

Two Types of Cleft Constructions in Korean: A Constraint-Based Approach

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Jong-Bok Kim. 2008. Two Types of Cleft Constructions in Korean: A Constraint-Based Approach. *Language and Information* 12.1, 85–103. Like English, Korean employs several complicated types of cleft constructions. This paper deals with two main types of Korean cleft constructions: predicational and identificational. It first reviews the formal properties of these two types and then provides a constraint-based analysis that can be computationally implemented. In particular, the paper assumes two types of noun KES (one as a common noun and the other as a bound noun) and treats the argument-gapped cleft clause similar to relative clauses while treating the adjunct-gapped cleft clause as a noun-complement construction. The paper further shows that the cleft constructions are closely linked to the copula constructions, sharing many common properties while having their own constructional constraints. (Kyung-Hee University)

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1. Introduction

English employs three main types of cleft constructions consisting of a relative-clause like cleft clause, a focused XP which is coindexed with the relativized argument in the cleft clause, and then a copula (see Collins, 1991; Heycock and Kroch, 1999; Davidse, 2000; among others):

- (1) a. It-cleft: It is Korean that we want to learn.
- b. Pseudocleft: What we want to learn is Korean.
- c. Inverted pseudocleft: Korean is what we want to learn.

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In terms of truth conditional meaning, these three are identical. They also represent the identical information structure. All these three types presuppose ‘we want to learn x ’, sustain ‘Korean’ as background (or foreground) information, and then assert that x is Korean.

Korean also has at least two main types of clefts: predicational and identificational.¹

(2) a. Predicational:

[John-i ____i senthaykha-n kes-un] [i chayk]_i-i-ta
 John-NOM select-MOD KES-TOP this book-COP-DECL
 ‘What John selected is this book.’

b. Identificational:

[i chayk]_i-i palo [John-i ____i senthaykha-n kes-i-ta]
 this book-NOM very John-NOM select-MOD KES-COP-DECL
 ‘This book is what John selected.’

The predicational cleft in (2a) consists of a cleft clause with the missing object coindexed with the precopula expression *i chayk* ‘this book’ whereas the identificational one in (2b) has the nominative phrase *i chayk* coindexed with the missing object in the following cleft clause.

This paper aims to review the basic properties of these two different types of Korean cleft constructions and provide a constraint-based analysis. In particular, we will show that these Korean cleft constructions are closely related to Korean copula constructions.

2. Two Types of Korean Copula Constructions

There exist at least two main types of copula constructions: predicational and identificational. Let’s consider the predicational type first:²

(3) a. John-un [chakha-n haksayng]-i-ta
 John-TOP honest-MOD student-COP-DECL
 ‘John is an honest student.’

b. mwuncey-nun [yeki-pwuthe]-i-ta
 problem-TOP here-from-COP-DECL
 ‘The problem is (from) here.’

¹ The language seems to have one more type of cleft construction as illustrated in (i):

(i) kuttay [John-i cip-ey o-n] kes-i-ess-ta
 the moment John-NOM home-LOC come-MOD KES-COP-PAST-DECL
 ‘It is at the very moment that John came home.’

This sentence focuses the event denoted by the clause. The discussion of this type is beyond the scope of this paper.

² Much of this section is based on Kim and Sells (2007). In addition, see Jo (2004).

In the predicational copula here, the property expressed by the precopula NP *chakha-n haksayng* 'honest student' is predicated of the subject. This predicative use is non-referential and thus has no restriction on its category, allowing even a PP as given in (3b). The predicative property of this expression can be attested by an example with the pronoun *what* (instead of *who*) that canonically represents a predicational use:

(4) A: John-un cikep-i mwe-ni?
('What is John's occupation?')

B: John-un kyoswu-i-ta
John-TOP professor-COP-DECL

As given here, the most natural answer places the new information on the precopula position. The following cannot be an appropriate answer to A:

(5)Ba: #kyoswu-nun John-i-ta
professor-TOP John-COP-DECL

Bb: #kyoswu-ka John-i-ta
professor-NOM John-COP-DECL

As given in here, the predicational expression, representing new information, cannot be topic as in (Ba): neither can it be focus in the subject position with the topic phrase 'John' in the precopular position canonically representing focus as illustrated in (Bb).

Meanwhile, in the identificational copula, the referent of the first NP is identical with that of the second NP:

(6) a. John-i Samuel-(*pwuthe)-i-ta
John-NOM Samuel-(*from)-COP-DECL

b. ce salam-i John-(*pwuthe)-i-ta
that person-NOM John-(*from)-COP-DECL
'That person is John.'

This implies that the precopular expression is referential. This is why its phrasal type is restricted only to the NP, as illustrated in (6). In identificational uses, we have a different information structure from the predicational use. Consider examples with *who*:

(7) A: nwukwu-ka i pan pancang-i-ni?
('Who is the speaker of this class?')

Ba: John-i i pan pancang-i-ta
John-NOM this class speaker-COP-DECL

Bb: i pan pancang-un John-i-ta
this class speaker-TOP John-COP-DECL

The question A here presupposes the existence of the property of being *the class president* and asks who is the one with that property. As seen here, the possible answer to this question can be either in subject as in (Ba) or precopular position as in (Bb). The identificational copula thus allows the given and new information to appear either in subject or predicate positions.

In sum, we can observe that in the predicational use of the copula, the predicate part of the example canonically represents new information and is nonreferential. Meanwhile, in the equative use of the copula, the index of one referent is the same as the index of the other: the new information can be either in the subject or precopular position, requiring both to be referential. In what follows, we will observe that such constraints are carried over to Korean cleft constructions.

3. Formal Properties of the Cleft Constructions

3.1 Categorical Status of KES

The expression KES is traditionally taken to be a bound noun in terms of morphosyntactic category in the sense that it canonically combines with either a specifier or a sentential complement (cf. see section 4):

- (8) a. *(i) kes-kwa *(ce) kes
 this thing-CONJ that-thing
- b. *(nay) kes-i *(ne) kes-pota khu-ta
 my thing-NOM your thing-more big-DECL
 ‘(Lit.) My thing is bigger than your thing’
- c. *(John-i talli-nun) kes-ul moll-ass-ta
 John-NOM run-MOD KES-ACC not.know-PAST-DECL
 ‘(We) didn’t know that John was running.’

As noted here, KES in (8a and b) refers to a nonhuman entity. When KES refers to an individual, its reference value can be a nonanimate or a nonhonored human being as in *elin kes* ‘a childish one’. The expression KES in (8c) refers to the proposition denoted by the clause.³

The noun KES can also be associated with a gap in the relative clause. However, there is a contrast between an argument and a putative adjunct gap:

- (9) a. John-i ____i ilk-un kes_i-ul peli-ess-ta
 John-NOM read-MOD KES-ACC discardPAST-DECL
 ‘(I) discarded what John read.’
- b. *[[John-i Mary-lul manna-n] kos/*kes-eyse] pwul-i
 John-NOM Mary-ACC meet-MOD place/KES-LOC fire-NOM
 na-ss-ta
 happen-COP-DECL
 ‘Where John met Mary, there happened a fire.’

³ In the literature, KES in (8c) has been treated as a complementizer. Cf. Jhang (1994) and Sohn (2004).

