The Intervention Effect as a Syntactic Phenomenon in Korean Wh-questions*

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Hisashi Morita and Namkil Kang. 2016. The Intervention Effect as a Syntactic Phenomenon in Korean Wh-questions. Studies in Generative Grammar. 26-2, 165-192. There are mainly three types of approaches to intervention effects in Korean wh-questions: pragmatic, semantic and syntactic. The present paper argues that despite problems presented by pragmatic and semantic accounts, a syntactic approach can explain the intervention effect in Korean wh-questions best because it can logically explain why Korean speakers make different grammatical judgment as far as the intervention effect is concerned and can predict the environment where no intervention effect is observed. Judgmental variability of the intervention effect and crosslinguistic varieties of intereners have been presented against syntactic accounts; however, the present paper claims that there are two superficially identical types of wh-questions in Korean, and due to the ambiguous status, grammatical judgment of the intervention effect can differ among speakers and may fluctuate within the same speaker more markedly than other syntactic phenomena, and also shows that the kind of interveners do not differ so much as has been claimed, and that interveners are contrastive-focused as Kim (2002a, b) argues.

Keywords: quiz question, echo question, contrastive focus, NPIs, quantifiers

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1. Introduction

There is a phenomenon called intervention effects in *wh*-questions, which is represented as follows:

(1) *[CP Q ··· intervener ··· wh ···]

(where Q is a question particle in C)

According to (1), ungrammaticality arises when an intervener, which is underlined here and elsewhere, c-commands a *wh*-phrase. For example, compare the following examples:

(2) a. {(*??)nwukwuna/*??)john-in-a bill]-i mues-ul ilkess ni?
   everyone -or -Nom what-Acc read Q
   \('What did \{everyone/John or Bill\} read?\)\)  Tomioka (2007, adapted)

b. mues-ul {nwukwuna / john-in-a bill}]-i ti ilkess ni? (scrambled)
   \('What did \{everyone/John or Bill\} read?\)\)  Tomioka (2007, adapted)

(3) a. ?*Minsu-{man/to} nuku-lul manna-ss-ni?
   -only/also who-Acc meet-Past-Q
   \('Who did \{only/also\} Minsu meet?\)\)  Kim (2002a, adapted)

b. nukul-lul, Minsu-{man/to} ti manna-ss-ni? (scrambled)
   \('Who did \{only/also\} Minsu meet?\)\)  Kim (2002a, adapted)

In Korean, expressions such as *nwukwuna* ‘everyone’, *A-in-a B ‘A or B’ and phrases with focus particles such as *man* ‘only’ and *to* ‘also’ cannot c-command a *wh*-phrase at surface structure as in (2)a and (3)a. However, when a *wh*-phrase is scrambled over the interveners, the intervention effect is lifted as in (2)b and (3)b.

In literature, three kinds of accounts have been proposed: syntactic, semantic and pragmatic ones. The present paper claims that a syntactic account explains Korean *wh*-questions best.

2. Three types of account

Let us introduce the three kinds of proposals, syntactic, semantic and pragmatic, one by one.

2.1. Syntactic accounts

Although details are different, Hagstrom (1998), Kim (2002b), and Morita (2013a,
b) among others argue for syntactic explanations, all of whom agree that intervention effects are attributed to violation of an economy principle, i.e. the Minimal Link Condition, which is represented as follows:

\[(4) \ast [cp \ Q \ ... \ intervener \ ... \ wh\text{-}phrase \ ... ]\]

\[ [Q] \ [WH] \ [WH] \]

Suppose \([Q]\) in \(C\) is a probe and seeks \([WH]\) as a goal in its c-commanding domain. The representation above results in ungrammaticality because \([Q]\) in \(C\) wrongly enters into Agree with \([WH]\) of the interveners. The fact that if a \(wh\)-phrase is scrambled over the interveners, it becomes grammatical as in \((2)b\) and \((3)b\) supports syntactic explanations. This is because the scrambled \(wh\)-phrase is closer to \(C\), so it can successfully go through Agree with \(C\).

2.2. A semantic account

Beck (2006) and Beck and Kim (2006), however, attribute the effect to a semantic reason, and present the following representation:\(^1\)

\[(5) \ast [cp \ Q \ ... \ [Op \ [er \ ... \ wh\text{-}phrase \ ... \ ]]]\]

In this representation, \(Op\) stands for a focus-sensitive operator, and is necessary to license focused expressions and (certain) quantifiers. Following Rooth (1992), they assume that there are two types of semantic value, an ordinary and an additional focus semantic value, and focused phrases as well as \(wh\)-phrases generate a set of relevant alternatives in the additional focus semantic value. \(Op\) in the representation provides additional semantic values as well as ordinary semantic values to focused expressions in its (c-commanding) domain. However, Beck (2006) and Beck and Kim (2006) claim that \(wh\)-phrases cannot be in the domain of \(Op\) because they cannot have an ordinary semantic value, which leads to semantic anomaly, and hence, intervention effects.\(^2\) The reason why focused expressions and (certain) quantifiers cause the intervention effect is because they must be introduced with \(Op\) and \(Op\) cannot interpret \(wh\)-expressions. If \(wh\)-phrases leave the domain of \(Op\) due to scrambling, the sentence becomes

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\(^1\) Mayr (2013) also proposes a semantic account of the intervention effect, but it will not be discussed in the present paper because of limited space.

\(^2\) Beck and Kim assume that \(wh\)-phrases do not move to \(C\) at any level in Korean. This assumption is crucial in order for them to argue for a semantic account.
grammatical as in (2)b and (3)b because the scrambled \textit{wh}-phrases are properly licensed by Q.

