3), John is the only self-criticizer which is compatible with (1). In (3), Tom did not criticize himself, Bill did not criticize himself, and Mary did not criticize herself. In (3), only John is a self-criticizer, which renders (1) true. Now observe the following state of affairs:

(4) (1)=0
John John
Tom Tom

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Bill Bill
Mary Mary

The state of affairs in (4) makes (1) false since John criticized himself and Tom also criticized himself. That is to say, John is a self-criticizer and Tom is also a self-criticizer, which is not compatible with (1). Now let us observe (2) and (5):

(5) (2)=0
John John
Tom Tom
Bill Bill
Mary Mary

In (5), only John did not criticize John since Tom also criticized John, which is not compatible with (2). This in turn indicates that the state of affairs in (5) renders (2) false. Now observe the state of affairs in (6):

(6) (2)=1
John John
Tom Tom
Bill Bill
Mary Mary

In (6), only John criticized John, which is compatible with (2). Tom criticized himself, but did not criticized John. In addition, Bill criticized Tom and Mary criticized Bill. Thus, it is reasonable to conclude that *caki* 'self' and *caki-casin* 'self-self' are synonymously used, but they are not semantically equivalent. Also, when an anaphor takes the even NP as its antecedent, the truth condition becomes different. Let us observe the following examples:

(7) John-cocha caki-casin-ul onghohayssta.
        even self-self-ACC defended
    (Even John defended self-self.)
(8) John-cocha caki-lul onghohayssta.
        even self-ACC defended
    (Even John defended self.)

Now observe the following state of affairs:

(9) (7)=0
John John
Tom Tom
Bill Bill
Mary Mary

The state of affairs in (9) makes (7) false since John defended himself, but Tom, Bill, and Mary did not defend themselves, respectively. However, the state of affairs in (10) makes (7) true:

(10) (7)=1
John John
Tom Tom
Bill Bill
Mary Mary

The state of affairs in (10) renders (7) true since (7) indicates that for every x, x defended x, and John is the last person who defended himself. However, let us observe (8) and the following state of affairs:

(11) (8)=1
John John
Tom Tom
Bill Bill
Mary Mary

The state of affairs in (11) makes (8) true since (8) indicates that Tom, Bill, and Mary defended John and John is the last person who defended John. Likewise, the following state of affairs also makes (8) true:

(12) (8)=1
John John————————
Tom Tom————————
Bill Bill ————————
Mary Mary————————

The state of affairs in (12) makes (8) true since (8) indicates that for every x, x defended x and John is the last person who defended himself. This in turn suggests that *caki* 'self' is two way ambiguous in the truth condition. We thus conclude that *caki* 'self' is not the semantic equivalent of *aki-asin* 'self-self'.

2.2. Coreferential vs. Bound Reflexives

It is well-known that pronouns in some instances do not have a referential meaning. A quantified DP does not refer to a unique individual and pronouns can take quantified DPs as their antecedents (Mckillen 2016):

(13) [$_{DP}$Every man] thinks that he is intelligent.
    a. For every x, x thinks that x is intelligent.
    b. *Every man thinks that every man is intelligent.

How do we get the intended reading of (13)? As pointed out by Mckillen (2016), QR moves a DP to adjoin to a higher node in the tree and introduces a variable binder, $\lambda 1$:

(14) TP
        DP $\lambda 1$ TP
      every man t1 VP
              thinks CP
                  that TP
                      he1 T'
                          is AP
                              intelligent
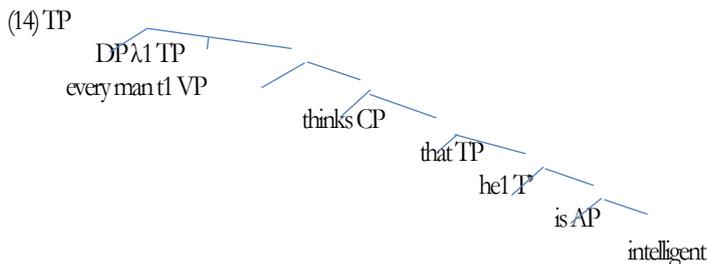
In (14), *every man* semantically binds the pronoun *he* since *every man* c-commands *he* and *he* and the trace of *every man* are bound by the same variable binder, $\lambda 1$ (Mckillen 2016: 7). With this in mind, let us turn our attention to *caki* 'self' and *caki-asin* 'self-self'. In this section, we wish to argue that the Korean reflexive *caki-asin* 'self-self' is construed as associated with its antecedent by variable binding, whereas the Korean reflexive *caki* 'self' is construed as coreferential with its antecedent. Let us observe the following sentences:

