The Third Position for a Wh-Phrase

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ABSTRACT
It is well known that at least in some languages wh-phrases undergo focus movement.
I claim that a referential wh-phrase universally bears a [foc(us)]-feature and agrees
with Foc(us).  Language variation results from the presence/absence of an
EPP-feature on Foc.  In Japanese and Hungarian, wh-/focus phrases must move to
SPEC-Foc in order to have an exhaustive interpretation.  In English, on the other
hand, Agree with Foc is sufficient for wh-/focus phrases to have an exhaustive
interpretation, which means that Foc need not bear an EPP-feature to induce focus
movement.  I show that the suggested analysis accounts for various properties
regarding the syntactic behavior and the interpretation of wh-phrases in each language.

0. Introduction

Chomsky [6] maintains that the following strongest minimalist thesis might hold
in human language:

(1) Language is an optimal solution to legibility conditions.  (Chomsky [6: 9])

If this thesis is true, then a syntactic representation/structure is expected to be an
optimally-designed semantic instruction mapped to the C-I system.  Logically, there
are three possible types of mapping instructions:

(2) a. Instructions by interpretable features: if a word/phrase bears an interpretable
feature A, then it is interpreted with the meaning A. (For instance, *pencils* bears an interpretable feature [plural] and gets interpreted as plural.)

b. Instructions by uninterpretable features (I) (Instructions by agreement): if a word/phrase has its uninterpretable feature deleted by Agree, the history of the agreement is retained in some way and affects the interpretation of the word/phrase. (For instance, if a DP has its [Case] feature deleted by Agree with v*, it is interpreted as an object.)

c. Instructions by uninterpretable features (II) (Instructions by dislocation): if Agree is followed by Move, a word/phrase is moved to SPEC of a probe it agrees with and gets an interpretation assigned to the position. (For instance, if a *wh*-phrase moves to SPEC-C, it is interpreted as an interrogative quantifier.)

(2a) is a very direct instruction, unlikely to allow a cross-linguistic variation. (2b) and (2c) are, on the other hand, indirect in the sense that the ‘effect’ induced by an uninterpretable feature (i.e. agreement in (2b) or dislocation in (2c)) affects the interpretation. Which instruction is required may differ from construction to construction, and from language to language. Actually we can easily find such variations. For example, a *wh*-phrase must occupy SPEC-C in English, while there is no such requirement in Japanese.

(3) a. \[CP \; \text{What}_1 \; \text{did} \; \text{[TP John buy } t_1 \text{]}?\]
   b. \[CP \; \text{[TP John-ga nani-o kai-masi-ta] ka]?\]

   ‘What did John buy?’
The contrast can be attributed to the difference in the type of mapping instruction. English employs the (2c)-type of mapping instruction as for interrogative quantification, which means that interrogative quantification is assigned to a particular position, i.e. SPEC-C. Therefore a wh-phrase obligatorily moves to SPEC-C, after it agrees with [+Q] C. On the other hand, Japanese employs the (2b)-type of mapping instruction, which means that Agree between a wh-phrase and [+Q] C (ka) is sufficient for the wh-phrase to get an interrogative interpretation. Therefore a wh-phrase need not move to SPEC-C.

In the minimalist framework, however, the syntactic computation cannot refer to semantics when deciding what operation to take. The difference in mapping instructions like above minimally arranges the syntactic design in each language, i.e. a parameter about the presence/absence of an EPP-feature, so that syntactic derivations can automatically yield an appropriate representation. Take wh-movement for instance. In both languages, a wh-phrase and [+Q] C enter into an agreement relation under matching of [Q]-features. The agreement is not followed by Move in Japanese since C does not bear an EPP-feature. In English, on the other hand, C bears an EPP-feature and induces wh-movement to its SPEC. In this way, each syntactic operation in each language is motivated by a local requirement for Agree and Move, without recourse to semantics.

One of the goals of this paper is to show that a ‘syntactic’ focus bears an uninterpretable feature [foc(us)], therefore acting as a mapping instructor either of the (2b)-type or of the (2c)-type. Specifically, Japanese employs the (2c)-type of focus interpretation, which means that a syntactic focus must undergo ‘focus’ movement and occupy a particular position, i.e. SPEC-Foc(us). On the other hand, English employs the (2b)-type of focus interpretation, which means that a syntactic focus can get a
proper interpretation in situ, making an agreement relation with Foc. Although the agreement relation is not apparent, its presence is argued for empirically. Another goal is to show that a referential wh-phrase also bears a [foc]-feature and establishes a relation with Foc. Accordingly, a referential wh-phrase is related to three syntactic positions: a merged position, C, and Foc. Given this assumption, we can account for various phenomena regarding the interpretation of multiple wh-questions and the interaction between a focus and a wh-phrase observed in Japanese and English.

The organization of this paper is as follows. In section 1, I define a syntactic focus, following É. Kiss [9], and consider what mapping instruction is imposed for Japanese and English focus. In section 2, I take up Japanese wh-questions, and show that the present analysis can provide an account for two properties of Japanese wh-questions. Section 3 deals with English wh-questions. I demonstrate that given the focus-mapping instruction for English, we can account for two phenomena regarding English wh-questions. In section 4, I turn to Hungarian focus/wh-constructions and show that the same mapping instruction as that of Japanese is applicable to the language. Section 5 concludes the discussion.

1. Syntactic Foci and the Mapping Instructions

É. Kiss [9] suggests that there are two types of foci, identificational focus and information focus, and that only the former is syntactic. She defines an identificational focus as follows:

(4) The function of identificational focus: An identificational focus represents a subset of contextually or situationally given elements for which the predicate phrase can potentially hold; it is identified as the exhaustive subset of this set for
Simply put, an identificational focus conveys exhaustive information. Since exhaustiveness changes the truth condition for the proposition, an identificational focus should be related to Logical Form. On the other hand, an information focus is emphasized merely because it is new to the discourse. Since the newness of information is a matter of the discourse, it is unlikely that an information focus should have any relevance to syntax.

In this section, I consider how an identificational focus is realized in Japanese and in English, and how the mapping instruction functions to yield a proper focus interpretation in each language.

1.1 Identificational Focus in Japanese

Although É. Kiss discusses the distinction based on Hungarian data, the two types of foci can be exemplified by Japanese data, too, as shown in (5a, b) below:

(5) a. Identificational focus: John-wa ringo-wa katta.

John-top apple-foc bought

‘John bought AN APPLE (, but not other fruits).’

b. Information focus: John-wa ringo-o katta.  (Pitch accent on ringo-o)

John-top apple-acc bought

‘John bought AN APPLE.’

(5a) has two nominal phrases marked with the particle –wa, i.e. subject and object. For some unclear reasons, the sequentially second wa-phrase gets interpreted as a
focus, and the first wa-phrase as a topic. The object in (5a) thus marks its focal status morphologically. In (5b), on the other hand, the object marks its focal status with pitch accent.

The focal status in (5a) is different from that in (5b). The focus in (5b) is an information focus, which merely expresses new information. On the other hand, the focus in (5a) bears a contrastive meaning, as shown in the translation. I consider contrastiveness as a special case of an exhaustive interpretation. To make a contrast, we must firstly exhaust the situations in which a given proposition is true and then contrast them with other false situations. For instance, (5a) presupposes that John was expected to buy an apple and some other thing(s) and conveys that John bought only an apple. Thus (5a) not only conveys that John bought an apple, but also, with an equal importance, that he did not buy the other thing(s). The contrastive focus in Japanese therefore conforms to the definition (4), and can be regarded as syntactic.

Let us now consider the following question: How is an identificational (i.e. syntactic) focus mapped to semantic interpretation in Japanese? Since it is syntactic, some kind of syntactic feature should be involved in the identificational focus construction. There are three possible mapping instructions as shown in (2a-c). First, suppose that [focus] is an interpretable feature ((2a)). Then any word or phrase can be interpreted as identificational focus as long as it bears a [focus]-feature. In this case, it need not undergo any kind of syntactic operation, Agree or Move. Second, suppose that [focus] is an uninterpretable feature associated with an identificational focus and its probe, Focus. If Agree between the focus and Focus is a sufficient condition for the focus interpretation ((2b)), the focus interpretation is obtained with no movement involved. If, on the other hand, the interpretation of an identificational focus is associated with a particular position, SPEC-Focus in this case
Agree must be followed by Move. In this case an identificational focus undergoes obligatory movement.

A close look at the behavior of identificational foci reveals that the (2c)-type of mapping instruction should be involved in the interpretation of foci. Yanagida [34] and Miyagawa [21] observe that a contrastive focus must be outside VP, or v*P in the framework of Chomsky [7]. Consider the following examples.

(6) a. ?? John-wa [v*P matigatte ringo-wa katta].
   John-top [ mistakenly apple-foc bought]
   b. John-wa ringo-wa [v*P matigatte t katta].
   John-top apple-foc [ mistakenly t bought]
   ‘John bought AN APPLE by mistake (, but not other fruits).’