So far, syntactic and semantic accounts are very similar to each other in that a \textit{wh}-phrase and C must be locally licensed, but Beck and Kim claim that syntactic proposals have problems. One main problem is that the kinds of interveners vary considerably across languages. For example, adverbs such as ‘often’ and ‘at least’ cause intervention effects in German, but not in Korean as follows:

   Luise enumerates which university \textit{often} which linguists invited has

b. Luise zahlt auf, welche Uni \textit{welche Linguisten oft} eingeladen had.
   Luise enumerates which university which linguists \textit{often} invited has
   ‘Luise enumerates which university \textit{often} invited which linguists.’ Beck (2006)

(7) ??Wer hat \textit{mindestens zweimal welche Preise} gewonnen?
   who has \textit{at.least twice} which prizes won
   ‘Who has won which prizes \textit{at least twice}?’ Beck (1996)

(8) Minsu-n\textsubscript{un} chachu nuku-l\textsubscript{l\l} p\textquoteright at\textprime i-e teliko ka-ss-ni?
   -Top often who-Acc party-to take-Past-Q
   ‘Who did Minsu \textit{often} take to the party?’ Kim (2002a)

(9) John-i \textit{ceketo twupen mues-ul ilkess ni}?
   -Nom at.least twice what-Acc read Q
   ‘What did John \textit{read} at least twice?’

German examples such as (6) and (7) show that lexical items such as \textit{oft} ‘often’ and \textit{mindestens} ‘at least’ cause the intervention effect when they c-command in-situ \textit{wh}-phrases. However, the counterparts in Korean, i.e., \textit{chachu} ‘often’ and \textit{ceketo} ‘at least’, do not cause ungrammaticality as in (8) and (9). On the basis of examples such as these, they argue that the kinds of focused phrases can be different among languages, so one cannot define interveners in terms of syntactic features.

Before introducing a pragmatic account of the intervention effect, let us raise empirical and conceptual issues on Beck and Kim’s semantic account. According to (5), an abstract element such as $Op$ is a real intervener, and it cannot c-command a \textit{wh}-expression because of a semantic reason. Beck and Kim (2006) claim focusing particles such as ‘only’ and ‘also’ function as $Op$. However, \textit{ceketo} ‘at least’ is also a focusing particle, but it does not seem to cause the intervention effect as in (9). Moreover, they claim that certain quantifiers or
operators such as ‘every’, ‘some’ and disjunction introduce the abstract operator. However, it remains unclear why certain quantifiers such as ‘every’ and ‘some’ need Op while others such as ‘most’ do not. We will come back to this issue in section 4.

2.3. A pragmatic account

Tomioka (2007) presents a third account to intervention effects, which is pragmatic. More specifically, he attributes the effect to violation of information structure proposed by Vallduvi (1992). Roughly speaking, a sentence is divided into two parts: a focus and a ground. A focus carries new information while a ground represents old or given information. A ground is further separated into two parts, a link, which connects the utterance to the on-going context and corresponds to Topic, and a tail. Tomioka claims that interveners are Anti-Topic Items (ATIs), so they cannot be placed in the initial position of a *wh*-question, because the position is where Topic is expected to be placed, which is illustrated as follows:

(10) *[CP [[Focus *wh*] [Tail …]]

As one support, interveners cannot bear a topic-marker, nun, as follows:

(11) a. *nwukwuna-nun
    everyone-Top

b. *[[John-ina Bill]-un
    John or Bill-Top

c. *amuto-nun
    anyone-Top

Tomioka (2007, adapted)

In other words, intervention effects arise in Korean *wh*-questions because the initial position of a *wh*-question, where Topic must appear unless it is a *wh*-phrase, is occupied by an ATI. Scrambling of a *wh*-phrase over the interveners (ATIs) improves grammaticality because the ATIs are not in the Link position anymore (and are now embedded in the Tail part):

(12) [CP [[[Focus *wh*] [Tail ATI t;…]]]

The main reasons why Tomioka does not consider that intervention effects
are syntactic is that judgment of intervention effects is notoriously difficult as the bracketed grammatical judgements indicate in (2)a, and varies among speakers. Moreover, NPIs are somehow the strongest interveners as follows:

\[
\begin{align*}
(13) \quad &\text{Amuto mues-ul ilkci-anh-ass ni? [NPI]} \\
&\text{anyone what-Acc read.not Q} \\
&\text{‘What did no one read?’} \\
\end{align*}
\]
Tomiooka (2007, adapted)

In comparison to (2)a and (3)a, NPI interveners such as (13) cause stronger ungrammaticality. These types of criticism with regard to judgement variability and variance among interveners seem to be real and argue against Beck (2006) and Beck and Kim’s (2006) semantic explanation too. However, as will be discussed in section 3, it is possible to explain these problems without resorting to information structure.

2.4. Problems with non-syntactic accounts

Before presenting the main claims, let us mention a few more problems with the semantic and the pragmatic accounts of intervention effects introduced above. First, addition of \textit{ku sikane} ‘at that time’ lifts intervention effects as follows:

\[
\begin{align*}
(14) \quad &\text{Nwukwuna / John-in-na Bill -i ku sikane mues-ul ilkess ni?} \\
&\text{everyone -or -Nom at.that.time what-Acc read Q} \\
&\text{‘What did [everyone/John or Bill] read at that time?’} \\
&\text{What> } \forall \text{ (or ‘John or Bill’); } \forall \text{ (or ‘John or Bill’)} > \text{What (i.e. single-list only)}
\end{align*}
\]

Somehow, addition of \textit{ku sikane} cancels intervention effects as in (14) in contrast to (2)a. In this case, no judgmental variability arises: Korean speakers unanimously accept (14) unlike (2)a. This surprising fact cannot be easily accommodated in the pragmatic or semantic accounts introduced above. The example is particularly problematic for Tomiooka’s (2007) pragmatic account. The information structure in (2)a and (14) is the same in that an ATI is in a sentence-initial position and precedes a \textit{wh}-expression; nevertheless, mere addition of a particular adverb lifts ungrammaticality as in (14). Similarly, the example poses a problem to Beck and Kim’s (2006) semantic account too because the

\footnote{For other types of problems for the pragmatic and semantic accounts of the intervention effect, refer to Morita (2013b).}
operator for the interveners applies to the \textit{wh}-expression before C does, and this process should cause the intervention effect according to their claim contrary to the fact.

Secondly, in German, a universal quantifier, \textit{jeder}, which is also an intervener, must take wide scope as follows:

\begin{equation}
\text{Wen hat \underline{jeder} wo gesehen?}
\end{equation}

\textit{whom has everyone where seen}

\textquote{Where did everyone see whom?'}

\textquote*{Where, whom} > \forall; \ \forall > \textit{Where, whom} \ \textit{(i.e. distributive readings only)}

Beck (1996: 19)

In (15), \textit{jeder} is an intervener against (covert movement or interpretation of) the in-situ \textit{wh}-phrase, \textit{wo}. Accordingly, the universal quantifier must take wide scope. However, the Korean counterpart exhibits a few different aspects from German.

