On the Nature of Korean Wh-Expressions

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Korean wh-expressions have interrogative or quantificational readings depending on where they occur. In some contexts they are ambiguous, in others they have only one interpretation. In this paper, previous attempts to account for this are reviewed, and several problematic cases for existing hypotheses are discussed. It is then argued, on the basis of empirical data, that Korean wh-words behave like pronominal variables and that their interpretations are determined under binding by licensing morphemes in C which contain an operator feature. In the case of wh-words in English, these contain an operator feature, unlike Korean. I then go on to argue that when Korean wh-words are used as interrogative wh-expressions, they are clausal in structure, contain a copular verb and an operator feature contained in C in this local domain.

1. Introduction

As is well known, English wh-expressions move to their scope positions, while Korean wh-expressions remain in situ:

(1) Who do you love?

(2) a. Na-nun Mary-lul   saranghan-ta

  I-Top   Mary-Acc   love-Decl

  'I love Mary.'

 b. Ne-nun   nwuku-lul   sarangha-ni?

  You-Top   who-Acc   love-Q

  'Who do you love?'

This contrast has been discussed, and has often been attributed to variation in the

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internal morphology of wh-expressions. This has been argued by Fukui (1986, 1988, 1995), Fukui and Takano (1998), Watanabe (1991, 1992), Tsai (1994, 1999), Chomsky (1995), Hagstrom (1998), and Yoon (1999) among others. However, their descriptions of the internal morphology of wh-expressions are different. In this paper, we will mainly consider the nature of wh-expressions in Korean.

2. Wh-expressions in Korean

Korean belongs to the group of languages that have a set of lexical items which are ambiguous between an interrogative reading and a quantifier reading depending on the environment in which they appear[2]:

(3)a. Nwu(kwu)-ka   wass-ta.

    Who-Nom   came-Dec

    'Someone came.'

  b. Nwu(kwu)-ka   wass-ni?

    Who-Nom   came-Q

    'Who came?' or 'Did someone come?'

  c. Nwu(kwu)-(i)-tunchi   wa-la.

    Who   be -∀   come-Imp

    'Come, anyone' or 'Everyone can come.'

In (3a), the wh-expression is interpreted as an existential quantifier, while in (3b), it can have both an interrogative reading and an existential quantificational reading. In (3c), it

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[2] See Kuroda (1965), Huang (1982), Li (1992), and Nishigauchi (1986), among others for more detail.

is interpreted as a universal quantifier or may have a negative polarity reading. Before discussing the composition of the feature system in wh-questions in Korean, I will first take a brief look at previous analyses of Korean wh-expressions. There are three main approaches to the syntax of wh-expressions in Korean. One group of linguists take wh-expressions to be quantifiers. For instance, C-M Suh (1987, 1989) claims that all wh-expressions are existential quantifiers in the lexicon and they are converted to wh-question phrases when they receive phonological prominence. On the other hand, C-S Suh (1989) and Chung (1996) pursue a very different direction. They argue that all wh-expressions are wh-question clauses, and both existential and universal quantifier expressions are also considered as indirect question clauses. A third group of linguists argues that wh-words themselves should be treated as variables. This approach is advocated by Kuroda (1965), Nishigauchi (1990), Cheng (1991), Aoun and Li (1993), Tsai (1994,1999), and Kim (2000). They claim that wh-expressions themselves do not have an inherent quantificational force in Korean, Japanese, and Chinese. In the following sections, I will examine these analyses in more detail.

3. Unified Interrogative Clause Analyses of Korean Wh-expressions

C-S Suh (1990) considers existential quantifiers as complex NP structures containing a question ending marker in embedded clauses: (QE= question ending marker)

(4) a. nwukwu-(i)-nka   o-ess-ta.

     Who- be-QE   came-Decl

     'someone came.'

  b. John-i   mwues-i-nka   mek-ess-ta.

John-Nom   what-be-QE   eat-Decl

'John eat something.'

