

A Base-generated Fragment Approach to Sluicing Constructions*

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Yoo, Eun-Jung. (2013). A Base-generated Fragment Approach to Sluicing Constructions.

The Linguistic Association of Korea Journal, 21(4). 27-56. Sluicing in Korean is distinguished from that in *wh*-fronting languages in that it requires a copula as well as a *wh*-phrase in embedded contexts. Observing certain parallelism between sluicing and fragments in Korean such as presence of a copula and case connectivity, this paper argues that sluiced sentences in Korean should be treated as fragments that appear both in embedded and matrix contexts. In contrast to previous analyses that posit either ellipsis or a null pronominal within the sluiced clauses, this paper proposes that Korean sluiced sentences be analyzed as base-generated fragments along the lines of Ginzburg and Sag (2000).

Key Words: sluicing, fragments, sluiced interrogatives, copular constructions, QUD(questions under discussion)

1. Introduction

Sluicing refers to a phenomenon in which an isolated *wh*-phrase functions as an interrogative clause as in (1).

(1) Someone left the book on the desk, but I don't know who.

* This work was supported by the College of Humanities Research Fund (CHRF) of Seoul National University. I would like to thank three anonymous reviewers for their helpful comments.

While sluicing has been taken to constitute an independent syntactic phenomenon in English and many other *wh*-movement languages, typically as a subset of interrogative constructions that is characterized by additional syntactic properties such as ellipsis, it has been more or less controversial whether *wh*-in-situ languages like Korean and Japanese have the same type of phenomena.

Sluicing in Korean is distinguished from that in *wh*-fronting languages in the respect that it requires a copula (followed by a question morpheme) as well as a *wh*-phrase in embedded contexts.

- (2) Yenghi-ka nwukwunka-lul manness-nuntey, [nwukwu-i-nci]
 Yenghi-Nom someone-Acc met-but who-Cop-Q
 molukeyssta.
 not know
 'Yenghi met someone, but I don't know who.'

Since a copula in Korea is always cliticized to its complement with other verbal suffixes attached to it, the *wh*-phrase and copula combination behaves like one morphological word.

This paper investigates sluicing in Korean and argues that it should be analyzed as an interrogative clause consisting of a *wh*-phrase or a *wh*-phrase with a copula cliticized to it. Observing the parallelism between sluicing and fragments in Korean, this paper will propose that Korean sluiced sentences be analyzed as base-generated fragments along the lines of Ginzburg and Sag (2000). While many previous studies on Korean sluicing focus on embedded sluices, this work will show that sluicing occurs both in matrix and embedded contexts in Korean, and that matrix fragments with a copula, together with case parallelism shared between matrix and embedded sluices, provide supporting evidence for this position.

2. Previous Analyses

There have been two kinds of approaches to sluicing in Korean, both of

which involve ellipsis. The first one is a movement-based analysis that posits a *wh*-movement (or a focus movement) of a *wh*-phrase followed by deletion of a clausal element (i.e., IP or TP). The second one takes sluicing to be a copular construction in which the subject is either a null pronominal or an elided cleft clause. In what follows, recent proposals representing each approach will be briefly reviewed.

2.1. Movement-based Ellipsis Approaches

Based on Takahashi (1994) that analyzes Japanese sluicing as *wh*-movement followed by IP ellipsis, Kim (2000) proposes that Korean sluicing sentences involve focus movement of *wh*-phrases and subsequent VP or TP deletion. The following (3) shows Kim's (2000) analysis of sluiced sentences.

- (3) a. John-i mwuenka-lul sass-nuntey, na-nun [mwue i/iess (nu)nci]
 J-Nom something-Acc bought-but, I-Top what is/was Q
 molunta.
 not know
 'John bought something, but I don't know what.'
- b. na-nun [_{CP} [_{FocP} MWUE [_{TP} [_{VP} John-i t-sa] i/iess] (nu)nci _{Foc}] [+WH]]
 I-Top what J-Nom buy is/was Q C
 molunta
 not know

This analysis captures commonalities with English sluicing in (4), which was taken to be an ellipsis phenomenon that follows Question Formation by Ross (1969).

- (4) John met someone, but I don't know who.

Based on the movement of *wh*-phrases, this approach may also account for multiple occurrences of *wh*-phrases in (5).

- (5) Minho-ka ku nal mwuenka-lul nwukwunka-eykey
 M-Nom that day something-Acc someone-to
 ponayss-ta-nuntey, mwues-ul nwukwu-eykey-i-nci molukeyssta.
 sent-said-but what-Acc who-to-Cop-Q not know
 ‘Minho is said to have sent something to someone, but I don’t know what
 to whom.’

However, it faces criticisms regarding accounts of various properties that only Korean sluicing exhibits. (See Sohn 2000, Park 2001, 2009, Jo 2005 inter alia for detailed critical reviews of Kim’s movement-based ellipsis approach.)

Most importantly, the occurrence of a copula is not well explained. Kim (2000) claims that the copula *i*, which is a focus auxiliary verb, is supported as a last resort operation in order to prevent a stranded tense in TP in (3b). However, the claim that the copula *i* is a focus auxiliary verb needs to be independently motivated, because except in cleft constructions, the copula doesn’t seem to have special association with focus in Korean. Since (3a) is not analyzed as involving a cleft sentence, it should be explained why the supported verb is a copula.

Moreover, in Kim (2000), the option of TP deletion may cause a problem, because when the *wh*-phrase is case-marked, the output with TP deletion is not always acceptable. For example, in (3b), if the *wh*-phrase appears in its accusative form *mwues-ul*, then the output of TP deletion would be **mwues-u(l)-(nu)nci* or **mwues-ul-nunci*, both of which are unacceptable.

Next, Kim (2000) does not account for the absence of island effects in examples like (6).

- (6) Na-nun [ku hayngsa-ey etten chaykinka-lul kipwuha-n] salam-ul
 I-Top that event-to some book-Acc donated person-Acc
 alko iss-nuntey, [etten chayk-i-nci]-nun molunta.
 know -but, what book-Cop-Q-Top not know
 ‘I know the person who donated some book to the event, but I don’t
 know what book.’

Under the Focus movement approach, the *wh*-phrase *etten chayk* in the

sluiced clause is assumed to be moved out of the complex NP. Since this type of examples are acceptable, it should be explained why island constraints are not observed.¹⁾

In addition, optional occurrences of postpositions as in (7) also raise a problem for this approach.