Consider (2)a again, which is repeated below:

\begin{itemize}
\item \textit{Nwukwuna-ka mues-ul ilkess ni ?}
\item \textit{everyone-Nom what-Acc read Q}
\item \textquote{What did everyone read?'}
\end{itemize}

The first difference has already been mentioned; that is, not every Korean speaker regards (2)a as ungrammatical, whereas the judgment in (15) is uncontroversial for German speakers. The second difference is that if a universal quantifier intervener precedes a \textit{wh}-phrase, ungrammaticality surfaces as in (2)a for some speakers of Korean, whereas it does not result in ungrammaticality in German as in (15). This difference may be accounted for by assuming that a universal quantifier can take scope over \textit{wh}-phrases in German, but not for the group of Korean speakers who consider (2)a as ungrammatical. More specifically, a universal quantifier can be raised to a position higher than \textit{wh}-expressions in CP at LF in German, but not for some speakers of Korean. If that is the case, another problem arises. For the other group of Korean speakers, who judge (2)a to be grammatical, the universal quantifier is expected to take scope over the \textit{wh}-phrase as in German; however, that is not the case. This phenomenon is particularly problematic for Beck (2006) and Beck and Kim’s (2006) semantic account because \textit{wh}-phrases do not move in their account, so the universal quantifier is expected to take scope over the \textit{wh}-phrase contrary to the fact. Moreover, if intervention effects are explained in a semantic way, crosslinguistic
differences such as above should not be observed in the first place.

The final problem for non-syntactic accounts of intervention effects is that multiple-pair readings are blocked when interveners precede *wh*-phrases. Compare the following dialogues:

(16) Q: John-ka etten haksayng-eykey etten chayk-ul ilke-cwuess ni?
   -Nom which student-Dat which book-Acc read-gave Q
   ‘To which student did John read which book?’
A: (John-ka) i haksayng-eykey LGB-ul, cho haksayng-eykey Barriers-ul, ….
   -Nom this student-Dat -Acc that student-Dat -Acc
   read
   ‘(John read) LGB to this student, Barriers to that student, …’

(17) Q: {(??)nwukwuna/(??)Bill-ina Mary}-ka etten haksayng-eykey etten chayk-ul ilke-cwuess ni?
   everyone -or -Nom which student-Dat which book-Acc read-gave Q
   ‘To which student did {everyone/Bill or Mary} read which book?’
A: ((Nwukwuna/Bill-ina Mary)-ka) i haksayng-eykey LGB-ul,
   everyone -or -Nom this student-Dat -Acc
   cho haksayng-eykey Barriers-ul, ….
   that student-Dat -Acc read-gave
   ‘({Everyone/Bill or Mary} read) LGB to this student, Barriers to that student, …’

(16) shows that two ‘*which’ + singular N questions allow multiple-pair answers. As is often the case with the intervention effect, grammatical judgment is variable among Korean speakers, so there are speakers who do not accept the question in (17). However, according to speakers who accept (17), multiple-pair readings are disallowed unlike (16). The correlation between cancelation of the intervention effect and unavailability of multiple-pair interpretations in (17) cannot be easily explained in semantic or pragmatic accounts.

3. A syntactic account of the intervention effect

To account for the problems raised against syntactic accounts of the intervention effect, the present paper will propose that there are two types of *wh*-questions

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4 We consulted with five Korean speakers who accepted (17) and all of them agree that no multiple-pair reading is available in (17).
following S. Watanabe (1995), Pesetsky (1987, 2000), Barss (2000), Dayal (2002), Bruening and Tran (2006), and Morita (2013a, b). Moreover, we claim that the two types of wh-questions are identical at the surface structure, so that judgmental variability arises among speakers. Before going into the main discussion, let us redefine the intervention effect as follows:

(18) *[[CP C ... intervener ... wh-phrase ...] [ufocus] [focus] [focus]]

Following Kim (2002a, b), we argue that interveners are focused elements, and we assume that interveners as well as wh-expressions have a syntactic feature, [focus]. Suppose that C enters into Agree with the focus feature of a wh-expression in order to initiate subsequent wh-movement of the wh-expression. Then the intervention effect arises due to violation of the Minimal Link Condition; that is, C wrongly goes into Agree with the intervener to value its focus feature in (18).

Coming back to the main discussion, it has been proposed above that judgmental variability or fluctuation arises because wh-questions are superficially ambiguous in two ways in Korean. Actually, English has two types of wh-questions when one wants to ask for new information as follows:

(19) Q: What did Bill buy?
   A: Bill bought a flower and a book.
(20) Q: Bill bought what?
   A: Bill bought a flower and a book.

(19) is an ordinary question to seek new information, but (20) is also possible in certain circumstances, which we call a quiz question. According to Huddleston and Pullum (2002), quiz questions are used “in contexts of sustained questioning, such as quizzes and interrogations by legal counsel, police, and so on (Huddleston and Pullum (2002: 873))”. Thus, quiz questions are not echo questions; new information is requested in quiz questions unlike in echo questions, the latter of which are employed only to clarify what the speaker uttered and not to ask for new information.

One obvious important difference between ordinary and quiz questions in English is that no wh-movement is initiated in quiz questions. Suppose Korean also has two types of wh-questions similar to the ones in English. Note also that Agree of focus features between C and a wh-expression is necessary to initiate
wh-movement as has been suggested above. Then it is predicted that ordinary wh-questions in Korean are subject to the intervention effect because they require Agree to perform wh-movement and Agree is regulated by the Minimal Link Condition, whereas quiz questions never show the effect because of no wh-movement or Agree. Moreover, since the two types of questions in Korean are superficially identical, speakers cannot determine which type of the two they are dealing with when they are asked for grammatical judgment, and this is why grammatical judgment of the intervention effects has been regarded as difficult and variable in comparison to other syntactic phenomena. The rest of the section will present a few pieces of evidence for the claim.