C-S Suh (1990.p.251) analyses such existential quantifiers as indirect questions under a relative clause. He argues that the existential licensing morpheme *-inka* should be decomposed into the copula verb *-i* plus a question ending marker *-nka*:
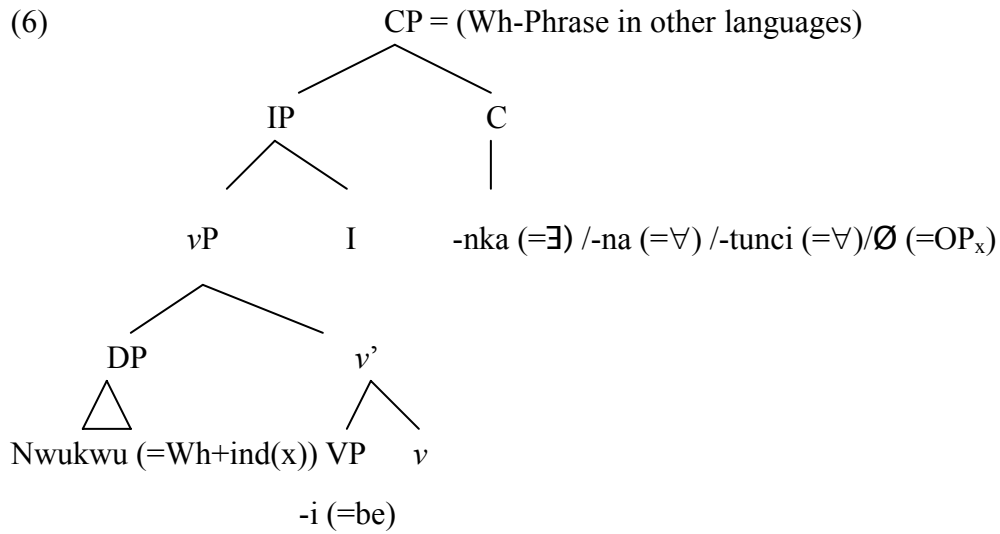
(5) nwukwu- i - nka

    who   -be - QE

'a man who I do not know'

'someone'

Thus, under C-S Suh's (1990) analysis of Korean wh-expressions, we have the following structure for wh-expressions based on Tsai's (1994, 1999) feature composition schema:[3]

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[3] According to Tsai (1994,1999,2003), Operator-variable dependencies are parameterised relative to operator height, namely, operators merging in CP/IP in Chinese, in PP/DP in Japanese, and in D/N in English. However, in Chung (1996, 2000), Tsai's analysis of Japanese is shown to be unworkable for Korean, since Korean wh-expressions can be considered as interrogative clauses including an operator within the structure of the wh-expressions.

(6)   CP = (Wh-Phrase in other languages)

            IP   C

     vP   I   -nka (=∃) /-na (=∀) /-tunci (=∀)/Ø (=OP$_x$)

  DP   v'

Nwukwu (=Wh+ind(x)) VP   v

       -i (=be)

The copular *–i* is generated in V, and the licensing morphemes *-nka/-na/-tunci/Ø* containing an operator feature are located in C within wh-expressions.

    C-S Suh (1990) and Chung (1996) provide several pieces of empirical evidence for the analysis of Korean quantifiers as indirect questions. To begin with, let us consider Korean wh-existential quantifiers. Firstly, when the existential licensing morpheme -*inka* is used without the copula verb *–i*, *-nka* can function as a Question ending (QE) in indirect questions like those in (7):

(7) a. John-nun   [CP nwu-ka   wa-ess-nka]   mul-ess-ta

    John-Top   who-Nom   came-QE   asked-Decl

    'John asked who came.'

  b. John-nun   [CP nwu-ka   wa-ess-nci]   mul-ess-ta

    John-Top   who-Nom   came-QE   asked-Decl

    'John asked who came.'

Ci is an indirect question marker in Korean. In (7a,b), *n+ka* have the same property as *n+ci* in indirect questions.[4]

Secondly, we can find a parallelism between the question ending and the universal licensing morphemes. Both of them function as scope barriers for wh-expressions:

(8) John-i   mwues-inka   mek-ess-ni?

    John-Nom   what- QE   ate-QE

    'Did John eat something?'

    #'What did John eat?'

The lack of a matrix reading for *mwues* 'what' in (8) indicates that the existential licensing morpheme   *-inka* functions as a scope barrier for the wh-expression just like the question marker *-ci* in the following example:

(9)   John-i   [Mary-ka   mwues-ul mek-ess-nun-ci] al   -ni?

    John-Nom Mary-Nom what-Acc   ate-Asp-QE   know-QE

    'Does John know what Mary ate?'

    #'What does John know Mary ate?'

Thirdly, the honorific particle *-si* can be inserted between *-i* and *–nka*. The honorific morpheme *-si* attaches only to a verb stem, as shown in (10):

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[4] In Korean, *-n* is a Relative marker.

(10) Sensayngnim-kkeyse   Seoul-ey   ka-si-ess-ta

   teacher-Nom(Hon)   Seoul-to   go-Hon-past-Decl

Elsewhere, attachment is not allowed as shown in (11):

(11) a. * Sensayngnim-si-kkeyse

        teacher-Hon-Nom (Hon)

   b. * Sensayngnim-kkeyse-si

        teacher-Nom (Hon)-Hon

   c. * Seoul-si-ey

       Seoul-Hon-to

   d. * Seoul-ey-si

       Seoul-to-Hon

   e. * ka-ess-si-ta

       go-past-Hon-Decl

   f. * ka-ess-ta-si

       go-past-Decl-Hon

In the light of this attachment property of honorific morpheme -*si*, it is significant that –*si* can be attached to the existential licensing morpheme –*inka*.