The contrast here indicates that even though KES can be linked to an argument in the relative clause, it cannot be linked to a putative adjunct gap: if it can, (9b) with KES would be grammatical.

The observations given here hint that there are at least two different types of KES: one referring to an entity (or thing) and the other functioning as an event denoting pronoun.⁴

In terms of its categorial status, KES in cleft clauses has gained no consensus either: For example, Kang (2006) claims that KES in cleft clauses is either C or N, and therefore heads a CP in some cases and an NP in others, based on the following contrast:

- (10) a. [John-i ___ sa-n kes]-un i chayk-i-ta
 [John-NOM buy-MOD KES]-TOP this book-COP-DECL
 'What John bought is this book.'
- b. [John-i ___ manna-n kes-un] i yeca-i-ta
 [John-NOM meet-MOD KES-TOP] this woman-COP-DECL
 'Who John met is this woman.'
- (11) a. i chayk-i [John-i ___ sa-n kes]-i-ta
 this book-TOP [John-NOM buy-MOD KES]-COP-DECL
 'This book is what John bought.'
- b.*i yeca-ka [John-i ___ manna-n kes]-i-ta
 this woman-NOM [John-NOM meet-MOD KES]-COP-DECL
 'This woman is who John met.'

The contrast here tells us that unlike the predicational cleft (10), the identificational cleft (11) requires its first NP to be an inanimate. According to Kang (2006), this kind of pragmatic condition is due to the fact that KES in the predicational cleft creates a CP structure within which animacy is not represented, and hence such a KES-phrase can be compatible with an inanimate or an animate referent in the predicate position. In its other category, the KES in the identificational cleft creates

⁴ In the so-called IHRC (internally headed relative construction), KES can be linked to an individual either given in the embedded clause as in (i) or provided by context as in (ii)b:

- (i) (John-i talli-nun) kes-ul cap-ass-ta
 John-NOM run-MOD KES-ACC catch-PAST-DECL
 '(He) caught John when he was running.'
- (ii) a. [paci_i-ka telewe ci-n kes_j-ul] ttakanayssta
 pants-NOM dirty become KES-ACC wiped out
 'The pants became dirty and (I) washed out the dirt from them.'
- b. [paci_i-ka telewe ci-n kes_i-ul] ppalassta
 pants-NOM dirty become KES-ACC washed
 'The pants became dirty and I washed them.'

Though the semantic argument of the matrix predicate in (i)b is the subject, the one in (ii)a is an implicit argument: We cannot wipe out the pants themselves, but the dirt itself as in (ii)a. See Chung and Kim (2003) for further discussion.

an NP with the feature [–animate], and hence this is incompatible with an animate subject, as in (11)b.

One immediate question that arises from this view is that if KES can be either CP or NP in cleft clauses, we also could expect the following two structures:

- (12) a. [John-i sa-n kes]_{NP}-un i chayk-i-ta
 John-NOM buy-MOD KES-TOP this book-COP-DECL
 ‘What John bought is this book.’
- b. *i yeca-nun [John-i manna-n kes]_{CP}-i-ta
 this woman-TOP John-NOM meet-MOD KES-COP-DECL
 ‘(Int.) This is what John met.’

Nothing in Kang’s analysis blocks us from having these structures, incorrectly predicting the grammaticality of (12b).⁵

In addition, there is enough evidence that indicates KES here is just a nominal expression. One simple fact can come from the possibility of replacing KES by a common noun:

- (13) a. [John-i __ cohaha-nun kes/konchwung]-un camcali-i-ta
 ‘John-NOM like-MOD KES/insect-TOP dragonfly-COP-DECL
 ‘The insect that John likes is dragonfly’
- b. camcali-ka [John-i __ cohaha-nun kes/konchwung]-i-ta
 ‘dragonfly-NOM John-NOM like-MOD KESinsect-COP-DECL
 ‘Dragonfly is the insect that John likes.

Though there exist pragmatic conditions on the replacement, nothing blocks its replacement by an appropriate common noun, as illustrated here.

A canonical complementizer like *-ko* does not host a grammatical case marker (NOM or ACC), whereas all phrases headed by KES in the predicational cleft do:⁶

- (14) a. [John-i ku sasil-ul molunta-ko-(*lul)]_{CP} malhayessta
 John-NOM the fact-ACC not.know-COMP-ACC said
- b. [John-i __ sa-n kes]_{NP}-i palo i chayk-i-ta
 John-NOM buy-MOD KES-NOM very this book-COP-DECL

⁵ As a reviewer points out, the ungrammaticality of (12b) may be due to the animacy mismatch between the subject *this woman* and the thing that *kes* refers to. However, this analysis then runs into a problem of explaining why (10b) is acceptable.

⁶ In the identificational cleft, no grammatical case marking (NOM or ACC) is allowed due to the morphological properties of the copula (cf. Kim, Sells, and Wescoat (2004)):

- (i) a. i chayk-i nay chayk-(*i/*lul)-i-ta
 this book my book-NOM/ACC-COP-DECL
- b. i chayk-i John-i sa-n kes-(*ul)-i-ta
 this book-NOM John-NOM buy-MOD KES-ACC-COP-DECL

The plural marking can be attached to a nominal element, but not a true verbal element. The possibility of attaching the plural marker *tul* to the cleft clause clearly indicates that KES in the cleft is a nominal projection:

- (15) a. John-i [haksayng-tul-i ku chayk-ul ilkessta-ko]-(*tul) mitessta
 John-NOM student-PL-NOM the book-ACC read-COMP-PL believe
 'John believed that students read the book.'
- b. [John-i ___ ilk-un kes-tul-un] i chayk-tul-i-ta
 John-NOM read-MOD KES-PL-TOP this book-PL-COP-DECL
 'What John read is these books.'
- c. i chayk-tul-i palo [John-i ___ ilk-un kes-tul]-i-ta
 this book-PL-NOM very John-NOM read-MOD KES-PL-COP-DECL
 'These books are what John read.'

The plural marking, which cannot follow a complementizer as in (15a), can appear with the KES in the predicational or identificational one.

Coordination data also indicate that KES is a noun-like expression. The conjunction marker *-wa/kwa* conjoins only NPs, not Ss:

- (16) a. [sensayngnim]_{NP}-kwa [haksayngtul]_{NP}-i hamkkey ttena-ss-ta
 teacher-CONJ student-NOM together leave-PAST-DECL
- b.*[John-un chayk-ul ilk]_S-kwa [Mary-nun 'nolay-lul pwulessta]_S
 John-TOP book-ACC read-CONJ Mary-TOP song-ACC sang
 '(Int.) John read books and Mary sang a song.'

We can notice that predicational and identificational clefts both allow nominal coordination:

- (17) a. [John-i sa-n kes]-kwa [Mary-ka ilk-un kes]-un
 John-NOM buy-MOD KES-CONJ Mary-NOM read-MOD KES-TOP
 motwu kacca-i-ta
 all fake-COP-DECL
 'What John bought and what Mary read are all fake.'
- b. i chayk-tul-i [John-i sa-n kes]-kwa [Mary-ka ilk-un
 this book-PL-NOM John-NOM buy-MOD KES-CONJ Mary-NOM read-MOD
 kes]-tul-i-ta
 KES-COP-DECL
 'These books are what John bought and what Mary read.'

