

## Original Paper

# Anaphora and Merge

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### Abstract

*The ultimate goal of this paper is to show that binding can be captured in terms of Merge and Transfer. It is well-known that the phi-deficiency view of anaphora is taken to be the predominant view in the Minimalist literature and that an anaphor is assumed to be a nominal that lacks one or more phi-features. We examine the phi-deficiency view of anaphora and argue that animate features, phi-features, and R-features are necessary. Korean ku-casin “he-self” and English himself underspecified for R-features are subject/object/indirect object-oriented and are strictly local anaphors. On the other hand, Korean caki “self” underspecified for phi-features is subject/object-oriented and both locally and non-locally bound. Korean caki-casin “self-self” underspecified for both features (phi-features and R-features) are subject-oriented and strictly a local anaphor. Finally, within the Minimalist work, we show that binding can be captured by animate features, phi-features, R-features, Merge, and Transfer. Transfer provides the governing category and semantic computations, by which binding can be captured.*

### Keywords

*binding, animate features, phi-features, R-features, Transfer, Merge*

## 1. Introduction

The main purpose of this paper is to explain binding in terms of animate features, phi-features, R-features, Merge, and Transfer within the Minimalist work. In section 2, we examine the phi-deficiency view of anaphora and show that Korean *caki* “self” is sensitive to person and animate features, but there is no restriction on *caki* “self” with respect to number and gender. With respect to English anaphora, we argue that it is not sensitive to number. In section 3, we maintain that *caki* “self” can refer to the hearer as its referent, but *caki-casin* “self-self” cannot refer to the hearer as its referent since Korean *caki* “self” carries an R-feature, but *caki-casin* “self-self” does not. In section 4, we contend that Korean *ku-casin* “he-self” and English *himself* underspecified for R-features are subject/object/indirect object-oriented and strictly local anaphors, that Korean *caki* “self”

underspecified for phi-features are subject/object-oriented and not local, and that *caki-casin* “self-self” underspecified for both features (phi-features and R-features) is a local and subject-oriented anaphor. In section 5, we show that binding can be captured in terms of animate features, phi-features, R-features, Merge, and Transfer. In section 5, we show that Transfer provides the governing category of anaphors and semantic computations, by which binding can be captured. In section 5, we maintain that *himself*, *ku-casin* “he-self”, and *caki-casin* “self-self” are licensed after the first Transfer, whereas Korean *caki* “self” is licensed after the first and second Transfer.

## 2. The Phi-deficiency View

The phi-deficiency view of anaphora is the predominant view in the Minimalist literature (Sundaresan, 2017). In what follows, we argue that phi-features-based (gender, number, and person) approaches to binding have difficulty accounting for it. To begin with, let us consider the following sentence:

- (1) \*[Tom-uy catongcha]<sub>i</sub>-ka caki<sub>i</sub>-uy cipapey  
       GEN car-NOM       self-GEN house in front of  
       cwuchatoyeissta.  
       is parked  
       (\*Tom’s car<sub>i</sub> is parked in front of caki<sub>i</sub>’s house.)

(1) clearly indicates that the antecedent of Korean *caki* must be [+animate]. The reason why (1) is ungrammatical is that the antecedent of *caki* “self” is the inanimate NP *Tom’s car*. Exactly the same can be said of (2):

- (2) \*[Tom-uy computer]<sub>i</sub>-ka caki<sub>i</sub>-uy cha-ey issta.  
       GEN computer-NOM self-GEN car-in is  
       (Tom’s computer is in caki’s car.)

(2) is ungrammatical due to the fact that the antecedent of *caki* “self” is not [+animate]. This in turn indicates that approaches which are based on the three categories (gender, number, and person) of phi-features cannot capture the ungrammaticality of (1) and (2) since Korean *caki* “self” carries the [+animate] feature. Standard theories classify phi-features into three categories (gender, number, and person), but Korean *caki* “self” requires only two categories: person and animate features. It is significant to note that there is no restriction on Korean *caki* “self” with respect to gender and number features:

- (3) a. Tom<sub>i</sub>-i caki<sub>i</sub>-uy pang-eyse cako-issta.  
       NOM self-GEN room-in sleeping-is  
       (Tom<sub>i</sub> is sleeping in caki<sub>i</sub>’s room.)  
       b. \*Na<sub>i</sub>-nun caki<sub>i</sub>-uy pang-eyse cako-issta.  
       TOP self-GEN room-in sleeping-is  
       (I<sub>i</sub> am sleeping in caki<sub>i</sub>’s room.)  
       c. [Tom kwa Mary]<sub>i</sub>-nun caki<sub>i</sub>-uy pang-eyse cako-issta.