(15) John-i caki-casin-ul onghohayssta.
        NOM self-self-ACC defended
    (John defended self-self.)
(16) John-i caki-lul onghohayssta.
        NOM self-ACC defended
    (John defended self.)

When a DP appears as its antecedent, we cannot see any difference in naturalness between *caki-asin* 'self' and *caki* 'self'. However, when a Wh-word or a QP appears as its antecedent, the difference in naturalness between *caki-asin* 'self-self' and *caki* 'self' becomes sharper.

(17) Nwukwuna caki-casin-ul piphanhayssta.
    everyone self-self-ACC criticized
    (Everyone criticized self-self.)
(18) ???Nwukwuna caki-lul piphanhayssta.
            everyone self-ACC criticized
        (Everyone criticized self.)

The contrast of naturalness between (17) and (18) can be accounted for by the availability of variable binding of *caki-casin* 'self-self' and *caki* 'self'. More specifically, the grammaticality of (17) suggests that *caki-casin* 'self-self' induces variable binding, whereas the marginality of (18) suggests that *caki* 'self' may not. Simply put, *caki-casin* 'self-self' is construed as a bound variable, whereas *caki* 'self' may not be construed as a bound variable. In (18), the hearer is favored over the QP antecedent as the referent of *caki* 'self'. An important question to be asked at this moment is "why is the sentence in (16) where *caki* 'self' is associated with its DP antecedent grammatical?" We wish to argue that *caki* 'self' in (16) is not bound by the DP antecedent *John*, but simply coreferential with it. Thus, it is reasonable to conclude that *caki* 'self' is construed as coreferential with its antecedent, whereas *caki-casin* 'self-self' is construed as associated with its antecedent by variable binding. Now how do we get the intended reading of (17) and (18)? Let us observe the following trees:

(19) TP
       DP λ1 TP
  everyone t1 VP
             criticized DP
                      caki-casin1

(20) *TP
       DP λ1 TP
  everyone t1 VP
             criticized DP
                  caki1
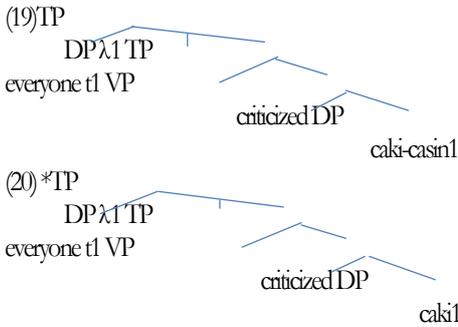
In (19), QR moves a DP to adjoin to a TP in the tree and introduces a variable binder, λ1, but (18) cannot have the tree such as (20) since *caki* 'self' may not be interpreted as a bound variable. Thus, *caki-casin* 'self-self' and *caki* 'self' have the following LF representations, respectively:

(21) [$_{TP}$John$_i$[$_{TP}$t$_i$criticized caki-casin$_i$]
(22) [$_{TP}$John$_i$criticized caki$_i$]

We assume along with Heim (1991, 1992) and Mckillen (2016) that QR may apply to any kinds of DPs. When a binder undergoes QR, only variable binding is possible, whereas when the binder does not undergo QR, variable binding is not possible. Then (15) has the following tree:

(23) TP
       DP λ1 TP
      John t1 VP
            criticized DP
                   caki-casin1
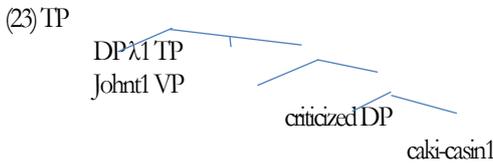
In (23), *John* semantically binds *caki-casin* 'self-self' since *John* c-commands *caki-casin* 'self-self' and *caki-casin* 'self-self' and the trace of *John* are bound by the same variable binder, λ1. We thus conclude that local *caki* 'self' is construed as simply coreferential with its antecedent, whereas local *caki-casin* 'self-self' is construed as associated with its antecedent by variable binding. This in turn suggests that *caki* 'self' cannot be analyzed on a par with *caki-casin* 'self-self'.