- (7) John-i nwukwunka-lo-pwuthe cha-lul sass-ta-nuntey, na-nun
 John-Nom someone-from car-Acc bought-said-but, I-Top
 [nwukwu-(lo-pwuthe)-i-nci] molukeyssta.
 who(-from)-Cop-Q not know
 'John bought something, but I don't know what'

In (7), the complex postposition *-lo-pwuthe* 'from' can be omitted without changing the grammatical status of the sentence. However, since the whole *wh*-phrase including the postposition undergoes Focus movement in this analysis, examples with omitted postposition cannot be accounted for.²⁾

2.2. Sluicing as Subjectless Copular or Cleft Constructions

Another well-known view on Korean examples like (2) is that there is no sluicing in Korean and that such examples can be analyzed as subjectless copular or cleft constructions. This approach is classified into two positions. One of them, which is advocated by Sohn (2000), assumes that the subject of such copular constructions is a demonstrative pronominal *kukey/kukes-i* 'it' or its empty counterpart *pro*. Thus according to Sohn (2000), these examples are simply instances of a plain copular construction. In contrast, the other, which is mainly proposed and developed in Park (2001, 2009),³⁾ analyzes that the subjects

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- 1) 'Repair by ellipsis' is assumed by many advocates of movement-based approaches in order to account for the absence of island effects in sluicing. (Cf. Ross 1969, Merchant 2001) However, see Culicover and Jackendoff (2005:239-248) for criticisms for this mechanism.
- 2) A reviewer points out that omitted postposition in examples like (7) can be accounted for, if the postposition is analyzed as being stranded and then deleted by TP/VP deletion. However, Park (2009) discusses that it is problematic to employ this kind of repair by ellipsis analysis for omissible postpositions, because postpositions cannot be omitted when the combining NPs bear 'contrast' in the context.

of those sentences are cleft clauses or their empty counterparts and that the remnant phrases with a copula constitute the pivots of cleft clauses.

2.2.1 A Subjectless copular Construction Approach

Sohn (2000) analyzes the example in (3) as in (8), positing an overt or covert demonstrative pronominal.

- (8) John-i mwuenka-lul sass-nuntey, na-nun [kukey/[*pro*] mwues-i-nci]
 J-Nom something-Acc bought-but, I-Top it what-Cop-Q
 molunta.
 not know
 'John bought something, but I don't know what.'

He argues that the demonstrative pronominal in this construction may refer to various antecedents including a clause and a nominal expression. In this regard, this construction is distinguished from typical cleft constructions, in which the subject corresponds to a clause.

However, Sohn's analysis has some limitations. Firstly, while *pro* is taken to be interpreted in diverse ways, even referring to a degree that is related to an adverbial expression as in (9), the exact nature of *pro* and the way it is interpreted is not explicitly investigated.

- (9) Ku colyensa-ka hangsang cosimsulepkey tongmwultul-ul talwunta-ko
 the trainer-Nom always carefully animals-Add treat-Comp
 tuless-nuntey, [*pro*] elmana cosimsulepkey-i-nci-nun cal molukeyssta.
 heard-but how carefully-Cop-Q-Top well not know
 'I heard that the trainer always treats animals carefully, but I don't know
 how carefully.' (Sohn 2000:290)

Another limitation of this approach comes from the fact that it is difficult to provide a unified analysis for matrix and embedded sluices. As will be

3) Nishiyama et al. (1996) also analyze these examples as cleft constructions, however, Park (2001, 2009) differ from them in that the empty subject of the cleft construction is identified with a cleft clause, not an empty pronominal.

discussed in detail in Section 3, matrix sluices share major properties with embedded ones, while differing in that the occurrence of a copula is not obligatory. Therefore, if sluiced clauses are viewed as a copular construction, similarities between embedded and matrix sluices cannot be accounted for. Furthermore, when a copula is not present in a matrix sluice, the sluiced *wh*-phrase may or may not include a case marker (or a postposition), as in (10b) and (11b). However, when a case marker (or a postposition) appears with the *wh*-phrase, the occurrence of the pronominal subject *kukey/kukes-i* is not acceptable as in (10c) and (11c).

(10) a. A: Minho-ka mwuenka-lul mekesse.

M-Nom something-Acc ate
 ‘Minho ate something.’

b. B: Mwues(-ul)?

what-Acc
 ‘What?’

c. B’: *Kukey/kukes-i mwues-ul?

it-Nom what-Acc

(11) a. A: Nwukwunka oassesse.

someone came
 ‘Someone came.’

b. B: Nwuka?/ Nwukwu?

who-Nom who
 ‘Who?’

c. B’: *Kukey/kukes-i nwuka?

it-Nom who-Nom

Therefore, the copular construction analysis has a burden to provide a separate analysis for the copula-less matrix sluices as in (10b) and (11b).

Finally, as discussed in Takahashi (1994) and Park (2001), this line of analysis cannot explain the pair-list reading of the examples which include multiple *wh*-phrases.

- (12) Hoysa-eyse mwuenka-lul nwukwunka-eykey ponayss-ta-nuntey,
 company-Source something-Acc someone-to sent-said-but
 (kukes-i) mwues-ul nwukwu-eykey-i-nci molukeyssta.
 it-Nom what-Acc who-to-Cop-Q not know
 ‘The company is said to have sent something to someone, but I don’t
 know what to whom.’

While the example (12) may receive a pair-list reading of *wh*-phrases when the subject *kukes-i* is absent, the occurrence of *kukes-i* makes such pair-list reading unavailable.⁴⁾

2.2.2 A Subjectless Cleft Construction Approach

Park (2001) proposes that sluiced sentences as in (2) be analyzed as a cleft construction in which the subject, overt or covert, is a cleft clause. In this approach, it naturally follows that the remnant part occurs with a copula, since the pivot of a cleft construction always includes a copula. Park (2001, 2009) argue that there are two types of subject-less cleft constructions, an antecedented type and an antecedent-less type. He further claims that the lack of island effects in the antecedented type is accounted for by analyzing the phonologically suppressed cleft clause in the subject position as involving binding as in (13c) rather than involving movement as in (13b).

- (13) a. sensayngnum-i [**etten mwunceyinka-lul** cal phwun
 teacher-Nom some problem-Acc correctly solved
 haksayng-ul] chingchanhaysstako hate-ntay, **etten mwuncey-inci**
 student-Acc praised-Comp said-Circum which problem-Interr
 ne-nun al-ni
 you-Top know-Interr
 ‘People said that the teacher praised the student who solved a certain
 problem correctly, but do you know which problem?’
 b. *sensayngnum-i [**t_i** cal phwun haksayng-ul] chingchanhaysstako haten
kes_i-i

4) For additional criticisms for this approach, see Park 2001.

