



On Korean Pronouns and Korean Null Arguments: a Merge-based Analysis

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Abstract

The ultimate goal of this paper is to explain the difference between Korean overt pronouns and Korean null arguments in terms of Merge, and Transfer. A major point to note is that Korean pronouns are sensitive to phi-features, whereas Korean null arguments are not. The Korean pronouns ku 'he' and ku-tul 'they' match their antecedents for phi-features, whereas Korean null arguments cannot. A further point to note is that there are differences in interpretive behavior between Korean pronouns and Korean null arguments. First, the Korean plural pronoun ku-tul 'they' and Korean null arguments function as a bound variable, whereas the Korean singular pronoun ku 'he' cannot. Second, the peculiar property of Korean pronouns and Korean null arguments can be observed within opaque contexts. Third, the Korean pronoun ku-tul 'they' can have overlapping reference, whereas Korean null arguments cannot. Fourth, the Korean pronoun ku-tul 'they' and Korean null arguments permit split antecedence, but they are different from each other. Fifth, the Korean pronoun ku 'they' induces an indirect thought, whereas Korean null arguments yields a direct thought. This paper argues that these five properties of Korean pronouns and Korean null arguments can be captured by embedded predicates, Merge, and Transfer.

Keywords: Overt pronouns, Null argument, Merge, Transfer, Governing category

1. Introduction

The main goal of this paper is to account for Korean overt pronouns and Korean null arguments in terms of embedded predicates, Merge, and Transfer. When it comes to Korean anaphors, they must be bound to their antecedents within the whole sentence. On the other hand, Korean pronominals must also be bound to their antecedents within the whole sentence. Simply put, Korean anaphors and Korean pronominals overlap in the position where they are supposed to occur. That is to say, Korean anaphors and Korean pronominals are not in complementary distribution. Thus, we assume that the governing category of Korean anaphors and Korean pronominals is the whole sentence. We further assume that Korean anaphors and Korean pronouns must be bound to their antecedents within the whole sentence. In this paper, we aim to show that the distribution of Korean pronouns is the same as that of Korean null arguments, but Korean pronouns are distinguished from Korean null arguments and that this can be captured by Merge and Transfer. Additionally, we argue that Korean null arguments are recoverable from embedded predicates. The organization of this paper is as follows. In section 2, we argue that Korean pronouns are sensitive to phi-features, whereas Korean null arguments are not. Korean pronouns *ku* 'he' and *ku-tul* 'they' match their antecedents for phi-features, whereas Korean null arguments cannot. In section 3.1, we show that the referent of Korean null arguments as well as Korean pronouns can be recoverable from embedded predicates. In section 3.2, we argue that there are differences in interpretive behavior between Korean pronouns and Korean null arguments. First, the Korean plural pronoun *ku-tul* 'they' and Korean null arguments function as a bound variable, whereas the Korean singular pronoun *ku* 'he' cannot. Second, the peculiar property of Korean pronouns and Korean null arguments can be observed within opaque contexts. Third, the Korean pronoun *ku-tul* 'they' can have overlapping reference, whereas Korean null arguments cannot. Fourth, the Korean pronoun *ku-tul* 'they' and Korean null arguments permit split antecedence, but they are different from each other. Fifth, the Korean pronoun *ku* 'they' induces an indirect thought, whereas Korean null arguments yields a direct thought. We attempt to show that these five properties of Korean pronouns and Korean null arguments can be captured by embedded predicates, Merge, and Transfer.

2. Phi-features and R-features

As a point of departure, we postulate two types of N-features in the spirit of Richards (1995, 1997). More specifically, we postulate two features: phi-features involving person, gender, and number, and R-features which are defined as referential features (Huang and Tang 1991, Richards 1995, 1997). A DP which carries an R-feature has its own reference like Mary. Korean anaphors and pronominals carry different kinds of N-features:

Languages	Anaphora	Phi-features	R-features
English	himself	+	-
English	he/she	+	-
English	they	+	-
Korean	caki	partial	+
Korean	caki-casin	partial	-
Korean	ku-casin	+	-
Korean	ku	+	-
Korean	ku-tul	+	-
Korean	null argument	-	-

Table 1 Two features of Korean anaphora

It is worth pointing out that the Korean pronoun *ku* ‘he’ is sensitive to phi-features, as illustrated in (1):

- (1) *Maryi-nun *kui-ka* ikilkesila-ko mitnunta.