(12) Nwukwu-i-si-nka   o-si-ess-ta

   Who-be-Hon-QE   come-Hon-past-Decl

   'Someone came.'

The honorific morpheme *-si* is attached to the copular verb *-i* as well as to the stem of the matrix verb *o-ta* 'come'. Since both verbs have the same subject, they have the same honorific agreement. This provides further evidence in support of the claim that wh-expressions resemble indirect questions.

Now, consider universal quantifiers (∀-QP) in Korean. Universal quantifiers in Korean consist of a wh-word plus the universal licensing morphemes *–ina/ -itunci*:

(13) a. Nwu(kwu)-(i)tunci   cal   sal-ki   palan-ta.

     Who   -∀   well   live-Nmz   want-Dec

     'Everyone wants to be well off.'

  b. Nwu(kwu)-(i)na   cal   sal-ki   palan-ta.

     Who   -∀   well   live-Nmz   want-Dec

     'Everyone wants to be well off.'   Chung (1996, p.217)

Chung (1996) extends C-S Suh's (1990) interrogative analysis of wh-existential quantifiers (∃-QP) to universal quantifiers (∀-QP) in Korean. He argues that the universal licensing morphemes *–ina/ -itunci* are decomposable into the copula verb *-i* plus a QE *–na/-tunci*. We can consider them in the same way as the analysis of existential quantifiers (∃-QP).

Firstly, *-na* and *–(tun)ci* in the universal licensing morphemes *–ina/ -itunci* are used without the copula verb *-i* as a QE in indirect questions as in (61):

(14) a. John-nun   [CP nwu-ka   o-ess-na]   mul-ess-ta

     John-Top   who-Nom   came-QE   asked-Decl

     'John asked who came.'

   b. John-nun   [CP nwu-ka   o-ess-nun-ci]   mul-ess-ta

     John-Top   who-Nom   came-QE   asked-Decl

     'John asked who came.'

In (14), *-na* has the same property as *-ci* in indirect questions.

　　Secondly, we can find a parallelism between the question ending and the existential

licensing morphemes. Both of them function as scope barriers for wh-expressions:

(15)   John-un   [mwues-i-{na/tunci}]   cal   mek-nun-ni

     John-Top   what-be-QE   well   eat-present-QE

     'Does John eat anything well? '

     # 'What does John eat well?'

The lack of a matrix reading for *muwes* in (15) indicates that the universal licensing

morphemes *–ina/   -itunci* function as a scope barrier for the wh-expression just like

the indirect question marker *-ci*.

　　Thirdly, the honorific form *-si* can be inserted between *-i* and *–na/ -tunci:*

(16) yelepwun-un   nwukwu-i-si-tunci   hwanyanghapni-ta

     You(PL)-Top   who-be-Hon-QE   welcome-Decl

     'We welcome any of you.'

The honorific morpheme *-si* is attached to the copular verb *–i*. The subject *yelepwun* undergoes honorific agreement with the copular verb *-i*. Thus, universal quantifiers can be considered as indirect questions. Chung (1996) argues that the copula verb *–i* incorporates wh-expressions. Through the incorporation of the relevant elements, all Korean wh-expressions are interrogative in form.

However, if the unified interrogative analysis of wh-expressions is correct, how can we tell existential quantifiers from universal quantifiers? Since both of them are indirect questions, there seems to be no distinction between them. Chung (1996) points to syntactic differences between existential quantifiers and universal quantifiers. For example, in general, existential quantifiers can have a Case particle, while universal quantifiers cannot:

(17) a. nwukwu-i-nka (-ka)   o-ess-ta.

      Who-be-QE -Nom   came-Decl

      'someone came.'

  b. nwukwu-Ø-{na (??-ka)/ tunci (*-ka)}   John-ul   cohaha-n-ta

     who-   (be)- {QE-Nom/QE-Nom}   John-Acc like-present-Decl

     'Anyone likes John.'

As you see in (17b), Case particles with universal quantifiers make the sentence very marginal or unacceptable. Based on C-S Suh's (1990) analysis of existential quantifiers as indirect questions embedded under a relative clause, Chung (1996) maintains that universal quantifiers are indirect questions embedded under an adverbial clause.

According to him, this suggestion is supported by the choice of interrogative predicates following each quantifier.

