

## Fragments in Korean: A Direct Interpretation Approach\*

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Kim, Jong-Bok. 2015. **Fragments in Korean: A Direct Interpretation Approach**. *Studies in Generative Grammar*, 25-3, 703-733. Fragment answers consist of a non-sentential XP but convey the same propositional content as fully sentential answers, inducing form-meaning mismatch. Similar to sluicing, fragments thus allow to unexpress clausal material, but the unexpressed, elided material needs to be recovered in a proper way. This paper discusses two different approaches for the analysis of fragments in Korean: ellipsis and direct interpretation approaches. Discussing several key empirical facts, the paper argues for a direct interpretation approach, couched upon the framework of Construction- based HPSG and an independently motivated theory of dialogue context. This analysis can offer a streamlined analysis for the flexible connectivity effects and discourse initial fragments with no linguistic correlate.

*Keywords*: direct interpretation, ellipsis, dialogue board game, connectivity effects, construction-based HPSG

### 1. Introduction

Fragments, as illustrated in the following dialogue exchange, pose a fundamental challenge for standard linguistic theories of the form-meaning relation (see Merchant 2004, Ginzburg and Sag 2000, Craenenbroeck and Merchant 2013).

- (1) A: Who did Mimi meet?  
B: Haha.

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\* I thank three anonymous reviewers of this journal for helpful comments. Most of the idea presented here is developed from Kim (2015).

- (2) A: Who is the guy next to Mimi?  
 B: The guy who she met at the library.

The answer to each question here is a fragment (nonsentential), but it receives a sentential interpretation:

- (3) a. Mimi met Haha.  
 b. He is the guy she met at the library.

As such, in terms of its form, the fragments are not full sentences, but they are interpreted as full sentences, evoking mismatches between form and meaning.

The question that arises with respect to such form-meaning mismatching fragments, then, is how we can account for the semantically propositional character of what appear to be syntactically less than sentential structures (Merchant 2004, Ginzburg and Sag 2000). In answering this question, there have been two main approaches to deal with fragments in languages: the ellipsis and direct interpretation (DI) approach. The ellipsis approach allows full-sentential source sentences like (3) and allow the ellipsis process of the unpronounced material. (Hankamer 1979, Morgan 1989, Merchant 2004). That is, there is the usual syntax of declarative answers, part of which is unpronounced, as illustrated in (4) for (1B):

- (4) [<sub>CP</sub> [~~Mimi met~~ [<sub>DP</sub> Haha]]]

The meaning of each fragment is thus derived from the corresponding full sentential structure, preserving the usual mapping between syntax and semantics. Meanwhile, the DI approach assumes that the complete syntax of a fragment is just the categorial phrase projection of the fragment itself, requiring a special form-meaning mapping (Barton 1990, 1998, Lappin 1996, Ginzburg and Sag 2000, Jackendoff 2002, Stainton 1995, 2006, Kehler 2002, Culicover and Jackendoff 2005, among others).

- (5) [<sub>CP</sub> [<sub>DP</sub> Mimi]]

Within this direct interpretation approach, a proposition then arises from a DP, requiring a special mapping mechanism.<sup>1</sup>

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<sup>1</sup> For example, in Culicover and Jackendoff (2005: 270), the S node has the IL (indirect

As briefly noted, the ellipsis approach, the most dominant, traditional approach in handling fragments, places burden on the syntax by positing unpronounced structure while the direct interpretation approach complicates the syntax-semantics mapping relations. This paper reviews pros and cons of these two analyses, and argues that in dealing with fragments in Korean the ellipsis approach meets more challenges than the direct interpretation approach. In particular, it shows that a variety of empirical facts we find in fragments in Korean support the direct interpretation approach.

## 2. Arguments for the ellipsis analysis

Consider some typical Korean fragment examples, corresponding to the English example in (1):

- (6) A: Mimi-ka      nwukwu-lul      manna-ss-e?  
       Mimi-NOM    who-ACC        meet-PST-QUE  
       ‘Who did Mimi meet?’

B: Haha-lul ‘Haha-ACC’/\*Haha-ka ‘Haha-NOM’.

Within the ellipsis approach, the fragment answer here is taken to have a full sentential structure like (7) prior to ellipsis, and the interpretation then follows from the assumed sentential structure (see Park 2005, Ahn and Cho 2006, 2012a, 2012b, Ahn 2012):

- (7) [<sub>CP</sub> Haha<sub>i</sub>-lul<sub>i</sub> E [<sub>TP</sub> Mimi-ka      ti-      manna-ss-e]].  
       Haha-ACC            Mimi-NOM            meet-PST-DECL  
       ‘Mimi met Haha.’

As illustrated here, before applying the ellipsis of TP, the object fragment first

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licensing) operator and the *wh*-phrase is an orphan:

- (i) Syntax: [<sub>S</sub> nwukwu-lul<sup>ORPH</sup>]<sup>L</sup>  
       Semantics: Q[F(what)]

The semantics of the *wh*-fragment contains a question operator Q, binding the semantics of a *wh*-word and the free variable F (propositional content of a question) which is constructed from the context via ‘indirect licensing’. In this paper, we offer a more precise mapping relation with the system of sophisticated discourse structure.

undergoes movement to the sentence initial position, triggered by the E (ellipsis) feature (see Ahn and Cho 2006, 2012b). The E feature serves as the locus of all the relevant properties that distinguish the elliptical structure from its non-elliptical counterpart. The analysis, basically following that of Merchant's (2004), proposes to assimilate fragment answers to sluicing by analyzing the fragment as having moved to a clause-peripheral position, followed by ellipsis of the clause itself.

There seem to be several supporting pieces of evidence in favor of this kind of ellipsis approach. The first may come from the case matching connectivity. As we can observe in (6B), the morphological case value of the DP fragment answer (*Haha-lul* 'Haha-ACC') is the same as the case value of the corresponding DP in the source sentence and that of the *wh*-correlate (*nwukwu-lul* 'who-ACC') in A's question. This is why the NOM marked fragment *Haha-ka* 'Haha-NOM' in (6B) cannot serve as a legitimate answer. The case matching effect can be observed in a more complex example like (8), noted by Ahn and Cho (2006):

- (8) A: Mimi-nun nwukwu-lul manna-ko siph-ci?  
 Mimi-TOP who-ACC meet-CONN would.like-QUE  
 'Who does Mimi like to meet?'

B: Haha-ka 'Haha-NOM'/Haha-lul 'Haha-ACC'.

- B': Mimi-nun Haha-lul/Haha-ka manna-ko siph-ta  
 Mimi-TOP Haha-ACC/Haha-NOM meet-CONN would.like-DECL  
 'Mimi would like to meet Haha.'

The so-called desirative construction with the auxiliary verb *siph-* 'would.like' allows the complement to bear either the ACC or NOM case marking, as seen from the full sentence in (8B') (see Kim 2004). The ellipsis approach, deriving the fragments in B from B', then can predict this case alternation possibility.