NOM he-NOM win-COMP believe

(Maryi believes that hei will win.)

The reason why (1) is ungrammatical is that the Korean pronoun *ku* ‘he’ does not match its antecedent for phi-features, especially a gender feature. It is significant to note that the Korean pronoun *ku* ‘he’ is also sensitive to a number feature, as indicated in (2):

- (2) *Nwukwunaii *kui-ka* ttoktokhata-ko mitnunta.

everyone he-NOM intelligent-COMP believe

(Everyonei believes that hei is intelligent.)

We attribute the ungrammaticality of (2) to the disagreement of phi-features. More specifically, the QNP *nwukwunaii* ‘everyone’ involves a group of people and thus is plural. On the other hand, the Korean pronoun *ku* ‘he’ is singular in number, thus resulting in the phi-feature disagreement. Therefore, it is reasonable to assume that the Korean singular pronoun *ku* ‘he’ is sensitive to phi-features. Most interestingly, the Korean plural pronoun *ku-tul* ‘they’ can be associated with *nwukwunaii* ‘everyone’ (plural quantifiers) through variable binding:

- (3) *Nwukwunaii ku-tuli-i* ttoktokhata-ko sayngkakhanta.

everyone they-NOM intelligent-COMP think

(Everyonei thinks that theyi is intelligent.)

As alluded to in (3), the reason why (3) is grammatical is that the Korean plural pronoun *ku-tul* ‘they’ matches its antecedent for phi-features, especially the number feature. Thus, in (3), the Korean pronoun *ku-tul* ‘they’ functions as a bound variable. This in turn indicates that the Korean plural pronoun *ku-tul* ‘they’ is also sensitive to phi-features. Let us consider the following sentences:

- (4) *Motuni-ka pati-ey kassko John-un *ku-lul* kekise

NOM party-at went-COMP TOP he-ACC there

poassta.

saw

(Everyone went to the party and John saw him there.)

(5) *Motuni*-ka pati-ey kassko John-un *ku-tul*-ul kekise
 NOM party-at went-COMP TOP them-ACC there
 poassta.
 saw
 (Everyone went to the party and John saw them there.)

As illustrated in (4), (4) is ungrammatical since the Korean pronoun *ku* ‘he’ does not match its antecedent for phi-features. That is to say, the QNP *motuni* ‘everyone’ is plural in number, whereas the Korean pronoun *ku* ‘he’ is singular, hence the phi-feature disagreement. On the other hand, (5) is grammatical since the Korean plural pronoun *ku-tul* ‘they’ matches its antecedent for phi-features. That is, the antecedent *motuni* ‘everyone’ and the Korean pronoun *ku-tul* ‘they’ are both plural in number, thus resulting in the grammaticality of (5). From all of this, it is clear that Korean overt pronouns are sensitive to phi-features and that their use depends on the phi-feature agreement. Most interestingly, Korean null arguments do not carry phi-features, as indicated in (7):

(6) *Johni-un kui*-ka *ikilkesila*-ko sayngkakhanta.

TOP he-NOM will win-COMP think

(John thinks that he will win.)

(7) *Johni-un [ei ikilkesila]*-ko sayngkakhanta.

TOP will win-COMP think

(John thinks that he will win.)

(6) is grammatical since the Korean pronoun *ku* ‘he’ matches its antecedent for phi-features, namely number, person, and gender features. On the other hand, (7) is grammatical, despite the fact that the null pronoun *e* does not match its antecedent for phi-features. This in turn indicates that Korean null arguments are not sensitive to phi-features. In addition, the referent of Korean null arguments depends on the speaker’s intention:

(8) *John-un [e (points to Tom) ikilkesila]*-ko malhayssta.

TOP will win-COMP said

(John said that Tom would win.)

In (8), the referent of the null argument *e* is Tom. The referent of Korean null arguments depends on the speaker’s intention. In (8), the null argument can be Mary if the speaker points to her. Thus, the referent of Korean null arguments varies depending on the speaker’s intention. Interestingly, Korean pronouns also show this effect, but they are different from null arguments:

(9) *John-un [ku-ka (points to Tom) ikilkesila]*-ko malhayssta.

TOP he-NOM will win said

(John said that Tom would win.)

Just as in the case of Korean null arguments, the Korean pronoun *ku* ‘he’ shows the same effect, but it is sensitive to phi-features:

(10) ???*John-un [ku-ka (points to Mary) ikilkesila]*-ko malhayssta.