(18) a. [[nwukwu-i-nka] molu-   (nu)n]   salam-i   o-ess-ta.

who-be-QE   not know-Rel   a man-Nom came-Decl

'Someone came'

　　b. *[[nwukwu-i-nka]   sangkwaneps-i]   o-ess-ta.

who-be-QE   not to be related   a man-Nom came-Decl

'Someone came'   Chung (1996, p.237)

(19) a John-un   [[mwues-i-{na/tunci}] sangkwaneps-i]   cal   mek-nun-ta

John-Top   what-be-QE   not to be related-ADV well   eat-present-Decl

'John eats anything well regardless of what it is.'

　b *John-un   [[mwues-i-{na/tunci}]   molu-nun   mwulken-ul]cal   mek-nun-ta

John-Top   what-be-QE   not know Rel   thing-Acc   eat-present-Decl

'John eats anything well regardless of what it is.   Chung (1996, p.238)

As can be seen in (18), an existential quantifier *nwukwuinka* may be followed by *molu-nun salam* 'a person that I do not know' but not by an interrogative predicate like *sangkwaneps-i* 'irrespective of'. On the other hand, in (19), the universal quantifier *nwukwuina* can be followed by *sangkwaneps-i* 'irrespective of' but not by *molu-nun mwulken* 'a thing that he does not know'. Through the examples in (18) and (19), Chung (1996) argues that existential quantifiers must be followed by a relative interrogative predicate while universal quantifiers must be followed by an adverbial interrogative predicate. Thus, his argument is that the variation between an existential quantifier

reading and a universal quantifier reading depends on the choice of interrogative predicate. However, Chung's analysis of the difference between existential quantifiers and universal quantifiers is inadequate, as the following counter example illustrates:

(20) Nwukwu-i-na-ka   gyungki-ey chamyeo-hay-ess-ta.

   Who-be-QE-Nom   game-to   participate-do-past-Decl

  'Everybody participated in the game.'

Jang and Kim (1996) also claim that Chung's analysis is falsified by the fact that it is possible to add a Nominative Case particle to universal quantifiers in the earlier example in (17b), repeated here as (21):

(21)   nwukwu-Ø-{na -ka/ tunci -ka}   John-ul   cohaha-n-ta

    who-   be- {QE-Nom/QE-Nom} John-Acc like-present-Decl

    'Anyone likes John.   Jang and Kim (1996, p.146)

In addition, Chung's argument that the variation between an existential quantifier reading and a universal quantifier reading depends on the choice of interrogative predicates is also problematic. According to Chung, the use of interrogative predicates with existential quantifiers and universal quantifiers is restricted, and this makes the difference between an existential quantifier reading and a universal quantifier reading. However, contrary to what he claims, the following example allows both types of interrogative predicate:

(22) a. John-un   [nwukwu-i-na] sangkwanepsi   mana-n-ta

John-Top   who-be-QE   not to be related-Adv   meet-present-Decl

'John meets everyone.'

b. John-un   [nwukwu-i-na/-tunci] molu-(nu)n   salam-ul   mana-n-ta

John-Top   who-be-QE   not to know-Rel   man-Acc   meet-present-Decl

'John meets a man that he does not know.'

According to Chung (1996), (22b) is expected not to be allowed, since relative interrogative predicates cannot follow universal quantifiers. And yet, the above examples are perfectly grammatical. Chung (1996) rejects Kuroda's (1965) and Nishigauchi's (1990) arguments that different question markers directly lead to an existential vs. universal quantifier reading, and suggests that both existential quantifiers and universal quantifiers are indirect questions. However, his argument does not seem to be well supported by empirical data. Thus, although we accept his analysis of Korean wh-expressions as clauses, we still maintain Kuroda's (1965) and Nishigauchi's (1990) views on the link between wh-words and specific question markers in Cs. We will consider this in more detail in section 5.

4. Unified Quantifier Analyses of Korean Wh-expressions

In this section, we will consider an analysis directly opposed to that in the previous section. That is, wh-expressions are actually indefinite quantifiers, and the interrogative reading of wh-expressions is derived by some mechanism. There are two main approaches along these lines in the literature. For example, Chang (1976) and C-M Suh (1987) argue that all Korean wh-expressions are existential quantifiers and that they are

changed to interrogative expressions when they receive focus. Thus, the meaning of wh-expressions is determined by the presence or absence of focus on wh-expressions: (the bold-printed **Nwu** receives focus)

(23) a.Nwu(kwu)-ka   o-ess-ni?

   Who-Nom   came-QE

   'Did someone come?

  b. **Nwu(kwu)**-ka   o-ess-ni?

    Who-Nom   came-QE

    'Who came?'

As you see in (23b), when the bold-printed wh-expression *nwu(kwu)* has focus, the wh-expression has an interrogative reading. The following examples also support this approach:

(24) a. John-i   **nwuku**-cocha   manna-ess-ni?

    John-Nom   who-even   met-past-QE

    'Who was it that John met?'

    #'Did John meet even someone?'

  b. [John-i   e$_i$ mek-un]   kes-i   **mwues**-i-ni?

    John-Nom   eat-Rel   thing-Nom   what-be-QE

    'What is it that John ate?'