- c. *sensayngnum-i* [**letten mwunceyinka-lul_i** cal phwun haksayng-ul]
 chingchanhaysstako haten (**palo ku**) **key/kes_i**
 (Park 2001: 730-733)

However, there are some problems with this account. First of all, to analyze a cleft sentence via binding as in (13c) may raise a question about the cleft construction approach itself, because cleft sentences have been typically viewed as a movement or unbounded dependency construction that exhibits island effects. Since the antecedented type constitutes the core case of sluices, if the antecedented type has to be analyzed as involving an unusual type of cleft construction, it is questionable whether it is adequate to take sluiced sentences as a cleft construction.

A related problem is that under the binding analysis of the cleft construction analysis, the fully specified sentence without the suppression of the subject part does not sound very natural and is not likely to be actually used by speakers. The sentence in (14b) exemplifies this.

- (14) a. *Minho-ka* **mwuenka-lul** *sass-nuntey*, *na-nun* **mwues-i-nci**
 Minho-Nom something-Acc bought-but, I-Top what-Cop-Q
molukeyssta.
 not know
 ‘John bought something, but I don’t know what.’
 b. ?**Minho-ka* **mwuenka-lul** *sass-nuntey*, *na-nun* [*Minho-ka*
mwuenka-lul_i *san* **key/kes_i**] **mwues-i-nci** *molukeyssta*.

In addition, Park (2001) claims that the pair-list reading associated with the multiple *wh*-phrases can be also accounted for by reconstructing a cleft clause in the subject position. Given the example below in (15), the reconstructed version will be represented as in (16). However, (16) does not sound acceptable. Furthermore, in (16), it is not clear what kind of binding mechanism operates for the indexing of *kes*, because *kes* has to be linked to two different indices under the binding analysis of a cleft construction.⁵⁾

5) Additionally, Sohn (2000) points out that the multiple occurrences of *wh*-phrases as in (5) are not compatible with the cleft approach, because cleft constructions do not permit

- (15) Con-i ecey **etten chinkwuinka-eykeyse etten senmwulinka-lul**
John-Nom yesterday some friend-from **some** present-Acc
 patasstako hanuntey, na-nun **nwukwu-eykeyse etten**
 receive said-Circum I-Top who-from which
senmwul-(ul)-inci kwungkumhata.
 present-Acc-Interr wonder
 ‘People said that John received some present from some friend, but I
 wonder from whom which present.’ (Park 2001:734)
- (16) *Con-i ecey **etten chinkwuinka-eykeyse etten senmwulinka-lul**
 patasstako hanuntey, na-nun [con-i **etten chinkwuinka_i-eykeyse**
etten senmwulinka_j-lul patun **kes_?]-i **nwukwu_i-eykeyse etten**
senmwul_j-(ul)-inci kwungkumhata.**

Finally, this approach has the same kind of problem as the copular construction analysis with regard to the matrix sluices without a copula. Since the presence of a copula is required in the cleft construction analysis, it cannot account for matrix sluices without a copula like (17b). Moreover, as shown in (17c), the occurrence of the subject cleft clause is not permitted when the remnant is case marked and not combined with a copula.

- (17) a. A: Minho-ka mwuenka-lul mekesse.
 M-Nom something-Acc ate
 ‘Minho ate something.’
- b. B: Mwues-ul?
 what-Acc
 ‘What?’
- c. B’: *[Minho-ka mekun-kes]-i mwues-ul?
 Minho-Nom ate-Nm-Nom what-Acc

multiple foci as in (i).

- (i) *[Minho-ka ponayn-kes]-un chayk-ul Mina-eykey-i-ta.
 M-Nom sent-Nm-Top book-Acc M-to-is-Decl
 ‘What Minho sent was a book to Mina.’

3. Sluicing as Base-generated Fragments

In contrast to the approaches that claim that there is no sluicing in Korean and that what looks like a sluicing construction is merely a type of copular construction or cleft construction, this paper argues that there is a sluicing construction in Korean that is independent of a copular or cleft construction. While all the previous analyses of Korean sluicing posit some kind of deletion (either of a VP/TP or a clausal/pronominal subject) or a covert pronominal element, we propose that sluiced sentences be base-generated as a fragment phrase whose main element is a *wh*-phrase. Therefore, we do not assume any deletion process or a null pronominal in sluiced clauses.

Many of previous works have concentrated on the analyses of embedded sluices. However, sluicing may occur in matrix contexts as well. The examples (10b, 11b) and the following (18) represent matrix sluices, which share certain properties with English ones in (19).⁶

(18) A: *Minho-ka nwukwunka-wa hamkkey oassesse.*

Minho-Nom someone-with together came
'Minho came with someone.'

B: *Nwukwu-wa?/ Nwukwu?*

who-with/ who
'With whom?/ Who?'

(19) a. A: John went to the theater with someone.

B: Who?/ With whom?

b. A: John met a guy who speaks a very unusual language.

B: Which language? (Culicover & Jackendoff 2005:267)

Besides the sluices discussed so far, there are other types of fragments. Other representative types include short answers as in (20-21) and reprise sluices (or echo question sluices) like (22-23). (Cf. Ginzburg & Sag 2000)

(20) A: Who brought the pie?

B: Jessica.

6) The example in (19b) shows that English matrix sluices do not exhibit island effects, either.

- (21) A: Nwuka kwail-ul kacyeoass-ni?
 who-Nom fruit-Acc brought-Q
 'Who brought the fruits?'
 B: Minho.

- (22) a. A: Did Jo leave?
 B: WHO?
 b. Who_i are you asking if i left. (Ginzburg & Sag 2000)

- (23) A: Minho-ka ttenass-ni?
 Minho-Nom left-Q
 'Did Minho leave?'
 B: NWUKA?/ NWUKWU?
 who-Nom/ who
 'WHO? (= Whoi are you asking if i left)'

Korean sluicing exhibits similarities with the other fragment constructions. First of all, in Korean, a copula may occur in all of matrix sluices, short answers to questions, and reprise (or echo) fragment questions as shown in (24-26).

- (24) A: Minho-ka mwuenka-lul chassko iss-upnita
 Minho-Nom something-Acc look-for Prog-Decl(polite)
 'Minho is looking for something.'
 B: Mwues-i-pnikka?/ Mwues-i-ntey?/ Mwues-ul(-yo)?
 what-Cop-Q(polite)/ what-Cop-Q/ what-Acc-DM
 'What (is he looking for)?'
- (25) A: Mwues-ul chassko iss-supnikka?
 what-Acc look-for Prog-Q
 'What are you looking for?'
 B: Yenphil-i-pnita./ Yenphil-i-yo./ Yenphil(-ul(-yo)).
 pencil-Cop-Decl(polite)/ pencil-Cop-DM/ pencil-Acc-DM
 'A pencil.'