If the cleft clause in predicational cleft is a CP, we would not expect such a coordination. Further evidence can be found from floating quantifier properties. The antecedent of a floating quantifier (or floated numeral classifier) needs to be within the same clause as illustrated in (18a). Interestingly, we allow a floating quantifier outside the cleft clause:

- (18) a. namca-tul-un [yeca-tul-i sakwa-lul mek-ess-ta-ko]
 men-PL-TOP women-NOM apple-ACC eat-PAST-DECL-COMP
 sey myeng-i sayngkakhay-ess-ta
 three CL-NOM think-PAST-DECL
 'As for men, three thought women ate apples.'
- b. John-i sa-n kes-i sey kay-ka kacca-i-ta
 John-NOM buy-MOD KES-NOM three CL-NOM fake-COP-DECL
 'As for the things John bought, three are fake.'

The antecedent of *say kay-ka* in (18b) must be in the same clause: if KES were a C, it could not serve as its antecedent since it is in the different clause. The only way appears to treat the KES here as the head of the cleft clause, placing KES and the floating quantifier in the same clause.

What we have seen so far tells us is that regardless of its uses, KES is a nominal element. In particular, its use in cleft clauses is externally nominal though the clauses have verbal properties in terms of internal syntax. However, the difference comes in semantics: when KES combines with a DetP specifier or a relative clause, it refers to a referential individual. Meanwhile, when it combines with a saturated sentence, it is linked to an event, whose data we will see more in the next section.

3.2 Syntax and Semantics of the Predicational and Identificational Cleft

In the predicational copula, we can observe that the focused XP can be either an argument or an adjunct. The adjunct element can have a semantic case or postposition:

- (19) a. [John-i Mary-lul manna-n kes]-un [kongwen-(eyse)]-i-ta
 [John-NOM Mary-ACC meet-MOD KES]-TOP park-at-COP-DECL
 'It was at the park that John met Mary.'
- b. John-i Mary-lul manna-n kes-un [tosekwan-(eyse)]-i-ta
 John-NOM Mary-ACC meet-MOD KES-TOP library-at-COP-DECL
 'Where John met Mary is (at) the library.'

As noted here, the postposition or semantic marker of the focused expression is optional. An adverbial element also can be focused as long as it is categorically an adverbial nominal:⁷

⁷ However, true adverbs cannot be focused:

- (i) a. John-i talli-n kes-un [chenchenhi]-i-ta
 John-NOM run-MOD KES-TOP slowly-COP-DECL
 '(lit.) The way John ran was slowly.'
- b. *[chenchenhi]-ka John-i talli-n kes-i-ta
 slowly-NOM John-NOM run-MOD KES-COP-DECL

As noted here, neither the predicational nor identificational cleft allows a true adverb to be focused.

- (20) John-i Mary-eykey senmwul-ul cwu-n kes-un [ecey]-i-ta
 John-NOM Mary-DAT present-ACC give-MOD KES-TOP yesterday-COP-DECL
 'It is yesterday when John gave Mary a present.'

Note that the identificational cleft does not allow the PP adjunct to be focused, regardless of the presence of the postposition:

- (21) a.*[kongwen-(eyse)]_{PP}-ka [John-i Mary-lul manna-n kes]-i-ta
 park-at-NOM [John-NOM Mary-ACC meet-MOD KES]-COP-DECL
 b.*[tosekwan-(eyse)]-ka John-i Mary-lul manna-n kes-i-ta
 library-at-NOM John-NOM Mary-ACC meet-MOD KES-COP-DECL
 c.*[ecey]-ka John-i Mary-eykey senmwul-ul cwu-n
 yesterday-NOM John-NOM Mary-DAT present-ACC give-MOD
 kes-i-ta
 KES-COP-DECL

As observed earlier, the cleft clause in the two types of cleft constructions include a gap element. In this respect, we can observe that Korean clefts behave like relative clauses, differently from topic constructions which can be either gapped or gapless:

- (22) a. ku chayk-un [John-i __ ilk-ess-ta]
 the book-TOP John-NOM read-PAST-DECL
 'This book, John read.'
 b. [John-i __ ilk-un] ku chayk
 John-NOM read-MOD the book
 'the book that John read'
 c. [John-i __ ilk-un kes]-un palo i chayk-i-ta
 John-NOM read-MOD KES-TOP very this book-COP-DECL
 'What John read is this very book.'
- (23) a. kkoch-un [cangmi-ka yepputa]
 flowers-TOP rose-NOM pretty
 'As for flowers, roses are pretty.'
 b.*[cangmi-ka yeppu]-n kkoch
 roses-NOM pretty-MOD flowers
 c.*[cangmi-ka yeppu-n kes]-un kkoch-i-ta
 rose-NOM pretty-MOD KES-TOP flower-COP-DECL

The contrast between the gapped examples in (22) and the gapless examples in (23) indicate that clefts are like relative clauses, rather than topic clauses.

The two types of clefts also allow long distance dependency:

- (24) a. [John-i [Mary-ka __ cohahanta-ko] sayngkakha-nun kes]-un
 John-NOM Mary-NOM like-COMP think-MOD KES-TOP
 i kulim-i-ta
 this picture-COP-DECL
 'What John thought Mary likes is this picture.'
- b. i kulim-i [John-i [Mary-ka __ cohaha-n-ta-ko]
 this picture-NOM John-NOM Mary-NOM like-PRES-DECL-COMP
 sayngkakha-nun kes]-i-ta
 think-MOD KES
 'This picture is what John thought Mary likes.'

What is clefted in both examples is the object of the embedded clause. The cleft example cannot be an adjunct in the embedded clause.

- (25) a. [John-i [Mary-ka ku chak-ul ilkessta-ko]] sayngkakha-n ecey
 John-NOM Mary-NOM the book-ACC read-COMP think-MOD yesterday
 'the time when John thought Mary read the book'
- b. [John-i [Mary-ka ku chak-ul ilkessta-ko] sayngkakha-nun
 John-NOM Mary-NOM the book-ACC read-COMP think-MOD
 kes]-un ecey-i-ta
 KES-TOP yesterday-COP-DECL
 'The time when John thought Mary read the book was yesterday'

In both relative and cleft examples, the relativized and cleft adjunct is linked to the higher main clause, not to the embedded clause.

We can observe that just like relative clauses, the cleft observes the CNPC (complex noun phrase constraint) but not the Wh-island:⁸

- (26) a. [John-i __ piphanha-n kes-un] ku nonmwun-i-ta
 John-NOM criticize-MOD KES-TOP the article-COP-DECL
 'What John criticized is the article.'
- b.*[John-i [[__ ssu-n] salam-ul]] piphanha-n] kes-un
 John-NOM write-MOD person-ACC criticize-MOD KES-MOD
 ku nonmwun-i-ta
 the article-COP-DECL
 '(lit.) What John criticized the person who wrote __ was the article.'
- (27) a. John-i nwu-ka ku chayk-ul sass-nunci kwungkumhay hayessta
 John-NOM who-NOM the book-ACC buy-Q wonder do
 'John wondered who bought the book.'

⁸ See Kang (2006) for a different view in this matter.

- b. John-i nwu-ka __ sass-nunci kwungkumhay ha-n kes-un
 John-NOM who-NOM buy-Q wonder do-MOD KES-TOP
 ku chayk-i-ta
 the book-COP-DECL
 ‘What John wondered who bought __ is the book.’