Another connectivity effect can be observed in examples like the following:

- (9) A: kunye-nun eti-ey sa-ni?  
 she-TOP where-at live-QUE  
 'Where is she<sub>i</sub> living?'

B: \*Mimi<sub>i</sub>-uy aphathu-ey.  
 Mimi-GEN apartment-at

'At Mimi's apartment'

B': \*kune<sub>i</sub>-nun Mimi<sub>i</sub>-uy aphathu-ey sa-n-ta.  
 she-TOP Mimi-GEN apartment-at live-PRES-DECL  
 'She lives at Mimi's apartment.'

Principle C requires that the R-expression not corefer with a c-commanding pronoun, accounting for the ungrammaticality of the full sentential answer B' (Fiengo and May 1994, Chomsky 1995). The fragment answer in B here, arguably derived from B', is equally impossible because it also violates Principle C.

This kind of connectivity effect is also found with reflexives. The local anaphor *cakicasin* 'self' needs to have a local binder and this behavior is what we can find in both fragments and full sentential structures B':

(10) A: Mimi<sub>i</sub>-ka nwukwu-lul cohaha-ni?  
 Mimi-NOM who-ACC like-QUE  
 'Who does Mimi like?'

B: cakicasin<sub>i</sub>-ul 'self-ACC'.

B': Mimi<sub>i</sub>-ka cakicasin<sub>i/\*j</sub>-ul cohaha-y.  
 Mimi-NOM self-ACC like-DECL  
 'Mimi likes herself.'

The parallel behavior is witnessed in the following long distance example:

(11) A: Haha-nun Mimi<sub>i</sub>-ka nwukwu-lul cohaha-n-ta-ko sayngkakha-ni?  
 Haha-TOP Mimi-NOM who-ACC like-PRES-DECL-COMP think-QUE  
 'Who does Haha thinks Mimi likes?'

B: cakicasin<sub>i</sub>-ul 'self-ACC'.

B': Haha<sub>j</sub>-nun Mimi<sub>i</sub>-ka cakicasin<sub>i/\*j</sub>-lul cohaha-n-ta-ko sayngkakha-y.  
 Haha-TOP Mimi-NOM self-ACC like-PRES-DECL-COMP think-DECL  
 'Haha thinks Mimi likes herself.'

As seen from the full sentential structure in B', *cakicasin-ul* 'self-ACC' cannot be long-distance bound by the higher subject *Haha*. Its possible binder is the local

anaphor *Mimi*. This is why the fragment answer in B can be bound only by *Mimi*, supporting the ellipsis analysis.

### 3. Arguments against the ellipsis

The ellipsis analysis at first glance seems to be quite intuitive and attractive in capturing many connectivity effects we have seen. However, when taking into consideration a wider range of data, we encounter issues in positing putative sentential sources. For example, consider the following situation (see Merchant 2004 for a similar English situation):

- (12) (Haha and Momo are at a party. Haha sees an unfamiliar man with *Mimi*, a mutual friend of theirs, and turns to Momo with a puzzled look on his face, and Momo says:)

B: dosekwon-eyse manna-n namca.  
 library-at meet-MOD man  
 'The man who (she) met at the library'

In this situation, different from the examples we have seen in the previous section, the utterance in B is not preceded by any linguistic material that can function as a linguistic antecedent to the fragment. As correctly pointed out by Barton (1990) and Stainton (1995, 2006) for similar English examples, this kind of discourse-initial fragment challenges the ellipsis approach in the postulation of proper sentential answers linked to the fragment answers. A similar issue arises from examples like the following (Ahn and Cho 2006, 2012a, Ahn 2012):

- (13) A: onul an coh-a po-ye.  
 today not good-CONN look-DECL  
 'You look bad today.'

B: ung twuthong.  
 Yes, headache

The issue is that the interpretation of the fragment answer here is not fixed but can vary, depending on context. This can be illustrated by possible interpretations of the fragment as following:

- (14) a. I have a headache.  
 b. I got a terrible headache.  
 c. My headache makes me feel bad.  
 d. My headache kills me.  
 e. My headache comes again.

This flexibility in turn means that the putative source sentence for certain fragments is determined not by the linguistic antecedent but by contextual information. That is, the syntax component needs to generate such fragments by themselves, and the pragmatic or discourse interpretive component may yield propositional content for the fragments.

More clear issues arise from syntactic connectivity effects between the fragment answer and its correlate. Examples like the following show us that syntactic connectivity is not really fixed but can be flexible (Ahn and Cho 2006, Kim and Sells 2013, Kim 2015):

- (15) A: *nwu-ka tomangka-ss-e?*  
 who-NOM run.away-PST-QUE  
 'Who ran away?'

B: *Mimi-ka 'Mimi-NOM'/Mimi 'Mimi'.*

As illustrated here, the *wh*-correlate is NOM-marked, but the fragment answer can be either NOM-marked or bare-case marked. One may point out that the optional properties of structural cases NOM or ACC in informal context may allow such bare-case marked fragment answers. However, observe the following with a semantic case marking which cannot be dropped in the language (Kim 2004):

- (16) A: *nwukwu-\*(lopwuthe) ton-ul pat-ass-e?*  
 who-from money-ACC receive-PST-QUE  
 'From whom did you receive money?'

B: *Mimi-lopwuthe 'Mimi-from'/Mimi 'Mimi'.*

Even though the language does not license the ellipsis of a semantic case marking, the fragment answer here can be either marked with the source marking *-lopwuthe* or bare-case marked. Compare the following contrast:

- (17) a. Mimi-(ka) sakwa-(lul) mek-ess-ta.  
 Mimi-NOM apple-ACC eat-PST-DECL  
 'Mimi ate an apple.'
- b. Haha-(ka) Mimi-\*(lopwuthe) ton-(lul) pat-ass-ta.  
 Haha-NOM Mimi-SRC money-ACC receive-PST-DECL  
 'Haha received money from Mimi.'

The examples show that the structural or grammatical cases NOM and ACC are optional, but the presence of the semantic case *-lopwuthe* is obligatory. The possibility of having a bare-case marked fragment as in (16) thus challenges the ellipsis approach that derives a fragment from a corresponding full sentential structure.

What does not countenance the ellipsis approach further is that such a discrepancy is quite natural in many examples including even those with an adjunct:

- (18) A: Mimi-lul eti-eyse manna-ss-ni?  
 Mimi-ACC where-at meet-PST-QUE  
 'Where did you meet Mimi?'
- B: hakkyo-eyse 'school-at'/hakkyo 'school'
- B': \*Mimi-lul hakkyo manna-ss-e.  
 Mimi-ACC school meet-PST-DECL  
 '(int.) I met Mimi at school.'

The correlate of the fragment answer *eti-eyse* 'where-at' is marked with a locative semantic case marking *-eyse* and the fragment can be either marked with this semantic case or bare-case marked. Note that the putative sentential source in B' requires the presence of the semantic marking to the adjunct.