2.3. Demonstrative Uses

Among demonstrative uses, Higginbotham (1992, 1999) distinguishes the free use of an element from the discriminating use. In the case of the free use of an element, its utterance is not accomplished by any act of ostension or gesture on the speaker's side. On the other hand, the discriminating use is signaled by ostension.

It is evident that the Korean reflexives *caki-casin* 'self-self' and *caki* 'self' are locally bound as well as LD-bound. Hence, the following examples are judged to be grammatical with the intended reading and there is no difference in meanings between *caki* 'self' and *caki-casin* 'self-self'.

(24) John$_i$-i Bill-eykey Mary$_j$-ka caki$_{i/j}$-lul
     NOM DAT NOM self ACC
   ttlyessta-ko malhaystta.
   hit-COMP said
   (John said to Bill that Mary hit self.)
(25) John$_i$-i Bill-eykey Mary$_j$-ka caki-casin$_{i/j}$-ul
      NOM DAT NOM self-self-ACC
   ttlyessta-ko malhaystta.
   hit-COMP said
   (John said to Bill that Mary hit self-self.)

The grammaticality of (24) and (25) indicates that binding condition A functions in order to include *John* and *Mary* as the referents of *caki-casin* 'self-self' and *caki* 'self'. Note, conversely, that since the utterance of (26) is accompanied by the act of pointing, *caki* 'self' can only refer to *John*.

(26) John-i Bill-eykey Mary-ka caki (points to John)–lul
        NOM DAT NOM self ACC
      ttlyessta-ko malhayssta.
      hit-COMP said
      (John said to Bill that Mary hit self.)

Unlike (24), in (26), *caki* 'self' can only refer to *John* due to the discriminating use of a demonstrative, which is can be used by the speaker in order to indicate a particular object. Now let us observe the following sentence:

(27) John-i Bill-eykey Mary-ka caki (points to Bill)–lul
        NOM DAT NOM self-ACC
      ttlyessta-ko malhayssta.
      hit-COMP said
      (John said to Bill that Mary hit self.)

Unlike (24), in (27), *caki* 'self' can only refer to *Bill* as its antecedent due to the act of pointing by the speaker's intention. Likewise, the same can be said of the following sentence:

(28) John-i Bill-eykey Mary-ka caki (points to Mary)–lul
        NOM DAT NOM self-ACC
      ttlyessta-ko malhayssta.
      hit-COMP said
      (John said to Bill that Mary hit self.)

Note that the demonstrative effect can be used by the speaker in order to indicate a particular object or particular objects. Hence, in (28), *caki* 'self' can only refer to *Mary* as its referent, which is exactly what we gain from the speaker's intention. Now let us observe the following sentence:

(29) John-i Bill-eykey Mary-ka caki (points to John, Bill,
        NOM DAT NOM self
      and Mary)–lul ttlyessta-ko malhayssta.
                ACC hit-COMP said
      (John said to Bill that Mary hit self.)

Interestingly, in (29), *caki* 'self' can refer to *John*, *Bill*, and *Mary* as its referents due to the discriminating use, which is used by the speaker in order to indicate particular objects. This in turn suggests that *caki* 'self' can act as a free variable, depending on the demonstrative effect. Now attention is paid to *caki-casin* 'self-self':

(30) John-i Bill-eykey Mary-ka caki-casin (points to Bill)
        NOM DAT NOM self-self
      –ul ttlyessta-ko malhayssta.
      ACC hit-COMP said
      (John said to Bill that Mary hit self-self.)