- (26) A: *Minho-ka sakwa-lul ponaysse.*
 Minho-Nom apples-Acc sent
 'Minho sent apples.'
 B: *MWUES-I-YO?/ MWUES-UL(-YO)?*
 what-Cop-DM what-Acc-DM
 'WHAT? (= what; did you say Minho sent i)'

In general, absence or presence of a copula seems to depend on the selectional properties of a verbal or discourse endings in the final positions. For example, while a copula is optional with the (informal) discourse ending *-yo*, it is required when a nominal phrase is used with the formal declarative ending *-(u)pnita*.⁷⁾ Likewise, a copula is obligatory in embedded sluices in Korean, because it is required by the presence of an interrogative complementizer *-(nu)nci* in embedded questions. Complementizers in Korean have to combine with a verb, not with other categories.⁸⁾

Another piece of evidence in favor of the fragment analysis is that short answers and reprise fragment questions as well as sluices exhibit more or less relaxed syntactic connectivity with regard to the occurrence of semantic case markers (i.e., postpositions) in Korean. Short answers, reprise questions, and sluices can be all formed without a postposition even if their preceding clauses include them, as shown in (27b), (28b), and (29b). The embedded sluices also exhibit the same pattern as in (30a), as briefly mentioned in Section 2.

7) Even if a copula is present in a short answer, the answer will still be counted as a fragment, because the Korean copula is morphologically bound to its complement, thus not occurring as an independent word. However, as will be shown shortly, in a syntactic analysis, the copula will be treated as a verb that combines with its complement phrase, based on various properties of a word it bears (e.g. combining with a verbal suffix). (Cf. Chan & Kim 2002)

8) Phonologically reduced forms without a copula can be also used as in (i), however, this reduction is only possible when the complement of the copula ends with a vowel. A copula is obligatory when its complement ends with a consonant in its phonological form as in (ii).

(i) *Na-nun [ku-ka nwukwu(-i)-nci] molukeyssta.*

(ii) *Na-nun [ku-ka haksayng*(-i)(-nu)nci] alko-sipta.*

- (27) a. A: Nwuku-eykeyse cenhwa-lul patass-ni?
 who-from call-Acc received-Q
 'From whom did you receive a call?'
 b. B: Minho(-eykeyse)-i-pnita./ Minho(-eykeyse)(-yo).
 Minho-from-Cop-Decl(formal)/ Minho-from-DM
 'From Minho.'
 c. B': Minho{-hanthese/-lo-pwuthe}-i-pnita./
 Minho{-from/-from}-Cop-Decl(formal)/
 Minho{-hanthese/-lo-pwuthe}(-yo).
 Minho{-from/-from}-DM
 'From Minho.'
- (28) a. A: Nay-ka Chelmin-eykeyse cenhwa-lul patasse.
 I-Nom Chelmin-from call-Acc received
 'I received a call from Chelmin.'
 b. B: NWUKWU(-eykeyse)(-yo)?
 c. B': NWUKWU{-hanthese/-lo-pwuthe}(-yo)?
- (29) a. A: Yenghi-ka nwukwunka-eykeyse cenhwa-lul patassta.
 Yenghi-Nom someone-from call-Acc received
 'Yenghi received a call from someone.'
 b. B: Nwukwu(-eykeyse)-i-pnikka?/ Nwukwu(-eykeyse)(-yo)?
 c. B': Nwukwu{-hanthese/-lo-pwuthe}-i-pnikka?/
 Nwukwu{-hanthese/-lo-pwuthe}(-yo)?
- (30) a. Nay-ka nwukwunka-eykeyse cenhwa-lul patass-nuntey,
 I-Nom someone-from call-Acc received-but
 nwukwu(-eykeyse)-i-nci molukeyssta.
 who-from-Cop-Q not know
 'I received a call from someone, but I don't know from whom.'
 b. Nay-ka nwukwunka-eykeyse cenhwa-lul patass-nuntey,
 nwukwu{-hanthese/-lo-pwuthe}-i-nci molukeyssta.

What is more interesting is that it is also possible to have a different form of postpositions so far as the meaning of the postposition is preserved, as (27c), (28c), and (29c) exemplify. The same parallelism is observed in embedded sluices as in (30b). This shows that with regard to connectivity, semantic parallelism is also relevant as well as syntactic parallelism.

Furthermore, as in embedded sluices like (6) and (13a), matrix fragments do not exhibit island effects. The following (31B) shows the absence of island effects in matrix sluices.

- (31) A: Na-nun [Yenghi-ka kyengmae-eyse mwuenka-lul sassta-nun]
 I-Top Yenghi-Nom auction-in something-Acc bought
 sonwum-ul tulesse.
 rumor-Acc heard
 'I heard the rumor that Yenghi bought something in the auction.'
 B: Mwues-i-ntey?/ Mwues-ul?
 what-Cop-Q what-Acc
 'What?'

Finally, in contrast to English sluices that only consist of a *wh*-phrase, Korean sluices have direct evidence for their clausal status. Since the question morpheme *-(nu)nci* only appears at the end of a verb stem in a question, Korean sluices must be treated as interrogative clauses. This is also supported by their question interpretations, especially by pair-list readings of multiple *wh*-phrases as in (32).

- (32) Ku-ka mwuenka-lul etten haksayngtul-eykey nanwuecwuess-nuntey,
 he-Nom something-Acc some students-to gave-out -but
 mwues-ul nwukwu-eykey-i-nci molukeyssta.
 what-Acc who-to-Cop-Q not know
 'He gave out something to some students, but I don't know what to whom.'

Therefore, based on the foregoing discussions, we propose that embedded sluices in Korean should be treated as a fragment phenomenon that shares

essential properties with matrix sluices.

Now, we will consider whether sluicing should be taken as an interrogative phenomenon in Korean, as it has been in the studies of English sluices such as Ross (1969), Chung et al. (1995), Ginzburg & Sag (2000), and Merchant (2001). Advocates of subjectless copular/cleft approaches to Korean sluicing argue that the following kind of declarative examples exhibit the same properties as interrogative ones like (2), thus belonging to the same copular/cleft construction.

- (33) a. Chelswu-nun [Yenghi-ka sakwa-lul mekesstako] cwucangha-ciman,
 Chelswu-Top Yenghi-Nom apple-Acc ate claim-but
 na-nun [sakwa-la-ko] sayngkakha-ci anh-nun-ta.
 I-Top apple-Cop-Comp think don't
 'Chelswu claims that Yenghi had an apple, but I don't think that it
 was an apple.' (Park 2009:44)
- b. Chelswu-nun [Yenghi-ka sakwa-lul mekesstako] cwucangha-ciman,
 Chelswu-Top Yenghi-Nom apple-Acc ate claim-but
 na-nun [swupak-i-la-ko] sayngkakhanta.
 I-Top watermelon-Cop-Comp think-Decl
 'Chelswu claims that Yenghi had an apple, but I think that [it was]
 watermelon.'