TOP he-NOM will win said

(John said that he would win.)

On the other hand, (10) is odd if the speaker points to Mary as the referent of *ku* 'he'. That (10) is odd comes from the phi-feature disagreement. Thus, it is reasonable to conclude that Korean pronouns are sensitive to phi-features, whereas Korean null arguments are not.

3. Anaphora, Merge, and Transfer

3.1. Phi-features vs. Embedded predicates

As observed earlier, Korean overt pronouns match their antecedents for phi-features, but Korean null arguments cannot. Korean null arguments do not carry phi-features and thus cannot match their antecedents for phi-features. In this section, we attempt to show that the referent of Korean null arguments as well as Korean pronouns can be recoverable from embedded predicates. We propose the following:

Embedded Predicate	Antecedent(s)
- <i>haysstako</i>	agent
- <i>lako</i>	agent
- <i>hatako</i>	agent
- <i>hantako</i>	agent and goal

Table 2 Recoverability of Korean Null Arguments and Pronouns

Let us consider the following example:

(11) a. Tom-i *ku-ka* *sopwung-ul* *kassta-ko* *malhayssta*.

NOM he-NOM picnic-ACC went-COMP said

(Tom said that he went on a picnic.)

b. Tom-i [*e* *sopwung-ul* *kassta*]-*ko* *malhayssta*.

NOM picnic-ACC went-COMP said

(Tom said that he went on a picnic.)

As indicated in Table 2, the Korean pronoun *ku* 'he' is recoverable from the embedded predicate *kasstako*. Thus, the antecedent of *ku* 'he' becomes the agent Tom on the basis of Table 2. Likewise, in (11b), the null argument *e* is easily recoverable from the embedded predicate *kasstako*. Accordingly, the embedded predicate *hasstako* recovers the null argument *e* as the agent Tom.

Now let us observe the following sentences:

(12) a. Tom-i Mary-eykey *ku-tul-i* *ttenayahanta-ko* *malhayssta*.

NOM DAT they-NOM leave-COMP said

(Tom told Mary that they should leave.)

b. Tom-i Mary-eykey [*e* *ttenayahanta*]-*ko* *malhayssta*

NOM DAT leave-COMP said

(Tom told Mary that they should leave.)

As illustrated in Table 2, the Korean pronouns *ku-tul* 'they' is recoverable from the embedded predicate *ttenayahantako* 'leave'. The embedded predicate *ttenayahantako* 'leave' recovers *ku-tul* 'they' as both Tom and Mary, which is in accordance with Table 2. Likewise, the Korean null argument *e* is recoverable from the embedded predicate *ttenayahantako* 'leave'. Thus, the antecedents of *ku-tul* 'they' can be Tom and Mary, which is in accordance with Table 2.

3.2. Merge and Transfer

In what follows, we attempt to account for pronominal binding in terms of Merge and Transfer within current generative grammar (Chomsky 2008, 2013, 2014, 2019a, 2019b, Adger and Svenonius 2015). As observed earlier,

phi-features-based analyses cannot account for the phenomenon of Korean null arguments. In our analysis, embedded predicates replace them. In this section, we show that the governing category of Korean pronouns and Korean null arguments is captured by Transfer and Merge. Adger and Svenonius (2015) employ Transfer to account for a bound variable reading:

(13) Transfer: Transfer the minimal structure containing the finite complementizer to phonological and semantic computations.

Chomsky (2019b) contends that “while no firm conclusions can be drawn, it is plausible that Merge and Transfer are rooted in principles of efficient computations” (Chomsky 2019b). Following Adger and Svenonius (2015) and Chomsky (2019a/b), we take a syntactic unit as follows:

(13) 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 what follows, we show that there is a difference in interpretive behavior between Korean singular pronouns and Korean null arguments:

(14) **Nwukwunaiii kui-ka ttoktokhata-ko mitnunta.*

everyone he-NOM intelligent-COMP believe

(Everyone believes that he is intelligent.)

(14') Merge (he, is) = {he, is}

Merge {he, {is, {intelligent}}}

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

Transfer takes place because that is a finite complementizer.

SEM→[y: a person] [y is intelligent]

Merge (believes, {that, {he, {is, {intelligent}}}})

Merge (everyone, {believes, {that, {he, {is, {intelligent}}}}})

Transfer takes place because the derivation is finished.