And-TOP self-GEN room-in sleeping-is

([Tom and Mary]<sub>i</sub> are sleeping in caki<sub>i</sub>'s room.)

As alluded to in (3b), Korean *caki* “self” is sensitive to person, but there is no restriction on *caki* “self” with respect to number and gender, as illustrated in (3c). However, English reflexives are sensitive to these features:

- (4) a. Tom<sub>i</sub>/Mary<sub>i</sub> blamed himself<sub>i</sub>/ herself<sub>i</sub>.  
b. They<sub>i</sub> blamed themselves<sub>i</sub>.

This clearly indicates that phi-features (gender, number, and person)-based approaches have difficulty accounting for Korean *caki* “self”. As evidenced by (1), (2), and (3), Korean *caki* “self” requires two categories such as person and animate features, which is not in accordance with standard theories which classify phi-features into three categories (gender, number, and person).

Now let us consider the following example:

- (5) Tom<sub>i</sub> said that they<sub>i+j</sub> went on a picnic.

(5) clearly indicates that there is no agreement in the phi-features of *Tom* and *they*, especially in the number feature of *Tom* and *they*. However, *they* can refer to *Tom* and someone else. This clearly indicates that English pronouns are not sensitive to number and that they require two categories such as person and gender. Exactly the same can be said of Korean. Let us consider the following sentence:

- (6) Mary<sub>i</sub>-nun ku-tul<sub>i+j</sub>-uy chinkwu-lul pipphanhayssta.

TOP they-GEN friend-ACC criticized

(Tom<sub>i</sub> criticized their<sub>i+j</sub> friend.)

In (6), the Korean pronoun *ku-tul* “they” does not match its antecedent for phi-features, especially number and gender features. Facts like these apparently convince us that English and Korean anaphora is against the standard categories of phi-features including gender, number, and person. Furthermore, it is possible for plural anaphors or pronouns to be bound by singular quantifiers:

- (7) a. Everyone<sub>i</sub> outwitted themselves<sub>i</sub>.  
b. Everyone<sub>i</sub> outwitted their<sub>i</sub> adversary.  
c. Everyone<sub>i</sub> assumes John outwitted them<sub>i</sub> (Kang, 2019).

In (7), anaphors and pronouns do not match their antecedents for phi-features, especially the number feature. More interestingly, it is also possible for plural anaphors or pronouns to be bound by singular quantifiers:

- (8) a. Someone<sub>i</sub> outwitted themselves<sub>i</sub>.  
b. Someone<sub>i</sub> outwitted their<sub>i</sub> adversary.  
c. Someone<sub>i</sub> assumes John outwitted them<sub>i</sub>.

Again, English anaphora does not match its antecedent for the number feature, which clearly indicates that the phi-deficiency view of anaphora in the Minimalist work is on the right track.

### 3. R-features

The main goal of this section is to reveal that phi-features (gender, number, and person)-based approaches have difficulty accounting for Korean anaphora. We try to argue that anaphors are by nature non-referential, but they can have their own reference (R-features). R-features (U-features in Richards (1997)) are defined as features which the noun carries. An NP which carries an R-feature has its own reference like Tom. Richards (1997) classify anaphors into three types in terms of phi-features and U-features. He assumes that reflexives with underspecified U-features are local. Within Richards' framework, reflexives with underspecified phi-features are subject-oriented. On the other hand, reflexives underspecified for both features are subject-oriented and local. However, we depart from Richards (1997) since it cannot capture the binding behavior of Korean and English. Given the system of R-features just defined, English and Korean allow the following animate features, phi-features, and R-features.

**Table 1. Animate Features, Phi-features, and R-features**

Languages	Anaphors	Animate features	Phi-features	R-features
English	himself	+	+	-
Korean	caki-casin	+	partial	-
Korean	caki	+	partial	+
Korean	ku-casin	+	+	-

Now let us consider the following sentences:

(9) a. \*Caki-casin katun naykwausatul-un sin-uy

self-self like physicians-TOP God-GEN

senmwul ita.

present be

(Physicians like caki-casin are a godsend.)

b. \*Ku-casin katun naykwausatul-un sin-uy

he-self like physicians-TOP God-GEN

senmwul ita.

present be

(Physicians like ku-casin are a godsend.)

c. Caki katun naykwausatul-un sin-uy

self like physicians-TOP God-GEN

senmwul ita.

present be

(Physicians like caki are a godsend.)