However, in spite of involving a fragmentary element, examples like (33) are different from interrogative ones as in (2) in a few respects. First, they observe island effects as in (34), which contrasts with interrogative cases such as (6) and (13a).

- (34) a. *Chelswu-nun [Yenghi-ka cip-ul sassta-nun] somwun-ul
 Chelswu-Top Yenghi-Nom house-Acc bought rumor-Acc
 mit-ciman, na-nun [cip-i-la-ko] sayngkakhaci anh-nun-ta.
 believe -but I-Top house-Cop-Decl-Comp think don't
 'Chelswu believes the rumor that Yenghi bought a house, but I don't
 think that [it was] a house.'

- b. *Minho-ka [khokkili-ka myelcongha-lke-la-nun] cwucang-ul
 M-Nom elephants-Nom extinct-Prospective-Decl-Adnom claim-Acc
 naynohass-ciman na-nun khokkili-la-ko sayngkakhaci anhnunta.
 put-forth-but I-Top elephant-Decl-Comp think don't
 'Minho put forth a claim that elephants will become extinct, but I
 don't think that elephants [will].'

Second, embedded declarative fragments do not allow the omission of postpositions as shown in the following:

- (35) a. Minho-ka [Yenghi-ka hoysa-lo-pwuthe senmwul-ul
 Minho-Nom Yenghi-Nom company-from present-Acc
 patassta-ko] cwucangha-ciman, na-nun hoysa*(-lo-pwuthe)-la-ko
 received-Comp claim-but I-Top company-from-Decl-Comp
 sayngkakhaci anhnunta.
 think don't
 'Minho claimed that Yenghi received a present from the company, but
 I don't think that [it's] from the company.'
- b. Minho-nun [Yenghi-ka hoysa-lo-pwuthe senmwul-ul
 Minho-Top Yenghi-Nom company-from present-Acc
 patassta-ko] cwucangha-ciman, na-nun tonglyo*(-lo-pwuthe)-la-ko
 received-Comp claim-but I-Top colleague-from-Decl-Comp
 mitnunta.
 believe
 'Minho claimed that Yenghi received a present from the company, but
 I believe that [it's] from her colleague.'

Third, although there seem to be matrix counterparts for the embedded declarative fragments as shown in (36), they show different patterns from matrix ones with regard to postposition omissibility and island sensitivity. The latter cases are illustrated in (37-38).

(36) a. A: Chelswu-nun [Yenghi-ka sakwa-lul mekesstako] cwucanghaysse.
 Chelswu-Top Yenghi-Nom apple-Acc ate claimed
 'Chelswu claimed that Yenghi ate an apple.'

B: (Anya,) swupak-i-ya.
 no watermelon-Cop-Decl
 '(No,) watermelon.'

b. A: Yenghi-ka sakwa-lul mekesse.
 'Yenghi ate an apple.'

B: (Anya,) swupak-i-ya.
 '(No,) watermelon.'

(37) a. A: Yenghi-nun Cwungkwuk-eyse oasse.
 Yenghi-Top China-from came
 'Yenghi is from China.'

B: Ilpon-i-ya.
 Japan-Cop-Decl(informal)
 'Japan.'

b. A: Yenghi-ka wuenemin sensayngnim-eykeyse yenge-lul
 Yenghi-Nom native-speaker teacher-from English-Acc
 paywuess-ni?
 learned-Q

'Did Yenghi learn English from a native speaker teacher?'

B: (Aniyo,) hankukin sensayngnim-i-yo.
 no Korean teacher-Cop-DM
 '(No,) from a Korean teacher.'

(38) A: Minho-ka [khokkili-ka myelcongha-lke-la-nun]
 Minho-Nom elephants-Nom extinct-Prospective-Decl-Adnom
 cwucang-ul naynohasse.
 claim-Acc put-forth
 'Minho-Nom put forth a claim that elephants will become extinct.'

B: ?Anya, khoppwulso-ya.
 no rhinoceroses-Decl(informal)
 'No, rhinoceroses.'

In (37), postpositions can be deleted in the matrix fragments including a copula. It is less clear that matrix fragments as in (38) do not exhibit island effects, however, in very informal contexts, B's utterance in (38) seems to be allowed.⁹⁾

In addition, in contrast to matrix ones, embedded declarative fragments may consist of a predicate, as shown in (39).

- (39) Chelswu-nun [Yenghi-ka sakwa-lul mekesstako] cwucangha-ciman,
 Chelswu-Top Yenghi-Nom apple-Acc ate claim-but
 na-nun [pelyessta-ko] sayngkakhanta.
 I-Top threw-away-Comp think-Decl
 'Chelswu claims that Yenghi ate the apple, but I think [she] threw [it] away.'

It should be noted that examples like (39) are not compatible with a copula or cleft construction analysis, because a cleft clause or a pronominal cannot be posited as a subject in these cases.

The above discussed contrasts between embedded declarative fragments and matrix ones suggest that embedded declarative fragments as in (33) should be treated differently from embedded sluices that share syntactic and semantic patterns with matrix sluices.

As a matter of a fact, declarative fragments as in (33) and (36) demonstrate further restrictions that other fragments do not have. While precise restrictions have to be further examined, it seems that they appear in a semantic context that either (partially) negates or reaffirms the content of the previous proposition.¹⁰⁾ For example, in (33a), the embedded fragment *sakwa-la-ko* 'an

9) One of the reviewers did not agree with our ungrammaticality judgements in (34) and (35).

We are not sure how much speaker variation exists as to the grammatical status of these examples; however, it is not clear what analyses the copular construction approaches can provide to the speakers who accept these examples. In (34), for example, it seems awkward to insert *kukey* or a cleft clause as a subject of the embedded fragmentary clauses.