3.1 Disappearance of multiple-pair readings

As discussed in (16) and (17), when an intervener c-commands two ‘which’ phrases, multiple-pair readings are blocked. Examine the two dialogues again, which are repeated below:

(16) Q: John-ka etten haksayng-eykey etten chayk-ul ilke-cwuess ni?
    -Nom which student-Dat which book-Acc read-gave Q
    ’To which student did John read which book?’
A: (John-ka) i haksayng-eykey LGB-ul, cho haksayng-eykey Barriers-ul, …
  -Nom this student-Dat -Acc that student-Dat -Acc
  ilke-cwuesso.
  read-gave
  ’(John read) LGB to this student, Barriers to that student, …’

(17) Q: {((??)nwukwuna/??Bill-ina Mary}-ka etten haksayng-eykey etten chayk-ul ilke-cwuess ni?
  everyone -or -Nom which student-Dat which book-Acc read-gave Q
  ’To which student did {everyone/Bill or Mary} read which book?’
A: {((Nwukwuna/Bill-ina Mary)-ka)
  i haksayng-eykey LGB-ul,
  everyone -or -Nom this student-Dat -Acc
  cho haksayng-eykey Barriers-ul, … ilke-cwuesso.
  that student-Dat -Acc read-gave
  ’{Everyone/Bill or Mary} read LGB to this student, Barriers to that student, …’

The contrast between (16) and (17) receives a natural account if the intervention effect is a syntactic phenomenon. However, before providing the explanation, let us introduce Dayal’s (2002) account of English multiple wh-questions.
Examine the following dialogues:

(21) Q: Which professor likes Mary?
   A1: Professor Smith likes Mary.
   A2: #Professor Smith likes Mary and Professor King likes Mary.

(22) Q: Which professor likes which linguist?
   A1: Professor Smith likes Professor Brown.
   A2: Professor Smith likes Professor Brown and Professor King likes Professor Matthew.

Dayal (2002: 512)

As (21) illustrates, which followed by a singular noun phrase presupposes that there is only one referent which answers the question, which is why multiple-pair answers such as A2 is disallowed in (21). However, when there is more than one which singular NP in a question, multiple-pair answers as well as single-pair ones are possible as in (22). According to Higginbotham and May (1981), the mechanism which makes it possible for multiple which singular NPs to have multiple-pair readings is called wh-absorption. Specifically, multiple WH operators merge into one operator, which enables multiple-pair interpretations. An important implication in this mechanism is that which singular NPs need to be adjacent to each other to initiate wh-absorption at LF.

Dayal (2002) shows that is indeed the case by presenting the following dialogue:

(23) Q: Which linguist will be offended if we invite which philosopher?
   A1: Professor Smith will be offended if we invite Professor Brown.
   A2: #/*Professor Smith will be offended if we invite Professor Brown, and Professor King will be offended if we invite Professor Matthew.

She claims that two which phrases result in a single-pair interpretation as in A1 in (22) or a multiple-pair interpretation as in A2 in (22). However, if one of the two wh-phrases is inside an island as in (23), multiple-pair interpretations are unavailable. To account for the unavailability, Dayal claims that all wh-phrases must be raised to C to start wh-absorption: (23) does not permit multiple-pair readings because the lower wh-phrase is inside an island and cannot be raised to the matrix C across the island.

The same explanation can be employed to account for the contrast between (16) and (17) in Korean. The reason why (17) does not allow multiple-pair
readings unlike (16) is that *wh*-movement is somehow blocked. In other words, (even) if Korean speakers judge (17) grammatical, no movement of *wh*-phrases is applied there; that is, (17) is parsed as a quiz question. According to the syntactic account, the intervention effect arises when an intervener blocks movement of a *wh*-phrase, so for those who regard (17) as a quiz question, neither the intervention effect nor multiple-pair interpretations are observed. Thus, the syntactic account can account for the correlation between unavailability of multiple-pair readings and insensitivity to the intervention effect in (17) in a natural manner.

3.2 When quiz questions are preferred

Another interesting aspect in the intervention effect is that the effect is lifted when *ku sikane* 'at that time' is employed; thus, judgmental variability disappears as in (14), which is repeated below:

(14) {Nwukwuna / John-inà Bill }-i *ku sikane* mues-ul ilkess ni?
     everyone    -or    -Nom at.that.time what-Acc read Q
     'What did {everyone/John or Bill} read at that time?'

The grammaticality of (14) suggests that no *wh*-movement is applied there, which indicates that the example is a question without *wh*-movement. In other words, (14) is a quiz question according to the present account. In the following are more examples:

(24) Nwukwunaka-ka *ku sikane* mues-ul ilkess ni?
     someone-Nom at.that.time what-Acc read Q
     'What did someone read at that time?'

(25) Amuto *ku sikane* mues-ul ilkci-anh-ass ni?
     anyone at.that.time what-Acc read.not Q
     'What did no one read at that time?'

Again, no judgmental variability among speakers or judgmental fluctuation within the same individuals arises in the examples above. These examples suggest that the adverb *ku sikane* somehow forces a speaker to regard the question as a quiz question, which is why the intervention effect is unobserved and no judgmental variability or ungrammaticality follows when the adverb is employed. This fact in
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turn supports the present claim that there are two types of wh-questions in Korean.

In addition to the examples above, ku sikane blocks multiple-pair interpretations in the case of multiple-‘which’ questions. Examine the following dialogue:

(26) Q: **ku sikane** etten haksayng-i etten chayk-ul ilkess ni?
   at.that.time which student-Nom which book-Acc read Q
   ‘Which student read which book at that time?’
A1: John-i LGB-lul ilkesso. [single-pair]
   -Nom -Acc read
   ‘John read LGB.’
A2: #John-i LGB-lul, Mary-i Barriers-ul, …. ilkesso. [multiple-pair]
   -Nom -Acc -Nom -Acc read
   ‘John read LGB, Mary read Barriers, …’

(26) shows that **ku sikane** prevents multiple-pair interpretations. The reason is clear if the adverb is compatible with only quiz questions (which will be denied shortly, though). Quiz questions do not need wh-movement, so multiple-pair readings are unavailable if Dayal (2002) is correct.