This indicates that the interrogative clause the verb *kwungkuwmhayha-* selects is not an NP but a CP clause so that it can participate in the unbounded dependency.

In sum, the two types of clefts behave a lot like their counterpart copula constructions while each has its own constructional properties.

4. An Analysis

The observations we have seen in the previous section have shown us that the cleft clause exhibits nominal properties externally though it displays verbal properties internally. With the aim of implementing the analysis for computational purposes, the challenges are thus how we capture these mixed properties with less stipulations.

We have seen that the KES in cleft is an N in terms of morphosyntactic category. Based on the observations we have made so far, we introduce two different types of KES: one as a common noun and the other as a bound noun. When it functions as a common noun, it refers to a referential individual. Meanwhile, when it serves as a bound noun, it functions as a pure pronoun whose reference is determined by a context or by a governor such as the predicate selecting the phrase headed by KES. These two possibilities of what KES can refer to can be represented as the following lexical entries:⁹

- (28) a.
$$\left[\begin{array}{l} cn \\ \langle kes \rangle \\ \text{SYN} \left[\begin{array}{l} \text{HEAD} | \text{POS } noun \\ \text{VAL} | \text{SPR } \langle (\text{DetP}) \rangle \end{array} \right] \\ \text{SEM} \left[\begin{array}{l} \text{INDEX } i \\ \text{RELS } \left\langle \left[\begin{array}{l} \text{PRED } one_rel \\ \text{ARG0 } i \end{array} \right] \right\rangle \end{array} \right] \end{array} \right]$$
- b.
$$\left[\begin{array}{l} bn \\ \langle kes \rangle \\ \text{SYN} \left[\begin{array}{l} \text{HEAD} | \text{POS } noun \\ \text{VAL} | \text{COMPS } \langle S \left[\begin{array}{l} \text{XARG } i \\ \text{INDEX } e1 \end{array} \right] \rangle \end{array} \right] \\ \text{SEM} | \text{INDEX } e1 \vee i \end{array} \right]$$

The lexical entry (28a) means that KES refers to a referential index with the meaning of *one* when it combines with its specifier DetP or occurs as the head in the relative

⁹ For the semantics, we follow the representation of MRS (Minimal Recursion Semantics). See Bender, Flickenger, and Oepen (2002), Copestake (2002), Copestake et al. (2005), and Kim (2006) for details.

clause. This kind of treatment diverges from the traditional view treating KES as only a bound noun. Corpus data reveal that KES can be used like a common noun in various contexts:¹⁰

- (29) saylowun siswul-ul hanta-ko, yatan-i-ess-nuntey. kes-to
 new operation-ACC do-COMP lowsy-COP-PAST-but, KES-also
 chwisotoy-ess-e.
 cancel-PAST-DECL
 'People were talking about the new way of operation, but it was also canceled.' (Sejong Corpus)

We thus assume that KES is a common noun when it combines with a DetP or with a relative clause. The KES in the cleft is also a common noun since it combines with a gapped relative clause. In such a case, KES is semantically similar to the English pronoun *one*.¹¹

Meanwhile, in (28b), KES is a bound noun combining with a fully saturated sentence. In this case, its INDEX value is identified either with that of the sentential complement or with the XARG's value.¹² This will ensure that when KES combines with a fully saturated sentence, it is linked either to an event or its subject (mainly in the IHRC construction).¹³

Consider the following two sentences:

- (30) a. Mary-nun [John-i talli-nun kes]-ul **cap-ass-ta**.
 Mary-TOP John-NOM run-PNE KES-ACC catch-PAST-DECL
 'Mary caught John who was running.'
- b. Mary-nun [John-i talli-nun kes]-ul **al-ass-ta**.
 Mary-TOP John-NOM run-PNE KES-ACC realize-PAST-DECL
 'Mary saw John running.'

When the matrix predicate is an action verb such as *capta* 'catch', KES is linked to an individual index because one can capture only a referential individual. Meanwhile, KES in (30b) is linked to an event because of the lexical properties of the perception

¹⁰ Such uses are dominant in spoken texts but similar words with the same phonological environment do not behave alike.

¹¹ Though it may be premature to link KES with the substitute pronoun *one*, there are many cases where the two behave similar (cf. Quirk et al. (1985)):

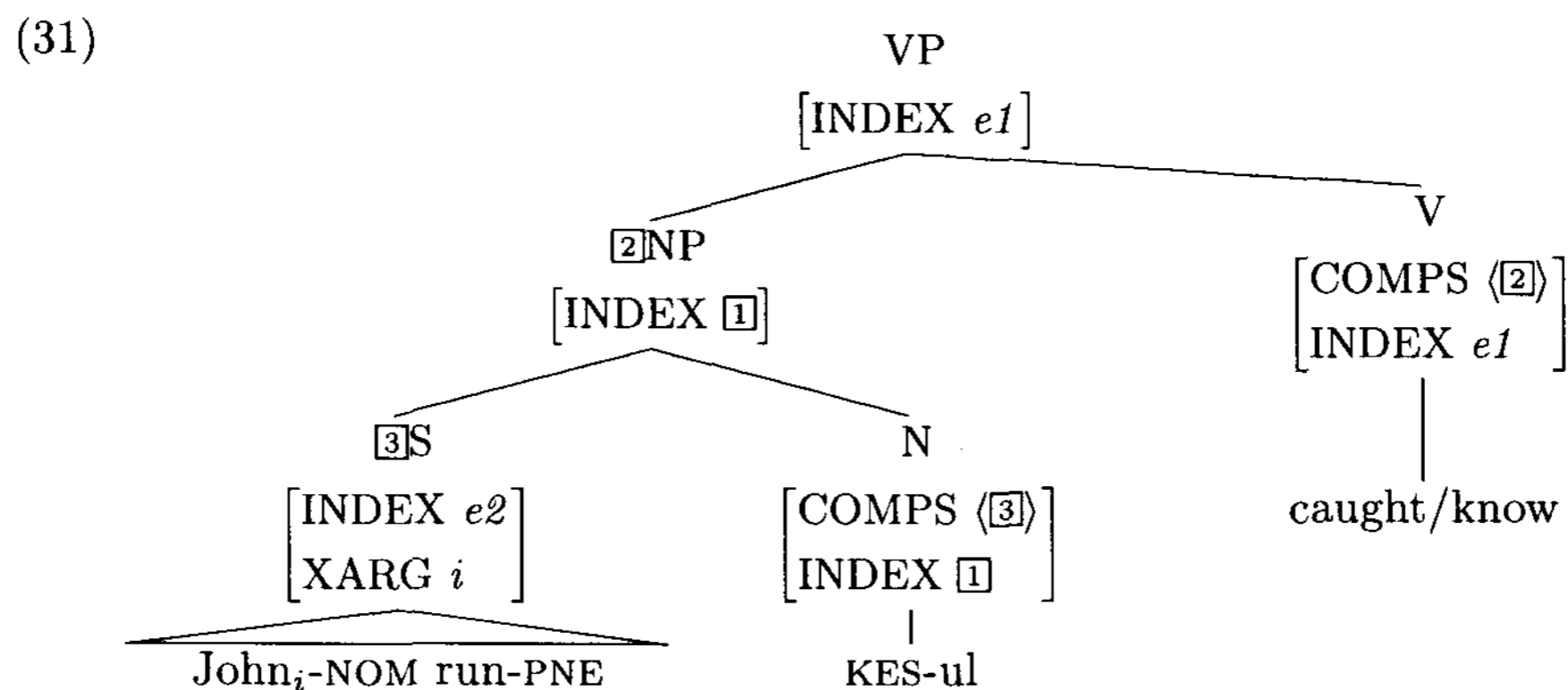
- (i) a. The one with chocolate frosting has cream filling.
 b. Is this the one you want to meet?
 c. Do you want these ones?
 d. These donuts look delicious; I think I will choose this one.