(9a) and (9b) are ungrammatical due to the fact that there is no antecedent to match for phi-features. That is to say, in (9a) and (9b), anaphors must be bound to their antecedents, but there are no antecedents which can bind them, which results in the ungrammaticality of (9) and (9b). Then why is (9c) grammatical? We wish to argue that (9c) is grammatical since Korean *caki* “self” carries an R-feature. Simply put, Korean *caki* “self” carries its own reference, namely the hearer. Thus, (9c) is grammatical even though there is no antecedent to match for phi-features. That is why an R-feature other than phi-features in (9c) is necessary. Phi-features play no role in (9c) and R-features obtain their role in (9c). There is another environment in which Korean *caki* “self” favors the hearer as its referent over its antecedent:

(10) a. Tom kwa Mary-ka *caki*<sub>hearer/\*John & Mary</sub>-lul

and NOM self-ACC

pinanhayssta.

blamed

(Tom and Mary blamed *caki*.)

b. Tom kwa Mary-ka *caki-casin*<sub>hearer/John & Mary</sub>-ul

and NOM self-self-ACC

pinanhayssta.

blamed

(Tom and Mary blamed *caki-casin*.)

Clearly, in (10a), the hearer is preferred over the linguistic antecedent as the referent of *caki* “self” since Korean *caki* “self” carries an R-feature. The unavailability of the hearer as the referent of Korean *caki-casin* “self-self” in (10b) is predicted, given the fact that *caki-casin* “self-self” does not carry an R-feature. Thus, it is reasonable to conclude that Korean *caki* “self” requires three systems such as animate features, phi-features, and R-features.

#### 4. Phi-features and R-features

In what follows, we argue that phi-features and R-features are closely related to the binding behavior of Korean reflexives and English reflexives. We assume that Korean *ku-casin* “he-self” and English *himself* with underspecified R-features are subject/object/indirect object-oriented and that they are strictly local anaphors. Let us consider the following example:

(11) Tom<sub>i</sub>-i Bill<sub>j</sub>-eykey *ku-casin*<sub>i/j</sub>-uy pang-ul

NOM DAT he-self-GEN room-ACC

poyecwuessta.

showed

(Tom<sub>i</sub> showed Bill<sub>j</sub> *ku-casin*<sub>i/j</sub>’s room.)

In (11), Korean *ku-casin* “he-self” can be linked to the subject *Tom*, which in turn suggests that it is subject-oriented. In addition, *ku-casin* “he-self” can refer to the indirect object *Bill*. The coindexation

between *ku-casin* “he-self” and the indirect object *Bill* indicates that Korean *ku-casin* “he-self” with underspecified R-features is subject/indirect object-oriented. Now let us consider the following sentence:

- (12) Tom<sub>i</sub>-i Mary<sub>j</sub>-eykey [Bill<sub>k</sub>-i ku-casin<sub>k</sub>-ul piphanhayssta]-ko  
 NOM DAT NOM he-self-ACC criticized-COMP  
 malhayssta.  
 said  
 (Tom<sub>i</sub> said to Mary<sub>j</sub> that Bill<sub>k</sub> criticized ku-casin<sub>\*i/\*j/k</sub>.)

The coindexation between *ku-casin* “he-self” and the embedded subject *Bill* in (12) implies that *ku-casin* “he-self” can strictly a local anaphor. In (12), *ku-casin* “he-self” can refer to the embedded subject *Bill*, but it cannot refer to the matrix subject *Tom*. By this contrast it becomes clear that Korean *ku-casin* “he-self” is strictly a local anaphor. Thus, it is reasonable to assume that Korean *ku-casin* “he-self” underspecified for R-features are subject/indirect object-oriented and strictly a local anaphor.

Now attention is paid to English *himself* underspecified for R-features:

- (13) Tom<sub>i</sub> believes that Bill<sub>j</sub> told James<sub>k</sub> about himself<sub>\*i/j/k</sub>.

The coindexation between *himself* and the subject *Bill* indicates that English *himself* is subject-oriented. In addition, coindexing English *himself* with the object *James* is also acceptable. From this it is clear that English *himself* is also object-oriented. In (13), on the other hand, the *himself*-binding by the embedded subject *Bill* implies that English *himself* is strictly a local anaphor. Thus, it is reasonable to conclude that Korean *ku-casin* “he-self” and English *himself* underspecified for R-features are subject/object/indirect object-oriented and strictly local anaphors.

Now we assume that Korean *caki* “self” with underspecified phi-features is subject/object-oriented and not local. Let us consider the following sentence:

- (14) John<sub>i</sub>-i Bill<sub>j</sub>-ul caki<sub>i/j</sub>-uy pangey katwuessta.  
 NOM ACC self-GEN in room kept  
 (John<sub>i</sub> kept Bill<sub>j</sub> in caki<sub>i/j</sub>’s room.)