    #'Is it something that John ate?'   Chung (1996, p.241)

In (24a), the wh-expression is followed by a focus affix *-cocha*, and in (24b), the wh-expression is the complement of a copular verb in the cleft construction. Both of them are interpreted as having an interrogative reading. However, this approach does not seem to explain why universal quantifiers cannot have an interrogative reading, even when they have focus.

(25) **Nwuku**-{ina/-itunci}-ka   ku-il-ul   cal   ha-ni?

   Who-be- ∀ -Nom   the-work-Acc   well do-QE

   'Can everyone do the work well?'

   #'Who can do the work well?'

In addition, there is no consistent account of the absence of focus on wh-expressions in declarative clauses.

(26) a. Nwu-ka   wa-ess-ta.

      Who-Nom   came-Decl

    'Someone came.'

   b.??**Nwu**-ka   wa-ess-ta.

      Who-Nom came-Decl

    'Someone came.'

    #'Who came?'

Furthermore, in the case of *way* 'why', it only has an interrogative reading whether it has focus or not:

(27) John-i   **way**   wa-ess-ni?

   John-Nom   why   come-past-QE

   'Why did John come?'

   # 'did John come for some reason?'

If wh-expressions are existential quantifiers and the interrogative reading is derived from indefinite quantifiers, the case of *way* 'why' cannot be explained under this approach.

   An alternative approach is proposed by Kim (1989, 1991). He argues that Korean wh-expressions are quantifiers. A major difference from the first approach is that the interpretation of a wh-expression is determined by its relation to a question licensing ending marker. He argues (1989, p.121) that wh-expressions in Korean and Japanese behave as polarity items in that a Q-morpheme is necessary for an interrogative reading. In addition, he argues that wh-expressions are not raised in the overt syntax, since they are quantifiers. Instead they undergo Quantifier Raising (QR) at LF like other quantifiers. Consider the following examples:

(28) a. ?* What did John ask whether Mary bought __?

   b. * What did John ask who bought ___?

   c. * John/Who asked whether John bought what?

   d. Who asked who bought what?

In the examples in (28), the fact that (28d) can be a multiple matrix wh-question shows

that LF-wh-movement in English does not obey the wh-island condition. However, we can observe the existence of wh-island effects in the following Japanese and Korean examples:

(29) a. Japanese

    * John-wa   [Mary-ka   nani-o   tabe-ta   ka-ddoka] oboe-te-imasu-ka?

    John-Top   Mary-Top what-Acc eat-P   whether   remember-is-Q

    'What is the thing x such that John remember whether Mary ate x?'

  b. Korean

    * John-un   [Mary-ka   mwues-ul meok-ess-nci]   kiyeok-ha-ni?

    John-Top   Mary-Nom what-Acc   eat-P- Q   remember-do-Q

    'What is the thing x such that John remember whether Mary ate x?'

The existence of wh-island effects with LF movement in Korean and Japanese is unexpected, if the wh-expressions in question are the same as unmoved wh-expressions in English, since given Huang's (1982) line of reasoning, one of the two could stay in the embedded clause and the other would move to the matrix clause. Thus, Kim (1989) argues that the nature of wh-island effects with LF movement in Korean and Japanese can be viewed as an island effect on ordinary quantifiers phrases (QPs) as an opaque domain for QPs, but not that on unmoved wh-phrases at LF. He calls such an effect a QP-Island effect. In English, we can observe similar QP-island effects:

(30) a. John asked whether he had bought some shuttle-cocks at Abercrombie's.

    b. Carol wondered why everyone was reading Gravity's Rainbow.

c. John defeated some politicians who run in every election.   May (1977)

In the above examples in (30), quantifier phrases that occur in embedded clauses containing wh-expressions have only embedded scope. On the other hand, the examples in (31) allow ambiguous readings:

(31) a. John believed that someone was at the door.

   b. Harry wanted us to invite too many people to the party.

   c. John realised that a picture had been stolen.   May (1977)

The scope of quantifiers is not clause-bound in Hornstein (1984). Thus, quantifiers can have matrix scope as well as embedded scope in (31). Based on these examples, Kim (1989, 1991) argues that both quantifiers and wh-expressions in Korean and Japanese are the same type of quantifiers in relevant senses, while in English they constitute heterogeneous groups.

   However, this analysis is also problematic, for several reasons. First, according to Kim (1989, 1991), wh-expressions with an interrogative reading are interrogative polarity items which must be licensed by a question morpheme at LF, while wh-expressions with a quantifier reading must not be licensed by a question morpheme. But, consider the following sentence:

(32) John-un   [Mary-ka   nwukwu-lul   salangha-n-ta-ko]   mit-ni?

   John-Top   Mary-Nom   who-Acc   love-present-Decl   believe-QE

   'Who does John believe that Mary loves?'

'Does John believe that Mary loves someone/anyone?'