However, when ku sikane c-commands no wh-expressions, multiple-pair interpretations are possible as follows:

(27) Q: etten haksayng-i etten chayk-ul **ku sikane** ilkess ni?
   which student-Nom which book-Acc at.that.time read Q
   ‘Which student read which book at that time?’
A1: John-i LGB-lul ilkesso. [single-pair]
   -Nom -Acc read
   ‘John read LGB.’
A2: John-i LGB-lul, Mary-i Barriers-ul, …. ilkesso. [multiple-pair]
   -Nom -Acc -Nom -Acc read
   ‘John read LGB, Mary read Barriers, …’

According to Dayal (2002), the availability of multiple-pair readings suggests that both of the wh-phrases are raised to C in (27). This fact leads to two new findings. One is that **ku sikane** does not necessarily force quiz questions despite the claim made immediately above. In other words, the adverb usually prompts quiz questions rather than ordinary wh-questions, but does not necessarily block
the reading of ordinary *wh*-questions. The other finding is that *ku sikane* too is an intervener. If two *wh*-expressions are higher than *ku sikane* as in (27), their movements to C-spec are not blocked and *wh*-absorption is available: hence, multiple-pair interpretations are possible there. However, when the adverb c-commands *wh*-phrases as in (26), *wh*-movement is blocked and *wh*-absorption is unavailable; therefore, no multiple-pair reading is possible there. The next subsection will discuss this issue further.

### 3.3 Semantic differences between ordinary and quiz questions

Apart from the contextual difference and existence of *wh*-movement between ordinary and quiz questions, an interpretational difference arises between the two types of questions in the case of English multiple-*wh* questions. Compare the following dialogues:

(28) Q: What did President Kennedy give to who(m) at the party just before his assassination?
   A$_1$: He gave a book to his wife.
   A$_2$: He gave a book to his wife and (gave) a card to his secretary.

(29) Q: President Kennedy gave what to who(m) at the party just before his assassination?
   A$_1$: He gave a book to his wife.
   A$_2$: #He gave a book to his wife and (gave) a card to his secretary.

(28) is an ordinary *wh*-question containing more than one *wh*-phrase, in which case not only a single-pair but also a multiple-pair answer is possible. In contrast, in the case of quiz questions with multiple *wh*-phrases, a multiple-pair answer is disallowed as in (29). Note that availability of multiple-pair readings in the current discussion is of a different type from the one discussed in subsection 3.1 because multiple non-*which* questions permit multiple-pair readings even if not every *wh*-phrase is raised to the matrix C as follows:

(30) Q: Who will be offended if we invite who?
   A: Professor Smith will be offended if we invite Professor Brown, and Professor King will be offended if we invite Professor Matthew.
Unlike (23), which is a multiple *which* question, (30) allows a multiple-pair reading although the second *who* is inside an island. Accordingly, availability of multiple-pair readings in multiple non-*which* questions is different from that of multiple *which* questions in that movement of every *wh*-phrase to spec of the matrix C is irrelevant in multiple non-*which* questions. Although availability of multiple-pair interpretations is not so restricted in multiple non-*which* questions as in multiple *which* questions, quiz questions are very restricted even if non-*which* *wh*-expressions are employed as in (29). It seems that the form of a quiz question and the one of its answer must be structurally correspondent to each other. Multiple-pair answers disrupt the correspondence in that they are conjoined clauses even when their quiz questions are single clauses as in (29).

We claim that the difference is due to the semantic difference between the two types of *wh*-questions, but before providing an explanation, let us discuss the meaning of *wh*-questions. As for the meaning of ordinary *wh*-questions, at least two types of representations have been proposed: a set of propositions (Hamblin (1973) and Karttunen (1977)), and a proposition with an unbounded variable (Hausser (1983)). According to these proposals, the question, *what did Bill buy?*, will be represented as follows:

\[(31) \lambda p \exists x [\text{thing}(x, w_a) \land p = \lambda w \exists e \{\text{buy}(b, x, e, w) \land e < u}\}]\]

\[(32) (\lambda x) \exists e \{\text{buy}(b, x, e, w_a) \land e < u \land \text{thing-or-things}(x, w_a)\}\]

A representation such as (31) will provide a set of propositions such as {Bill bought a flower, Bill bought a book, Bill bought a pencil, …}. According to Hamblin (1973), each proposition in the set is yet to have truth value, and the listener is expected to utter true propositions out of the set as the answer. On the other hand, a representation such as (32) is an incomplete proposition, which may look like ‘Bill bought (    )’, and the listener’s answer is expected to fill the gap according to Hausser (1983). In other words, the listener has a job to make the incomplete proposition a true proposition by providing an entity in the gap.

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5 There is another type of representation proposed by Higginbotham and May (1978), and Groenendijk and Stokhof (1984). For the sake of argument, their representation will not be discussed in the present paper.

6 *u* indicates utterance time, so *e*<\(u\) means that the predicate holds in the past.

7 ‘thing-or-things(x, w\(_a\))’ indicates that the variable, *x*, can be a single entity or plural entities in the actual world, *w\(_a\)*. Thus, an answer such as ‘a book and a pencil’ is possible too.
As is already noted and obvious in English, the main difference between ordinary wh-questions and quiz questions is the existence of wh-movement. Considering the fact that a wh-phrase needs to be raised to spec of C in ordinary wh-questions, it is plausible to assume that such a wh-phrase is a kind of operator, i.e. an existential quantifier, and needs to define the scope, presumably by wh-movement. Then Hamblin (1973) and Karttunen’s (1977) semantics of wh-questions such as (31) is plausible for ordinary wh-questions. That is, the meaning of ordinary wh-questions is a set of propositions. In contrast, Hauser’s (1983) semantics such as (32) is implausible for the meaning of ordinary wh-questions. For example, one could appropriately answer the current question by saying “Bill didn’t buy anything”, but this way of answering does not fill the gap; hence, it would be regarded as an infelicitous answer contrary to the fact. Nevertheless, the strong affinity of forms between the question and the answer suggests that his semantics describes the meaning of quiz questions. In other words, wh-phrases employed in those questions are not operators and simply provide a variable, in which case no movement of wh-phrases is necessary. Then it is probable that the meaning derived from such a syntactic representation corresponds to Hauser’s incomplete proposition.