Further complexity arises when there is no overt correlate of the fragment answer. Consider the following:

- (19) A: phyenci-ka wa-ss-e?  
 letter-NOM come-PST-QUE  
 'Did the letter come?'
- B: Ung, Mimi-lopwuthe 'Mimi-from'/\*Mimi 'Mimi'.



A's question here does not include a correlate leading to the fragment answer, and then the fragment answer cannot be bare-case marked. This contrasts with examples like (18) in which the question includes an overt correlate and the fragment answer can be bare-case marked.

A more serious issue arises from polarity mismatching. In Korean, the NPI needs to be licensed by a clause-mate negation (see Ahn and Cho 2006 also):

- (20) a. \*Mimi-ka amwukesto mek-ess-e.  
 Mimi-NOM anything eat-PST-DECL  
 '(int.) Mimi didn't eat anything.'  
 b. Mimi-ka amwukesto mek-ci anh-ass-e.  
 Mimi-NOM anything eat-CONN not-PST-DECL  
 'Mimi didn't eat anything.'

The NPI *amwukesto* here is licensed by the negative auxiliary *anh-ass-e*. Note the following exchange with a fragment answer:

- (21) A: Mimi-ka mwues-ul mek-ess-ni?  
 Mimi-NOM what-ACC eat-PST-QUE  
 'What did Mimi eat?'

B: amwukesto 'anything'.

Note that the putative antecedent clause does not include any negative licenser, but the NPI can serve as a legitimate fragment. Within the ellipsis approach, the fragment would derive from the source sentence given in (22) in which the NPI object moves to the sentence initial position and TP ellipsis applies:

- (22) \*[amwukesto<sub>i</sub> [Mimi-ka t<sub>i</sub> mek-ess-ta]].  
 anything Mimi-NOM eat-PST-DECL  
 '(int.) Anything, Mimi didn't eat.'

However, observe that the source sentence (22) is ungrammatical because there is no licenser for the NPI. The ellipsis analysis is thus required to posit undesirable source sentences.

A further challenge comes from island repair. If fragments are to be analyzed as A'-movement followed by TP or clausal deletion, then it is reasonable to expect that island constraints will be obeyed. This is in fact what

we can observe from English (data from Merchant 2004 and italics indicates an accented constituent).

- (23) a. Does Abby speak the same Balkan language that *Ben* speaks?  
 b. \*No, *Charlie*.  
 c. No, she speaks the same Balkan language that *Charlie* speaks.
- (24) a. Did Ben leave the party because *Abby* wouldn't dance with him?  
 b. \*No, *Beth*.  
 c. No, he left the party because *Beth* wouldn't dance with him.
- (25) a. Did Abby vote for a *Green Party* candidate?  
 b. \*No, *Reform Party*.  
 c. No, she voted for a *Reform Party* candidate.

However, different from English examples where island repair is not possible in fragments, fragment answers in Korean can violate island constraints (see Park 2005, 2014 for a similar point).

- (26) A: Mimi-nun [nwu-ka peli-n ton-ul] cwu-ess-ni? (CNPC)  
 Mimi-TOP who-NOM throw.away-PNE money-ACC pick.up-PST-QUE  
 '(lit.) Who<sub>i</sub> did Mimi pick up the money that   <sub>i</sub> threw away?'  
 B: Haha-ka 'Haha-NOM'.
- (27) A: Mimi-nun nwu-ka phathi-ey anwasski ttaymwuney hwa-ka  
 Mimi-TOP who-NOM party-at not.come since angry-NOM  
 nass-ni? (Adjunct Constraint)  
 bring.out-PST-QUE  
 '(lit.) Who<sub>i</sub> did Mimi get angry because   <sub>i</sub> did not come to the party?'  
 B: Haha-ka 'Haha-NOM'.
- (28) A: Mimi-ka yetang hwupo-eykey thwuphoha-yess-ni?  
 Mimi-NOM ruling.party candidate-to vote-PST-QUE  
 (Left Branch Condition)  
 'Did Mimi vote for the ruling party's candidate?'

B: ani, yatang.  
 ‘No, the oppositive party.’

The fragment answer in each of these examples is linked to an island expression. For instance, the putative full sentential answer of the fragment in (26) would be something like the following:

(29) B': Mimi-nun [NP [S Haha-ka peli-n] ton-ul]  
 Mimi-TOP Haha-NOM throw.away-PNE money-ACC  
 cwu-ess-e. (CNPC)  
 pick.up-PST-DECL  
 ‘Mimi picked up the money that Haha threw away.’

The NP *Haha-ka* ‘Haha-NOM’ resides within the complex NP and thus would not move out to induce the fragment answer in (26B), contrary to the example.

In sum, discourse initial fragments, syntactic connectivity effects, and island repair all challenge the assumption that there is a putative sentential structure for each fragment answer. In what follows, we offer a direct interpretation approach that generates fragment answers directly but induces a sentential interpretation with the help of dialogue context.

## 4. A Direct Interpretation Approach

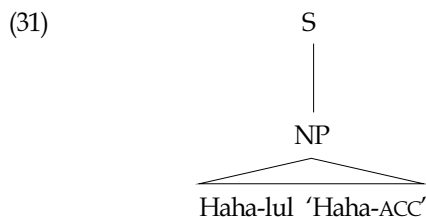
### 4.1. Theoretical Apparatus

Unlike the ellipsis approach, the DI approach projects the meanings of the unpronounced material with no underlying syntactic structures (Ginzburg and Sag 2000, Kehler 2002, Culicover and Jackendoff 2005, Sag and Nykiel 2011). This view directly generates fragments being licensed by elements of the surrounding context. In terms of syntax, it follows the philosophy of Simpler Syntax Hypothesis (Culicover and Jackendoff 2005) in the sense that there is no syntactic structure at the ellipsis site and fragments are the sole daughter of an S-node. For example, consider the following exchange involving a fragment answer:

(30) A: Mimi-ka nwukwu-lul manna-ss-e?  
 Mimi-NOM who-ACC meet-PST-QUE  
 ‘Who did Mimi meet yesterday?’

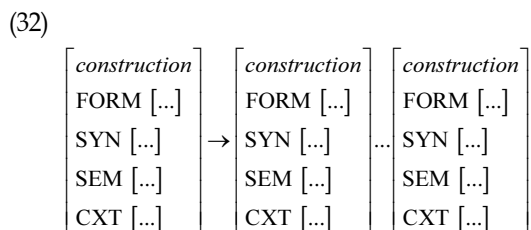
B: Haha-lul/\*Haha-ka/Haha.  
 Haha-ACC/\*Haha-NOM/Haha

Within the DI perspective, B's response in (30B) would have the following simple structure:



The fragment here includes only the expression *Haha-lul 'Haha-ACC'*. There is no syntactic material corresponding to the clausal source for the fragment, but additional featural (e.g., discourse) machinery helps ellipsis resolution, which we will see in due course.