The sentence in (32) is ambiguous with respect to the reading of the wh-expression *nwuku*. Under the Minimalist Program, wh-expressions cannot move to spec C without feature checking, whether by overt movement or covert movement. Suppose the wh-expression *nwukwu* is not marked with respect to the feature that distinguishes interrogatives from quantifiers. How, then, can we differentiate the interrogative reading from the quantifier reading? Within the Minimalist Program, Kim's unified quantifier analysis does not seem to give a clear answer to the ambiguity in (32), since both readings of the sentence are associated with the same terminal morpheme. Second, some wh-expressions do not have a quantifier reading. Chung (1996, pp.273-274) provides the following examples in which wh-expressions have an exclusive interrogative reading:

(33) a. John-i   way   o-ess-ni?

    John-Nom   why   came-QE

  'Why did John come?'

   #'Did John come for some reason?'

  b. Nwukwu-nwukwu-ka o-ess-ni?

    Who-who-Nom   came-QE

   'Who (pl.) came?'

   #'Did someone come?'

  c. Ku nwukwu-ka   ilen   sayngkak-ul   ha-l-ka?

    That who-Nom   such   idea-Acc   do-future-QE

'who would think of such a thing?'

#'Would anyone think of such a thing?'

In the above examples, wh-expressions that have an exclusive interrogative reading are the wh-word *way* 'why', duplicate wh-expressions, and wh-expressions modified by *ku* 'the/that', or *enu* 'which'. Finally, since all wh-expressions and quantifiers have the same properties as quantifiers, it is clear why QP-island effects occur in Korean and Japanese. However the reason that the examples in (30) in English have only embedded scope because of QP-island effects is not clear, since quantifiers and wh-expressions are distinct in English. Thus, Kim's (1991) argument that all wh-expressions are quantifiers does not seem to be defensible in the face of such counter-examples.

5. An Indefinite Pronominal Variable Analysis of Korean Wh-Words

In this section, we will consider Korean wh-words as pure indefinite pronouns devoid of an inherent interrogative or an inherent quantifier operator feature along the lines of Kuroda (1965), Nishigauchi (1990), Li (1992), Aoun and Li (1993a,b,c), Cheng (1991), and Tsai (1992, 1994, 1999). The claim that Korean wh-expressions do not have an inherent operator feature can be supported by the following example:

(34)   Nwukwu-ka   mwues-ul sassa-ni?

        Who-Nom   What-Acc bought-Q

        a. 'Did someone buy something?'

        b. 'Who bought what?'

        c. *'Who bought something?'

d. *'What did someone buy?'　　　　　　　　　　Kim (2000, p.315)

Kim (2000) argues on the basis of the above examples that Korean wh-expressions are variables. She argues that when two wh-expressions appear in the same clause, they must receive the same interpretation as in (34). She calls this an across-the-board (ATB) effect. She argues that if wh-expressions were inherently interrogative or existential quantifiers, the sentence in (34) should be able to have four readings. We can find the same phenomena in the following Chinese examples:

(35) a. Ta　yiwei　shei　xihuan　shenme.

　　　He　think　who　like　　　what

　　　'He thought somebody liked something.'

　b. Ta yiwei　shei　xihuan　shenme　ne?

　　　he thinks　who　like　　　what　　wh-QE

　　　'Who(x), what(y), he thought x liked y?'

　　　#'Who(x), he thought x liked something?'

　　　#'What(y), he thought somebody liked y?'

　　　#'He thought who liked what.'　　　　　　　　　Li (1992, p.138)

As the glosses indicate, the wh-expressions in (35a) can be interpreted as quantifiers, owing to the presence of the non-factive verb *yiwei* 'think'. However, in (35b) where a question ending marker is present, all wh-expressions must be interpreted as interrogatives. If Chinese wh-expressions have an inherent interrogative or quantificational force, the remaining interpretations in (35b) should be allowed. Thus,

wh-words themselves do not have an inherent interrogative or quantifier operator feature.

Now, consider the following example:

(36) Nwukwu-ka   mwues-inka-lul   sassa-ni?

   Who-Nom   What-   ∃ - Acc   bought-Q

     a. 'Did someone buy something?'

     b.'Who bought something?

In (36), the wh-expression *mwues* is followed by the existential quantifier morpheme -*inka* containing an inherent operator feature. Owing to the presence of the quantifier morpheme -*inka,* the interpretation of the wh-expression *mwues* is fixed as an existential. Following C-S Suh (1990), and Chung (1996), we assume that Korean wh-expressions are clauses, as we argued in section 3. The existential quantificational morpheme -*inka* is decomposed into the copula verb -*i* plus a question ending marker -*nka* in C-S Suh (1990), as we have already seen:

(37) nwukwu- i - nka

    who   -be - QE

   'a man who I do not know'

Chung (1990) analyses all interrogative and quantificational ending markers as indirect question markers. However, since we earlier highlighted the problems of Chung's Unified Interrogative Analysis of Korean wh-expressions in section 3, we will assume that quantificational wh-expressions and interrogative wh-expressions have different

ending properties. Thus, the ending marker *-nka* is an existential quantificational ending marker. The ending determines the interpretation of a wh-word, as in:

(38) nwukwu-i-nka

   who-   be- ∃Q

  'someone'

The conclusion that we draw from this is that Korean wh-words themselves are variables and their interpretations are determined by the ending marker of C in the whole wh-expression. In Japanese too, we find a similar phenomenon:

(39) a. dare-ka-ga   kita-ka?