(7) a. John-wa [v*P matigatte ringo-o katta].
   John-top [ mistakenly apple-acc bought]
   b. John-wa ringo-o [v*P matigatte t katta].
   John-top apple-acc [ mistakenly t bought]
   ‘John bought AN APPLE by mistake.’
   (Pitch accent on ringo-o)

I assume that the manner adverb matigatte (mistakenly) adjoins to v*P. Therefore an element preceding the adverb is considered to be outside v*P, and an element following the adverb inside v*P. As shown in (7a, b), the information focus has no constraint on its surface position: it can remain in v*P ((7a)), or ‘scramble’ out of v*P ((7b)). On the other hand, the identificational focus must be outside v*P, as shown in (6b): (6a) is not acceptable since the focus remains in v*P.
The requirement that the identificational focus should be dislocated is accounted for once we adopt the (2c)-type of mapping instruction for an identificational focus. Let us consider how the contrast in (6) is accounted for in syntactic terms. Suppose that an identificational focus bears an uninterpretable [foc(us)]-feature and enters into an agreement relation with a matching [foc]-feature on a functional head, Foc(us). In that case, the following structure is constructed at some stage of the derivation of (6a, b):

\[
(8) \quad \begin{array}{c}
\varepsilon P \matigatte \text{John-wa} \\
\begin{array}{c}
\varepsilon P \\
\text{ringo-wa} \\
\katta \\
v* \\
[foc]
\end{array}
\end{array}
\]

The object ringo-wa (apple-foc) bears an uninterpretable [foc]-feature. Since an uninterpretable feature needs to be deleted by Agree and Agree is not applicable into the domain of a phase (Phase Impenetrability Condition (PIC) (Chomsky [6: 22]), the object has to be moved to the edge position, i.e. outer SPEC of v*P. The movement is triggered by an EPP-feature optionally assigned to v*. As a result, (9) is formed.

\[
(9) \quad \begin{array}{c}
\varepsilon P \matigatte \varepsilon P \text{ringo-wa John-wa} \\
\begin{array}{c}
\varepsilon P \\
\varepsilon P \\
\text{VP} \\
\text{t} \\
\text{katta} \\
v* \\
[foc]
\end{array}
\end{array}
\]

Then the derivation proceeds to the next higher phase. Assuming that Foc is merged with v*P, the following structure is formed:

\[
(10) \quad \begin{array}{c}
\text{FocP} \\
\varepsilon P \matigatte \varepsilon P \text{ringo-wa John-wa} \\
\begin{array}{c}
\varepsilon P \\
\varepsilon P \\
\text{VP} \\
\text{t} \\
\text{katta} \\
v* \\
\text{Foc} \\
[foc] \\
[foc] (\text{[EPP]})
\end{array}
\end{array}
\]

8
Under matching of [foc]-features, Agree holds between Foc and the object, deleting the uninterpretable [foc]-features.

At this point, the object is moved to SPEC-Foc if the probe Foc bears an EPP-feature. I assume that Foc bears an EPP-feature optionally. Then T is merged with FocP, followed by merger of C with TP, yielding (11a) or (11b):


If the focus has been moved to SPEC-Foc by the optional EPP-feature on Foc, the acceptable (11a) (=6b)) results. If the focus has not been moved and pronounced in situ, the deviant (11b) (=6a)) results.2

To account for the contrast in grammaticality between (11a) and (11b), I propose that the following mapping instruction should hold in Japanese:

(12) JAPANESE: an XP in SPEC-Foc is assigned a syntactic focus interpretation.

(11a) is acceptable since the identificational focus occupies SPEC-Foc and receives a proper interpretation by (12). On the other hand, (11b) is deviant since the identificational focus, whose focal status is marked by a particle \-wa, does not occupy SPEC-Foc and cannot receive a proper interpretation.

Two points should be noted regarding this argument. First, I have assumed that Foc ‘optionally’ bears an EPP-feature. The reader might think that Foc should bear
an EPP-feature obligatorily since the identificational focus undergoes movement
obligatorily. The assumption is related to the discussion in section 2 below, in which
I discuss the focal properties of wh-phrases. To explain the behavior of both
identificational foci and wh-phrases, it is better to assume that Foc in Japanese bears
an EPP-feature optionally. See section 2 for a detailed discussion. Second,
optionality is constrained by the condition below:

(13) Optional operations can apply only if they have an effect on outcome.

(Chomsky [7: 28])

Given (13), optional EPP-assignment to Foc must have an effect on outcome. In fact,
there is such an effect: it generates a new interpretation. An EPP-feature on Foc
attracts a focus phrase to SPEC-Foc, as shown in (11a), and the moved phrase is
interpreted as an identificational focus by the mapping instruction (12).

To sum up, the assumptions that [focus] is an uninterpretable feature and that
Japanese employs the mapping instruction (12) allow us to account for the fact that a
contrastive focus (i.e. an identificational focus) in Japanese obligatorily moves out of
v*P.

1.2 Identificational Foci in English

Let us now turn to English focus constructions. Unlike Japanese, it is hard to
see whether a ‘focus’ phrase in English undergoes syntactic operations. Consider the
following sentences:

(14) a. John bought AN APPLE.   (Capitals indicate stress assigned)
b. John bought an apple\(^\ast\). \(\ \ (^\ast\ \text{indicates rising intonation assigned})\)

c. An apple, John bought.

d. John bought only an apple.

e. It was an apple that John bought.

There are several kinds of focus constructions in English. (14a) and (14b) contain phonologically-marked foci. (Bush and Tevdoradze [5] observe that a rising intonation as in (14b) marks focus information.) (14c) shows that a focus can be preposed. (14d) indicates that a focus with an exhaustive reading can be marked lexically, i.e. by only. (14e) involves a complex sentence whose focus position is occupied by a focus.

Of the five possible focus constructions above, I do not deal with (14e) here. (14e) is a complex sentence: a focus appears in a focus position in the matrix clause, and the whole embedded clause expresses a presupposition. Such a construction might offer a template specified for the focus interpretation, which is independent of a mapping instruction which applies to non-specified sentences.\(^3\)

Then let us turn to (14a-d). Of the four constructions, (14b) and (14d) involve an identificational focus conveying exhaustive information. It is confirmed by the following entailment test (cf. É. Kiss [9]).

(15) a. John bought AN APPLE AND AN ORANGE.

b. John bought AN APPLE. \(\ (=14a)\)

(16) a. John bought an apple and orange\(^\ast\).

b. #John bought an apple\(^\ast\). \(\ (=14b)\)

(17) a. An apple and an orange, John bought.
b. An apple, John bought.  

(18) a. John bought only an apple and an orange.
   b. #John bought only an apple.  

The (a) sentences contain two coordinate DPs, whereas the (b) sentences contain only one of them. If the focus phrase in each construction involves exhaustive information, it will be predicted that (b) is not among the logical consequences of (a). The prediction holds for (16) and (18): since (b) means that John bought an apple and only an apple, it is not consistent with (a) in which John bought an orange, too. Therefore, the phrase with a rising intonation in (14b) and the phase associated with only in (14d) are identificational foci that bear an uninterpretable feature [foc], and get their focal status licensed through syntactic operations. The others are considered information foci, which have no relevance to syntax. (However, I will give a few notes on the syntactic properties of a preposed focus as in (14c) below.)

Given that (14b) and (14d) are syntactic focus constructions, we see that foci in English do not undergo focus movement. They are interpreted as foci in their merged position. It seems that English employs a (2b)-type of mapping instruction for an identificational focus: Agree between a focus and Foc is necessary and sufficient for the interpretation. The agreement relation is established as shown below. (I assume that Foc merges TP in English for the reason clarified below.)

\[
\begin{array}{c}
\text{FocP Foc} \\
\text{TP John T} \\
\text{v*P v} \\
\text{bought an apple} \\
\end{array}
\]

\[\text{[foc]} \quad \text{[foc]} \quad \text{Agree} \]

\[
\begin{array}{c}
\text{FocP Foc} \\
\text{TP John T} \\
\text{v*P v} \\
\text{bought only an apple} \\
\end{array}
\]
More precisely, the focus phrases above occupies the edge of the v*P phase since otherwise the probe Foc in the higher phase cannot seek out its goal. The movement is motivated by an EPP-feature optionally assigned to v*. (The optional assignment of an EPP-feature is validated since it has an effect on output, i.e. an agreement relation established between Foc and the focus.) However, I assume that an instance of the focus in the edge position is eliminated at the LF/PF representations (cf. footnote 2), since successive cyclic movement takes place only for mechanical reasons (i.e. to conform to the PIC) and intermediate landing sites are irrelevant to interpretation. Thus at the LF representation, the history of Agree is retained between Foc and the focus phrase in its merged position, just as shown in (19).