The utterance of (30) is accompanied by the discriminating use, but it does not work for *caki-casin* 'self-self'. That is to say, *caki-casin* 'self-self' cannot refer to *Bill*, despite the discriminating use. Rather, *caki-casin* 'self-self' refers to *John* and *Bill* as its referents, which suggests that the act of pointing does not work for *caki-casin* 'self-self'. Exactly the same can be said about (31):

(31) John-i Bill-eykey Mary-ka caki-casin (points to John,
        NOM DAT NOM self-self
      Bill, and Mary)–ul ttlyessta-ko malhayssta.
                ACC hit-COMP said
      (John said to Bill that Mary hit self-self.)

Again, the demonstrative effect does not work for *caki-casin* 'self-self'. Simply put, *caki-casin* 'self-self' cannot refer to *John, Bill*, and *Mary* as its referents. This in turn suggests that *caki-casin* 'self-self' does not show the demonstrative effect and it does not act as a free variable. Thus, it is reasonable to conclude that *caki-casin* 'self-self' cannot be analyzed on a par with *caki* 'self' since they are not identically equal in their meanings.

2.4. Direct Thoughts vs. Indirect Thoughts

The present section is concerned with a distinction between direct thoughts and indirect thoughts (Higginbotham 1989b, 1992, 1999). We wish to argue that the Korean reflexive *caki* 'self' attributes direct thoughts, whereas the Korean reflexive *caki-casin* 'self-self' attributes indirect thoughts of the sort associated with English pronouns.

Let us start from a distinction between the two notions. A distinction of semantic contribution between anaphoric elements lies between what Higginbotham terms direct and indirect. In English, this distinction clearly puts PRO on the direct side and ordinary pronouns on the indirect side. Standard contexts include (32) and (33):

(32) John expects PRO to win.
(33) John expects he will win.
        (Higginbotham 1992)

PRO and pronouns become different truth-conditionally, relying on which kind of interpretation is assigned to PRO and the English pronoun *he*. We can understand (33) as true when John believes that "the person who trained hardest will win and that John is the person who trained hardest" (Higginbotham 1992). On the contrary, (32) is true only if "the first-person thought that John would express with (34) can be ascribed to him" (Higinbotham 1992).

(34) I will win.

Now let us consider whether PRO and overt pronouns in Korean possess the same interpretation as those of English.

(35) a. John-i PRO ikilkess-ul kitayhanta.
            NOM to win-ACC expect
        (John expects to win.)
    b. John-i ku-ka ikilkessila-ko kitayhanta.
            NOM he-NOM will win-COMP expect
        (John expects that he will win.)

Only (35a) is true only if "the first-person thought that John would express with 'I will win' can be ascribed to him" (Higginbotham 1992). On the other hand, (35b) stands true only if "the person who trained hardest will win and John is the person who trained hardest" (Higginbotam 1992). Such distinctions indicates that Korean PRO is semantically direct, whereas Korean pronouns are indirect.

Now let us turn our attention to the Korean reflexives *caki* 'self' and *caki-casin* 'self-self'.

(36) John-i caki-ka ikilkessila-ko kitayhanta.
            NOM self-NOM will win-COMP expect
        (John expects that self will win.)
(37) John-i caki-casin-i ikilkessila-ko kitayhanta.
            NOM self-self-NOM will win-COMP expect
    (John expects that self-self will win.)

In fact, (36) and (37) express the same proposition, but *caki* 'self' admits direct thoughts, whereas *caki-casin* 'self-self' attributes indirect thoughts. From (37) above, we can obtain the reading of 'John expects JOHN (but not other people) will win. *Caki-casin* in (37) gives rise to a presupposition such that there are people who are likely to win and John is the only person who will be so. Thus, it is reasonable to assume that *caki* 'self' admits direct thoughts, whereas *caki-casin* 'self-self' attributes indirect thoughts. This suggests that the meaning of *caki* 'self' is not logically deducible from that of *caki-casin* 'self-self'.

2.5. Anaphoric Reference and Common Reference

In this section, we wish to argue that *caki* 'self' is associated with its antecedent by common reference, whereas *caki-casin* 'self-self' inherits anaphoric reference from its antecedent. Let us consider a certain structure Σ which has two positions:

(38) $[_\Sigma \ldots [X] \ldots [Y] \ldots]$

Higginbotham (1992) proposes two types of intentions:

(39) (i) "The speaker intends Σ to be taken such that Y inherits its reference from the antecedent X".
    (ii) "The speaker does not have the intention in (i), but intends to be taken such that the reference of X and the reference of Y coincide". (Higginbotham 1992)

Higginbotham (1992) terms (i) anaphoric reference and (ii) common reference. The main difference between common reference and anaphoric reference is supported by cases like (40) and (41):

(40) John thinks Bill$_i$ told Fred$_j$ about himself$_{i/j}$.
(41) Before I met Chomsky, I had read several books by Chomsky.