In accounting for the grammatical properties of Korean fragments in a more precise way, following Kim (2015) for the analysis of sluicing in Korean, we accept the philosophy of Construction-based HPSG. Within the philosophy of Construction Grammar (CxG), all levels of description (including morpheme, word, phrase, and clause) are understood to involve pairings of form with semantic or discourse functions, and grammar is a recursive system of constructions, as represented in the following feature system (Goldberg 2006, Sag 2012):



Since fragment answers involve interrogative questions, let us first consider the semantic representations of questions. Following Ginzburg and Sag (2000), we assume that 'questions' are basic semantic entities such as individuals and propositions (Karttunen 1977, Ginzburg and Sag 2000). Questions are

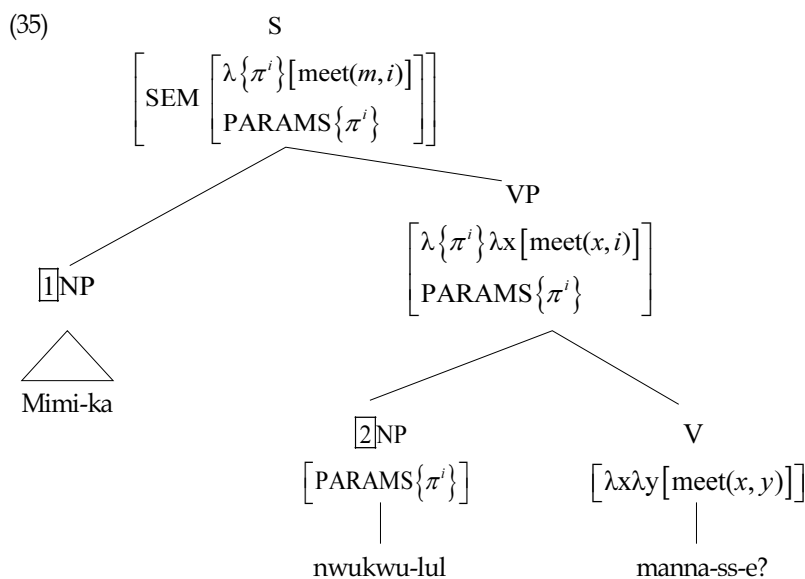
distinguished from other messages in terms of a feature called PARAMS (parameters), whose set value is empty for yes-no questions but non-empty for *wh*-questions. The *wh*-phrase, as given in (33), represents a parameter consisting of an index and a set of restricting propositions for what the referent of the parameter refers to:

(33) Semantic content of *who*:  $\pi^i_{\{\text{person}(i)\}}$

This position would give us the following semantic representation for interrogatives.

- (34) a. Polar question:  $\lambda\{ \} [\text{love}(k, l)]$  (Does Kim love Lee?)
- b. Unary *wh*-question:  $\lambda\{\pi^i\} [\text{love}(k, i)]$  (Who does Kim love?)

Each *wh*-question is thus treated as being about a proposition in question, with a set of parameters (or variables) to be determined in an answer. Given Ginzburg and Sag’s system, we can represent the semantic composition process of the Korean *wh*-question in (30) as following:<sup>2</sup>



<sup>2</sup> For the detailed feature structure system in HPSG, see Ginzburg and Sag (2000), Sag (2012).

As shown by the structure, the sentence basically represents the proposition with a variable that Mimi met someone 'x', and asks the value of this variable. This variable (parameter) is introduced by the *wh*-phrase. One further assumption we adopt is that the interpretation of a fragment answer depends on the notion of 'question-under-discussion (QUD)' in the dialogue. Dialogues are described via a Dialogue Game Board (DGB) where the contextual parameters are anchored and where there is a record of who said what to whom, and what/who they were referring to (see Ginzburg 1996, 2012, Ginzburg and Fernandex 2010). DGB monitors which questions are under discussion, what answers have been provided by whom, etc. The conversational events are tracked by various conversational 'moves' that have specific preconditions and effects. The main claim is that non-sentential utterances, functioning as a salient utterance, are resolved to the contextual parameters of the DGB. Since the value of QUD is constantly being updated as a dialogue progress, the relevant context offers the basis of the interpretation for fragments. Interpreting this system in terms of the feature-structure based system, DGB, as part of contextual information, would have at least the two attributes, SAL-UTT (salient-utterance) and MAX-QUD (maximal-question-under-discussion):

$$(36) \quad \left[ \text{DGB} \begin{array}{l} \left[ \text{SAL-UTT} \dots \right] \\ \left[ \text{MAX-QUE} \dots \right] \end{array} \right]$$

The feature MAX-QUD, representing the question currently under discussion, takes as its value *questions*. Meanwhile, SAL-UTT, taking as its value syntactic as well as semantic information, represents the utterance which receives the widest scope within MAX-QUD. For example, uttering the question *Who did Kim meet?* will activate the following feature structure with the appropriate DGB information:

$$(37) \quad \left[ \begin{array}{l} \text{FORM} \langle \text{who did Kim meet?} \rangle \\ \text{SYN S} \\ \text{SEM } \lambda \{ \pi^i \} [ \text{meet}(k, i) ] \\ \text{DGB} \begin{array}{l} \left[ \text{MAX-QUD } \lambda \{ \pi^i \} [ \text{meet}(k, i) ] \right] \\ \text{SAL-UTT} \begin{array}{l} \left[ \text{SYN NP} \right] \\ \left[ \text{SEM } \pi^i \right] \end{array} \end{array} \end{array} \right]$$

Note that the *wh*-question asks who is the person that Kim met (QUD) and the (variable) information about this person functions as a salient utterance. The fragment answer *Haha-lul* 'Haha-ACC' then supplies the value for the variable *i*.

#### 4.2. Head-Fragment Construction and Connectivity Effects

Similar to English, Korean has a variety of fragment utterances including short answers. The examples given in the following illustrate that various phrasal expressions can function as a fragment in Korean (Kim and Sells 2013):

- (38) A: Kim-i        yeki-ey iss-ni?  
 Kim-NOM here-at exist-QUE  
 'Is Kim here?'  
 B: iss-e.        / eps-e.  
 exist-DECL / not.exist-DECL  
 '(He) is.' / '(He) isn't.'
- (39) A: way ilccik wa-ss-e?  
 why early come-PST-QUE  
 'Why did you come early?'  
 B: pap mek-ulyeko  
 meal eat-in.order.to  
 'In order to eat a meal.'
- (40) A: encey wa-ss-e?  
 when come-PST-QUE  
 'When did you come?'  
 B: pelsse 'already'.
- (41) A: Mimi-ka        nwukwu-lul manna-ss-ni?  
 Mimi-NOM who-ACC meet-PST-QUE  
 'Who did Mimi meet?'  
 B: Haha / Haha-lul / \*Haha-ka.  
 Haha / Haha-ACC / Haha-NOM