In (14), Korean *caki* “self” can be associated with the subject *John* and the object *Bill*. From this it is clear that *caki* “self” is subject/object-oriented. Let us observe the following example:

- (15) Tom<sub>i</sub>-i [Mary<sub>j</sub>-ka caki<sub>i/j</sub>-lul kwachanhayssta]-ko malhayssta.  
 NOM NOM self-ACC overpraised-COMP said  
 (Tom<sub>i</sub> said that Mary<sub>j</sub> overpraised caki<sub>i/j</sub>.)

The coindexation between *caki* “self” and matrix subject *Tom* indicates that *caki* “self” can be non-locally bound, whereas the coindexation between *caki* “self” and the embedded subject *Mary* implies that *caki* “self” can be locally bound. We thus conclude that Korean *caki* “self” underspecified for phi-features is subject/object-oriented and both locally and non-locally bound.

Finally, let us turn our attention to *caki-casin* “self-self” underspecified for both features (phi-features and R-features). *Caki-casin* “self-self” underspecified for both features is subject-oriented and strictly a

local anaphor. Now let us consider the following sentence:

(16) John<sub>i</sub>-i [Bill<sub>j</sub>-i Mary<sub>k</sub>-eykey caki-casin\*<sub>i/j/\*k</sub>-ey

NOM NOM DAT self-self

kwanhayse malhayssta]-ko sayngkakhanta.

about said-COMP think

(John<sub>i</sub> thinks that Bill<sub>j</sub> told Mary<sub>k</sub> about caki-casin\*<sub>i/j/\*k</sub>.)

In (16), *caki-casin* “self-self” cannot refer to the matrix subject *John* and the object *Mary*. It can only refer to the embedded subject *Bill*. This indicates that *caki-casin* “self-self” underspecified for both features (phi-features and R-features) is a local and subject-oriented anaphor. We thus conclude that Korean *ku-casin* “he-self” and English *himself* underspecified for R-features are subject/object/indirect object-oriented and strictly local anaphors, that Korean *caki* “self” underspecified for phi-features are subject/object-oriented and not local, and that *caki-casin* “self-self” underspecified for both features (phi-features and R-features) is a local and subject-oriented anaphor.

## 5. Binding, Merge, and Transfer

In what follows, within current generative grammar (Chomsky, 2008, 2013, 2014, 2019a, 2019b; Adger & Svenonius, 2015; Heinat, 2008; Kratzer, 2009; Hick, 2009; Reuland, 2011; Sundaresan, 2017) we try to account for binding in terms of animate features, phi-features, R-features, Merge, and Transfer. We will capture the governing category of anaphors in terms of Transfer (Adger & Svenonius, 2015; Chomsky, 2008, 2019a). Note that Adger and Svenonius (2015) employ Transfer to account for a bound variable interpretation.

(17) Transfer: Transfer the minimal structure containing the finite complementizer to phonological and semantic computations. Once a structure has been transferred, it is no longer accessible to further syntactic computation.

Chomsky (2019b) argues that “while no firm conclusions can be drawn, it is plausible that Merge and Transfer are rooted in principles of efficient computation”. In this section, following Chomsky (2019a/b), we define a syntactic unit as follows:

(18) a. Lexical items are syntactic units.

b. If A and B are syntactic units then Merge (A, B) = {A, B} is a syntactic unit.

In this section, we provide the following theorem of anaphors:

(19) a. Korean *ku-casin* “he-self” and English *himself* are licensed after the first Transfer.

b. Korean *caki* “self” is licensed after the first and second Transfer.

c. Korean *caki-casin* “self-self” is licensed after the first Transfer.

Korean *ku-casin* “he-self” and English *himself* must match their antecedents for phi-features since they are non-referential. Note that the anaphors *ku-casin* “he-self” and *himself* underspecified for R-features are subject/object/indirect object-oriented and local. Korean *ku-casin* “he-self” and English *himself*’s phi-matching takes place after the first Transfer since they are strictly local anaphors. Transfer provides

the governing category which is the minimal structure containing the finite complementizer *that* and it provides semantic computations, by which binding is captured. On the other hand, Korean *caki* “self” underspecified for phi-features is subject/object-oriented and both locally and non-locally bound. Thus, phi-matching can take place after the first and second Transfer since Korean *caki* “self” is both locally and non-locally bound. When it comes to Korean *caki-casin* “self-self” underspecified for both features (phi-features and R-features), it is strictly a local anaphor and subject-oriented. In this case, phi-matching takes place after the first Transfer since Korean *caki-casin* “self-self” is strictly a local anaphor.

Now let us consider the following sentence:

(20) John<sub>i</sub> thinks that Bill<sub>j</sub> told Fred<sub>k</sub> about himself<sub>\*i/j/k</sub>.