Since Agree is a necessary and sufficient condition for a syntactic focus interpretation, the following mapping instruction is relevant in English:

(20) ENGLISH: an XP which agrees with Foc is assigned a syntactic focus interpretation.⁴

In this way, the cross-linguistic difference in the behavior of identificational foci is attributed to the different focus-mapping instructions in Japanese ((12)) and English ((20)).

Before closing this section, let us consider (14c) again, repeated here as (21).

(21) An apple, John bought.
A preposed phrase does not serve as exhaustive information, as confirmed by the entailment test in (17). However, it does convey some kind of exhaustiveness when used with a (non-referential) wh-phrase.

(22) a. Why with Jane did you have a great time and with Mary you didn’t?
   b. Tell me why Jane you like so much and Mary you don’t at all.

(Kuno and Takami [14: 92])

Suppose that (22b) is uttered in the discourse which only the two girls, Jane and Mary, are concerned with. The questioner wants to know the reason why the hearer likes only Jane. In this sense the fronted phrase conveys exhaustive information.

It might be the case that when interpreted with a wh-phrase, an identificational focus can occupy SPEC-Foc, as shown below:

(23) \[
\text{CP \, wh\, C \, [\text{\text{focP \, Jane}_1\, Foc \, [TP \, you\, like\, so\, much \, t_1]]}}
\]

The movement of Jane should not be required from the mapping instruction, since the agreement between Foc and Jane is sufficient for Jane to be interpreted as an identificational focus, as stated in (20). Therefore, focus movement in (23) is required by some kind of interaction between the wh-phrase and the focus, though the nature of the interaction is not yet clear. Here I assume that Foc bears an optional EPP-feature in a wh-question and attracts an agreed phrase to its SPEC, putting aside the question why. The possibility of cooccurrence of a wh-phrase and a focus will be discussed extensively in section 3.
It should also be noted that in (22), the fronted focus occupies a position between the *wh*-phrase and the inverted AUX. It means that Foc in English appears in a higher position than Foc in Japanese. I assume that Foc is merged with TP in English.

1.3 Summary: Focus Mapping Instructions in Japanese and English

The above discussion has revealed that an identificational focus, which conveys exhaustive information, is syntactic, and therefore contains a formal feature [foc]. Assuming that [foc] is uninterpretable, we can account for the syntactic behavior of an identificational focus in Japanese and English. Specifically, I proposed that the following mapping instructions hold for these languages.

(24) JAPANESE: an XP in SPEC-Foc is assigned a syntactic focus interpretation. 

\[ (= (12)) \]

(25) ENGLISH: an XP which agrees with Foc is assigned a syntactic focus interpretation. 

\[ (= (20)) \]

The difference in the mapping instructions is reflected in the presence/absence of an optional EPP-feature assigned to Foc. In Japanese, since Foc can be assigned an EPP-feature optionally, it can attract a focus phrase to SPEC-Foc, a position to which a syntactic focus interpretation is assigned. In English, on the other hand, since Foc cannot be assigned an optional EPP-feature (except for cases like (23)), a focus phrase remains in situ and gets a proper interpretation through an agreement with Foc.

2. An Interaction between Focus and *Wh*-Phrases in Japanese
In this section, I show that given the focus-mapping instruction (24), we can account for at least two properties observed in Japanese wh-questions, both of which have not been discussed in previous studies. One of them concerns multiple wh-questions. As shown in section 2.1, (referential) wh-phrases sometimes contribute to an exhaustive interpretation. We can predict, given (24), that such wh-phrases must occupy SPEC-Foc. I will show that this is in fact the case. The other has to do with a kind of ‘wh-island’ effect which will be discussed in section 2.2.

2.1 Surface Positions for Wh-Phrases and Their Interpretation

It is well known that Japanese wh-phrases need not move overtly, and that they can ‘scramble’ to any non-scope position. Observe the following multiple wh-questions.

(26) a. [v*P matigatte dare-ga nani-o katta] no?
   [ mistakenly who-nom what-acc bought] Q
   ‘Who bought what by mistake?’

   b. Dare-ga [v*P matigatte nani-o katta] no?
   who-nom [ mistakenly what-acc bought] Q

   c. Dare-ga nani-o [v*P matigatte katta] no?
   who-nom what-acc [ mistakenly bought] Q
Assuming that the manner adverb \textit{matigatte} (mistakenly) edges the border of \textit{v*P}, both \textit{wh}-phrases in (26a) following the adverb should be inside \textit{v*P}. In (26b), on the other hand, the order of the subject \textit{dare-ga} preceding the adverb indicates that the \textit{wh}-phrase has moved out of \textit{v*P}. Similarly, in (26c) both subject and object \textit{wh}-phrases have moved out of \textit{v*P}.

If this kind of movement were really scrambling, it would not change the interpretation of the sentence. In fact, however, the movement of \textit{wh}-phrases out of \textit{v*P} generates a second interpretation. As Bošković [4] correctly points out, a Japanese multiple \textit{wh}-question has two possible readings. One is a single-pair (SP) reading, which can be answered by (27a), and the other is a pair-list (PL) reading, which can be answered by (27b).

(27) a. John-ga hon-o (matigatte) katta.
    \hspace{2cm} John-nom book-acc (mistakenly) bought.
    \hspace{2cm} ‘John bought a book (by mistake).’

    b. John-ga hon-o, Mary-ga tokei-o, Bill-ga nekutai-o
    \hspace{2cm} John-nom book-acc Mary-nom watch-acc Bill-nom tie-acc
    \hspace{2cm} (matigatte) katta.
    \hspace{2cm} (mistakenly) bought
    \hspace{2cm} ‘John bought a book, Mary a watch, and Bill a tie (by mistake).’

Unlike an SP reading, a PL reading requires an appropriate context. Specifically, potential answers to each \textit{wh}-phrase are available from the context, and the answerer is required to make suitable pairs from them. Also, a PL reading is a kind of exhaustive interpretation in that the answerer should provide ‘all’ the correct pairs available from
the context.

It should be noted that they are possible readings. The actual readings are constrained by the surface position of wh-phrases. An SP reading is a default reading, available in all examples in (26). On the other hand, a PL reading is available only in (26c), in which both wh-phrases have moved out of v*P. The change of interpretation possibility in (26c) leads to the conclusion that the movement of wh-phrases is not a case of scrambling, but a case of syntactic movement for an exhaustive interpretation. From (26a-c) and their interpretation possibilities, the following generalization is obtained:

(28) For a multiple wh-question to have a PL reading, all the wh-phrases must move out of v*P.6

This fact can be accounted for by the mapping instruction (24). Let us see how this is the case below.

Since a wh-phrase can contribute to a PL reading, i.e. an exhaustive interpretation of the question, it should bear a [foc]-feature like a contrastive focus.

(29) A referential wh-phrase bears a [foc]-feature.

At present, it is not clear whether a wh-phrase obligatorily bears a [foc]-feature, or whether (29) is limited to ‘focus’ wh-phrases, i.e. wh-phrases which contribute to a PL reading. I will argue in section 3 that referential wh-phrases obligatorily bear a [foc]-feature for their potential for an exhaustive interpretation, based on English data. For the time being, I only stipulate that (29) holds for referential wh-phrase.
With (29) in mind, let us consider how each sentence in (26) is derived. Suppose that the derivation has reached the stage (30):

\[(30) [v^{*}_{P} \text{matigatte} (v^{*}_{P} \text{dare-ga} (v^{*}_{P} \text{nani-o } \text{katta} ) v^{*})]^{[\text{foc}][Q]} [\text{foc}][Q]\]

Both subject and object DPs are active since they bear two kinds of uninterpretable features, i.e. [foc] and [Q]. The subject need not move since it already occupies the edge position. However, the object has to move to the outer SPEC-v* before the v*P phase completes its derivation. The movement of the object to the outer SPEC-v* forms (31):

\[(31) [v^{*}_{P} \text{matigatte} (v^{*}_{P} \text{nani-o } \text{dare-ga} (v^{*}_{P} \text{katta} ) v^{*})]^{[\text{foc}][Q]} [\text{foc}][Q]\]

Merger of Foc with v*P yields the following structure.

\[(32) [\text{FocP} [v^{*}_{P} \text{matigatte} (v^{*}_{P} \text{nani-o } \text{dare-ga} (v^{*}_{P} \text{katta} ) v^{*})] \text{Foc}]^{[\text{foc}][Q]} [\text{foc}][Q] [\text{foc}][\text{EPP}]\]

Under matching of [foc]-features, Foc and the wh-phrases enter into an agreement relation. (Foc can undergo multiple agreements since an uninterpretable feature remains visible until the strong phase level even if it is deleted.)