It can refer to an entity as well as a human; it can be pluralized; it can be a member of the set in the given context.

¹² The XARG (external argument) is linked to the subject's index value of all predicates (including both unaccusative and unergative verbs). See Bender, Flickenger, and Oepen (2002) and Kim (2006) for the function of this value.

¹³ As an anonymous reviewer points out, there can be examples where the embedded semantic argument in the IHRC is an object, given that this argument is more discourse-prominent.

verb *al-ta* 'know'. These restrictions can be seen from the identical structures of these two sentences:



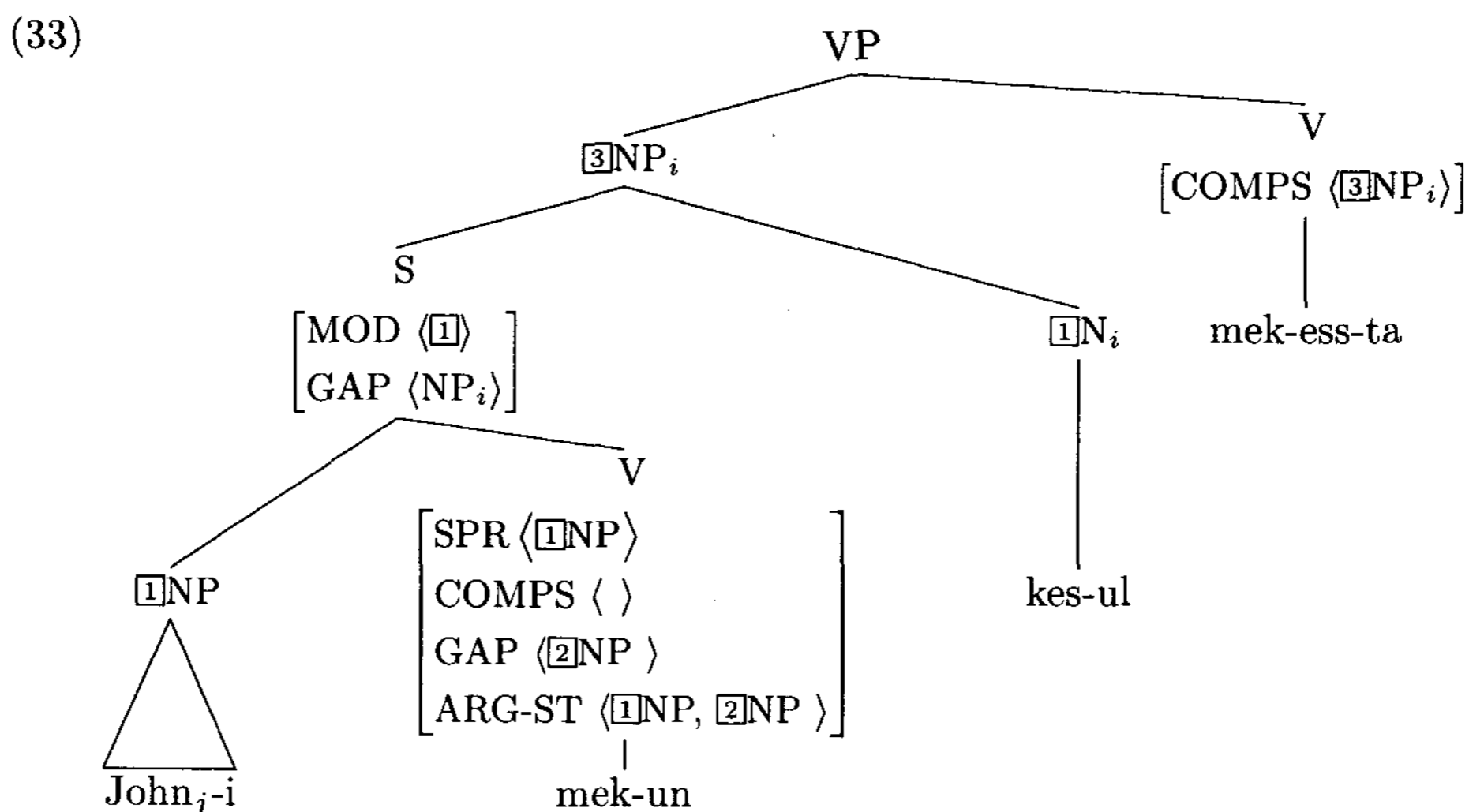
As represented in the structure, in both examples, *kes* combines with its sentential complement S. The resulting NP will then serve the complement of the main verb *caught* and *know*, respectively. The INDEX value of this NP is determined by the properties of these verbs: 'caught' requires it to be an individual whereas the verb 'know' asks it to be an event.¹⁴

Now let's consider the following relative clause and cleft example:

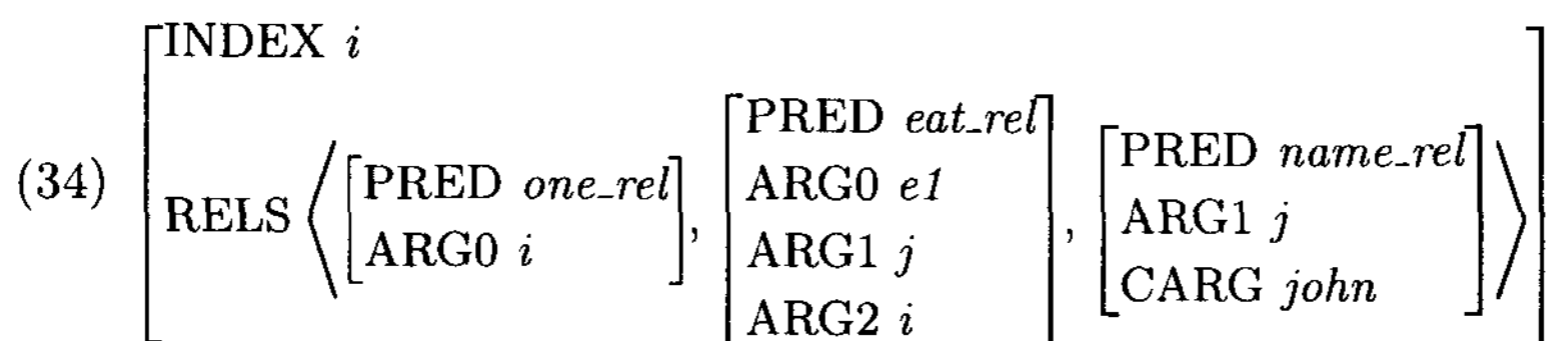
- (32) a. [John-i ___ mek-un kes/sakwa]-ul mek-ess-ta
 John-NOM eat-MOD KES/apple-ACC eat-PAST-DECL
 '(We) ate the thing that John ate.'
- b. [John-i mek-un kes/kwail]-un sakwa-i-ta
 John-NOM eat-MOD KES/fruit-TOP apple-COP-DECL
 'What John ate is an apple.'