- (21) a. Merge (Bill, told)={Bill, told}  
 b. Merge {Bill, {told, (Fred)}}  
 c. Merge {Bill, {told, {Fred, (about)}}}  
 d. Merge {Bill, {told, {Fred, {about, (himself)}}}}  
 e. (that, {told, {Fred, {about, {himself}}}})

The first Transfer takes place since *that* is a finite complementizer.

SEM→[x, y: a person] [x told y about z and x=z and y=z]

- f. Merge (thinks, {that, {Bill, {told, {Fred, {about, {himself}}}}}})  
 g. Merge (John {thinks, {that, {Bill, {told, {Fred, {about, {himself}}}}}}})  
 {John, {thinks, {that, {Bill, {told, {Fred, {about, {himself}}}}}}}}

The second Transfer takes place since the derivation is finished.

SEM→[w, x, y: a person] [w thinks that x told y about z and x=z and y=z]

In (21), English *himself* underspecified for R-features is subject/object-oriented and strictly a local anaphor. In (21), SEM indicates semantic computations. It is significant to note that Transfer does two things. Transfer provides the governing category of anaphors and semantic computations, by which binding is captured. In (21), phi-matching takes place after the first Transfer since English *himself* is strictly a local anaphor. More specifically, z must match x and y for phi-features since z is subject/object-oriented. Here z cannot match w for phi-features since w is outside of the minimal category containing the complementizer *that*. Thus, phi-matching takes place after the first Transfer. Note that Transfer plays a pivotal role in providing the governing category of anaphors and semantic computations. The minimal structure containing *that* which the first Transfer involves is the governing category of English *himself*, in which English *himself* is bound to *Bill* and *Fred*.

Now consider the derivation of the sentence in (22):

- (22) Tom<sub>i</sub>-i Mary<sub>j</sub>-eykey [James<sub>k</sub>-ka ku-casin<sub>k</sub>-ul  
 NOM DAT NOM he-self-ACC  
 pipphanhayssta]-ko malhayssta.  
 criticized-COMP said



(Tom<sub>i</sub> said to Mary<sub>j</sub> that James<sub>k</sub> criticized ku-casin<sub>k</sub>.)

(23) Merge (James, criticized)={James, criticized}

Merge {criticized, {ku-casin, (ku-casin)}}

Merge (that, {Bill, {criticized, {ku-casin}}})

The first Transfer takes place since *that* is a finite complementizer.

SEM→[y: a person] [y criticized z and y=z]

Merge (Mary, {that, {Bill, {criticized, {ku-casin}}}})

Merge (to, {Mary, {that, {Bill, {criticized, {ku-casin}}}}})

Merge (said, {to, {Mary, {that, {Bill, {criticized, {ku-casin}}}}})

Merge (Tom, {said, {to, {Mary, {that, {Bill, {criticized, {ku-casin}}}}})

The second Transfer takes place since the derivation is finished.

SEM→[w, x, y: a person] [w said to x that y criticized z

and y=z]

Note that z must be licensed by y since z underspecified for R-features is strictly a local anaphor. This is possible since z and y are inside of the minimal structure containing the finite complementizer *that*. After the first Transfer, z cannot be matched by x for phi-features since x is a female and outside of the minimal category containing the finite complementizer *that*. Only the first Transfer provides the governing category of Korean *ku-casin* “he-self”. Exactly the same can be said of w. Z cannot be matched by w for phi-features since w is outside of the minimal structure containing the complementizer *that* which the first Transfer involves. Thus, z can only be licensed by y after the first Transfer. In (23), the minimal structure containing z and y is the governing category of z and z is locally bound to y in the minimal structure. The minimal structure is what the first Transfer provides.

Now consider the derivation of (24):

(24) John<sub>i</sub>-i Tom<sub>j</sub>-ul caki<sub>i/j</sub>-uy pang-ey katwuessta.

NOM ACC self-GEN room in kept

(John<sub>i</sub> kept Tom<sub>j</sub> in caki<sub>i/j</sub>'s room.)

(25) Merge (John, kept)={John, kept}

Merge {John, {kept, (Tom)}}

Merge {John, {kept, {Tom, (in)}}}

Merge {John, {kept, {Tom, {in, (caki)}}}}

Merge {John, {kept, {Tom, {in, {caki, (room)}}}}}

Merge ({John, {kept, {Tom, {in, {caki, {room}}}}})

The first Transfer takes place since the derivation is finished.

SEM→[x, y: a person] [x kept y in z's room and x=z and y=z]

Note that Korean *caki* “self” underspecified for phi-features is subject/object-oriented and that it can be both locally and non-locally bound. In (25), z is bound to the subject x and the object y since Korean *caki* “self” is subject/object-oriented. In this case, phi-matching takes place after the first Transfer.