By assumption, Foc optionally bears an EPP-feature. If Foc is assigned one EPP-feature, one of the two wh-phrases moves to SPEC-Foc and deletes the
EPP-feature. If Foc is assigned two EPP-features, both wh-phrases move and delete the EPPs. If Foc bears no EPP-feature, there will be no wh-movement to SPEC-Foc. The surface positions for the wh-phrases in (26) are shown below:

(33) a. \([FocP \ [v^*P \ (adverb) \ WH_1 \ WH_2 \ldots ] \ Foc \) \(=\)\(=(26a)\)
    
b. \([FocP \ WH_1 \ [v^*P \ (adverb) WH_2 \ldots ] \ Foc \) \(=\)\(=(26b)\)
    
c. \([FocP \ WH_1 \ WH_2 \ [v^*P \ (adverb) \ldots ] \ Foc \) \(=\)\(=(26c)\)

Let us now consider how each representation in (33) is mapped to interpretation. In section 1 the mapping instruction was formulated as in (24), repeated here as (34):

(34) JAPANESE: an XP in SPEC-Foc is assigned a syntactic focus interpretation.

Given (34), the wh-phrases in (33) are interpreted as follows. In (33a), neither wh-phrase is assigned a syntactic focus interpretation, i.e. an exhaustive interpretation. Hence (33a) cannot have a PL reading. In (33b), WH_1 is assigned an exhaustive interpretation. However, it does not contribute to a PL reading of the question, since a PL-reading is generated by the interaction of the ‘two’ wh-phrases with an exhaustive interpretation. Hence (33b) cannot have a PL reading, either.\(^9\) In (33c), by contrast, both of the two wh-phrases occupy SPEC-Foc and hence are assigned an exhaustive interpretation by (34). Therefore, (33c) can have a PL reading.

To sum up, since a PL reading of a multiple wh-question is another kind of a syntactic focus interpretation, the wh-phrases in the question that ask for ‘exhaustive’ answers must occupy the position assigned an exhaustive interpretation. Therefore, all wh-phrases in a multiple wh-question must move out of v^*P and occupy SPEC-Foc
when the question has a PL reading.

2.2 A Scope Conflict between a Wh-Phrase and an Identificational Focus

The discussion in the previous section has shown that there is a third position for a wh-phrase, SPEC-Foc. A wh-phrase bears a [foc]-feature and enters into an agreement relation with Foc. If Foc bears optional EPP-features, the wh-phrases are moved to SPEC-Foc and assigned an exhaustive interpretation, contributing to a PL reading of the question.

This section provides a second piece of evidence for the present analysis. Observe the following example.

(35) John-wa [Mary-ga nani-o katta ka] sirabe-teiru no?

John-top [Mary-nom what-acc bought Q] investigate-prog Q

a. ‘Is John investigating what Mary bought?’

b. ‘What is John investigating whether Mary bought?’

The wh-phrase nani-o can be related to either ka or no. The former option creates an embedded-scope question with reading (35a). The latter option creates a matrix-scope question, in which the Q-particle ka functions like whether in English, as the translation (35b) indicates.

The acceptability judgment for (35) with reading (35b) varies from person to person, while (35) with the reading (35a) is uniquely accepted. Lasnik and Saito [16] judge the sentence with the reading as ‘(?)’, Watanabe [32] as ‘??’, Nishigauchi [23] as ‘?’; and Mihara [20] and Tanaka [29] as ‘*’. Why are the judgments so diverse? Watanabe notes that his judgment ‘??’ is obtained by taking an average degree of
acceptability ‘in order to reflect the judgment of the relevant speakers’ (Watanabe [32: 11]). As far as my informants are concerned, the judgments seem to be divided into highly or marginally acceptable (‘?–??’) and unacceptable (‘*’). (The awkwardness of the reading (35b) may be due to the fact that it is not a primary reading. The primary reading (35a) may make parsing of (35b) harder. Acceptability is ameliorated if an appropriate context is given to elicit the reading (35b).)

It is not my concern here to determine the exact grammaticality of (35) with the reading (35b), or to discuss why the judgments are so diverse among individuals. What is important here is the fact that some speakers accept (35) with the wide-scope reading. I attempt to account for the acceptability of the example for these speakers.

There is one property that has not been discussed in previous studies: a wh-clause in Japanese can be marked with a Case-particle. Observe the following examples.

(36) a. John-wa [Mary-ga nani-o katta ka]-o sirabe-teiru no? (cf. (35))
   John-top [Mary-nom what-acc bought Q]-acc investigate-prog Q
   i. ‘Is John investigating what Mary bought?’
   ii. ‘What is John investigating whether Mary bought?’

b. John-wa [Mary-ga nani-o katta ka]-ni kyoomi-o motta no?
   John-top [Mary-nom what-acc bought Q]-dat interest-acc had Q
   i. ‘Did John take interest in what Mary bought?’
   ii. ‘(Lit.) What did John take interest in whether Mary bought?’

c. [Mary-ga nani-o katta ka]-ga hanmee-sita no?
   [Mary-nom what-acc bought Q]-nom reveal-did Q
   i. ‘Did it get revealed what Mary bought?’
ii. *(Lit.) What did it get revealed whether Mary bought?’

In (36a-c) different Case-particles are assigned to the wh-clauses: the wh-clause is assigned accusative Case by *siraberu* (investigate) in (36a), dative Case by *kyoomi-o motu* (take interest (in)) in (36b), and nominative Case by *hanmee-suru* (get revealed) in (36c).

It is interesting to note that optional Case assignment to a wh-clause affects the possible scope reading of a wh-phrase. Specifically, when the wh-clause in each (36a-c) bears Case, the wide-scope reading (ii) becomes impossible. It should be noted that some people accept the wide-scope reading of (35), where the wh-clause is not Case-marked, although there are individual differences. However, they do not accept the reading (ii) in (36a-c) containing Case-marked wh-clauses. The following generalization is therefore obtained.

(37) Whereas a wh-phrase in a wh-clause can take wide scope over the clause, it is impossible when the wh-clause is marked with a Case particle.

2.2.1 A Case-Marked Clause as a Focus

It is important to note that the optional Case particles in (36a-c) are not a mere PF phenomenon. It is quite different from optional Case-dropping observed in DPs, which is a PF phenomenon.

(38) John-wa hon(-o) katta.

John-top book(-acc) bought

‘John bought a book.’
Case-dropping in (38) is a marked phenomenon, allowed only in a casual discourse. In contrast, what is marked in (36a-c) is optional assignment of Case particles, which adds some marked property which Case-marking to a DP never bears.

Masuoka [18] observes that several adverbial clauses can optionally take Cases, and that Case-marking to a clause highlights the clause as focus of the whole sentence. The temporal adverbial clause is optionally marked with dative Case –ni as in (39):

\[
(39) \text{[Kyoto-ni itta toki](-ni) kono hon-o katta noda.}
\]

[Kyoto-dat went when][-dat] this book-acc bought (modal)

a. 'It was this book that I bought when I went to Kyoto.'
b. 'It was when I went to Kyoto that I bought this book.'

Since the modal noda requires some element to be a focus, there are (at least) two possible readings for (39), depending on whether the object is focalized as in (39a), or the temporal clause is focalized as in (39b).

The two possible readings are actually constrained by optional Case-marking of the temporal clause: whereas both (39a) and (39b) are acceptable readings when the temporal clause does not bear Case, only (39b) is acceptable when it is marked with dative Case. In other words, when the temporal clause bears Case, it obligatorily receives a focus interpretation. The same holds true for other types of adverbial clauses. Two of them are exemplified below, adapted from Masuoka.

\[
(40) \text{[Yukiko-ni denwa sita ato](-de) kono tegami-o kaita noda.}
\]

[Yukiko-dat telephone did after][-dec] this letter-acc wrote (modal)
i. ‘It was this letter that I wrote after I telephoned Yukiko.’
ii. ‘It was after I telephoned Yukiko that I wrote this letter.’

(b) [Yuki-ga hutta tame]-ni sinkansen-ga tomatta noda.
   [snow-nom fell for]-dat the bullet train-nom stopped (modal)

i. ‘It was the bullet train that stopped due to the snow.’
ii. ‘It was due to the snow that the bullet train stopped.’

In each sentence, both readings (i) and (ii) are acceptable when the adverbial clause lacks Case. When Case is assigned to the clause, however, the Case-marked clause stands out as a focus, and the only possible reading is (ii).

At present, it is not clear why some clauses are focalized by means of optional Case-marking. Although there remains much to be explored about Case-marking of a clause, the descriptive generalization is that optional Case-marking of a clause highlights the clause as a focus of the whole sentence.

Masuoka only deals with Case-marking for adverbial clauses, but his observation can be extended to a wh-clause in a complement position. Consider example (36a), repeated here as (41) once again:

(41) John-wa [Mary-ga nani-o katta ka]-o sirabe-teiru no?
   John-top [Mary-nom what-acc bought Q(-acc) investigate-prog Q
   a. ‘Is John investigating what Mary bought?’
   b. *‘What is John investigating whether Mary bought?’