SEM→[Every x: x is a person] [x believes that y is intelligent and x=y]

(15) *Nwukwunaiii [ei ttoktokhata]-ko mitnunta.*

everyone intelligent-COMP believe

(Everyone believes that he is intelligent.)

(15') Merge (e, is) = {e, is}

Merge {e, {is, {intelligent}}}

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

Transfer takes place because that is a finite complementizer.

SEM→[y: a person] [y is intelligent]

Merge (believes, {that, {e, {is, {intelligent}}}})

Merge (everyone, {believes, {that, {e, {is, {intelligent}}}}})

Transfer takes place because the derivation is finished.

SEM→[Every x: x is a person] [x believes that y is intelligent and x=y]

In (14'), y cannot refer to x. On the other hand, in (15'), y can refer to x. More specifically, in (15'), y is can be interpreted as a bound variable, but in (14'), y cannot. Why does this take place? We wish to argue that Korean null arguments can be bound to a quantifier, whereas the Korean singular pronoun *ku* 'he' cannot. With this in mind, let us observe the following sentence:

(16) *Nwukwunaiii ku-tuli-i ttoktokhata-ko mitnunta.*

everyone they-NOM intelligent-COMP believe

(Everyone believes that they are intelligent.)

- (16') Merge (they, are) = {they, are}
 Merge {they, {are, (intelligent)}}
 Merge (that, {they, {are, {intelligent}}})
 Transfer takes place because that is a finite complementizer.
 SEM→[y: a person] [y is intelligent]
 Merge (believes, {that, {they, {are, {intelligent}}})
 Merge (everyone, {believes, {that, {they, {are, {intelligent}}})})
 Transfer takes place because the derivation is finished.
 SEM→[Every x: x is a person] [x believes that y is intelligent and x=y]

As illustrated in (16'), unlike *ku* 'he', *ku-tul* 'they' is interpreted as a bound variable. From all of this, it is clear that Korean null arguments and Korean plural pronouns can be interpreted as a bound variable, but Korean singular pronouns cannot. Thus, it seems reasonable to conclude that singular pronouns cannot be bound to a quantifier:

(17) Singular Pronoun Constraint:

Korean singular pronouns cannot be a bound variable iff null arguments, singular pronouns, and plural pronouns alternate in the same argument position.

It is worth pointing out that as indicated in (15'), phi-features play no role. Rather, embedded predicates obtain their role. As observed earlier, the embedded predicate *hatako* recovers the null argument as an agent subject, which is in accordance with Table 2. Thus, the antecedent of the null argument becomes *nwukwunaii* 'everyone'. It is significant to note that the null argument in (15') and the plural pronoun *ku-tul* 'they' in (16') can be bound to their antecedents after the second Transfer. However, after the first Transfer, they cannot be bound to their antecedents since their governing category is the whole sentence. Thus, it is reasonable to assume that Korean null arguments and Korean plural pronouns are bound to their antecedents after the second Transfer. We thus conclude that there is a difference in interpretive behavior between Korean null arguments (Korean plural pronouns) and Korean singular pronouns and that it can be captured by the singular pronoun constraint, Merge, and Transfer. In our analysis, phi-features play no role.

The peculiar property of Korean pronouns and Korean null arguments can be observed within opaque contexts. Korean null arguments are distinguished from Korean pronouns in that Korean pronouns induce interpretations that are looser than Korean null arguments. Consider a famous singer who suffers from amnesia. He remembers nothing of his popularity. Suppose that this man reads column about his popularity. Now observe the following statements:

- (18) The man believes that he is a hero.
 (19) The man believes that he himself is a hero.
 (20) The man believes himself to be a hero.
 (Higginbotham 1989)

As pointed out by Higginbotham (1989), we can understand (18) as true, but the others are not true. How can we capture this by using Merge and Transfer? Now let us observe (21):

- (21) Merge (he, is) = {he, is}
 Merge {he, {is, (a hero)}}
 Merge (that, {he, {is, {a hero}}})
 Transfer takes place because that is a finite complementizer.
 SEM→[y: a person] [y is a hero]
 Merge (believes {that, {he, {is, {a hero}}})
 Merge (the man {believes, {that, {he, {is, {a hero}}})})
 Transfer takes place because the derivation is finished.
 SEM1→[x, y: a person] [x believes that y is a hero and x=y]
 SEM2→[x, y: a person] [x believes that y is a hero and x≠y]