However, the following sentence shows that phi-matching takes place after the first and second Transfer. Let us consider the following sentence:

(26) John<sub>i</sub>-i Tom<sub>j</sub>-eykey [Mary<sub>k</sub>-ka caki<sub>i/\*j/k</sub>-lul

NOM DAT NOM self-ACC

pipphanhayssta]-ko malhayssta.

criticized-COMP said

(John<sub>i</sub> said to Tom<sub>j</sub> that Mary<sub>k</sub> criticized self<sub>i/\*j/k</sub>.)

(27) Merge (Mary, criticized)={Mary, criticized}

Merge ({Mary, criticized}, caki)={Mary, {criticized, caki}}

Merge (that, {Mary, {criticized, {caki}}})={that, {Mary, {criticized, caki}}}

Merge {that, {Mary, {criticized, {caki}}}}

The first Transfer takes place since *that* is a finite complementizer.

SEM→[y: a person] [y criticized z and y=z]

Merge (Tom {that, {Mary, {criticized, caki}}})

Merge (to {Tom, {that, {Mary, {criticized, caki}}}})

Merge (said, {to {Tom, {that, {Mary, {criticized, caki}}}}})

Merge (John {said, {to {Tom, {that, {Mary, {criticized, caki}}}}}})

The second Transfer takes place since the derivation is finished.

SEM→[w, x, y: a person] [w said to x that y criticized z and w=z and y=z]

As observer earlier, Korean *caki* “self” underspecified for phi-features is subject/object-oriented and can be both locally and non-locally bound. Thus, the Korean anaphor *caki* “self” (z) is matched by the embedded subject y as well as the matrix subject w. In the minimal structure containing the complementizer *that*, y binds z, which in turn indicates that z is bound to y after the first Transfer. On the other hand, z is also matched by w which is outside of the minimal structure containing *that* since it can be non-locally bound. This is possible after the second Transfer. It is worth pointing out that phi-matching between x and z cannot take place since Korean *caki* “self” underspecified for phi-features is subject/object-oriented. We thus conclude that Korean *caki* “self” matches its antecedent for person and animate features after the first and second Transfer and that the antecedent can be inside and outside of the minimal structure containing the complementizer *that*.

Now let us consider the derivation of (28):

(28) Mary<sub>i</sub> wa Mary-uy cha<sub>j</sub>-ka caki<sub>i/\*j</sub>-uy

and GEN car-NOM self-GEN

chako-ey issta.

garage-in be

(Mary<sub>i</sub> and Mary’s car<sub>j</sub> is in caki<sub>i/\*j</sub> garage.)

(29) Merge (Mary, and)={Mary, and}

Merge ({Mary, {and, (Mary)}})

Merge ({Mary, {and, {Mary, (car)}}})  
 Merge ({Mary, {and, {Mary, {car, (is)}}}})  
 Merge ({Mary, {and, {Mary, {car, {is, (in)}}}}})  
 Merge ({Mary, {and, {Mary, {car, {is, {in, (caki)}}}}}})  
 Merge ({Mary, {and, {Mary, {car, {is, {in, {caki, (garage)}}}}}}})  
 Merge ({Mary, {and, {Mary, {car, {is, {in, {caki, {garage}}}}}}}}})

The first Transfer takes place since the derivation is finished.

SEM→[x: a person and y: inanimate] [x and y is in z's garage and x=z]

As observed earlier, Korean *caki* “self” underspecified for phi-features is subject/object-oriented and both locally and non-locally bound. Thus, z can be licensed by x in its governing category (the whole sentence) after the first Transfer. In (29), Transfer takes place since the derivation of (29) is finished and it provides the governing category of *caki* “self” and semantic computations, by which binding is captured. In (29), z can refer to x since x is animate, but it cannot refer to y since y is inanimate. Note that Korean *caki* “self” is sensitive to the [+animate] feature.

Now let us consider the following sentence:

(30) Caki-katun naykwausatul-un sin-uy senmwul ita.

self like physicians-TOP God-GEN present be  
 (Physicians like self are a godsend.)

(31) Merge (physicians, like)={physicians, like}

Merge {physicians, {like, (caki)}}  
 Merge {physicians, {like, {caki, (are)}}}  
 Merge {physicians, {like, {caki, {are, (godsend)}}}}  
 Merge {physicians, {like, {caki, {are, {godsend}}}}}

The first Transfer takes place since the derivation is finished.