The B's response in each case is a predicate, VP, AdvP, and NP fragment, respectively, serving as a short answer to the given question. What this implies is that any XP can function as a fragment, projecting into a sentential structure, as illustrated by the following constructional constraint (see Kim and Sells 2013, Kim 2015 also):

(42) Head-Fragment Construction

$$\left[ \begin{array}{c} \text{SYN } S \\ \text{DGB} \left[ \begin{array}{c} \text{SAL-UTT} \left[ \begin{array}{c} \text{SYN} \left[ \text{CAT } \boxed{1} \right] \\ \text{SEM} \left[ \text{INDEX } i \right] \end{array} \right] \end{array} \right] \end{array} \right] \Rightarrow \left[ \begin{array}{c} \text{SYN} \left[ \text{CAT } \boxed{1} \right] \\ \text{SEM} \left[ \text{INDEX } i \right] \end{array} \right]$$

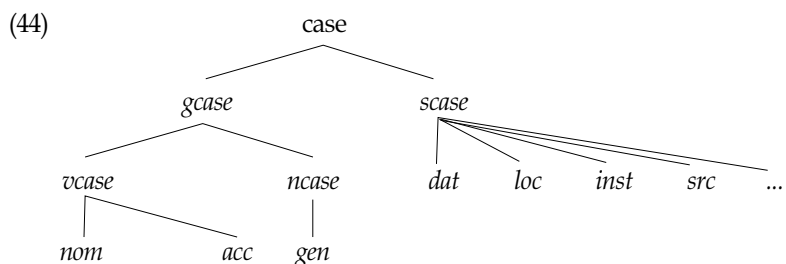
Each of the fragments from (38) to (41), including nominal fragments in (41), belongs to this Head-Fragment construction. The construction allows the head daughter to be any syntactic category and it corresponds to the category specified by the contextually provided SAL-UTT. The mother is an S, allowing such a phrase to serve as a stand-alone clause. This treatment basically accepts that fragments are salient entities in the given context.

Before we discuss how this system captures case connectivity effects, let us consider the Korean case system. We have seen that in Korean, different from semantic cases (*scase*), the structural or grammatical case (*gcase*) values can be optional, as illustrated by the following contrast:

- (43) a. Mimi-(ka) Mina-(lul) manna-ss-e.  
 Mimi-NOM Mina-ACC meet-PST-DECL  
 'Mimi met Mina.'  
 b. Mimi-(ka) Mina-\*(wa) nol-ko iss-e.  
 Mimi-NOM Mina-with play-CONN exist-DECL  
 'Mimi is playing with Mina.'

Distinguishing the grammatical (or structural) case values (assigned by grammar rules of configurations) from the semantic case values, as suggested by Kim (2004), the case values in Korean can be organized as given in the following hierarchy:





The grammatical case (*gcase*) has two subtypes *vcase* (verbal case) and *ncase* (nominal case) in which the former has NOM and ACC while the latter has *gen* as its single member. The semantic case values vary, depending the semantic role that each argument performs. One key property of the hierarchical system is that the topmost value *case*, the most general value, subsumes all its subtypes including both *gcase* and *scase*. The system then assigns the following lexical information to the GCASE-marked *Haha-ka* ‘Haha-NOM’ and the SCASE-marked *Haha-lopwuthe* ‘Haha-SRC’:

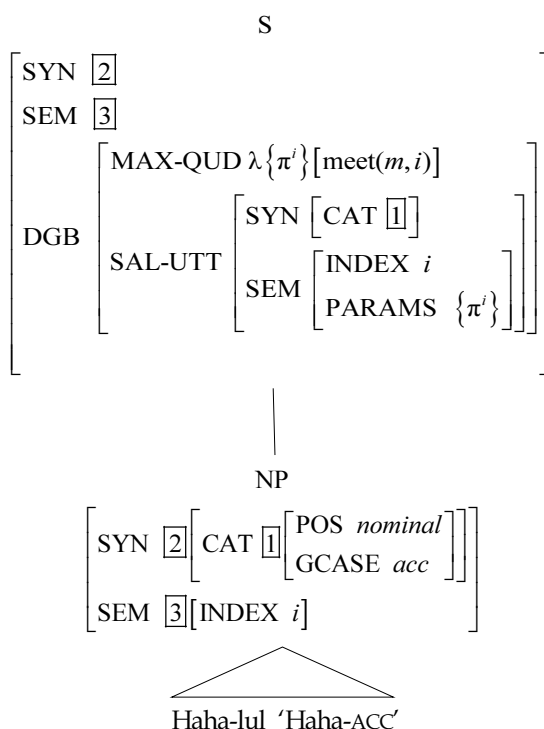
- (45) a.
- |      |                            |
|------|----------------------------|
| FORM | <i>&lt;Haha-ka&gt;</i>     |
| SYN  | CAT [ POS <i>nominal</i> ] |
|      | GCASE <i>nom</i>           |
- b.
- |      |                              |
|------|------------------------------|
| FORM | <i>&lt;Haha-lopwuthe&gt;</i> |
| SYN  | CAT [ POS <i>nominal</i> ]   |
|      | SCASE <i>src</i>             |

One clear justification to distinguish GCASE values from SCASE values comes from the fact that a nominal expression can have both case markings as in *Haha-eykey-man-i* ‘Haha-DAT-only-NOM’, whose lexical information is given in (46).

- (46)
- |      |                                 |
|------|---------------------------------|
| FORM | <i>&lt;Haha-eykey-man-i&gt;</i> |
| SYN  | CAT [ POS <i>nominal</i> ]      |
|      | GCASE <i>nom</i>                |
|      | SCASE <i>src</i>                |

Now, going back to case connectivity effects, consider the dialogue exchange in (41). Within the present system, the accusative-marked fragment *Haha-lul* ‘Haha-ACC’ in (41B) is a stand-alone clause, forming a Head-Fragment Construction, as represented in the following structure:

(47)



The fragment answer *Haha-lul* 'Haha-ACC' carries syntactic (SYN) information about its POS (parts of speech) and GCASE value, and its semantic information introduces the index value  $i$ . Note the role of DGB here. Uttering the *wh*-question in the dialogue introduces the information about QUD as well as SAL-UTT. The QUD concerns the information such that there is someone (*nwukwu-lul* 'who-ACC') that Mimi met. The index value of this *wh*-expression functions as the SAL-UTT, linked to that of the fragment *Haha-lul* 'Haha-ACC'. The Head-Fragment Construction in (42) requires the CAT value of the fragment to be identified with that of the SAL-UTT. Since the CAT value includes the CASE and POS values, we thus expect the case connectivity effect between the overt correlate and the fragment.

Note that within this system *Haha-ka* 'Haha-NOM' cannot serve as a licit fragment answer to this simply because the correlate *wh*-phrase is ACC-marked.