The only difference between the examples in (30) and (32) is that the clause the noun *KES* combines with has an argument gap. In both cases, *KES* can be replaced by a common noun, implying that *KES* may have a similar semantics too. Let's consider the structure of (32a) first:

¹⁴ See Kim and Yang (2004) for a computational implementation of this idea to process such sentences.



As we noted here, the noun *KES* in relative clauses is a common noun referring to an individual. Since the verb *mek-un* ‘ate’ also requires its object to be a referential individual, there is no mismatch between the two requirements. To observe how we obtain the semantics correctly, let us consider the MRS (minimal recursion semantics) representations when the gapped relative clause combines with its head noun *KES*.¹⁵



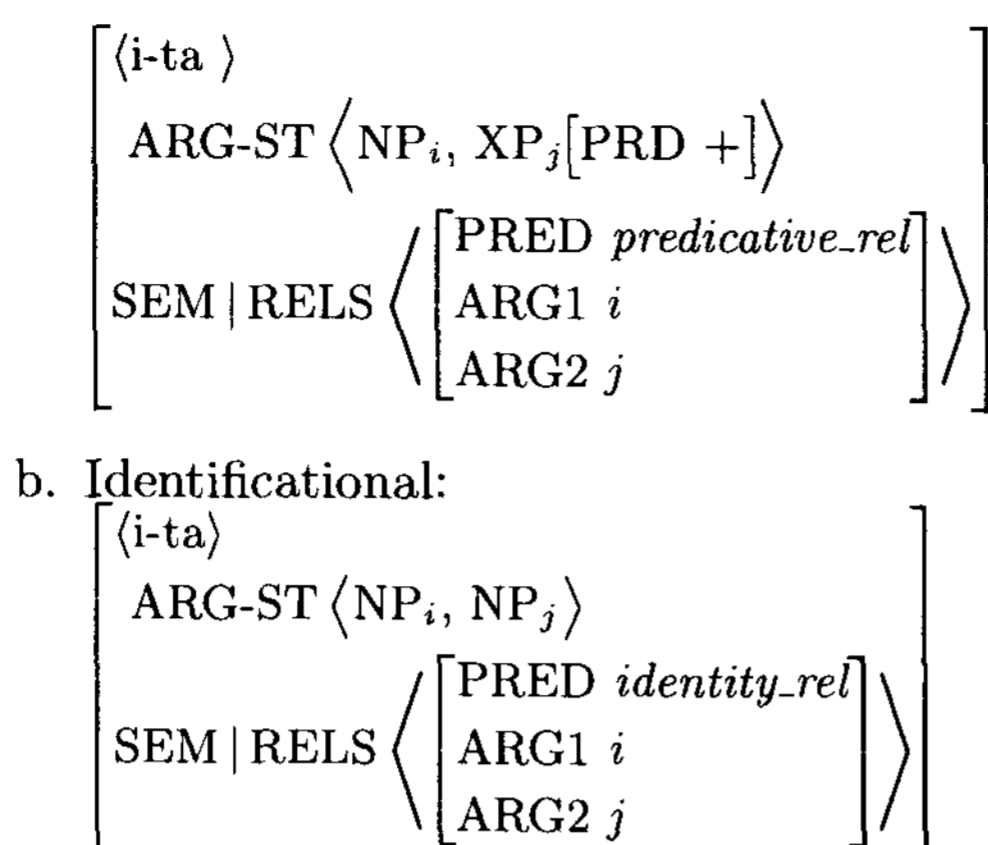
This simply means that there is an entity ‘i’ which the person named John eats. This index value is the patient that the person(s) referred to by the unrealized pronoun eat(s).

How about the cleft one? Before we provide its structure, consider the lexical entry for the copula *i-ta*. We have seen that the predicational and identificational copula is different in several respects as represented in the lexical entries:¹⁶

(35) a. Predicational:

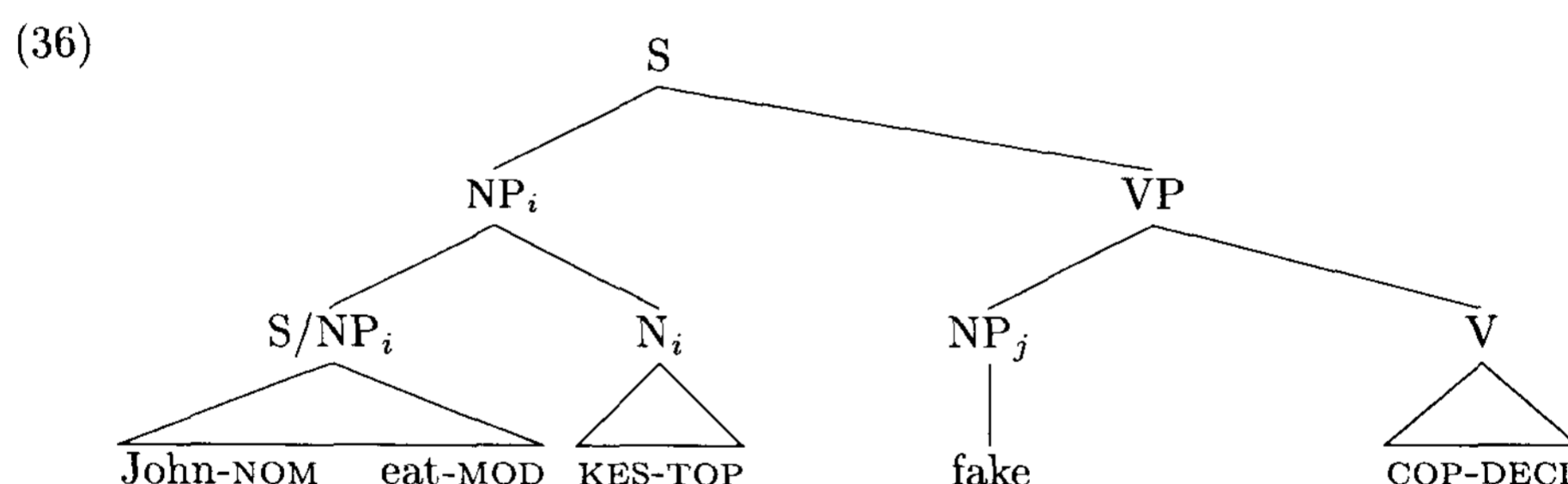
¹⁵ See Kim (2004) and Kim and Yang (2004) for the analysis of Korean relative clauses. ARG0 canonically refers to the index value of the EP (elementary predicate) itself whereas ARG1 or ARG2 refers to the predicate’s semantic arguments. CARG refers to constant arguments whose value is rather

¹⁶ Unlike Korean, Japanese allows the precopula expression to be GCASE (grammatical case marked).