    Who- ∃-Nom   came-Q

   'Has someone come?'

  b. dare-ka   kita-ka?

    Who-∃   came-Q

   'Has someone come?'

  c. dare-ga   kita-ka?

    Who-Nom came-Q

   'Who has come?'

In (39), the nominative Case marker *-ga* is morphologically distinct from the question marker *–ka*. However, the question marker *-ka* which is attached to wh-expressions

seems to be different from the question marker *-ka* which is attached to the verb. This question marker *-ka*, which is attached to wh-expressions, appears to have the same property as the Korean quantifier ending marker *-nka*. Thus, ambiguity does not arise in (39).

Now, consider the following morphological paradigm:

(40)   Wh-words (in Korean)

        nwukwu   'who'

        mwues   'what'

        eti   'where'

        encey   'when'

        etteke   'how'

        way   'why'

        enu N   'which N'

        elma   'which amount'

Although most wh-words start with *wh-* in English, wh-words in Korean do not have such a uniform morphological structure even though some of them start with *e-*. We can find a similar pattern in Japanese as in (41):

(41)   Wh-words   (in Japanese)

        dare   'who'

        nani   'what'

        doko   'where'

itsu	'when'
naze	'why'
dono N	'which N'

From this, it seems reasonable to conclude that wh-words in Korean and Japanese do not have an uninterpretable Form feature (or wh-feature). It seems that they have an idiosyncratic Form feature. Thus, I assume that Korean wh-expressions have features which are all interpretable, and those features are variables. Thus, under Chomsky's (1998) feature system, the feature composition of wh-expressions in English and Korean differs in that although wh-words in English contain an uninterpretable wh-feature and interpretable Q-operator feature (Q-OP), its Korean counterparts only carry interpretable variable features. Thus, since Korean wh-expressions do not have an uninterpretable wh-feature but only interpretable variable features, Korean wh-expressions cannot use a checking system such as Agree to mediate the relationship between C and themselves.[5] This means that wh-questions in Korean do not involve wh-movement. If Korean wh-expressions do not have an uninterpretable wh-feature, how can both English and Korean wh-questions have the same interpretation at LF? The wh-feature is a kind of form feature, so the feature itself is not interpretable in any way. Thus it should delete before Spell-out and should not exist in LF. This means that neither English nor Korean wh-expressions contain an uninterpretable wh-feature in LF. Thus, the same interpretation is possible in both English and Korean wh-questions. However, if Korean wh-questions do not make use of a checking system on the link between Cs and wh-

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[5] Chomsky (1999,p.4) posits that matching of probe-goal induces Agree, eliminating uninterpretable features that activate them. In other words, Agree is a syntactic operation for eliminating uninterpretable and unvalued features between a probe and a goal in Narrow Syntax. See Atkinson (2000, 2001,2002),

expressions, the question to deal with here is what kind of mechanism they make use of in the link between Cs and wh-expressions. Following Cheng (1991), Fukui (1986,1988,1995) and Fukui and Takano (1998), I will accept the particle system and the binding system as linking systems between Cs and wh-expressions in Korean. Even though the linking mechanism between C and wh-expressions is different in Syntax between English and Korean, the interpretation of their interpretable features is the same at LF.

Now, let us consider the feature composition of Korean wh-expressions more carefully. If wh-words have neither a wh-feature nor an operator feature, what features do they have? Before answering this question, let us consider another morphological paradigm. In (42), we observe that all Korean wh-words have Case except for *way* 'why'.

(42)   Interrogative Wh-expressions (in Korean)

        nwukwu-ka (Nom)/ -lul (Acc)   'who'

        mwues-i (Nom)/-ul (Acc)   'what'

        eti-ka (Nom)/-lul (Acc)   'where'

        encey-ka (Nom)/-lul (Acc)   'when'

        etteke-ka (Nom)/-lul (Acc)   'how'

        way-*ka (Nom)/-*lul (Acc)   'why'