- (48) a. 
$$\left[ \begin{array}{l} \text{FORM } \langle \text{nwukwu-lul} \rangle \\ \text{SAT-UTT } \left[ \text{CAT } \left[ \begin{array}{l} \text{POS } \textit{nominal} \\ \text{GCASE } \textit{acc} \end{array} \right] \right] \end{array} \right]$$
 b. 
$$\left[ \begin{array}{l} \text{FORM } \langle \text{Haha-ka} \rangle \\ \text{SYN } \left[ \text{CAT } \left[ \begin{array}{l} \text{POS } \textit{nominal} \\ \text{GCASE } \textit{nom} \end{array} \right] \right] \end{array} \right]$$

There is a case mismatch between the GCASE value of the correlate and that of the fragment, thus violating the Head Fragment Construction.

### 4.3. Non-Connectivity Effects

As seen from the dialogue in (41), an intriguing property is that the case marking of the fragment answer can be different from its *wh*-correlate. That is, the fragment answer can be bare-case marked *Haha* ‘Haha’ even though the *wh*-correlate *nwukwu-lul* is ACC-marked. This availability is due to the case system in Korean in which the unmarked case value subsumes the structure case values (NOM and ACC) (see Kim 2004). That is, in the Korean case system developed by Kim (2004) which we have briefly discussed in the previous section, the GCASE value of the bare nominal is *gcase* which subsumes all of its subtype values including *nom* and *acc*. The fragment *Haha* ‘Haha’, for example, would then have the following CAT value with its GCASE value unspecified:

- (49) 
$$\left[ \begin{array}{l} \text{FORM } \langle \text{Haha} \rangle \\ \text{SYN } \left[ \text{CAT } \left[ \begin{array}{l} \text{POS } \textit{nominal} \\ \text{GCASE } \textit{gcase} \\ \text{SCASE } \textit{scase} \end{array} \right] \right] \end{array} \right]$$

This in turn means that there is no conflict (no failure in the feature unification) between the GCASE value of *Haha* and that of the ACC-marked *wh*-correlate.

With an overt correlate, the *wh*-remnant or fragment answer can be bare-case marked even when the correlate is semantic-case marked.

- (50) A: Mimi-ka nwukwu-lopwuthe senmwul-ul pat-ass-e?  
 Mimi-NOM someone-SRC(from) gift-ACC receive-PST-QUE  
 ‘From whom did Mimi receive a gift?’

- B: Haha-lopwuthe / Haha-eykey / \*Haha-wa / Haha.  
 Haha-SRC / Haha-SRC / Haha-COMIT/ Haha  
 'From Haha/From Haha/With Haha/Haha'

The correlate *wh*-phrase *nwukwu-lopwuthe* 'who-from' here is marked with the source semantic case *-lopwuthe*, and there are several options as the fragment answer to (50A). The answer can be *Haha-lopwuthe* or *Haha-eykey* since the semantic case *source* in the language can be independently realized either as *-lopwuthe* or *-eykey*. However, *Haha-wa* 'Haha-with' cannot be a licit answer because its semantic case value is *comit* (comitative), conflicting with the value *src* (source). The fragment can be bare-case marked (*Haha* 'Haha') whose grammatical and semantic case values (*gcase* and *case*) are unspecified. This does not conflict with the *GCASE* or *SCASE* values of the *wh*-correlate *nwukwu-lopwuthe* 'who-SRC' with those of the fragment:

(51) a.

$$\left[ \begin{array}{l} \text{FORM } \langle \text{nwukwu-lopwuthe} \rangle \\ \text{SYN } \left[ \begin{array}{l} \text{CAT } \left[ \begin{array}{l} \text{POS } \textit{nominal} \\ \text{GCASE } \textit{gcase} \\ \text{SCASE } \textit{scase} \end{array} \right] \end{array} \right] \end{array} \right]$$

b.

$$\left[ \begin{array}{l} \text{FORM } \langle \text{Haha} \rangle \\ \text{SYN } \left[ \begin{array}{l} \text{CAT } \left[ \begin{array}{l} \text{POS } \textit{nominal} \\ \text{GCASE } \textit{gcase} \\ \text{SCASE } \textit{src} \end{array} \right] \end{array} \right] \end{array} \right]$$

There is thus no conflict between the bare-case marked NP and the correlate.

#### 4.4. Fragments with no overt correlate

In Section 3, we have seen that fragments with no overt correlate behave differently from those with an overt correlate with respect to the case connectivity. Observe the following contrast again:

- (52) A: Mimi-ka nwukwu-lopwuthe pinan.pat-ass-e?  
 Mimi-NOM who-SRC criticism.receive-PST-QUE

'From whom was Mimi criticized?'

B: Haha-lopwuthe 'Haha-SRC' / Haha 'Haha'

- (53) A: Mimi-ka pinan.pat-ass-e?  
 Mimi-NOM criticism.receive-PST-QUE  
 'Was Mimi criticized?'

B: Ung. Haha-lopwuthe 'Haha-SRC' / Haha 'Haha'.

The point is that when there is an overt *wh*-correlate, the fragment can be bare-case marked, but this is not possible with no overt correlate of the fragment answer in (53). The difference thus comes from the existence of the correlate *wh*-phrase in the discourse. We suggest that this contrast (syntactic identity with no overt correlate) has to do with context updating or recoverability of the covert correlate.

Before we spell out the context-updating analysis in detail, let us consider the properties of null arguments since examples with no correlate involve at least one null argument. Ruppenhofer and Michaelis (2014) distinguish two major types of null complements in English, definite and indefinite null complements, as illustrated by the following:

- (54) a. John loves to read [*e*].  
 b. No doubt, mistakes were made [*e*].  
 c. We arrived [*e*] at 8 pm.

The unexpressed argument in (54a) and the one in (54b) behave alike in that the material that John loves to read or the agent making the mistake need not be mutually known to the interlocutors, whose omission can thus be said to be an instance of indefinite null instantiation (INI). By contrast, the unexpressed goal argument in (54c) is known to the interlocutors in the given context and the omission of the argument is thus an instance of definite null instantiation (DNI). One clear distinction between the INI and DNI, noted by Ruppenhofer and Michaelis (2014), is whether we can reconstruct the missing argument by an indefinite expression like *something*, *someone* or a definite expression like *it* or *him*.

Incorporating this idea within the type feature system (where types are in italics), we can introduce two signs *overt* and *ini*, the latter of which can be resolved to a covert argument or an instance of INI. Given this type system, we

may represent the omitted or unrealized argument of *read* as following (see Ruppenhofer and Michaelis 2014 also):

(55) Lexical entry for *read*:

$$\left[ \begin{array}{l} \text{FORM } \langle \textit{read} \rangle \\ \text{ARG-ST } \langle \text{NP}_i, \text{NP}_x \rangle \\ \text{SYN } \left[ \begin{array}{l} \text{SUBJ } \langle \text{NP}[\textit{overt}] \rangle \\ \text{COMPS } \langle \text{NP}[\textit{ini}] \rangle \end{array} \right] \\ \text{SEM } \textit{read}(i, x) \end{array} \right]$$

The lexical information specifies that the second argument of *read* can be an indefinite null instantiation (an unrealized indefinite NP) while the first argument needs to be an overt one.