If Masuoka’s generalization is applicable to this case, it is suspected that the marked nuance induced by optional Case is a focus reading of the wh-clause. Suppose that
John is a detective who investigates something about Mary. He has several possible choices for the investigation: to check Mary’s purchase, to inquire into her behavior, to shadow her, etc. When accusative Case –o is absent, the question (41) just asks whether or not John is investigating Mary’s purchase. If he is, it is answered positively. However, it is not sufficient to give a positive answer when optional Case is assigned: when the wh-clause bears Case, the speaker of (41) asks whether John is investigating Mary’s purchase, and whether it is only the investigation John is actually taking from the possible choices. It would be difficult for (41) to get a positive answer when there is another investigation John is actually undertaking. In this sense optional Case-particle assigns the wh-clause an exhaustive interpretation: a Case-marked wh-clause becomes an identificational focus.

2.2.2 Scope Intervention between a Wh-Phrase and an Identificational Focus

The descriptive generalization obtained in section 2.2 was that a wh-phrase cannot take wide scope over an optionally Case-marked wh-clause. Now that I have shown in section 2.2.1 that optional Case-marking focalizes a wh-clause, the generalization is paraphrased as follows:

(42) A wh-phrase cannot take scope over a focalized wh-clause.

This seems like another instance of Relativized Minimality violation advocated by Rizzi [27] and modified by Szabolcsi and Zwarts [28], Beck [3] and Miyagawa [22]. Simply put, a quantifier dependency is illegitimate when there is an intervening quantifier of the same type between the quantifier and its variable. I propose the following informal intervention constraint:
(43) A quantification by a quantifier X is judged illegitimate at an LF representation if all the agreement relations created by X are blocked by the intervening agreement of the same type.

Let us consider how the generalization (42) is derived. Given that the Case-marked wh-clause serves as an identificational focus, the clause bears a [foc]-feature and enters into an agreement relation with the matrix Foc. (Since the whole wh-clause is focalized, the [foc]-feature is associated with the whole clause.)

\[
\begin{align*}
\text{[FocP} & \quad [v^*P \quad (wh\text{-clause}) - o \quad \text{sirabe-teiru}] \quad \text{Foc}] \\
\quad & \quad \text{[foc]} \quad \text{[foc]} \\
\quad & \quad \text{Agree}
\end{align*}
\]

Similarly, the wh-phrase inside the wh-clause bears a [foc]-feature, given the assumption (29). Hence it enters into an agreement relation with the matrix Foc when it takes matrix scope.  

\[
\begin{align*}
\text{[FocP} & \quad [v^*P \quad [wh\text{-clause: } \ldots \quad \text{nani-d} \ldots ] - o \quad \text{sirabe-teiru}] \quad \text{Foc}] \\
\quad & \quad \text{[foc]} \quad \text{[foc]} \\
\quad & \quad \text{Agree}
\end{align*}
\]

Therefore, the matrix Foc must agree both with the focalized wh-clause and the wh-phrase when the wh-phrase takes matrix scope. It induces a scope intervention effect, as demonstrated by the simplified LF representation below: (‘Agree’ is intended
to mean that the ‘history’ of Agree is retained as a chain at LF.)

Foc with an uninterpretable [foc]-feature firstly has established an agreement relation with the Case-marked wh-clause, as shown in (44). Then Foc has undergone the second Agree with nani-o, as shown in (45). The second agreement-dependency (Agree (II) in (46)) is judged illegitimate at the LF representation since there is a closer agreement-dependency (Agree (I) in (46)).

As shown in (43), the quantification of a quantifier X is illegitimate if ‘all’ the agreement relations X creates are intervened by the same agreement relations. Although the [foc]-agreement relation of nani-o is blocked by the intervening [foc]-agreement of the Case-marked wh-clause, nani-o bears the other quantificational feature, i.e. [Q], and enters into an agreement relation with the matrix C. If this [Q]-agreement survives, (43) will rule in the quantification of nani-o as an interrogative quantifier of matrix scope. However, the [Q]-agreement is also blocked by the intervening wh-clause.

Notice that the embedded C –ka in (41) also bears a [Q]-feature and creates some kind of [Q]-quantification. (I put aside the precise quantification of a yes-no question.) Even if the matrix C makes a [Q]-agreement relation with nani-o inside the wh-clause, it is judged illegitimate by the intervening [Q]-agreement which the
embedded C has created. Consequently, all the agreement relations that nani-o creates are blocked by the intervening agreement relation of the same type. The constraint (43) rules out the matrix scope reading of nani-o in (41), thereby deriving the generalization (42).

What if the wh-clause in (41) is not Case-marked, then? As shown above, a Caseless wh-clause allows a wh-phrase to take wide scope over it. This fact is also accounted for. Since Case on a wh-clause indicates its focal status, the lack of Case indicates that the wh-clause is not a focus, hence lacking a [foc]-feature. Accordingly, nani-o in the wh-clause can establish a [foc]-agreement with the matrix Foc:

Since the [foc]-agreement between nani-o and the matrix Foc is legitimate, the wh-phrase can legitimately take matrix scope. (Although the [Q]-agreement between nani-o and the matrix C is blocked by the embedded [+Q] C, the retained [foc]-agreement relation validates the quantification of nani-o, conforming to the constraint (43)).

To sum up, the scope intervention effect between a Case-marked wh-clause and a wh-phrase is accounted for in the present analysis in the following way:

(48) a. A referential wh-phrase bears a [foc]-feature.

b. A Case-marked wh-clause bears a [foc]-feature.
c. The two focus phrases cannot agree with the same Foc, since the closer agreement blocks the other.

d. A wh-clause bears a [Q]-feature.

e. The matrix C cannot agree with a wh-phrase in the wh-clause, since the [Q]-dependency in the embedded clause blocks the long [Q]-dependency between the matrix C and the wh-phrase.

f. There is no possibility for a wh-phrase to take wide scope over the Case-marked wh-clause, since its agreement relations are all blocked.

g. A wh-phrase can take wide scope over a Caseless wh-clause, since the blocking effect as in (48c) is absent in this case, and the [foc]-agreement with the matrix Foc survives.

A Case-marking effect can be thus accounted for only by a minimum assumption that a referential wh-phrase is another kind of focus bearing a [foc]-feature.

2.3 On Argument-Adjunct Asymmetry

I argue that a referential wh-phrase is another kind of identificational focus, bearing a [foc]-feature. Hence it agrees with Foc, and undergoes movement to SPEC-Foc if Foc is optionally assigned an EPP-feature.

I have limited my concern to referential wh-phrases. In this section, I discuss whether or not the same line of discussion developed in sections 2.1 and 2.2 can be applied to non-referential wh-phrases.

In section 2.1, I observed that wh-phrases must move out of v*P in order for a multiple wh-question to yield a PL reading. Let us consider if this is also the case with a multiple wh-question involving a non-referential wh-phrase.
In (49a), both wh-phrases dare-ni and doo remain in v*P. On the other hand, bothwh-phrases have moved out of v*P in (49b). If the argument in section 2.1 is extended to this case, then we can expect the question (49b) to have a PL reading. In fact, however, it only has a default SP reading. A multiple wh-question involving a non-referential wh-phrase never has a PL reading.

Why is this the case? I have assumed so far that an uninterpretable feature [foc] is relevant to an exhaustive reading. It is assigned to a referential wh-phrase or an identificational focus, and opens a way to move the phrase to SPEC-Foc, a position assigned an exhaustive interpretation. It does not seem to be the case, however, that a non-referential wh-phrase should have a potential for an exhaustive interpretation.

In order to have an exhaustive reading, a wh-phrase must be ‘D-linked’. For instance, given a discourse in which only Ken, Bill and Jack are involved, dare can only range over the D-set {Ken, Bill, Jack}. If Ken is the correct answer to dare, the answer not only serves as a correct answer, but also excludes the members in the complement set (i.e. Bill and Jack) as incorrect answers. In this way the D-linked wh-phrase is related to an exhaustive interpretation. Although the members of a D-set vary depending on the discourse, referential wh-phrases are inherently restricted
to some extent by their own morphological composition. Following Tsai [30], for instance, what consists of wh and (th)at (indefinite part of that). It means that what can range over only the set of things. In other words, what is inherently D-linked to the set of things. Therefore referential wh-phrases always have potential for an exhaustive reading.

On the other hand, it is hard to imagine that naze (why) or doo (how) can have its D-set of possible reasons or manners which are restricted by the discourse. Some previous studies have also argued that ‘D-linking’ of non-referential wh-phrases is impossible. See Pesetsky [24] and Kuno and Takami [14], among others. With no D-linking, an exhaustive interpretation is impossible. With no potential for an exhaustive interpretation, non-referential wh-phrases do not bear a [foc]-feature. With no [foc]-feature, non-referential wh-phrases never agree with Foc. With no Agree, therefore, non-referential wh-phrases can never move to SPEC-Foc, a position assigned an exhaustive interpretation.