SEM→[xs: people] [xs like y are a godsend and xs≠y]

As indicated in semantic computations, there is no antecedent to match for phi-features since xs are not y. Yet, *caki* “self” can refer to a discourse participant, namely the hearer. It is worth noting that cases like (31) is acceptable due to the fact that Korean *caki* “self” carries an R-feature. In (31), Korean *caki* “self” is self-licensed after the first Transfer. Here, Transfer provides the governing category of *caki* “self” and its semantic computations. However, the minimal structure containing *caki* “self” is not necessary since there is no antecedent to match for phi-features. We thus conclude that *caki* “self” can refer to a discourse participant since it carries an R-feature.

Now let us consider *caki-casin* “self-self” underspecified for both features (phi-features and R-features):

(32) John<sub>i</sub>-i [Tom<sub>j</sub>-i Mary<sub>k</sub>-eykey caki-casin<sub>\*i/j/\*k</sub>-ey

NOM NOM DAT self-self

kwanhayse malhayssta]-ko sayngkakhanta.

about said-COMP think

(John<sub>i</sub> thinks that Tom<sub>j</sub> told Mary<sub>k</sub> about caki-casin<sub>\*i/j/\*k\*</sub>)

(33) Merge (Tom, told)={Tom, told}

Merge {Tom, {told, (Mary)}}

Merge {Tom, {told, {Mary, (about)}}

Merge {Tom, {told, {Mary, {about, (caki-casin)}}}}

Merge (that, {Tom, {told, {Mary, {about, {caki-casin}}}}})

The first Transfer takes place since *that* is a finite complementizer.

SEM→[x, y: a person] [x told y about z and x=z]

Merge (thinks {that, {Tom, {told, {Mary, {about, {caki-casin}}}}})

Merge (John, {thinks {that, {Tom, {told, {Mary, {about, {caki-casin}}}}})

Merge {John, {thinks {that, {Tom, {told, {Mary, {about, {caki-casin}}}}}}}

The second Transfer takes place since the derivation is finished.

SEM→[w, x, y: a person] [w thinks that x told y about z and x=z]

As observed earlier, Korean *caki-casin* “self-self” underspecified for both features (phi-features and R-features) is subject-oriented and strictly a local anaphor. This in turn indicates that *caki-casin* “self-self” must match its antecedent for person and animate features after the first Transfer since *caki-casin* “self-self” is strictly a local anaphor. In (33), the first Transfer provides the minimal structure containing the complementizer *that*, which is the governing category of *caki-casin* “self-self”. *Caki-casin* “self-self” is bound to *Tom* in the minimal structure after the first Transfer. It must be noted, however, that *caki-casin* “self-self” cannot be bound to *Mary* in the minimal structure after the first Transfer. This is due to the fact that *caki-casin* “self-self” underspecified for both features (phi-features and R-features) is subject-oriented. It is worth pointing out that the second Transfer provides the whole sentence where *caki-casin* “self-self” cannot be bound to the matrix subject *John*. This is because *caki-casin* “self-self” is strictly a local anaphor. This in turn suggests that only the first Transfer provides the minimal structure which is the governing category of *caki-casin* “self-self”. We thus conclude that *caki-casin* “self-self” is licensed by a subject in the minimal structure containing the complementizer *that* after the first Transfer. The whole sentence which the second Transfer provides is not the governing category of *caki-casin* “self-self” since *caki-casin* “self-self” is strictly a local anaphor.

Next, it must be noted that Korean anaphors and English anaphors must be c-commanded by their antecedents:

(34) \*Tom<sub>i</sub>-uy tongsayng-i caki<sub>i</sub>/caki-casin<sub>i</sub>/ku-casin<sub>i</sub>-ul

GEN brother-NOM self/self-self/he-self-ACC

pinanhayssta.

blamed

(Tom<sub>i</sub>’s brother blamed self<sub>i</sub>/self-self<sub>i</sub>/he-self<sub>i</sub>.)

The ungrammaticality of (34) is due to the fact that Korean anaphors are not c-commanded by the antecedent *Tom* in this sentence. Exactly the same can be said about the English reflexive *himself*:

(35) \*Mary<sub>i</sub>'s brother blamed herself<sub>i</sub>.

Merge (Mary, brother)={Mary, brother}

Merge {Mary, {brother, (blamed)}}}

Merge {Mary, {brother, {blamed, (herself)}}}

Merge {Mary, {brother, {blamed, {herself}}}}

The first Transfer takes place since the derivation of (35) is finished.

SEM→[x, y: a person] [x's brother blamed y and x=y]

In (35), the first Transfer provides the governing category of *herself* and semantic computations. In (35), y is associated with x, but y is not c-commanded by x, hence the ungrammaticality of (35). This c-command requirement for English anaphors as well as Korean anaphors can sometimes be suspended. Such anaphors are called logophors in the literature.