It is important to note that Transfer provides semantic computations and the governing category of Korean pronouns. It is worth pointing out that (18) allows two semantic computations, as indicated in (21). The first one predicts that x believes that y is a hero and x=y. On the other hand, the second one predicts that x believes that y is a hero and x≠y. Why does this happen? We wish to argue that two different interpretations come from the speaker's intention. "The speaker intends to be taken such that the reference of x and the reference of y coincide" (Higginbotham 1992). Conversely, "the speaker intends to be taken such that the reference of x and the reference of y do not coincide" (Higginbotham 1992). Thus, we can understand (18) as true or false, depending on SEM1 and

SEM2. SEM1 renders (18) false, whereas SEM2 renders (18) true.
Now attention is paid to Korean pronouns and Korean null arguments:

(22) *Ku namca-ka ku-ka yengwungila-ko sayngkakhanta.*

the man-NOM he-NOM hero-COMP think

(The man thinks that he is a hero.)

(23) *Ku namca-ka [e yengwungila]-ko sayngkakhanta.*

the man-NOM hero-COMP think

(The man thinks that he is a hero.)

(22') Merge (he, is) = {he, is}
Merge {he, {is, (a hero)}}
Merge (that, {he, {is, {a hero}}})
Transfer takes place because that is a finite complementizer.
SEM→[y: a person] [y is a hero]
Merge (thinks {that, {he, {is, {a hero}}})
Merge (the man {thinks, {that, {he, {is, {a hero}}}}})
Transfer takes place because the derivation is finished.
SEM1→[x, y: a person] [x thinks that y is a hero and x=y]
SEM2→[x, y: a person] [x thinks that y is a hero and x≠y]

(23') Merge (e, is) = {e, is}
Merge {e, {is, (a hero)}}
Merge (that, {e, {is, {a hero}}})
Transfer takes place because that is a finite complementizer.
SEM→[y: a person] [y is a hero]
Merge (thinks {that, {e, {is, {a hero}}})
Merge (the man {thinks, {that, {e, {is, {a hero}}}}})
Transfer takes place because the derivation is finished.
SEM→[x, y: a person] [x thinks that y is a hero and x=y]

As expected, Korean pronouns also induce interpretations that are looser than Korean null arguments. More specifically, (22) permit two interpretations. The first SEM predicts that x thinks that y is a hero and x=y. On the other hand, the second SEM predicts that x thinks that y is a hero and x≠y. As observed earlier, the different interpretations also come from the speaker's intention. Unlike the Korean pronouns, Korean null argument permits only one interpretation. That is to say, SEM predicts that x thinks that y is a hero and x=y. Thus, we can understand (23) as false. It is worth noting that the embedded predicate *lako* recovers the null argument as the agent subject. Again, the phi-features-based explanation plays no role here. We thus conclude that Korean null arguments are distinguished from Korean pronouns and that this can be captured by Merge and Transfer.

It is taken for granted that taking overlapping reference is the property of pronominals. It provides a way distinguishing pronominals from anaphors (Giorgi 1984, Lebeaux 1985). This argument builds support for the claim that a DP can be a pronoun if it has overlapping reference:

(24) a. *Johni said that they_{i+j} went to a picnic.*
b. **Johni told Mary about themselves_{i+j}.*

In (24a), the English pronoun *they* can refer to both John and someone else in discourse, whereas the English reflexive *themselves* cannot refer to both John and someone else. Likewise, the same applies to Korean pronominals:

(25) *Johni-i ku-tuli_{i+j}-i sopwung-ul kasstako malhayssta.*

NOM they-NOM picnic-ACC went-COMP said

(John said that they went on a picnic.)

In (25), the Korean pronoun *ku-tul* ‘they’ can refer to both John and someone else in discourse, thus taking overlapping reference. However, Korean null arguments cannot have overlapping reference, as indicated in (26):

(26) *Johni-i ei+j sopwung-ul *kasstako* malhayssta.

NOM picnic-ACC went-COMP said

(John said that they went on a picnic.)

Now let us observe the derivation of (25) and (26), respectively:

(25') Merge (they, went) = {they, went}

Merge {they, {went, (on)}}

Merge {they, {went, {on, (a picnic)}}}

Merge (that, {they, {went, {on, {a picnic}}}})

Transfer takes place because that is a finite complementizer.