Accordingly, a multiple wh-question containing a non-referential wh-phrase never has a PL reading. The non-referential wh-phrase in (49b) does not occupy SPEC-Foc, but merely has scrambled out of v*P. Since a PL reading is possible only if all the wh-phrases occupy SPEC-Foc, (49b) fails to have a PL reading.

Secondly, observe the following example:

(50) John-wa [Mary-ga naze okotta ka](o) sirabe-teiru no?
John-top [Mary-nom why got-angry Q](acc) investigate-prog Q
a. ‘Is John investigating why Mary got angry?’

b. *‘Whyx is John investigating whether Mary got angry 1x?’
I have observed that a referential wh-phrase such as nani-o (what-acc) can take wide scope over a Caseless wh-clause. On the other hand, the non-referential wh-phrase naze (why) appearing in the wh-clause can never take matrix scope, regardless of whether the wh-clause is Case-marked or not.

The impossibility of the reading (50b) follows straightforwardly. The only feature that naze bears is a [Q]-feature that agrees with C. When the non-referential wh-phrase tries to take matrix scope, therefore, its [Q]-feature must legitimately agree with the matching feature on the matrix C. However, this agreement relation is judged illegitimate since there is an intervening agreement relation between them, i.e. the [Q]-agreement established in the embedded clause. Since the sole agreement relation that naze can establish is blocked, its matrix-scope quantification is ruled out by the LF locality constraint (43).

Notice that the intervener in (50) with the reading (50b) is a [Q]-agreement in the embedded clause. The presence/absence of an intervening [foc]-agreement, which is created when the wh-clause is Case-marked, has nothing to do with naze, since naze lacks a [foc]-feature. Therefore, the matrix-scope reading of naze (50b) is uniformly deviant, regardless of whether the wh-clause is Case-marked or not.

If the discussion is on the right track, then the ‘argument-adjunct asymmetry’ can be attributed to the feature asymmetry between referential and non-referential wh-phrases. Specifically, the lack of a [foc]-feature makes non-referential wh-phrases ‘weak’ quantifiers, which only make a [Q]-agreement. Since it is blocked by another intervening [Q]-agreement, non-referential wh-phrases do not take scope over another quantifier. On the other hand, the presence of a [foc]-feature makes referential wh-phrases ‘strong’ quantifiers, which make a [foc]-agreement as well as a [Q]-agreement. Even if one of the agreement relations is blocked by an intervening
agreement, the other agreement might survive and retain the matrix-scope quantification of the referential wh-phrases.

3. An Exhaustive Interpretation in English

Recall that at the end of section 1 I have proposed the following focus-mapping instruction for English:

(51) ENGLISH: an XP which agrees with Foc is assigned a syntactic focus interpretation. (= (20), (25))

In this section I show that the instruction (51) can account for two properties of English wh-questions.

3.1 The Interpretation of a Multiple Wh-Question

I have assumed that a referential wh-phrase bears a [foc]-feature in Japanese. Putting aside the question of whether a wh-phrase bears the feature obligatorily or optionally, let us assume, for the time being, that a referential wh-phrase obligatorily bears a [foc]-feature. I will return to the question later in this section.

With this in mind, let us observe the following multiple wh-question (52a), which is assumed to be assigned a structure such as (52b). (As in section 1, I assume that Foc is merged with TP in English.)

(52) a. Who bought what?
   b. [CP who CP [Foc P [TP T [v P T [v T [[v P T [v T [[v P wh-phrase]]]]]]]]]
According to Bošković [4], an English multiple wh-question obligatorily bears a PL-reading. (The same or similar observation is made by Kuno and Takami [14], Hornstein [11] and McCawley [19].) This can be accounted for straightforwardly once we adopt the focus-mapping instruction (51). I demonstrate how a PL interpretation is obtained.

Notice that the two wh-phrases in (52a) should bear two kinds of uninterpretable features, i.e. [Q] and [foc].

14 Suppose that the derivation has constructed the syntactic object (53):

(53) $[\text{FocP} \ Foc \ [\text{TP} \ \text{who} \ T \ [\text{vP} \ \text{what} \ t_1 \ \text{v}^* \ [\text{VP} \ \text{bought} \ t_2 \ ]]]$

[|foc|] [foc] [Q] [foc][Q]

| Agree | Agree |

What has been raised to outer SPEC-v*, triggered by an EPP-feature optionally assigned to v*. Foc agrees both with who and what, deleting the [foc]-features both on the probe and the goals. Move does not occur since Foc bears no EPP-feature.

At a later stage, C is merged with FocP and agrees with the both wh-phrases. This time who is attracted to SPEC-C by an EPP-feature which is obligatorily associated with [+Q] C, resulting in the structure in (52b). (The occurrence of what at SPEC-v* is erased at the LF/PF representations for the reason stated in footnote 2 and section 1.2.)

Now let us consider what the focus-mapping instruction (51) tells us about the interpretation of a multiple wh-question. (51) says that XP receives an exhaustive interpretation if it agrees with Foc, and each of the two wh-phrases in (52a) establishes the agreement relation as shown in (53). The wh-phrases should therefore be
assigned an exhaustive interpretation, which requires all the possible answers to each
wh-phrase to be answered. The agreement relations as in (53) are established
obligatorily since referential wh-phrases always involve a [foc]-feature and are in the
agreement domain of Foc. Consequently, a multiple wh-question in English
obligatorily bears a PL-reading.

In this way, the suggested analysis can provide an account for why an English
multiple wh-question can only have a PL-reading. Notice, however, that the account
in this section becomes impossible if we assume that a [foc]-feature is assigned to a
referential wh-phrase only optionally, i.e. only when the wh-phrase requires an
exhaustive interpretation. In that case, both wh-phrases in (52a) can do without
[foc]-features, establishing no agreement-relations with Foc. Since wh-phrases
which do not agree with Foc are not assigned an exhaustive interpretation, they can
only be interpreted existentially, contributing to an SP reading of the question. To
avoid this incorrect prediction, we have to assume that a referential wh-phrase
obligatorily bears a [foc]-feature, even if the wh-phrase is not restricted by a discourse.

One possible explanation is to assume that a [foc]-feature is assigned to a
wh-phrase that has ‘potential’ for an exhaustive interpretation. Remember that in
section 2.3 I argued that the domain of a referential wh-phrase is inherently restricted
to some extent by its morphological composition. For instance, since what consists
of wh and (th)at (indefinite pronoun), it can only range over the set of ‘things’ even
when there is no restricting discourse. If a [foc]-feature is associated to a (th)at part
over which the value of the wh-phrase ranges over, the feature is obligatory for
referential wh-phrases.

(54) a. what    b. who    c. where    d. when    (cf.) e. why
The idea that a referential wh-phrase can be decomposed into a quantifier and an indefinite pronoun (or a variable) is not novel at all. See, for example, Kuroda [15], Amber et al. [1], Basilico [2], Reinhart [25], and Tsai [30].

3.2 The Interaction between a Wh-Phrase and a Focus

In this section I show that the suggested analysis can also account for a case of argument-adjunct asymmetry regarding the interaction between a wh-phrase and a focus. Observe the following examples.

(55) a. *When with Jane did you have a great time and with Mary you didn’t?
   b. *Tell me where with Jane you went last Sunday and with Mary you went last Saturday.
   c. Why with Jane you had a great time and with Mary you didn’t?
   d. Tell me why Jane you like so much and Mary you don’t at all.

(Kuno and Takami [14: 92])

In section 1 I argued that whereas a preposed focus usually does not convey an exhaustive interpretation, it does when it occurs with a wh-phrase, as the contrasting coordination structures in (55c) and (55d) show. For some unclear reasons, therefore, an identificational focus can undergo focus movement to SPEC-Foc in such situations.
However, cooccurrence of a focus and a _wh_-phrase is not always possible. As the contrast between (55a, b) and (55c, d) shows, a focus can occur only with a non-referential _wh_-phrase.

The present analysis can account for the grammaticality of (55a-d) rather straightforwardly. Let us first consider the deviant (55a, b). The focus phrases (with Jane, with Mary) bear a [foc]-feature, enter into an agreement relation with Foc, and undergo movement to SPEC-Foc. The referential _wh_-phrases (when, where) also bear a [foc]-feature and enter into an agreement relation with Foc. Suppose that the derivation of (55a) has reached the following stage.

(56) \[
\begin{array}{llllll}
FocP & Foc & [TP & you & T & [vP when; with Jane] & v* [vP have a \\
& & & & & \text{great time} & 1 & 1] ] \\
\end{array}
\]

_When_ and _with Jane_ have moved to the outer SPEC positions of v*P in order to delete EPP-features of v*. This movement enables a probe outside the v*P phase to search its goal(s) at the edge position. Even if Foc can undergo multiple agreement with the two matching goals, the agreement relations inevitably induce a defective intervention effect at the LF representation. Specifically, the closer [foc]-agreement (between Foc and _when_ in (56)) blocks the other agreement (between Foc and _with Jane_ in (56)). The latter thus fails to make a proper agreement-relation, which causes the LF representation to be illegitimate.

