

The Deletion of Q-Feature of C*

Chong-Taek Yu
(Howon University)

Yu, Chong-Taek. 1999. The Deletion of Q-Feature of C. *Linguistics* 7-2, 143-162. The Q-feature of C checks the Q-feature of a non-*wh*- or (a) *wh*-phrase(s) through the Attract or Agree in syntax, deleting there right after the new whole syntactic structure was copied into phonology. The Q-feature of a non-*wh*-phrase is covertly Attracted from inner C to outer C in C^{OMAX}. All the non-*wh*- or *wh*-phrases move covertly or overtly to C or Spec-CP for checking their Q-features. An EQ seems to have double Specs-CP—inner Spec and outer Spec. English never permits more than one lexical *wh*-phrase in the same CP. Nevertheless, the Q-feature of C can Attract the Q-features of multiple *wh*-phrases. (Howon University)

1. Introduction

All the grammatical operations—Merges or Moves—in the computational system (C_{HL}) are due to features. As mentioned in Chomsky (1995), a checked uninterpretable F can delete, but a checked interpretable F cannot. Chomsky's (1998) grammar is based on the Strongly Cyclic Hypothesis (SCH), by which everything is cyclic in grammar; Spell-Out applies cyclically, and syntax and phonology interact cyclically, i.e., never referring to earlier derivational stages/cycles. In case of the Cyclic Spell-Out Hypothesis (CSH),¹⁾ the whole syntactic

* 이 논문은 호원대학교 교내학술 연구조성비에 의해 연구되었음.

1) As assumed in Chomsky (1998), Shallow Structure (SS) is motivated by various syntactic and semantic implications of operations assumed to take place in phonology. For example, the uninterpretable ϕ -feature of T should delete right after checking of the subject and yet it shows up in PF. It may be phonetically realized as a verbal suffix; so a stem and its inflectional affix are allowed to be combined in phonology or at SS.

structure is copied into phonology to form SS in phonology. Thus, the uninterpretable F is copied into phonology right before it deletes in syntax. The deletion of uninterpretable features by Agree means the elimination of activation of the Attractor feature (=Probe) or the Attracted feature (=Goal) for further Agree. This paper aims at examining how the uninterpretable Q-features delete through the Attract or Agree between Probe C and Goal non-*wh*- or *wh*-phrase.

First, it seems that Q-feature of a non-*wh*- or *wh*-phrase is covertly deleted by the Attract of the uninterpretable Q-feature of C in syntax. That is why every interrogative C has its own uninterpretable Q-feature, even if it has EPP-feature optionally.²⁾ I will argue that the interrogative C that selects a complement containing a non-*wh*-phrase has no EPP-feature which triggers Ancillary Merge, but it Attracts the Q-feature of the non-*wh*-phrase due to its Suicidal Greed. I will also argue that the interrogative C Attracts the Q-feature of a matrix *wh*-subject as well as that of an echo *wh*-phrase.

Secondly, I will argue that if Superiority is satisfied by the first instance of overt *wh*-movement in a multiple *wh*-phrases construction, then the other Q-features of *wh*-phrases are covertly Attracted by the Q-feature of C, following the Principle of Minimalist Compliance (PMC),³⁾ and that if Superiority is satisfied by the first instance of covert *wh*-movement in the construction, then the other Q-features of *wh*-phrases are also covertly Attracted by the Q-feature of C, Tucking in it.

2) The EPP feature of T is obligatory or language-universal, while the EPP-feature of C, v, and D are optional or language-particular. Cheng (1991) assumes that the optionality of the EPP feature of C is due to the lexical property of C in a particular language, according to the parameter that if [+Q]-feature of C is lexically realized as in Korean then C has no EPP feature, whereas if [+Q]-feature of C is not lexically realized as in English then C has EPP feature.

3) Richards (1997, 1998) assume that once an instance of movement to *a* has obeyed a constraint on the distance between source and target, other instances of movement to *a* need not obey the constraint.

2. The Checking of Q-feature of a non-*wh*- or *wh*-phrase

Chomsky (1957) assumes that interrogative sentences are derived from a Kernel Sentence—a declarative sentence, as shown in (1):⁴⁾

- (1) a. he + will + kill + the bear (=He will kill the bear.)
 b. will + he + kill + the bear (=Will he kill the bear?)
 c. Past + he + kill + the bear (=Did he kill the bear?)
 d. *wh*-he + will + kill + the bear
 (=Who will kill the bear?)
 e. *wh*-the bear + will + he + kill
 (=What will he kill?)