SEM→[x,y: a person] [x and y went on a picnic and x≠y]

Merge (said, {that, {they, {went, {on, {a picnic}}}}})

Merge (John, {said, {that, {they, {went, {on, {a picnic}}}}})

Transfer takes place because the derivation is finished.

SEM→[w,x,y: a person] [w said that x and y went on a picnic and w=x, w≠y, and x≠y]

(26') Merge (e, went) = {e, went}

Merge {e, {went, (on)}}

Merge {e, {went, {on, (a picnic)}}}

Merge (that, {e, {went, {on, {a picnic}}}})

Transfer takes place because that is a finite complementizer.

SEM→[y: a person] [y went on a picnic]

Merge (said, {that, {e, {went, {on, {a picnic}}}}})

Merge (John, {said, {that, {e, {went, {on, {a picnic}}}}})

Transfer takes place because the derivation is finished.

SEM→[x,y: a person] [x said that y went on a picnic and x=y]

As illustrated in (25'), the Korean pronoun *ku-tul* ‘they’ can refer to John and someone else. After the second Transfer, it is bound to John and someone else in the whole sentence. However, the phi-features-based analysis plays no role since there is no agreement in number between John and *ku-tul* ‘they’. In (25), the embedded predicate *haysstako* recovers the referent of *ku-tul* ‘they’ as the agent subject. It is noteworthy that Korean null arguments cannot take overlapping reference. In (26), the null argument cannot refer to John and someone else. As expected, the Korean null argument can only refer to John as its antecedent. This is captured by the embedded predicate *haysstako*, which recovers the null argument as the agent John. After the second Transfer, y is bound to x in the whole sentence, as indicated in (26'). We thus conclude that Korean null arguments are distinguished from

Korean pronouns and that this can be captured by Merge and Transfer.

Now attention is paid to split antecedence. Split antecedence is one of the properties of pronominals:

(27) John-un Mary-eykey *ku-tul*-i *kayahanta*-ko malhayssta.

TOP DAT they-NOM should go-COMP said

(John told Mary that they should go.)

(28) John-un Mary-eykey [e *kayahanta*]-ko malhayssta.

TOP DAT should go-COMP said

(John told Mary that he, (she), or (they) should go.)

In (27), the Korean pronoun *ku-tul* ‘they’ refers to John and Mary. On the other hand, (28) is three ways ambiguous, depending on the interpretation of the null argument. First, the null argument is interpreted as John. The null argument could also be interpreted as Mary. Finally, it could be interpreted as John and Mary. The derivation of

(27) and (28) is as follows:

- (27') Merge (they, should) = {they, should}
 Merge {they, {should, (go)}}
 Merge (that, {they, {should, {go}}})
 Transfer takes place because that is a finite complementizer.
 SEM→[z: a person] [z should go]
 Merge (Mary, {that, {they, {should, {go}}}})
 Merge (told, {Mary, {that, {they, {should, {go}}}}})
 Merge (John, {told, {Mary, {that, {they, {should, {go}}}}}}})
 Transfer takes place because the derivation is finished.
 SEM→[w,x,y: a person] [w told x that y and z should go and w and x=y and z]
- (28') Merge (e, should) = {he, should}
 Merge {e, {should, (go)}}
 Merge (that, {e, {should, {go}}})
 Transfer takes place because that is a finite complementizer.
 SEM→[z: a person] [z should go]
 Merge (Mary, {that, {e, {should, {go}}}})
 Merge (told, {Mary, {that, {e, {should, {go}}}}})
 Merge (John, {told, {Mary, {that, {e, {should, {go}}}}}}})
 Transfer takes place because the derivation is finished.
 SEM1→[w,x,y: a person] [w told x that y should go and w=y]
 SEM2→[w,x,y: a person] [w told x that y should go and x=y]
 SEM3→[w,x,y: a person] [w told x that y and z should go and w and x=y and z]

(27') is interpreted to mean that w told x that y and z should go and w and x=y and z. That is to say, the Korean pronoun *ku-tul* 'they' refers to John and Mary. Note that after the second Transfer, the pronoun *ku-tul* 'they' is bound to *John* and *Mary* in the whole sentence. Thus, the governing category of *ku-tul* 'they' is decided after the second Transfer. As illustrated in (28'), (28) is interpreted to mean that w told x that y should go and w=y. (28) could also be interpreted to mean that w told x that y should go and x=y. Finally, (28) could be interpreted as 'w told x that y and z should go and w and x=y and z'. After the second Transfer, the null argument is associated with its antecedent. It is worth noting that the embedded predicate *kayahantako* recovers the null argument as the agent and goal. That is, the referent of the null argument is recoverable from the embedded predicate. Thus, it seems reasonable to conclude that Korean pronouns are distinguished from Korean null arguments and that this can be captured by Merge and Transfer.