        enu N-ka (Nom)/-lul (Acc)   'which N'
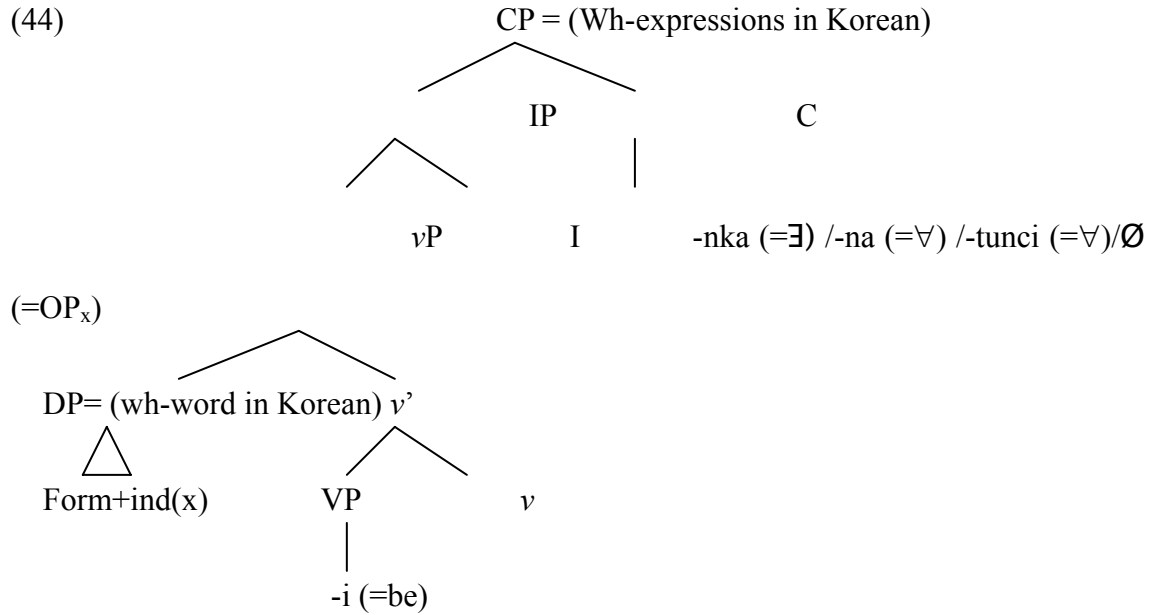
        elma-ka (Nom)/-lul (Acc)   'which amount'

Since Korean wh-words have Case, they are all pronominal except for *way* 'why', and

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Radford (2001, 2004) and Frampton et al (2000) for more discussion of Agree.

they are also variables. The interpretation of these variables is determined by the ending markers in the whole wh-expressions.

(43) Existential Wh-expressions (in Korean)

        nwukwu-i-nka   'someone'

        mwues-i-nka   'something'

        eti-i-nka   'somewhere'

        encey-i-nka   'sometime'

        way-i-*nka   'For some reason'

        enu N-i-nka   'some N'

        elma-i-nka   'some amount'

In (43), the existential interpretation of other wh-expressions except for *way* 'why' is determined by the ending marker *–nka*. Since *way* 'why' is not a pronominal variable, its interpretation is not determined by *-nka*. Thus, this binding system seems to work only for pronominal variables. Based on Tsai (1994, 1999) and Chomsky (1995), through our discussion of the behaviour of wh-expressions in Korean, we can assume the following feature composition for Korean wh-expressions:

(44) CP = (Wh-expressions in Korean)

IP   C

vP   I   -nka (=∃) /-na (=∀) /-tunci (=∀)/Ø

(=OP$_x$)

DP= (wh-word in Korean) v'

Form+ind(x)   VP   v

-i (=be)

As discussed in section 3, Korean wh-expressions are clauses. The copular *–i* is generated in V, and the licensing morphemes *-nka/-na/-tunci/Ø* containing an operator feature are located in C within wh-expressions. Wh-words themselves are pronominal variables, which are composed of an idiosyncratic form feature, an indefinite pronoun, and its semantic parts like a human or non-human, locational or temporal feature etc. Like English wh-expressions, their different interpretations also stem from a difference in the nature of the operator feature they carry. But in Korean, the operator feature is base-generated as one of features in Cs, and the link between Cs and wh-words is determined by a binding system.

6. Conclusion

In this paper, I have proposed that Korean wh-words are considered as pure indefinite pronouns void of an inherent interrogative or an inherent quantifier operator feature

along the lines of Kuroda (1965), Nishigauchi (1990), Li (1992), Aoun and Li (1993a,b,c), Cheng (1991), and Tsai (1992, 1994, 1999). Following C-S Suh (1990), and Chung (1996), I argue that Korean wh-words behave like variables. They are pronominal variables, which are composed of an idiosyncratic form feature, an indefinite pronoun, and its semantic parts like a human or non-human, locational or temporal feature etc. But, unlike English, in Korean, the operator feature is base-generated as one of features in Cs, and the link between Cs and wh-words is determined by a binding system. In addition, I assume that the whole Korean wh-expressions are clauses. The copular verb is generated in V, and the licensing morphemes, containing an operator feature, are located in C within wh-expressions.

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