Similar to English null arguments, the null arguments in Korean can also appear in several environments, as illustrated in the following (see Ahn and Cho 2012b for detailed discussion):

- (56) a. [e] cham cal talli-n-ta.  
           really fast run-PRES-DECL  
           ‘(I/He/She/They/It) really runs fast.’  
       b. Mimi-nun Nana-ka [e/caki/ku-lul] ttayly-ess-ta-ko malha-yess-ta.  
           Mimi-TOP Nana-NOM e/self/he-ACC hit-PST-DECL-COMP say-PST-DECL  
           ‘Mimi said that Nana hit herself/him.’

The null subject in (56a) refers to someone physically present, whose reference is provided in the discourse context. Meanwhile, the null object in (56b) is in variation with the overt resumptive pronouns, *caki-lul* ‘self-ACC’ or *ku-lul* ‘he-ACC’. Its coindexing relation is controlled (A-bound) by the matrix argument, suggesting it is a *pro*, but not a variable. Null arguments in Korean can also be classified into two types, DNI and INI.

The question-fragment answer pair with no overt linguistic correlate we discuss here all include INI cases as evidenced from the fact that we cannot replace the implicit argument by a definite NP:

- (57) A: Mimi-ka ku salam-ulopwuthe pinan.pat-ass-e?

Mimi-NOM the person-from criticism.receive-PST-DECL  
 ‘Was Mimi criticized by that person?’

B: \*Ung. Haha-lopwuthe ‘Haha-from’

B’: Ung, kulay. ‘Yes, that’s true.’

The question here is only a yes-no question, with the variable resolved. No variable is possible.<sup>3</sup>

This then implies that the source argument of the matrix verb *pinan.pat-* ‘be criticized’ in (57A) and the one in (57B), both of which are sprouting examples, is realized not as a definite but as an indefinite instantiation, as represented in the following:

(58) Lexical information for *pinan.pat-*:

$$\left[ \begin{array}{l} \text{FORM } \langle be.criticized \rangle \\ \text{ARG-ST } \langle \text{NP}_i, \text{NP}_x [\text{SCASE } src] \rangle \\ \text{SYN } \left[ \begin{array}{l} \text{SUBJ } \langle \text{NP} [overt] \rangle \\ \text{COMPS } \langle \text{NP} [ini] \rangle \end{array} \right] \\ \text{SEM } be.criticized(i, x) \end{array} \right]$$

The verb selects two arguments. The first argument is realized as the overt subject while the second one whose semantic role (semantic case) is source (*src: source*) is realized as a complement. But note that this complement is not an overt one but a covert indefinite null instantiation (*ini*).

Now consider the dialogue in (53). Uttering the sentence with A would then update the DGB as following, triggered from the verb *pinan.pat-* ‘be criticized’:

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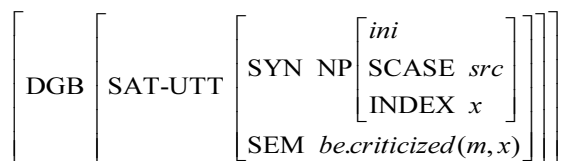
<sup>3</sup> One important constraint working here is that resolved questions cannot be under discussion (Ginzburg and Sag 2000):

(i) Question Introduction Condition (QIC)

A question *q* can be introduced into QUD by *A* only if there does not exist a fact  $\tau$  such that  $\tau \in \text{FACTS}$  and  $\tau$  resolves *q*.

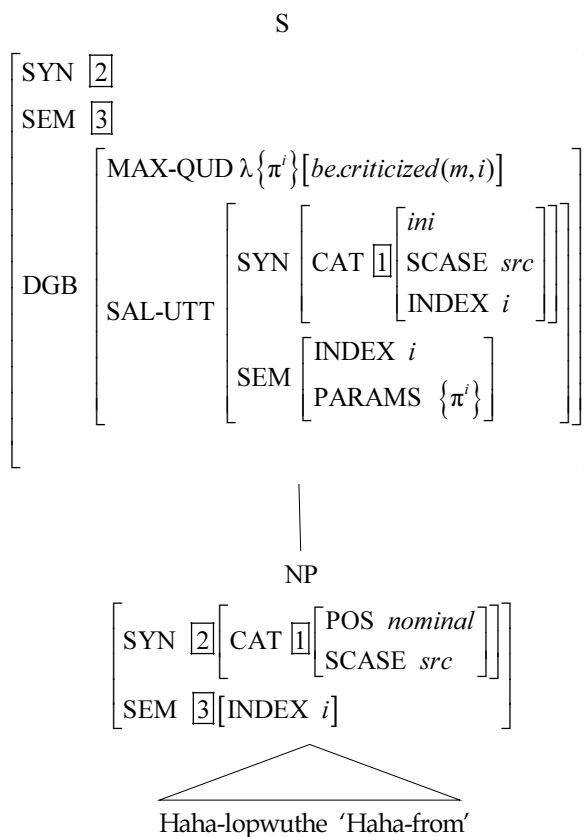
This condition basically rules out sentences with resolved questions.

(59)



Our direct interpretation with the Head-Fragment Construction would then project the following structure for the fragment *Haha-lopwuthe* ‘Haha-from’:

(60)



A’s utterance in (53) includes no overt correlate but is realized as an implicit argument triggered from the expression *pinan.pat-* ‘be criticized’. This unrealized



argument is introduced in discourse when one utters the proposition ‘Mimi is being criticized’. B’s fragment makes this unrealized argument as a member of the salient utterance (SAL-UTT). Since the Head-Fragment Construction ensures that this salient member matches with the fragment in terms of the CAT value, the fragment and the SAL-UTT both need to have the identical CASE value, part of the CAT information. This means that we cannot have fragments like *nwukwu-ka* ‘who-NOM’ as a fragment answer because of the conflicts in the case feature (*nom* and *src*).

The remaining question is why the bare-case marked NP is not licensed with no overt correlate (see (53)). That is, unlike examples with an overt correlate (see (50)), the syntactic or semantic case marking in the fragment (or matrix sluicing) cannot be omitted (see Kim and Sells 2013, and Kim 2015). How can we ensure this exact syntactic identity between the covert correlate and the fragment answer? What we can observe here is that the case marker of the covert or unexpressed NP whose syntactic information is contextually updated cannot be omitted. This condition can be phrased as following, as suggested by Kim (2015):

(61) Full Instantiation Constraint (FIC):

The syntactic information (e.g., case features) not available at surface but updated in the DGB needs to be fully specified in the subsequent syntax.

This condition has the effect of Chung’s (2006: 82) ‘no new word constraint’ specifying that an ellipsis site cannot contain any ‘new’ words. Chung’s condition is to capture the pattern in which the English preposition may be absent provided that the corresponding PP is realized. Note thus that Chung’s constraint is a lexical requirement, while the FIC is rather discourse-based account.