If these claims are correct, unavailability of multiple-pair readings in quiz questions as found in the contrast between (28) and (29) follows. Since the meaning of quiz questions is an incomplete proposition, the form of the answers remains to be the same as those of the questions. Accordingly, a multiple-pair answer is disallowed as in (29) because the answer is in the form of multiple clauses whereas the quiz question consists of a single clause. What is more, the fact also follows that speakers tend to parse a wh-question as a quiz question if it contains ku sikane ‘at that time’. This is because a quiz question is by default an inquiry about a single event as represented in (32), and the adverb is generally associated with a single occasion; hence, it is likely to be a single event. This is why quiz questions are a more likely choice when ku sikane is included in the questions. In contrast, as in (31), the meaning of an ordinary wh-question does not presuppose that it queries about a single event (so that one

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8 Note that an inquiry about multiple events is possible under certain circumstances. For example, in the case of a quiz question such as John visited which countries in 2000?, the predicate does not allow a collective reading and the plural form of the wh-phrase clearly indicates existence of more than one event of visiting a country, in which case multiple events have to be assumed. However, without such an explicit marking, an inquiry about a single event is a norm in quiz questions. Thus, (32) is expected to represent a collective interpretation such that there is one event in which Bill bought more than one item at the same. We would like to thank Kyumin Kim for pointing out the existence of multiple events reading in quiz questions.
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can answer “Bill bought a book in the morning and coffee in the afternoon”). However, this claim does not mean that ordinary wh-questions and the adverb are incompatible because multiple events can happen at the same time (particularly when there is more than one Agent), which is why multiple-pair readings are possible in (27). Simply stated, if a wh-question is presupposed to be an inquiry about a single event, Korean speakers are likely to regard it as a quiz question rather than an ordinary wh-question.

The ambiguous character of Korean wh-questions explains the different behavior between Korean and German with respect to the universal quantifier as discussed in (2)a and (15), which are repeated below:

(2) a. (7)Nwukwuna-ka mues-ul ilkess ni?
   everyone-Nom what-Acc read Q
   ‘What did everyone read?’
   what>∀; *∀>what (i.e. an individual reading only)

(15) Wen hat jeder wo gesehen?
   whom has everyone where seen
   ‘Where did everyone see whom?’
   *Where, whom> ∀;  ∀>Where, whom (i.e. a distributive reading only)

Beck (1996: 19)

There are two differences between the two languages in the examples above. One is that the Korean example, i.e. (2)a, results in ungrammaticality for some speakers of Korean, whereas the intervener does not cause ungrammaticality in German as in (15). The other difference is interpretation: the wh-phrase must take scope over the universal quantifier according to Korean speakers who accept (2)a, while the universal quantifier must take wide scope in German.

According to the syntactic account, the intervener blocks movement of in-situ wh-phrases to C, which is why wo ‘where’ cannot cross jeder ‘everyone’ and must take narrow scope with respect to the universal quantifier. Suppose jeder is covertly raised above the overtly moved wh-phrase, wen ‘whom’. Then it follows why the German example allows only a distributive reading, in which the universal quantifier takes scope over the two wh-phrases. In contrast, the same account does not apply to the Korean example, (2)a. As before, the universal quantifier, nwukwuna, which is an intervener, blocks movement of an in-situ wh-phrase to C. Suppose the intervener cannot be raised to CP unlike the German counterpart, jeder. Then the in-situ wh-phrase cannot be raised to CP and the sentence results in ungrammaticality. Nonetheless, a problem remains. As
discussed earlier, judgment of the intervention effect is often unstable, and there are speakers who think (2)a is fine. The problem is that, for those who regard (2)a as grammatical, the wh-phrase must take scope over the universal quantifier in contrast to the German example, which poses a serious problem for non-syntactic accounts such as Beck and Kim (2006). However, the difference in scope interpretations between the two languages is accounted for once it is assumed that Korean wh-questions are superficially ambiguous between ordinary and quiz questions, and the latter type of wh-question does not require wh-movement. Specifically, the reason why (2)a can be grammatical is because some people regard the example as a quiz question, which has no wh-movement, so the intervention effect does not arise. In that case, the semantic representation of (2) is the following:

\[(33) \quad (\lambda x) \exists e \forall y \left[ \text{person}(y, w_1) \rightarrow \text{read}(y, x, e, w_1) \right] \land e < \text{u} \land \text{thing-or-things}(x, w_1) \]\n
According to (33), the speaker is required to provide or specify an appropriate referent for x to make the incomplete proposition a true proposition, which is why ‘what’ appears to take scope over the universal quantifier. As a result, only an individual reading is allowed in (2)a unlike in the German example, (15).9

To summarize this section, two superficially identical wh-questions have been proposed to account for judgmental variability of the intervention effect in Korean. Note that this kind of method cannot be easily employed in Beck (2006) and Beck and Kim’s (2006) semantic account because they assume (in-situ) wh-phrases do not move overtly or covertly. However, the discussion of multiple-pair interpretations in multiple ‘which’ questions suggests that movement of wh-phrases needs to be assumed contrary to Beck and Kim’s claim. Even if this problem is overcome, they need to propose that there are two types of wh-questions, both of which require no wh-movement, and wh-expressions in one type can provide ordinary semantic value and ones in the other type do not. This additional assumption is unmotivated and conceptually problematic. The data of ku sikane ‘at that time’ and multiple-pair readings poses more serious problems to Tomioka’s (2007) pragmatic account. Even if two types of wh-questions are

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9 Note that the German example cannot be interpreted as a quiz question because wen ‘whom’ has gone through wh-movement in (15) and no wh-movement is applied in quiz questions. It seems that ordinary and quiz wh-questions cannot be mixed in the same clause presumably because of syntactic or pragmatic reasons. Accordingly, an individual reading is impossible in (15) unlike the Korean example, (2)a. We would like to thank the anonymous referee for pointing this aspect out to me.
supposed, it is not clear why one type avoids the intervention effect and the other does not in terms of information structure, because both types of \textit{wh}-questions are employed to ask for new information.