10) An example in an affirming context can be illustrated as in (i):

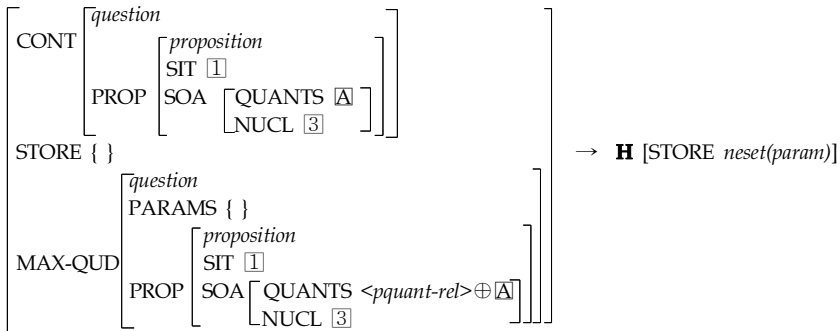
(i) Chelswu-nun [Yenghi-ka sakwa-lul mekesstako] cwucanghayss-ko,
 Chelswu-Top Yenghi-Nom apple-Acc ate claimed-and
 na-to [sakwa-la-ko] sayngkakhanta.

apple’ is embedded by the negative form of the predicate, which yields a content contrasting with the previous sentence. In (33b), on the other hand, the embedded fragment corrects or revises a part of previous proposition, giving rise to a contrastive focus. Therefore, declarative fragments in (33) should be distinguished from interrogative sluices and treated separately, probably as a subtype of fragment constructions. Since the investigation of declarative fragments is beyond the scope of this paper, we will focus on sluices, which are interrogative fragments.

4. A Fragment Analysis of Korean Sluicing

This section proposes a sentential fragment analysis of Korean sluicing that is based on Ginzburg & Sag’s (2000). Ginzburg & Sag propose that sluiced sentences in English be analyzed in terms of *sluiced-interrogative-clause* (*slu-int-cl*) which is a subtype of *headed-fragment-phrase* (*hd-frag-ph*) and *interrogative-clause* (*inter-cl*). The type constraints for *slu-int-cl* and *hd-frag-ph* are given as in (40)-(41) in Ginzburg & Sag.

(40) *slu-int-cl*:



(Ginzburg & Sag 2000:324)

I-also apple-Decl-Comp think

‘Chelswu claimed that Yenghi ate an apple, and I think that it was an apple, too.’

(41) *hd-frag-ph*:

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} v \\ \text{VFORM } fin \end{array} \right] \\ \text{SUBJ} < > \\ \text{SPR} < > \\ \text{CTXT} | \text{SAL-UTT} \left\{ \left[\begin{array}{l} \text{CAT } \textcircled{1} \\ \text{CONT} | \text{IND } \textcircled{2} \end{array} \right] \right\} \end{array} \right] \rightarrow \mathbf{H} \left[\begin{array}{l} \text{CAT } \textcircled{1} | \text{HEAD } nml \\ \text{CONT} | \text{IND } \textcircled{2} \end{array} \right]$$

(Ginzburg & Sag 2000:304)

Regarding the CTXT (CONTEXT) attribute, Ginzburg & Sag assume two fields, MAX-QUD (Maximal Questions Under Discussion) and SAL-UTT (SALIENT UTTERANCE). While MAX-QUD represents ‘the question currently under discussion’, SAL-UTT manifests ‘the (sub)utterance which receives widest scope within MAX-QUD’, which is typically the *wh*-phrase associated with the question in the MAX-QUD.¹¹⁾

As discussed in Section 3, one of the significant properties of Korean sluicing is that a copula occurs optionally in matrix sluices, and obligatorily in embedded ones. In addition, omissibility of case markers should be taken into account when relevant. We propose that fragment phrases in Korean be licensed via the constraints in (42), which manifests a collapsed form of two phrases, i.e., *nml-hd-frag-ph* (nominal-head-fragment-phrase) and *vbl-hd-frag-ph* (verbal-head-fragment-phrase). In (42), *vbl-hd-frag-ph* licenses the examples with a copula, and *nml-hd-frag-ph*, the ones without a copula. Since a copula combines with its complement to form a verb phrase, *vbl-hd-frag-ph* is a subtype of *hd-comp-ph* in our analysis. On the other hand, *nml-hd-frag-ph* is a subtype of *hd-only-ph*.¹²⁾

11) Ginzburg & Sag’s notion of MAX-QUD is based on Ginzburg’s (1996) theory of contextual structuring in which the dialogue participant’s version of the common ground is structured by separate fields such as FACTS and QUD (‘questions under discussion’). In Ginzburg, QUD consists of the currently discussable questions, some of which are subsequently resolved in dialogue. At a given point, a conversationalist may decide which question to be maximal, and depending on the maximal question to be discussed, the salient utterance, which is the utterance of the constituent to be resolved or clarified, is also determined. See Ginzburg (1996) and Ginzburg & Sag (2000) for detailed discussion of these notions.

12) As one of the reviewers pointed out, one issue that may arise here is why a copula appears in this construction and what kind of usage it has. In our view, the major function of the copula in Korean fragments (and in sluicing constructions) is essentially the same as

(42) *nml/vbl-hd-frag-ph*:

$$\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} v \\ \text{M-VFORM } \textit{mood-marking} \end{array} \right] \\ \text{SUBJ} < > \\ \text{SPR} < > \\ \text{SAL-UTT} \left\{ \left[\begin{array}{l} \text{CAT } \boxed{1} [\text{CASE } \boxed{4}] \\ \text{CONT} | \text{IND } \boxed{2} \end{array} \right] \right\} \end{array} \right] \rightarrow \boxed{3} \left[\begin{array}{l} \text{CAT } \boxed{1}' \left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} \textit{nml} \\ \text{CASE } \boxed{4}' \end{array} \right] \end{array} \right] \\ \text{CONT} | \text{IND } \boxed{2} \end{array} \right] \left(\left[\begin{array}{l} \text{HEAD} \left[\begin{array}{l} v \\ \text{COP } + \end{array} \right] \\ \text{COMPS} < \boxed{3} > \end{array} \right] \right) \right. \\ \left. (\text{CASE } \boxed{4}' = \boxed{4} \text{ when the grammatical case value are the same.}) \right.
 \end{array}$$

Besides allowing optional presence of a copula, the constraints in (42) have some important effects. First, regardless the occurrence of a copula, a fragment phrase is specified as [HEAD *v*[*mood-marking*]], which enables the phrase to conform the constraint for root clause in Korean.¹³⁾

Next, the nominal element (i.e., a noun or preposition phrase) that appears as a daughter of the phrase corresponds to the phrase provided in the SAL-UTT in the CTXT. Semantically, the nominal phrase is required to be coindexed with the phrase in the SAL-UTT, as indicated by two occurrences of the numeral tag $\boxed{2}$. Its syntactic information presented via the CAT(EGORY) (i.e., $\boxed{1}$) is the same as that of the SAL-UTT element (i.e., $\boxed{1}'$), except that the CASE values have the same grammatical case values (i.e., $\boxed{4}$ and $\boxed{4}'$). We assume the following type