The motivations of the FIC can be found from the anaphoric nature of fragments including sluicing and the question of identifying what is an issue (question under the discussion). We have seen that a fragment with a overt correlate contains an indefinite correlate in the antecedent clause which introduces an issue (QUD) into the discourse and an interrogative clause which anaphorically retrieves this issue (see AnderBois 2010, 2014 also). The linguistic or contextual discourse thus needs to make salient this issue. With the fragment with an overt correlate, we have no difficulties in identifying this issue. However, examples with no overt correlate make it difficult to pick out the issue, as seen from the following contrastive English examples:

- (62) a. \*[The cake was eaten], and I want to find out [who] <ate the cake>.  
 b. [The cake was eaten by someone], and I want to find out [who] <the cake was eaten by>.

The overt indefinite in (62b) raises the issue of what individual ate the cake, but (62a) has no such an overt indefinite. The sentence (62a) with an implicit passive agent cannot raise this issue, not being able to make salient the issue of which alternatives hold. The FIC thus helps the interlocutors to identify the issue in question by making the relevant syntactic information salient. That is, with an overt correlate, the issue is easier to be evoked in the awareness of the hearer (see Kim and Kuno 2013 too). With a covert correlate, the hearer needs to have syntactic and semantic information that enables him or her to identify the issue.

With this motivation for the FIC in mind, consider the following dialogue in Korean:

- (63) A: John-i ecey pam salhaytoy-ess-e.  
 John-NOM yesterday night be.murdered-PST-DECL  
 'John was murdered last night.'  
 B: nwukwu-eyuyhay? / \*nwukwu?  
 who-by / who  
 'By whom?'

The fragment answer here cannot omit the semantic case (or postposition) *eyuyhay* since there is no overt correlate. Our discourse-based theory would update the following DGB information:

- (64)
- $$\left[ \text{DGB} \left[ \text{SAT-UTT} \left[ \text{SYN NP} \left[ \begin{array}{l} \text{SCASE } \textit{src} \\ \text{INDEX } \textit{x} \end{array} \right] \right] \left[ \text{SEM } \textit{be.murdered}(j, x) \right] \right] \right]$$

The FIC in (61) ensures that the syntactic information of the source (or agent) NP including its GCASE value be specified at the subsequent syntax, linking the contextually updated information with syntax (or morphosyntactic) information. This is why we cannot omit the semantic case *eyuyhay* in (63), supporting the rationale for the proposed FIC in (61).

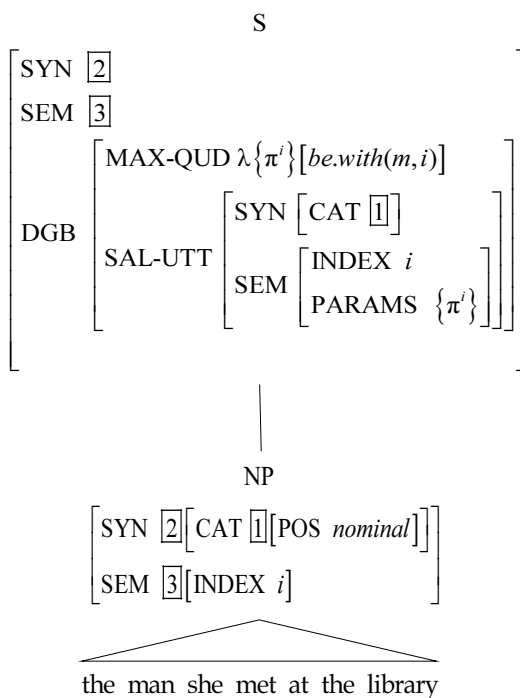
When there is no correlate for the *wh*-fragment, and its correlate is evoked at the discourse level, the grammar needs to refer to the full grammatical information of the evoked correlate to minimize the processing load. Note that the present analysis can also offer us a natural account for the fragment answer in the discourse initial position, whose example we repeat here.

- (65) (Haha and Momo are at a party. Haha sees an unfamiliar man with Mimi, a mutual friend of theirs, and turns to Momo with a puzzled look on his face, and Momo says:)

B: dosekwon-eyse manna-n namca.  
 library-at meet-PNE man  
 ‘The man who (she) met at the library’

The contexts are rich enough to make the unfamiliar man salient, and further to evoke the question of who the person is. This gives us the following DGB information:

- (66)



[

SYN [2][CAT 1][POS *nominal*]

SEM [3][INDEX *i*]

∧

the man she met at the library

As represented here, the context introduces the QUD of who is the person with Mimi, and the value of this individual is discourse salient. The fragment answer provides the value for this variable.

#### 4.5. Island Sensitivity

We have seen that the ellipsis approach introduces the movement of a fragment answer to the sentence initial position and an ellipsis of the remaining constituent (TP). This implies that this kind of movement would apply in observation of island constraints. This is what we can find in English fragment answers. However, Korean is different in the sense that movement needs to apply in violation of island constraints (data from Park 2005):

- (67) A: John-un [casin-uytongsayng-ekeymwues-ul cwun salam]-ul  
 John-TOP self-GEN brother-DAT what-ACC give-PNE person-ACC  
 manna-ss-ni?  
 meet-PST-QUE  
 ‘\*What did John meet a person who gave to his brother?’

B: sakwa-lul ‘apple-ACC’.

- B’: \*[sakwa-lul]<sub>i</sub> [John-un [casin-uy tongsayng-ekey t<sub>i</sub> cwu-n  
 {apple-ACC John-TOPself-GEN brother-DAT give-PNE  
 salam]-ul manna-ass-e].  
 person-ACC meet-PST-DECL

This problem also plagues any type of ellipsis analysis, which must transform the theory of syntactic islands to be about PF representations. This is in fact what the previous literature assumes, but this direction would mean giving up the syntactic representations that are directly manipulated by movement operations.

By contrast, the direct interpretation approach we have sketched here solves this problem simply: the fragments are directly generated; no island-sensitive operations are involved. The fragment answer involves no filler-gap dependency and hence no expectation that properties of movement will be projected into the grammar of fragments.

## 5. Conclusion

The intriguing feature of fragments is that they are non-sentential with respect to form values, but they induce a propositional interpretation. This mismatch between form and semantic function has led the development of two main approaches: ellipsis and direct interpretation.

The ellipsis approach places an emphasis on the sentential syntactic structure of fragments, avoiding extra mapping relation from form to meaning. This naturally places burden on the syntax by requiring each fragment to be linked to its full sentential source. Meanwhile, the direct interpretation approach introduces no additional syntax: fragments are mapped into non-sentential utterances and induce sentential interpretations from the enriched discourse. This approach at first glance places a heavy burden on the mapping relations from simple fragments to sentential interpretations. However, we have seen that once we have a system that represents clear discourse structures with the information about salient utterances and question-under-discussion, we can have straightforward mapping relations from fragments to propositional meaning. This direct interpretation approach is further supported by the robust account of flexible connectivity effects, discourse initial fragments, and island repair in Korean.

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