Let us then turn to the grammatical examples (55c, d). Since a non-referential _wh_-phrase does not bear a [foc]-feature, the only goal that enters into an agreement relation with Foc is a focus phrase. Suppose that the derivation has reached the stage

38
(57) when constructing (55c):

\[
[\text{FocP} \quad \text{Foc} \quad [\text{TP you T} [\text{v*P with Jane} \quad \text{v* [vP have a great time] why }]]]]
\]

Suppose that \textit{with Jane} has moved to the edge position of the v*P phase to delete the EPP-feature of v*. (\textit{Why} may be assumed to be base-generated in a v*P periphery position.) In this structure Foc only agrees with \textit{with Jane}. Since there is no overlap of a [foc]-agreement, there is no conflict at the LF representation. Hence the LF converges: a focus and a non-referential \textit{wh}-phrase can cooccur.

To sum up, the argument-adjunct asymmetry observed in the cooccurrence of a focus and a \textit{wh}-phrase is attributed to the argument-adjunct asymmetry induced by a [foc]-feature. Referential \textit{wh}-phrases obligatorily bear a [foc]-feature and agree with Foc, which induces an overlap of [foc]-agreement with a focus, causing a problem at the LF representation. On the other hand, non-referential \textit{wh}-phrases lacking a [foc]-feature fail to agree with Foc, which avoids the overlap of [foc]-agreement with a focus, and leads to a legitimate LF representation.

4. Hungarian Data

The preceding discussion has shown that the mapping instruction of an uninterpretable feature can vary from language to language, and that Japanese and English employ the following mapping instructions for a syntactic focus interpretation.

(58) a. JAPANESE: an XP in SPEC-Foc is assigned a syntactic focus interpretation.
b. ENGLISH: an XP which agrees with Foc is assigned a syntactic focus interpretation.

The assumptions (58a, b) enable us to account for various phenomena regarding a focus and a wh-phrase as well.

In this section, I turn to Hungarian focus/wh-constructions. Hungarian seems to employ the same mapping instruction as that of Japanese, since both an identificational focus and a referential wh-phrase undergo movement to the same position. Consider the following examples:

(59) a. Attila a földrengéstól félt.

Attila the earthquake-from feared

‘Attila feared THE EARTHQUAKE.’

b. Cf. Attila félt a földrengéstől. (No focus contained)

Attila feared the earthquake-from

‘Attila feared the earthquake.’

(Horvath [12: 91-2])

(60) a. Ki tette az asztalra az edényeket?

who put the table-onto the dishes-acc

‘Who put the dishes on the table?’

b. *Ki az asztalra tette az edényeket?

who the table-onto put the dishes-acc

(Horvath [12: 71])

A focus and a referential wh-phrase must occupy an immediate pre-V position. If they occupy any other position, the sentence is deviant, as in (60b). Assuming that V raises to Foc, the adjacent relation between a focus/wh-phrase and V follows, as shown
It seems that Hungarian employs the same focus-mapping instruction as that of Japanese:

(62) HUNGARIAN: an XP in SPEC-Foc is assigned a syntactic focus interpretation.

One caution is in order. Hungarian differs from Japanese in one respect: Foc obligatorily bears an EPP-feature and attracts a focus and a wh-phrase to SPEC-Foc. In Japanese, Foc has an optional EPP-feature, so that a wh-phrase, which does not always require an exhaustive interpretation, can remain in situ. Since a wh-phrase in Hungarian always occupies SPEC-Foc, it is considered to always receive an exhaustive reading. What if a wh-phrase is not restricted by a discourse and an exhaustive reading is practically impossible? I tentatively assume that, as argued in sections 2.3 and 3.1, a referential wh-phrase inherently restricts its domain, and the wh-phrase has an exhaustive reading over the inherent set when there is no discourse-restricting set is available, which is equal to an existential reading of an in-situ wh-phrase in Japanese.

In what follows I provide two facts in Hungarian which can be accounted for by the mapping instruction (62). First, obligatory wh-movement to SPEC-Foc is limited to referential wh-phrases. According to Uriagereka [31], non-referential wh-phrases need not be in focus position. Consider the following examples.
As shown in (63b), a non-referential wh-phrase need not occupy the immediate pre-V position. This means that a non-referential wh-phrase does not (at least need not) occupy SPEC-Foc.

This fact can be easily accounted for by the suggested analysis. Since non-referential wh-phrases do not have potential for an exhaustive interpretation, they do not bear a [foc]-feature. Hence they neither agree with Foc nor move to SPEC-Foc to delete the EPP-feature of Foc. Not occupying SPEC-Foc, therefore, they need not be adjacent to V-Foc.

Second, the mapping instruction (62) can also account for the relation between the surface position of wh-phrases and the interpretation of a multiple wh-question. In a Hungarian multiple wh-question involving two wh-phrases, one of them must move to an immediate pre-V position (i.e. SPEC-Foc) due to an obligatory EPP-feature on Foc. The other wh-phrase, however, can either undergo the same focus movement, or remain in situ. According to É. Kiss [9], the surface position of the second wh-phrase affects the interpretation of the sentence. Whereas example (64a) has a PL reading, example (64b) does not.

(64) a. Ki mit hozott Marinak?
   who what brought for Mary
‘Tell me about each person what he brought for Mary?’

b. Ki látotto kit?

who saw whom

‘Who saw somebody, and who was the person he saw?’ (É. Kiss [9: 263fn])

This is the very same phenomenon as that observed in Japanese multiple wh-questions in section 2.1. Wh-phrases must both occupy SPEC-Foc in order for the sentence to have a PL reading. The explanation given in section 2.1 was as follows. A PL reading is yielded when both wh-phrases receive an exhaustive interpretation. That interpretation requiring that both wh-phrases occupy SPEC-Foc is because of the mapping instruction (58a). Otherwise, a multiple wh-question will have an SP reading.

The same explanation holds for (64). Although Foc in Hungarian obligatorily bears one EPP-feature and attracts one wh-phrase to its SPEC, the attraction of the other wh-phrase is triggered by an optional EPP-feature assigned to Foc. If Foc bears an optional EPP-feature and attracts the second wh-phrase to SPEC-Foc, both wh-phrases occupy SPEC-Foc ((64a)), and both wh-phrases are assigned an exhaustive interpretation, yielding a PL reading of the sentence. If Foc does not bear an optional EPP-feature, on the other hand, the second wh-phrase remains in situ ((64b)) and hence does not receive an exhaustive interpretation. Unless both wh-phrases bear an exhaustive interpretation, a PL reading is not obtained.

5. Conclusion

In this paper, I have argued that a phrase that conveys exhaustive information should bear an uninterpretable [foc]-feature. An uninterpretable feature affects
semantics either by (2b) (agreement) or by (2c) (dislocation). Which option to take allows a parametric variation. I proposed the following mapping instructions for a syntactic focus interpretation.

(65) a. JAPANESE and HUNGARIAN: an XP in SPEC-Foc is assigned a syntactic focus interpretation.
   b. ENGLISH: an XP which agrees with Foc is assigned a syntactic focus interpretation.

Given (65), we can account for the different behavior of a focus in each language. In Japanese and Hungarian, a focus must undergo obligatory movement to SPEC-Foc, since a syntactic interpretation is assigned to that position. In English, on the other hand, a focus need not move to SPEC-Foc, since Agree with Foc is sufficient for the focus to receive a necessary interpretation.

I have also argued that (65) can account for various phenomena observed in the wh-questions of each language. Assuming that a referential wh-phrase also bears a [foc]-feature for its potential for an exhaustive interpretation, the following phenomena can be given explanation.

First, in a Japanese wh-question involving two wh-phrases, both wh-phrases must move out of v*P when the question has a PL reading (section 2.1). The same holds for a Hungarian wh-question (section 4). A PL reading is yielded when both wh-phrases receive an exhaustive interpretation. Since the interpretation requires that both wh-phrase must occupy SPEC-Foc, they undergo obligatory movement out of v*P. In an English multiple wh-question, on the other hand, there is no such movement to SPEC-Foc but the question obligatorily has a PL reading (section 3.1). Given (65b),
Agree between Foc and the wh-phrases is sufficient for the wh-phrases to have an exhaustive interpretation in English. Thus both wh-phrases are obligatorily assigned an exhaustive interpretation, contributing to a PL reading of the question.