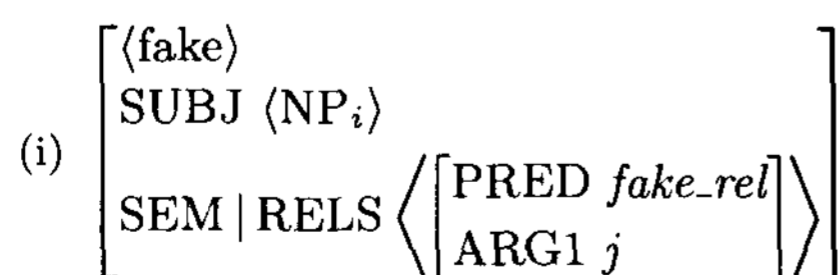
The predicational copula requires its second argument to carry the positive PRD feature, ensuring that this expression predicates of the first argument (subject). The semantics also reflects this. Meanwhile, the identificational copula requires the INDEX value of the first argument is in the *identity_rel* with that of the second argument. This lexical specification implies that the two expressions here have identical referential types.

Given these, we then can generate a structure like (36) for the predicational cleft:



This structure, including the cleft clause as the subject and the predicative expression, will then induce the meaning similar to (35a). The predicative expression ‘fake’ will predicate of this nominal element, inducing a semantic representation like the following:¹⁷

¹⁷ The index value of a predicative expression is identified with that of its subject or object that it is predicate of as illustrated by the following:



As given here, the semantic argument of ‘fake’ is the index value of the subject it is predicated of.

$$(37) \left[\text{RELS} \left\langle \left[\begin{array}{l} \text{PRED } one_rel \\ \text{ARG0 } i \end{array} \right], \left[\begin{array}{l} \text{PRED } fake_rel \\ \text{ARG1 } j \end{array} \right], \left[\begin{array}{l} \text{PRED } predicative_rel \\ \text{ARG1 } i \\ \text{ARG2 } j \end{array} \right] \right\rangle \right]$$

The meaning of *i* is relevant to the variable missing in the cleft. This index value and the index value of 'fake' is in the *predicative* semantic relation. This in turn means that as long as the precopular expression can predicate of the cleft-clause subject, there is no categorial restriction on the type of the precopular expression. That's why we allow other than an NP in this position.

We have also seen that even an adjunct can function as the predicative expression in the cleft clause. However, notice that KES cannot function as the head of a putative adjunct relative clause:

- (38) a. [[John-i Mary-lul manna-n] kes-nun] ecey-i-ta
 John-NOM Mary-ACC meet-MOD KES-TOP yesterday-COP-DECL
 '(lit.) When John met Mary was yesterday.'
- b. [[John-i Mary-lul manna-n] *kes/kos-eyse] pwul-i
 John-NOM Mary-ACC meet-MOD KES/place-LOC fire-NOM
 na-ss-ta
 happen-COP-DECL
 'The place where John met Mary had a fire.'

We assume that KES in (38a) here, different from the usage in the argument-gapped cleft clause, is combining not with an adjunct relative clause but with a fully saturated complement S. This in turn means that KES here is a bound noun, linked to an event. This event denoting KES clause is a predicative relation with the adjunct *ecey* 'yesterday'. That is, the semantics the analysis generates is something like the following:

$$(39) \left[\text{RELS} \left\langle \left[\begin{array}{l} \text{PRED } meet_rel \\ \text{ARG0 } e1 \\ \text{ARG1 } j \\ \text{ARG2 } m \end{array} \right], \left[\begin{array}{l} \text{PRED } yesterday_rel \\ \text{ARG0 } t1 \end{array} \right], \left[\begin{array}{l} \text{PRED } predicative_rel \\ \text{ARG1 } e1 \\ \text{ARG2 } t1 \end{array} \right] \right\rangle \right]$$

In the present analysis, the argument-gapped cleft and adjunct gapped cleft are thus different: only the former is treated as a kind of unbounded dependency. This prediction is borne out:

- (40) a. John-i [Mary-ka ___ ilkessta-ko] sayngkakha-n kes-un
 John-NOM Mary-NOM read-COMP think-MOD KES-TOP
 i chayk-i-ta
 this book-COP-DECL
 'The one that John thinks Mary read is this book.'
- b. John-i [Mary-ka i chaky-ul ilkessta-ko] malha-n kes-un
 John-NOM Mary-NOM this book read-COMP think-MOD KES-TOP

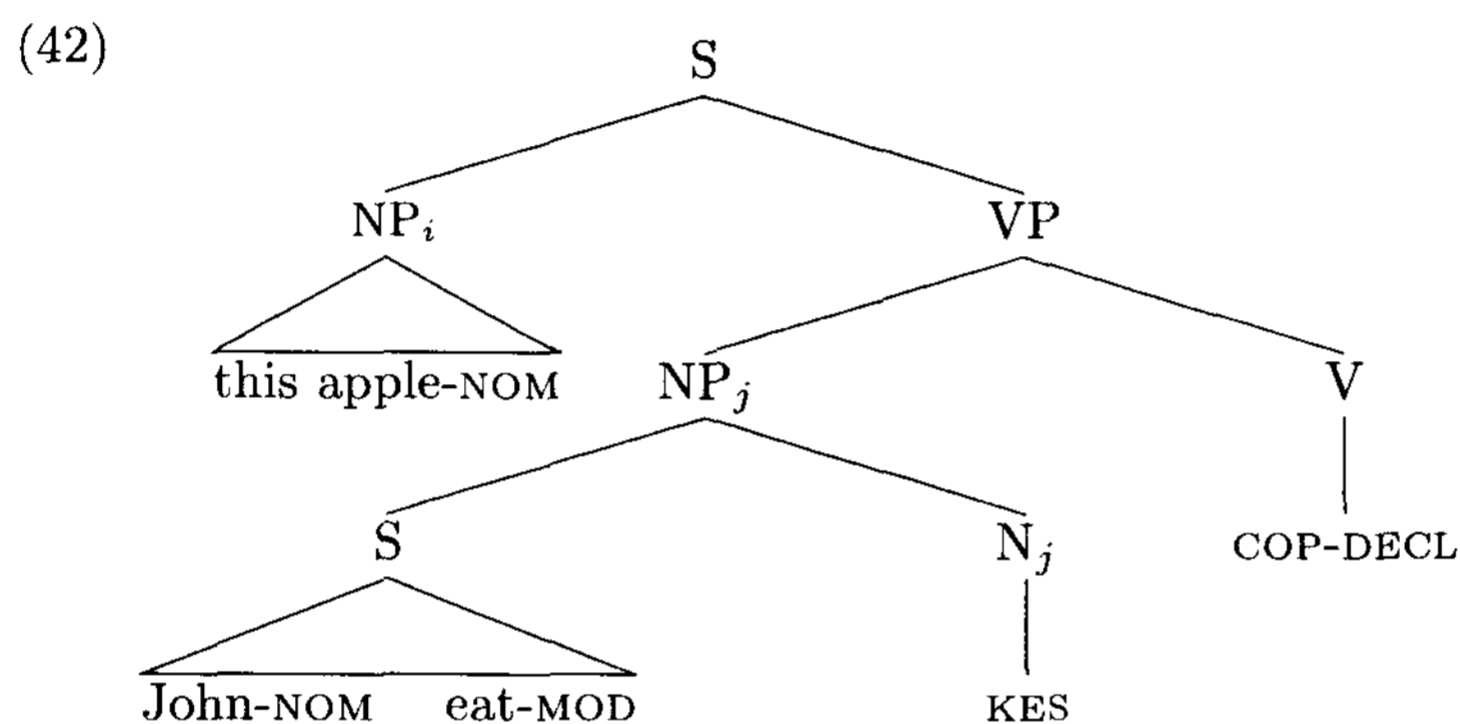
i kos-(eyse)-i-ta
 this place-COP-DECL
 ‘The place that John said Mary read this book is in this place.’