4. The nature of interveners

The syntactic (such as Hagstrom (1998), Kim (2002b), and Morita (2013a, b)) and the semantic account (such as Beck (2006) and Beck and Kim (2006)) of the intervention effect assume a different mechanism to explain the intervention effect: the former assumes covert \textit{wh}-movement of in-situ \textit{wh}-expressions while the latter does not.\footnote{Actually, Hagstrom (1998) claims that a question particle, \textit{ka}, overtly moves to CP instead of covert movement of in-situ \textit{wh}-phrases in Japanese (the latter analysis of which the present paper assumes); the movement of \textit{ka} is subjected to the Minimal Link Condition. Thus, his claim can be regarded as a syntactic account of the intervention effect.} However, the two types of proposals are not so different because both of them claim that the intervention effect is violation of some kind of minimality. In fact, the main reason why Beck (2006) and Beck and Kim (2006) consider that the intervention effect is a semantic phenomenon is crosslinguistic variability of interveners. However, even if the crosslinguistic variation exists, it is not clear why one can conclude that syntactic accounts are untenable for the intervention effect. What is more, as the following discussion shows, there is not so much crosslinguistic variety as they argue. More specifically, the following subsection will indicate that expressions meaning ‘often’ or ‘at least’, which Beck and Kim claim are interveners in German but not in Korean, are actually interveners in Korean too. Subsection 4.2 will discuss the nature of interveners.

4.1 Not much difference between Korean and German in terms of interveners

According to Beck and Kim (2006), grammatical judgment is not the only method to detect the intervention effect. Actually, availability of multiple-pair interpretations in multiple-\textit{wh} questions is another method. Examine the following sentence:

(34) 
\begin{quote}
\begin{verbatim}
Wer hat oft wen eingeladen?
\end{verbatim}
\end{quote}

As already mentioned, Beck and Kim regard oft ‘often’ as an intervener in German. However, they claim that (34) is “perhaps ok on a single-pair reading”, which suggests that not only grammatical judgment but also availability of multiple-pair readings is a means to find an intervener. In other words, a c-commanding intervener blocks multiple-pair readings in the case of multiple-\textit{wh} questions.

Bearing the discussion above in mind, examine the following dialogues:

(35) Q: John-i [\textit{cacwu/ceketo} twu]p \text{ etten} haksayng-	extit{eykey} \text{ etten chayk-ul ilke-cwuess ni?}
   -Nom often/at least twice which student-Dat which book-Acc read-gave Q
   ’To which student did John [often/at least twice] read which book?’
A1: (John-i) i haksayng-	extit{eykey} LGB-lul ilke-cwuesso.
   [single-pair]
   -Nom this student-Dat -Acc read-gave
   ’(John read) LGB to this student.’
A2: #(John-i) i haksayng-	extit{eykey} LGB-lul, cho haksayng-	extit{eykey} Barriers-ul, ….
   -Nom this student-Dat -Acc that student-Dat -Acc
   ilke-cwuesso.                                           [multiple-pair]
   read-gave
   ’(John read) LGB to this student, Barriers to that student, …’ (cf. (6), (7))

(36) Q: John-i \text{ etten} haksayng-	extit{eykey} \text{ etten chayk-ul[\textit{cacwu/ceketo} twu]}p ilke-cwuess ni?
   -Nom which student-Dat which book-Acc often/at least twice read-gave Q
   ’To which student did John [often/at least twice] read which book?’
A1: (John-i) i haksayng-	extit{eykey} LGB-lul ilke-cwuesso.
   [single-pair]
   -Nom this student-Dat -Acc read-gave
   ’(John read) LGB to this student.’
A2: (John-i) i haksayng-	extit{eykey} LGB-lul, cho haksayng-	extit{eykey} Barriers-ul, ….
   -Nom this student-Dat -Acc that student-Dat -Acc
   ilke-cwuesso.
   read-gave
   ’(John read) LGB to this student, Barriers to that student, …’ (cf. (6), (7))

The examples above show that when \textit{cacwu} ‘often’ or \textit{ceketo} ‘at least’ c-commands two ‘which’ phrases as in (35), multiple-pair readings are prevented. Following the reasoning employed in the German example, (34), there is a good reason to consider that \textit{cacwu} ‘often’ and \textit{ceketo} ‘at least’ are also interveners in Korean. Moreover, when they do not c-command \textit{wh}-expressions as in (36), the sentence allows a multiple-pair reading, which is also expected under the present syntactic account.

Negation is another element which seems to be an intervener in German,
but not in Korean. Compare the following German and Korean sentences:

(37) *Was glaubt Hans nicht, wer da war? (German)
    what believes not who there was
    ‘Who does Hans not believe was there?’

(38) John-i mues-ul ilkci-anh-ass ni?
    -Nom what-Acc read.not Q
    ‘What didn’t John read?’

When negation c-commands an in-situ wh-expression in German as in (37), ungrammaticality follows, whereas it does not seem to be the case in Korean as in (38), which seems to indicate that negation is an intervener in German, but not in Korean as Beck and Kim argue.

However, Korean has scrambling, so it may be the case that the wh-phrase in question is scrambled somewhere higher than negation. Thus, we need to provide a situation where the object remains under negation. An NPI in the subject position seems to present such a situation. Consider the following example:

(39) Amuto tasong myong isang-e saram-gwa aksu.hazi anatta.
    anyone 5 more.than. CL-Gen people-with shook.hands not
    ‘No one shook hands with more than 5 people.’
    (every>>) NOT >> more than 5: the number of people with whom everybody shook hands is equal to or less than 4;
    *(every>>) more than 5 >> NOT: the number of people with whom nobody shook hands is more than 5.

An interesting fact in (39) is that the object cannot take scope over negation when the subject is an NPI, which may have something to do with licensing of an NPI, but the present paper will not pursue the matter any further. More importantly, however, when the subject is an NPI, the object is under the scope of negation.

Now consider (13) again, which is repeated below:

(13) ?*Amuto mues-ul ilkci-anh-ass ni? [NPI]
    anyone what-Acc read.not Q
    ‘What did no one read?’
    Tomioka (2007, adapted)
Remember that (13) was presented to support Tomioka’s (2007) pragmatic account of the intervention effect: NPIs being the strongest interveners, non-pragmatic accounts have not been able to explain such variance among interveners. However, this situation is exactly like (39) in that an NPI is the subject; accordingly, the wh-phrase is expected to be under the scope of negation. Recall that negation is an intervener in German. Suppose that it is an intervener even in Korean. Then it makes sense why NPI constructions exhibit severer intervention effects: a wh-phrase is c-commanded by two interveners, an NPI and negation.