Second, an intervention effect between a wh-phrase and a focus can also be accounted for. Both a focus and a referential wh-phrase bear a [foc]-feature and the [foc]-features cause intervention between them. This assumption explains the fact that a wh-phrase cannot take scope over a Case-marked, i.e. focalized, wh-clause in Japanese (section 2.2). Similarly, in English, a referential wh-phrase cannot occur with a focus (section 3.2).

Third, several cases of argument-adjunct asymmetry are accounted for. Unlike a referential wh-phrase which inherently has a restriction domain, a non-referential wh-phrase does not bear such a domain, since it lacks the potential for an exhaustive interpretation. Therefore it lacks a [foc]-feature. Accordingly, the only agreement relation it can establish is [Q]-agreement with C. This agreement relation is blocked by another instance of [Q]-agreement. It explains the fact that a non-referential wh-phrase cannot take scope over a wh-clause (section 1.3). Also, since a non-referential wh-phrase does not agree with Foc, it never occupies SPEC-Foc. In Hungarian, therefore, a non-referential wh-phrase need not be adjacent to V which raises to Foc (section 4).

FOOTNOTES
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members there, especially to Mitsunobu Yoshida, Hiromu Sakai, and Jun Sasaki for helpful suggestions. I also thank two anonymous LA reviewers for pointing out several weak points in the early version of this paper and suggesting possibilities for a better account. Thanks are also due to Peter Skaer for suggesting stylistic improvements. Needless to say, responsibility for the text rests entirely upon me.

1. See Kitagawa [13] for a discussion of why this is the case.

2. I assume that the edge position created by an optional EPP-feature is not reflected on LF/PF representations. Since an edge position is created for derivational necessity, i.e. phasal minimality, it should be irrelevant to representations. In (11b), therefore, the focus ringo-wa is pronounced at its base-generated position (at t), not at SPEC-v*.

3. É. Kiss [9] argues that a construction like (14b) involves focus movement to SPEC-F(ocus) via SPEC-C, as shown below:

   (i) \[ TP \text{ it was } [FP \text{ an apple}_1 F \text{ that } [TP \text{ John bought } t_1 ]] ]

   If this is the case, the focus in English undergoes focus movement, just as we have seen in Japanese. However, this kind of analysis would create a number of problems one of which is this: What is the matrix TP for? If focus movement were to establish some kind of quantification, the derivation must be completed with the FP projection. I leave the exact analysis of this construction for future research.

4. A change in intonation, including the following in (14b) can be attributed to a [foc]-feature. Chomsky [7] states that a deleted feature remains until the strong phase level and at Spell-Out it is transferred to the phonological component. Therefore the
focus phrase (an apple) with the feature affects the phonological instruction and gets a rising intonation, just like a deleted Case feature can make morphological realization in some languages.

5. An anonymous reviewer pointed out to me that in this construction did remains in Foc, and does not raise to C. At present it is not clear why AUX remains in Foc. One possibility is to assume that AUX-raising is required to edge the boundary between a (sentence-scope) quantifier and a sentence to be quantified. Since a focus as well as a wh-phrase are quantifiers, AUX should be between [wh + focus] and [sentence], i.e. at Foc.

6. A PL reading is available only to questions involving ‘two’ wh-phrases. When a question involves more than two wh-phrases, it is most likely to elicit an SP answer, as shown below:

(i) a. Dare-ga doko-de nani-o katta no?
   who-nom where-loc what-acc bought Q
   ‘Who bought what where?’

   b. – John-ga honya-de pen-o katta.
   John-nom bookstore-loc pen-acc bought
   ‘John bought a pen at the bookstore.’

   It seems that a question involving more than two wh-phrases is uttered as an echo question. Since I do not deal with echo questions here, I deal with only multiple wh-questions involving two wh-phrases.

7. It might be the case that a [Q]-feature is optional and is not assigned to an in-situ (or,
sequentially-second) wh-phrase. In that case, the object nani-o (what-acc) lacking [Q] fails to agree with C. Interrogative quantification of the in-situ wh-phrase is obtained through unselective binding. See Watanabe [33], Hornstein [11] and Epstein [10] for the relevant discussion of wh-in-situ.

Although it is not clear whether a [Q]-feature is obligatorily assigned to every wh-phrase, I assume that a [foc]-feature is assigned obligatorily.

8. This is reminiscent of multiple agreement between C and wh-phrases. Richards [26] argues that in a Bulgarian multiple wh-question, [+Q] C attracts all the wh-phrases to its SPECs. Since Agree must precede Move, C must agree with all the wh-phrases. Therefore, a feature can undergo more than one agreement, at least within the strong phase where deleted features are still visible.

An anonymous reviewer pointed out to me that although Chomsky [7: 15] states that “deleted features remain visible until the strong phase level”, it does not necessarily mean that it can undergo multiple Agree. In fact, this assumption would wrongly rule in a defective intervention effect, schematized below:

(i) * α .... β .... γ
   [X] \[X\] [X]
   \[X\] Agree

There are two possible ways to avoid this problem. The first possibility is to assume that the intervention constraint above is limited to A-movement. It seems to me that the defective intervention constraints are irrelevant to A´-movement, given examples like below:

(ii) What do you wonder how to repair \(t_1\)? (Manzini [17: 51])

The second possibility is to assume that a defective intervention is relevant only at an
LF representation. Since wh-phrases are ‘absorbed’ into one complex quantifier (i.e. $\beta$ and $\gamma$ are unified in (i)) for a proper interpretation, multiple agreements might also be absorbed into one and avoid the intervention effect.

9. Strictly speaking, this line of explanation of (33b) is problematic. The condition (13) does not allow Foc to bear an optional EPP-feature since the assignment does not have an effect (i.e. a PL reading) on outcome. The word order as in (26b) might be obtained by scrambling of the first wh-phrase. If correct, the structure as in (33b) would never be generated.

10. At present, it is not clear why a clause marks its focal status with Case. I just point out that Turkish employs a similar strategy: optional Case-morphology for DP objects makes them specific objects (Diesing [8]). Optional Case might affect interpretation cross-linguistically.

11. Not all clauses can bear optional Case. An adverbial clause headed by kara (because) and the declarative clause headed by to (that), for instance, reject any Case.

(i) [Yuki-ga hutta kara(* -ni/-de) sinkansen-ga tomatta. (Cf. (40b))
[sn-om nom fell because](-dat/-loc) the bullet train-nom stopped
‘The bullet train stopped because it snowed.’

(ii) John-wa [Mary-ga hon-o katta to](* -o/-ni) omotta.
John-top [Mary-nom book-acc bought that](-acc/dat) thought
‘John thought that Mary bought a book.’

It is not clear why some clauses can take optional Case, and others cannot.

An anonymous reviewer suggested one possible solution to me. Suppose that
such particles as –kara (because) and –to (that) are Ps, whereas such particles as –ka (Q), -toki (when), -ato (after), and –tame (for) are Ds which quantify over the set of propositions. If correct, it will naturally follow that only the latter type can undergo Case-marking. At present, however, I have no evidence for this dichotomy.

12. More precisely, nani-o (what-acc) is moved to SPEC-v*, triggered by the EPP-feature of v*, since otherwise Foc cannot seek out the wh-phrase. The wh-movement to the edge position is omitted in (45) for simplicity’s sake. Actually, the wh-phrase in the edge is eliminated from the LF/PF representation since it is not necessary for interpretation. See section 1.2 and footnote 2 for a related discussion.

13. The reader might wonder whether this line of argument is contradictory to what I have argued in section 2.1. In section 2.1, I suggested that Foc can undergo multiple agreement with two wh-phrases:

(i) \[
\begin{array}{l}
\text{[FocP} \\
\text{[v*P dare-ga nani-o katta] Foc ]} \\
\text{[foc]} \\
\text{[foc]} \\
\text{[foc]}
\end{array}
\]

Foc agrees both with dare-ga (who-nom) and nani-o (what-acc) without causing any intervention effects.

It should be noted that Foc in (i) agrees with wh-phrases that are to be absorbed into one complex quantifier for interpretation. Along with the absorption, the two agreement relations created by each wh-phrase might also be absorbed into one. If so, the intervention effect that (i) creates during the derivation is cancelled at the LF representation: (cf. footnote 8)

(ii) \[
\begin{array}{l}
\text{[FocP} \\
\text{[v*P dare-ga nani-o katta] Foc ]} \\
\text{[foc]} \\
\text{[foc]}
\end{array}
\]

A relation created by Agree: OK
In (46), by contrast, Foc agrees with a focus (Case-marked wh-clause) and a
wh-phrase. However, they are not unified by Absorption. Therefore, the two
agreement relations which Foc creates are retained as two distinct relations, hence
cause an intervention effect at an LF representation.

14. A [Q]-feature may not be associated with an in-situ wh-phrase if the wh-phrase
does not function as an interrogative operator but as a bound pronoun whose
interpretation is dependent on a true operator in SPEC-C. I do not discuss this
possibility since it is not relevant to the present discussion. (See footnote 7.)

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