Though the precopular in (40a) expression is linked to the argument gap in the embedded clause, the adjunct precopular one in (40b) modifies only the matrix predicate ‘said’.

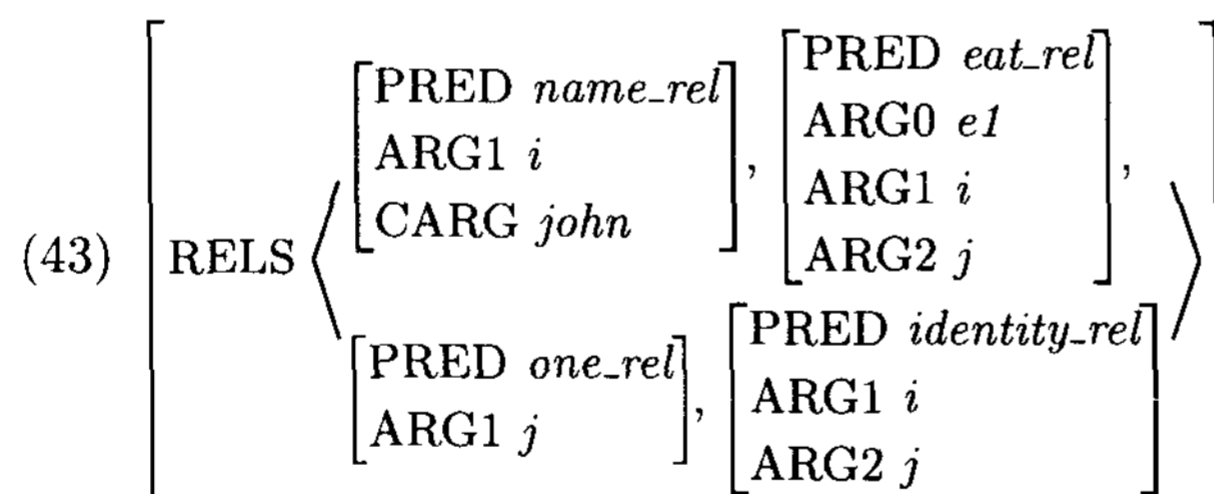
Now consider the structure of an identificational cleft sentence:

(41) i sakwa-ka John-i mek-un kes-i-ta
 this apple-NOM John-NOM eat-MOD KES-COP-DECL
 ‘This apple is what John ate’ in the language.’

A simple tree representation will be something like the following:



The lexical constraints of the identificational copula insure that the index value of the subject is identified with that of KES as represented in the expected semantics of this sentence:



Unlike the predicational one, the identificational one requires the identity of two index values. This is why neither the PP or an adverbial element can be focused in identificational cleft, whose data we repeat here:

(44) a. *[kongwen-(eyse)]_{PP}-ka [John-i Mary-lul manna-n kes]-i-ta
 park-at-NOM [John-NOM Mary-ACC meet-MOD KES]-COP-DECL
 b. *[ecey]-ka John-i Mary-eykey senmwul-ul cwu-n
 yesterday-NOM John-NOM Mary-DAT present-ACC give-MOD
 kes-i-ta
 KES-COP-DECL

The identificational cleft requires the two expressions to have the identical index value. The index value of either '(at) the park' or 'yesterday' can be identified with the KES in the cleft clause where it can be an referential entity or an event.

5. Conclusion

We have seen that there are two types of Korean clefts constituted of a cleft clause, focused expression, and a copula. These predicational and identificational cleft inherit many properties from the corresponding copula constructions.

We first have seen that KES is better treated as a nominal element as a morphosyntactic category. It can refer to either an individual or an event; its reference value can be determined either by a context or an external environment such as the main verb. The pronoun KES in the cleft clause refers to an individual entity as in the relative clause. Given these basic assumptions, we can provide a clean analysis of Korean cleft constructions that can be computationally implemented.

<References>

- Bender, Emily M., Dan Flickinger, and Stephan Oepen. 2002. The Grammar Matrix: An open-source starter-kit for the rapid development of cross-linguistically consistent broad-coverage precision grammars. In *Proceedings of the Workshop on Grammar Engineering and Evaluation at the 19th International Conference on Computational Linguistics*, pp. 8–14, Taipei, Taiwan.
- Chung, Chan and Jong-Bok Kim. 2003. Differences between externally and internally headed relative clause constructions. In J.B. Kim and Stephen Wechsler (eds.), *Proceedings of HPSG 2002*, pp. 3–25.
- Collins, Peter C. 1991. *Cleft and Pseudo-Cleft Constructions in English*. Routledge, London and New York.
- Copestake, Ann. 2002. *Implementing Typed Feature Structures*. CSLI Publications, Stanford.
- Copestake, Ann, Dan Flickinger, Carl Pollard, and Ivan A. Sag. 2005. Minimal Recursion Semantics: an Introduction. *Research on Language and Computation* 3.4, 281–332.
- Davidse, Kristin. 2000. A Constructional Approach to Clefts. *Linguistics* 38.6, 1101–1131.
- Heycock, Caroline and Anthony Kroch. 1999. Pseudo-cleft connectedness: Implications for the LF interface level. *Linguistic Inquiry* 30, 365–397.
- Jhang, Sea-Eun. 1994. *Headed nominalizations in Korean: Relative clauses, clefts, and comparatives*. Ph.D. thesis, Simon Fraser University.
- Jo, Jung-Min. 2004. *Grammatical Effects of Topic and Focus Information*. Ph.D. thesis, University of Illinois, Urbana-Champaign.
- Kang, Bosook. 2006. Some peculiarities of Korean 'kes' cleft constructions. *Studia Linguistica* 60.3, 251–281.
- Kim, Jong-Bok. 2004. *Korean Phrase Structure Grammar*. Hankook Publishing. (In Korean).

- Kim, Jong-Bok. 2006. Minimal Recursion Semantics: An Application into Korean. *Journal of the Linguistic Association of Korea* 14.2, 59–85.
- Kim, Jong-Bok and Peter Sells. 2007. Nominalizer *kes* and Information Structure. Paper presented in the 12th ISOKL, Harvard University, August 3–5, 2007.
- Kim, Jong-Bok, Peter Sells, and Michael T. Wescoat. 2004. Korean Copular Constructions: A Lexical Sharing Approach. In M. Hudson, S.-A. Jun, and P. Sells (eds.), *Proceedings of the 13th Japanese/Korean Linguistics Conference*. Stanford, CSLI Publications.
- Kim, Jong-Bok and Jaehyung Yang. 2004. Projections from Morphology to Syntax in the Korean Resource Grammar: Implementing Typed Feature Structures. In *Lecture Notes in Computer Science*, 2945. Springer-Verlag, pp. 13–24. 2004.2.
- Quirk, Randolph, S. Greenbaum, G. Leech, and J. Svartvik. 1985. *A comprehensive grammar of the English language*. Longman, London.
- Sohn, Keun-Won. 2004. Kes-clefts, Connectedness effects, and the implications thereof. *Studies in Generative Grammar* 14, 561–571.

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