As the following examples illustrate, when there are two c-commanding interveners, the grammaticality becomes worse than an example with only one c-commanding intervener:

\[(40) \text{’Nwukwunaka-ka John-ek-e mues-ul cu-ess ni?’ [one intervener]} \]
\[\text{someone-Nom Dat what-Acc gave Q} \]
\[\text{’What did someone gave to John?’} \]

\[(41) \text{’Nwukwunaka-ka John-ina-Bill-ek-e mues-ul cu-ess ni?’ [two interveners]} \]
\[\text{someone-Nom or Dat what-Acc gave Q} \]
\[\text{’What did someone gave to John or Bill?’} \]

If the present discussion is correct, negation is an intervener in Korean like in German. Moreover, the data above suggests that NPIs themselves are not particularly strong interveners in comparison to other interveners contrary to Tomioka’s (2007) pragmatic account. Furthermore, the fact that expressions such as ‘often’, ‘at least’ and negation, which Beck and Kim regard as non-interveners in Korean, are indeed interveners in Korean suggests that the kinds of interveners are not so different crosslinguistically contrary to Beck (2006) and Beck and Kim’s (2006) semantic account. Accordingly, there is no reason to prefer a semantic account to a syntactic one on the basis of kinds of interveners.

4.2 Interveners are focused

So far we have found out that the following categories are interveners:

\[(42) \text{a. Quantificational operators: ‘every’, ‘some’, disjunction, etc.} \]
\[\text{b. Focusing particles: ‘only’, ‘also’, ‘at least’, etc.} \]
\[\text{c. Others: negation, ‘often’, etc.} \]
Then what is a common feature in the interveners above? We believe that Kim’s (2002a, b) first intuition is correct in that interveners are contrastive-focused; that is, they generate a set of relevant alternatives as additional focus semantic value. If correct, it naturally follows that focusing particles such as ‘only’ and ‘also’ are interveners. Moreover, according to Jayaseelan (2001), Ramchand (1997), Morita (2005, 2013b), Gill, Harlow, and Tsoulas (2006) and Szabolcsi (2015), quantifiers such as ‘every’ and ‘some’ can be represented with (in)finite applications of conjunction and disjunction respectively focus as follows:

(43) a. [Everyone]F came.
    b. John came & Mary came & Susan came & …

(44) a. [Someone]F came.
    b. John came or Mary came or Susan came or …

In Korean, quantifiers such as nwukwu-na ‘everyone’ and nwukwu-nka ‘someone’ are made of a wh-part, nwuku ‘who’, and a (focusing) particle such as na ‘or’ and nka ‘be.Q’. According to Hamblin (1973), Shimoyama (2001), and Kratzer (2005), wh-expressions are contrastive-focused, and hence, provide a set of relevant alternatives (Rooth (1982)): in the current case, nwukwu ‘who’ represents a set of contextually relevant people. Suppose we consider a set of people such as {John, Mary, Susan, …} and they are regarded as the value of a variable which a focused phrase, i.e. the subject in the examples, turns into. Then a set of propositions such as {John came, Mary came, Susan came, …} are generated and if they are combined with conjunction, a universal quantifier-like interpretation is available as in (43)b. Similarly, if the set of propositions is connected with disjunction, an interpretation equivalent to a sentence with an existential quantifier is possible as in (44)b.11 What is more, the fact that (I) quantifiers

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11 A complication arises in the case of Korean. For example, na in nwukwu-na ‘everyone’ represents disjunction, so an existential quantifier-like interpretation is expected contrary to the fact. On this matter, Japanese is straightforward as follows:

(i) dare-ka; nani-ka; itu-ka; doko-ka [Japanese]
    who-or what-or when-or where-or
    ‘someone; something; sometime; somewhere’

(ii) dare-mo; nani-mo; itu-mo; doko-mo [Japanese]
    who-and what-and when-and where-and
    ‘everyone; everything; always; everywhere’

In (i), disjunction combined with a wh-part results in an existential quantifier. When conjunction is applied, a universal quantifier is generated as in (ii). Both of the cases are in accordance with the present claim. Malayalam (Jayaseelan (2001)), Sinhala (Slade (2011)) and Hungarian (Szabolcsi (2015)) show similar patterns. See Gill, Harlow, and Tsoulas (2006) for a proposal to overcome the problem
consisting of a wh-part, such as *nwukwu-na* ‘everyone’ and *nwukwu-nka* ‘someone’, and (II) phrases with a particle which changes a wh-expression into a quantifier, such as *na* ‘or’, are both typical interveners in Korean makes it more plausible to claim that the intervention effect arises because wh-expressions and interveners share the same syntactic feature, i.e. [focus], and C wrongly attracts the interveners due to the Minimal Link Condition.

Similarly, frequency adverbs such as ‘often’ can be considered as contrastive-focused if they generate a set of alternatives such as {sometimes, rarely, occasionally, frequently, often, …}. As for negation, it is treated as a focus operator in Jackendoff (1972) and Rooth (1996) in that among the set of contextually relevant propositions, there is only one false proposition which is also an ordinary value of the sentence.

To summarize, the present paper has introduced three types of approach to the intervention effect and has claimed that problems for Korean wh-questions raised by non-syntactic accounts such as Tomioka (1997) and Beck (2006) and Beck and Kim (2006) can be resolved syntactically. Specifically, judgmental variability among speakers can be explained by assuming that there are superficially two identical types of wh-questions in Korean, and speakers cannot determine which type to choose when they are asked for judgment. Moreover, the reason why a stronger intervention effect is observed in the case of NPIs is because negation too is an interlever in Korean as in German, so two interveners try to block the movement of the in-situ wh-phrase, hence, stronger ungrammaticality. Section 4 has challenged Beck (2006) and Beck and Kim’s (2006) claim, who argue that interveners are crosslinguistically variable, and has managed to show that interveners which they claim are not interveners in Korean, are actually interveners. Finally, it has been suggested that interveners are contrastive-focused following Kim (2002a, b).

One remaining issue is why the use of quiz questions in Korean is not so restricted as in English: they are not limited to situations such as quiz shows and legal interrogations. It is important to investigate how such a pragmatic difference between the two languages arises, which we will leave for future research.

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with Korean while assuming wh-expressions are contrastive-focused and quantifiers are (in)finite applications of conjunction or disjunction.
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