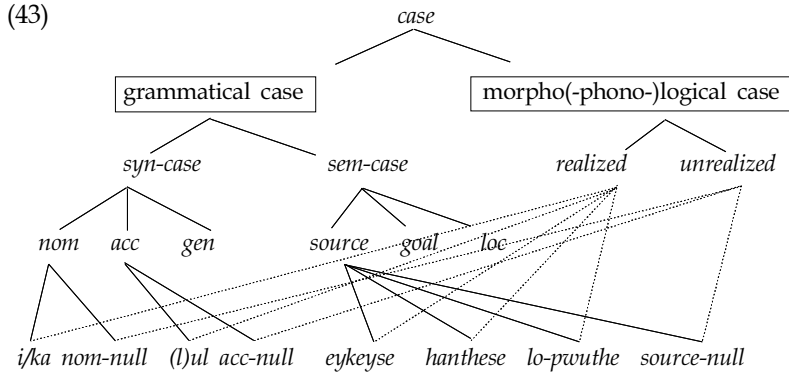
that of an ordinary copula, in the respect that the copula yields a verbal form by combining with a nominal element. The copula here can be considered as a semantically vacuous raising verb which identifies its SUBJ value (whether *elist* or *nelist*) with that of its complement. Unlike an ordinary copula, however, i) its SUBJ may be of an *elist* (*empty list*) when it combines with a non-precative element or ii) its non-empty SUBJ element is not realized in syntax. The latter case can be viewed as one of the properties of this construction. Since the mother is specified as [SUBJ < >] in (42), the subject of the copula is allowed to be unrealized.

- 13) Based on the discussions in Yoo (1997), Korean verbs are assumed to have both M(OOD)-VFORM and C(OMPLEMENTIZER)-VFORM within the VFORM, and root clauses to have the following constraint:

(i) *root* \rightarrow [M-VFORM *mood-marking*]

Since not all verb forms bear mood markers, only the verbs with mood markers are specified as [M-VFORM *mood-marking*], while the verbs without ones are [M-VFORM *mood-none*] in Yoo (1997). The value *mood-marking* has its own type hierarchy to represent various forms of declarative, interrogative, imperative, and propositive mood markers in Korean.

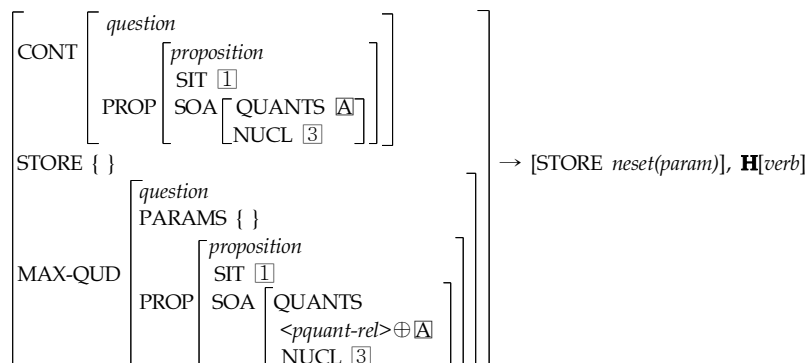
hierarchy for the CASE values of a nominal category in Korean.¹⁴⁾



In (43), *nom-null*, *acc-null*, and *source-null* respectively represent null forms of nominative, accusative, and source case. We assume that the distribution of such null case forms are determined by various morpho-phonological, semantic and pragmatic reasons, which will not be explored here.

Now turning into sluiced sentences, we propose that sluiced clauses with a copula as in (2) and (24) be analyzed in terms of *verbal-sluiced-interrogative-clause* (*vbl-slu-int-cl*) in (44), which is a subtype of *verbal-head-fragment-phrase* (*vbl-hd-frag-ph*) and *interrogative clause* (*inter-cl*). The constraints on *verbal-sluiced-interrogative-clause* (*vbl-slu-int-cl*) are the same as those for English *sluiced-interrogative-clause* (*slu-int-cl*) in Ginzburg & Sag (2000) except for the presence of the copula verb as a head daughter.

14) It should be noted that not all the case values are specified in (43). As for the morphological case forms, only those of *nom*, *acc*, and *source* are expressed in (43) for space reasons.

(44) *vbl-slu-int-cl*

On the other hand, matrix sluiced sentences without a copula are represented by *bare-slu-int-cl*, which is a subtype of *nominal-head-fragment-phrase* (*nml-hd-frag-ph*) and *interrogative clause*. The constraint on *bare-slu-int-cl* is identical to that of Ginzburg & Sag's *slu-int-cl*.

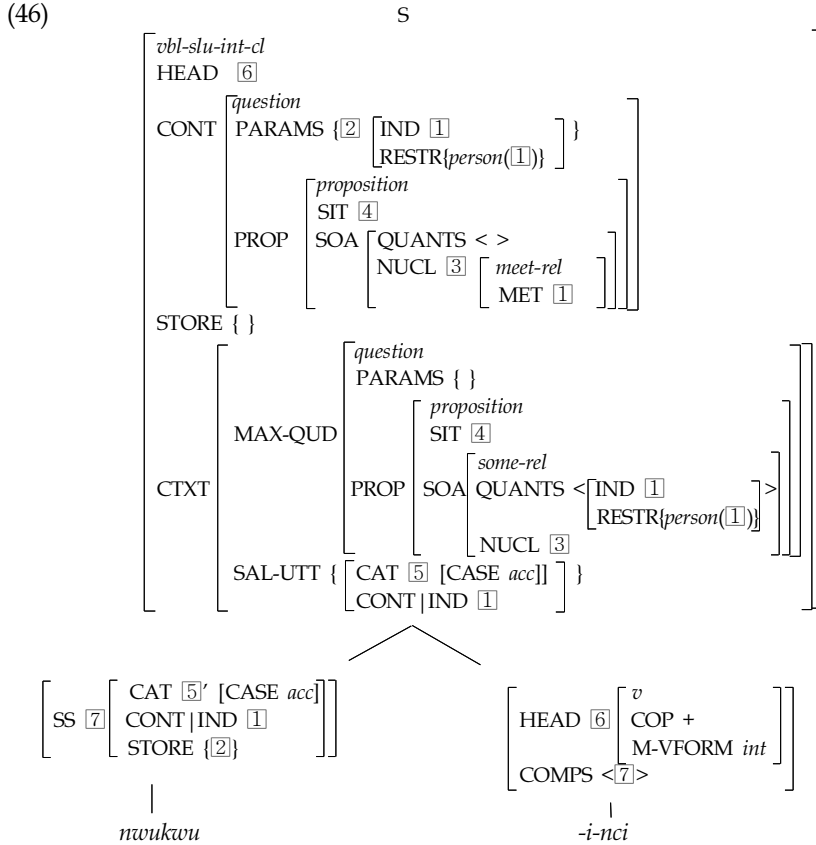
As in English, interrogative clauses are required to be [CONT *question*] by their type constraints. In addition, based on the discussions in Yoo (1997) and Pollard & Yoo (1998), we assume that the following constraint holds for the questions in Korean.