Now let us consider the derivation of (36):

(36) \*John<sub>i</sub> thinks that himself<sub>i</sub> is intelligent.

Merge (himself, is)={himself, is}

Merge {himself, {is, (intelligent)}}}

Merge {himself, {is, {intelligent}}}

Merge (that, {himself, {is, {intelligent}}})

The first Transfer takes place since *that* is a finite complementizer.

SEM→[y: a person] [y is intelligent]

Merge (thinks, {that, {himself, {is, {intelligent}}}}})

Merge (John, {thinks, {that, {himself, {is, {intelligent}}}}})

Merge {John, {thinks, {that, {himself, {is, {intelligent}}}}}}

The second Transfer takes place since the derivation of (36) is finished.

SEM→[x, y: a person] [x thinks that y is intelligent and x≠y]

English reflexives cannot appear in the embedded subject position, which is dubbed as the Tensed S Condition. That is, a reflexive must not be the subject of a tensed clause. How do we account for this? Note that English *himself* underspecified for R-features is subject/object-oriented and strictly a local anaphor. Thus, English *himself* must be matched by its antecedent for phi-features in the minimal structure containing the complementizer *that*. However, there is no antecedent to match for phi-features in the minimal structure containing *that*. In (36), x cannot bind y since x is outside of the minimal structure containing *that*. Thus, it is reasonable to conclude that the Tensed S Condition is captured by Merge and Transfer.

Finally, let us observe the derivation of (37):

(37) John<sub>i</sub> thinks that Mary<sub>j</sub> loves himself<sub>\*i/\*j</sub>.

Merge (Mary, loves)={Mary, loves}

Merge {Mary, {loves, {himself}}}

Merge {Mary, {loves, {himself}}}

Merge (that, {Mary, {loves, {himself}}})

The first Transfer takes place since *that* is a finite complementizer.

SEM→[y: a female] [y loves z and y≠z]

Merge (thinks, {that, {Mary, {loves, {himself}}}})

Merge (John, {thinks, {that, {Mary, {loves, {himself}}}}})

Merge {John, {thinks, {that, {Mary, {loves, {himself}}}}}}

The second Transfer takes place since the derivation of (37) is finished.

SEM→[x, y: a person] [x thinks that y loves z and x≠z and y≠z]

The intervention of an embedded subject blocks subject binding, which is called the Specified Subject Condition. As indicated in (37), *Mary* blocks subject binding. That is, English *himself* demonstrates SSC effect. How do we explain this? Note that English *himself* underspecified for R-features is subject/object-oriented and strictly a local anaphor. Thus, in (37), *himself* must be matched by its antecedent for phi-features after the first Transfer. However, *Mary* cannot be the antecedent of *himself* since *Mary* is a female. Also, *himself* cannot be matched by the potential antecedent *John* for phi-features since *John* is outside of the minimal structure containing *that*. In (37), phi-matching is impossible since English *himself* is strictly a local anaphor. We thus conclude that the Tensed S Condition and Specified Subject Condition are captured by Merge and Transfer.

## 6. Conclusion

The main goal of this paper is to account for binding in terms of animate features, phi-features, R-features, Merge, and Transfer within the Minimalist work. In section 2, we have examined the phi-deficiency view of anaphora and argued that phi-features-based (gender, number, and person) approaches to binding have difficulty accounting for it. We have shown that Korean *caki* “self” is sensitive to person and animate features, but there is no restriction on *caki* “self” with respect to number and gender. With respect to English anaphora, we have argued that it is not sensitive to number. In section 3, we have maintained that *caki* “self” can refer to the hearer as its referent since it carries an R-feature. On the other hand, we have argued that *caki-casin* “self-self” cannot refer to the hearer as its referent since it does not carry an R-feature. In section 4, we have contended that Korean *ku-casin* “he-self” and English *himself* underspecified for R-features are subject/object/indirect object-oriented and strictly local anaphors, that Korean *caki* “self” underspecified for phi-features are subject/object-oriented and not local, and that *caki-casin* “self-self” underspecified for both features (phi-features and R-features) is a local and subject-oriented anaphor. In section 5, we have shown that binding can be captured in terms of animate features, phi-features, R-features, Merge, and Transfer. In section 5, we have maintained that *ku-casin* “he-self”, *caki-casin* “self-self”, and *himself* are licensed after the first Transfer, whereas *caki* “self” is licensed after the first and second Transfer. We have

shown that Transfer provides the governing category of anaphors and semantic computations, by which binding can be captured. Additionally, we have maintained that Korean anaphors and English anaphors must be c-commanded by their antecedents. Finally, we have shown that the Tensed S Condition and Specified Subject Condition are captured by Merge and Transfer.

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