In (40), the grammaticality of (40) indicates that the English anaphor *himself* inherits anaphoric reference from *Bill* and *Fred*. On the other hand, in (41), "the speaker I might be intending to be understood by the hearer as talking about one person named Chomsky" (Higginbotham 1992), hence common reference.

Now we try to show that *caki-casin* 'self-self' inherits anaphoric reference from its antecedent and thus is a true anaphor. On the other hand, *caki* 'self' is associated with its antecedent by common reference and thus is not a true anaphor. Let us observe the following sentences:

(42) a. John-i caki$_{John\ or\ hearer}$–lul piphanhayssta.
        NOM self-ACC criticized
    (John criticized self.)
    b. John-i caki-casin$_{John\ or\ *hearer}$–ul piphanhayssta.
        NOM self-self-ACC criticized
    (John criticized self-self.)

When an NP is the antecedent of *caki* 'self', the linguistic antecedent *John* is preferred over the hearer. When a QP is the antecedent of *caki* 'self', the opposite happens:

(43) a. Nwukwuna caki$_{hearer/??*someone}$-lul
        everyone self-ACC
        piphanhakoissessta.
        was criticizing
    (Everyone was criticizing self.)
    b. Nwukwuna caki-casin$_{*hearer/someone}$-ul
        everyone self-self-ACC
        piphanhakoissessta.
        was criticizing
    (Everyone was criticizing self-self.)

When a QP is the antecedent of *caki* 'self', *caki* 'self' cannot refer to the linguistic antecedent, which in turn suggests that *caki* 'self' does not inherit anaphoric reference from the QP. Now an important question to be asked is "why is (42a) is grammatical?" We wish to argue that the reason why (42a) is grammatical is that in (42a), the reference of *John* and the reference of *caki* 'self' coincide, hence common reference. However, when a QP appears as the antecedent of *caki* 'self', common reference does not happen due to the nature of QPs. In contrast, *caki-casin* 'self-self' can be associated with the linguistic antecedent *John* in (42b) or the QP antecedent in (43b). That is to say, *caki-casin* 'self-self' cares for neither an NP antecedent nor a QP antecedent since it inherits anaphoric reference from its antecedent. These are predicted, given the fact that *caki-casin* 'self-self' inherits anaphoric reference from its antecedent and thus is a true anaphor, whereas *caki* 'self' is associated with its antecedent by common reference and thus is not a true anaphor. The only conclusion that we can derive from this is that the meanings of *caki* 'self' and those of *caki-casin* 'self-self' are not identical.

3. Conclusion

The ultimate goal of this paper is to demonstrate that in some environments, the Korean reflexives *caki* 'self' and *caki-casin* 'self-self' are interchangeable, but they are not semantically equivalent. In section 2.1, we have shown that when the Korean reflexives *caki* 'self' and *caki-casin* 'self-self' have the only NP as their antecedent, the truth condition of the sentence including *caki* 'self' and *caki-casin* 'self-self' becomes different. Also, we have shown that when *caki* 'self' and *caki-casin* 'self-self' take the even NP as their antecedent, the truth condition becomes different. In section 2.2, we have contended that local *caki* 'self' is construed as simply coreferential with its antecedent, whereas local *caki-casin* 'self-self' is construed as associated with its antecedent by variable binding. In section 2.3, we have pointed out that *caki* 'self' shows the demonstrative effect and acts as a free variable, whereas *caki-casin* 'self-self' shows neither the demonstrative effect nor the function of a free variable. In section 2.4, we have maintained that *caki* 'self' admits direct thoughts and *caki-casin* 'self-self' attributes indirect thoughts. In section 2.5, we have argued that *caki* 'self' is associated with its antecedent by common reference, whereas *caki-casin* 'self-self' inherits anaphoric reference from its antecedent.

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