(45) (For Korean)

$$[\text{CONT } \textit{question}] \rightarrow [\text{M-VFORM } \textit{int}]$$

The constraint (45) ensures that a Korean clause can be interpreted as a question only if its verbal head bears an interrogative ending that is [M-VFORM *int*]. Accordingly, the sluiced clauses have interrogative verb forms such as *-(nu)nci*, *-pnikka*, and *-ni*.

In our analysis, the sluiced clause in (2) can be accounted for as in (46), based on the combined constraints characterizing *vbl-slu-int-cl* in (44) and its supertype *vbl-hd-frag-ph* in (42) and as well as all other relevant constraints associated with these types.



In (46), considering the type hierarchy in (43), the actual CASE value of [5] will be *(l)ul* and that of [5]' will be *acc-null*. However, this does not violate the constraint in (42), because *nwukwu* and the element in the SAL-UTT have the same grammatical case value, i.e., *acc*.

Our account proposed here provides explanations for various properties of sluiced sentences. First of all, not only embedded sluices but also matrix sluices like (24) can be accounted for by the same set of constraints, because both cases are treated as sluiced interrogative clauses. Accordingly, the commonalities between the two types of sluices discussed in Section 3 can be naturally captured. Although embedded sluices are limited in that they do not occur in the form of *bare-slu-int-cl*, this can be ascribed to the property of embedded clauses in Korean in general that requires a complementizer and a verb.

Second, it follows from the type constraint for *vbl-slu-int-cl* that sluiced sentences are required to be a question in terms of semantic interpretation and have a clausal property syntactically. Since embedded sluiced sentences in Korean are always marked by interrogative ending *-(nu)nci*, the constraint (45) ensures that those clauses receive a question interpretation. Moreover, by the constraint (42), which requires a fragment phrase to be a verb phrase with its SUBJ value saturated, sluiced phrases are represented as an S.

Third, our analysis offers an account of case parallelism as well as optional presence of case markers exhibited in (29-30). As mentioned with regard to the constraint in (42), the nominal phrase that appears in a sluiced clause has the same grammatical case value as the phrase in the SAL-UTT. Thus, given the type hierarchy for CASE values in (43), case parallelism is ensured as far as those two phrases bear an identical grammatical case values such as *nom*, *acc*, *gen*, *source*, *goal*, and *loc*. For example, in (30), the NP *nwukwu* in sluiced clause may have various case forms like *eykeyse*, *hanthese*, and *lo-pwuthe* as well as a null form, while the phrase *nwukwu-eykeyse* in the SAL-UTT has *eykeyse*. This is permitted in our account since all such forms (including a null form) has the same grammatical case value *source*. Actual forms like *eykeyse* and *hanthese* are morpho-phonological forms which have identical grammatical case values.¹⁵⁾

Fourth, the examples of multiple sluicing can be also accommodated in our account. While the constraints in (42) and (44) do not fit multiple sluicing examples such as (5) in their present forms, our account may extend to cover such examples by adding additional nominal daughters in (42) and (44). Thus the sluiced clauses in (5), *mwues-ul nwukwu-eykey -i-nci*, can be analyzed as a clause consisting of a copula and its two nominal complement daughters.

Fifth, like English *slu-int-cl*, Korean *vbl-slu-int-cl* and *bare-slu-int-cl* are required to have a positive quantificational NP in the MAX-QUD. This is manifested in (44) via *positive-quantifier-relation* (*pquant-rel*) in the quantifiers

15) On the other hand, nominative and accusative case markers do not usually occur in embedded sluiced sentences. In our perspective, it is due to the general morpho-phonological ban on the complement of a copula that suppresses the syntactic case marker of its complement phrase. However, of course, this is not a strict rule, given that nominative and accusative case markers may sometimes occur in cases like multiple sluicing, as (15) exemplifies.

(QUANTS) list of the proposition in the MAX-QUD. This constraint guarantees that sluicing does not occur when there is no quantifier or when there is a negative quantifier in the MAX-QUD as in (47).

- (47) #John-i amwukesto an-sass-ta-nuntey, na-nun [mwues-i-nci]
 John-Nom anything not-bought-said-but, I-Top what-Cop-Q
 kwungkumhata.
 wonder
 ‘John didn’t buy anything, but I wonder what’

On the other hand, sluiced interrogatives get adequate when there is a quantified proposition with a positive quantifier in the MAX-QUD as in (2) and (48). As (48) exemplifies, a positive quantifier is not necessarily an existential quantifier.

- (48) Manhun salamtul-i ku chayk-ul sass-tanuntey, na-nun
 many people-Nom the book-Acc bought-said-but, I-Top
 nwukwu-i-nci molukeyssta.
 who-Cop-Q not know
 ‘It is said that many people bought the book, but I don’t know who.’

5. Concluding Remarks

This paper has argued that sluiced sentences in Korean should be treated as fragments that appear both in embedded and matrix contexts. This position contrasts with the existing view that there is no sluicing in Korean and what looks like sluices can be analyzed as subjectless copular or cleft constructions. In this paper, sluiced sentences are analyzed in terms of sluiced interrogative clauses, which are independent of copular or cleft constructions. It has been also shown that sluiced sentences should be distinguished from declarative fragments which typically involves contrastive focus or negative/affirmative contexts.

The proposal presented in this paper does not posit any ellipsis process or null pronominal, since sluiced interrogative clauses are analyzed as

base-generated fragments. Thus it is distinguished from both movement approaches that assume VP/TP deletion and cleft construction approaches that presuppose ellipsis of a cleft clause in the subject position. Moreover, unlike the copular construction approach, the present analysis does not assume a null pronominal element within a sluiced clause.

We have shown that the proposed analysis can account for various properties that Korean sluices have. The presence of a copula has been accounted for in our analysis, together with the omissibility and interchangeability of case-marking postpositions. Since sluiced sentences are treated as interrogative clauses, it is also possible to accommodate multiple sluicing examples.

There are many related areas where more extensive investigations are called for. As sluicing is viewed as one type of fragments in this paper, a more comprehensive understanding of fragment phenomena and comparisons among diverse types of fragments will provide more insights in explaining sluicing in Korean. In particular, it will be necessary to look into the composition of the MAX-QUD more systematically in order to account for contextual information that is relevant to the formation and interpretation of fragments. We leave such investigations for a future research.

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Received on September 30, 2013

Revised version received on November 30, 2013

Accepted on December 10, 2013