Finally, attention is paid to (29) and (30):

(29) Tomi-i *kui-ka* *ikilkesila-ko* *sayngkakhanta*.

NOM NOM will win-COMP think

(Tom thinks that he will win.)

(30) Tomi-i [ei *ikilkesila*]-ko *sayngkakhanta*.

NOM will win-COMP think

(Tom thinks that he will win.)

We can understand (29) as true when Tom thinks that "the person who trained hardest will win and he is the person who trained hardest" (Higginbotham 1992, 1999). On the other hand, (30) is true when Tom thinks that "I will win" (Higginbotham 1992, 1999). According to Higginbotham (1999), the first one (29) is an indirect thought, whereas the second one (30) is a direct thought. Now the derivation of (29) and (30) is as follows:

- (29') Merge (he, will) = {he, will}
 Merge {he, {will, (win)}}
 Merge (that, {he, {will, {win}}})
 Transfer takes place since that is a finite complementizer.
 SEM→[x: a person] [x will win]

Merge (thinks, {that, {he, {will, {win}}}}})
 Merge (Tom, {thinks, {that, {he, {will, {win}}}}})
 Transfer takes place because the derivation is finished.
 SEM→[x,y: a person] [x thinks that Y will win and x=Y]

(30') Merge (e, will) = {e, will}
 Merge {e, {will, (win)}}
 Merge (that, {e, {will, {win}}})
 Transfer takes place since that is a finite complementizer.
 SEM→[x: a person] [x will win]
 Merge (thinks, {that, {e, {will, {win}}}}})
 Merge (Tom, {thinks, {that, {e, {will, {win}}}}})
 Transfer takes place because the derivation is finished.
 SEM→[x,y: a person] [x thinks that y will win and x=y]

The governing category of *ku* 'he' is the whole sentence. *Ku* 'he' is bound to John after the second Transfer. More specifically, Y is bound to x and x=Y in the whole sentence. Here Y is expressed by the capital letter since *ku* 'he' yields an emphatic reading induced by the indirect thought. In the case of (30), there is no emphatic reading induced by the direct thought. Thus, (30) has the following SEM: x thinks that y will win and x=y. It is worthwhile noting that the embedded predicate *lako* recovers the null argument as the agent subject. We thus conclude that Korean null arguments are distinguished from Korean pronouns and that this can be accounted for by Merge and Transfer.

4. Conclusion

To sum up, by employing Merge and Transfer, we have provided a detailed analysis of Korean pronouns and Korean null arguments. In section 2, we have argued that Korean pronouns are sensitive to phi-features, whereas Korean null arguments are not. Korean pronouns *ku* 'he' and *ku-tul* 'they' match their antecedents for phi-features, whereas Korean null arguments cannot since they have no phi-features.

In section 3.1, we have shown that the referent of Korean null arguments as well as Korean pronouns can be recoverable from embedded predicates. In section 3.2, we have also shown that there are differences in interpretive behavior between Korean pronouns and Korean null arguments. First, the Korean plural pronoun *ku-tul* 'they' and Korean null arguments are interpreted as a bound variable, whereas the Korean singular pronoun *ku* 'he' cannot. Second, the difference between Korean pronouns and Korean null arguments can be observed within opaque contexts. Korean null arguments are distinguished from Korean pronouns in that Korean pronouns induce interpretations that are looser than Korean null arguments. Third, the Korean pronoun *ku-tul* 'they' can have overlapping reference, whereas Korean null arguments cannot. Fourth, the Korean pronoun *ku-tul* 'they' and Korean null arguments permit split antecedence, but they are different from each other. Fifth, the Korean pronoun *ku* 'they' induces an indirect thought, whereas Korean null arguments yields a direct thought. Thus, the former induces an emphatic reading induced by the indirect thought. In the case of the latter, there is no emphatic reading induced by the direct thought. We have shown that these five properties of Korean pronouns and Korean null arguments are captured by embedded predicates, Merge, and Transfer.

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