(1a) is the Kernel Sentence, from which general questions (1b-c) are derived by interrogative transformation. And special questions (1d-e) are derived from (1b). This means that all the questions are derived from declarative sentences.

Katz and Postal (1964) assumes that the underlying structure of every question involves an interrogative element Q, from which a question is derived by interrogative transformation. The Q indicates that a sentence containing it is a question. And a general question contains *wh*—a questioned element.⁵⁾ As assumed also in Jacobs & Rosenbaum

4) The rules that formulate questions:

- a. $X_1 + X_2 + X_3 \rightarrow X_2 + X_1 + X_3$ if only $X_1 =$ Noun Phrase, $X_2 =$ Tense (-PreVerb) + Verb, and $X_3 =$ Verb --- general questions
 b. $X + \text{Noun Phrase} + Y \rightarrow \text{wh-Noun Phrase} + X + Y$, X and/or Y may be zero --- special questions

5) According to Katz & Postal (1964), a general question also contains *wh* in addition to Q. In such a case, a sentential adverb 'either...or' is assumed to combine with the *wh*. For example, a direct question *Did John sleep?* has an underlying structure such as $Q + \text{wh} + \text{either} + \text{or} + \text{John} + \text{Past} + \text{sleep}$. Besides, Grimshaw (1993) assumes that yes-no questions contain a kind of abstract question operator (Op) which is directly generated

(1968), a dummy element *Q* plays the indicator's role which asks an underlying structure for interrogative transformation:

- (2) a. *Q*—Jane will work (=Will Jane work?)
 b. *Q*—Jim can go when (=When can Jim go?)

In (2a-b), the dummy element *Q* does not appear on each surface structure. (2a) is derived by interrogative transformation, whereas (2b) is derived by both interrogative transformation and *wh*-question transformation.

I argue here that in Minimalist Theory, the *Q*-feature of *C* can be motivated by the above theoretical evidences; every question has the *Q*-feature of *C* to delete obligatorily through the Attract or Agree:

- (3) The *Q*-feature of *C* checks the *Q*-feature of a non-*wh*- or (a) *wh*-phrase(s) through the Attract or Agree in syntax, deleting there right after the new whole syntactic structure was copied into phonology.⁶

Following the assumption (3), let us first consider the Attract of *Q*-feature of a non-*wh*-phrase:

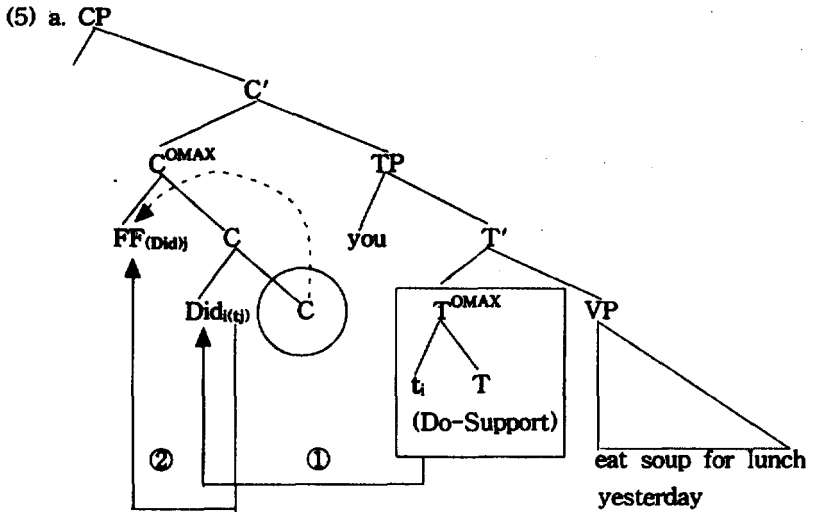
- (4) a. [_{CP} [_{C'} [_C^{OMAX} FF_{(Did)_i} Did_{i(t_i)} C] [_{TP} you t_i eat soup for lunch yesterday]]]?
 b. [_{CP} [_{C'} [_C^{OMAX} FF_{(you)_j} Did_i C] [_{TP} you_(t_j) t_i eat soup for lunch yesterday]]]?
 c. [_{CP} [_{C'} [_C^{OMAX} FF_{(soup)_j} Did_i C] [_{TP} you t_i eat soup_(t_j) for lunch yesterday]]]?

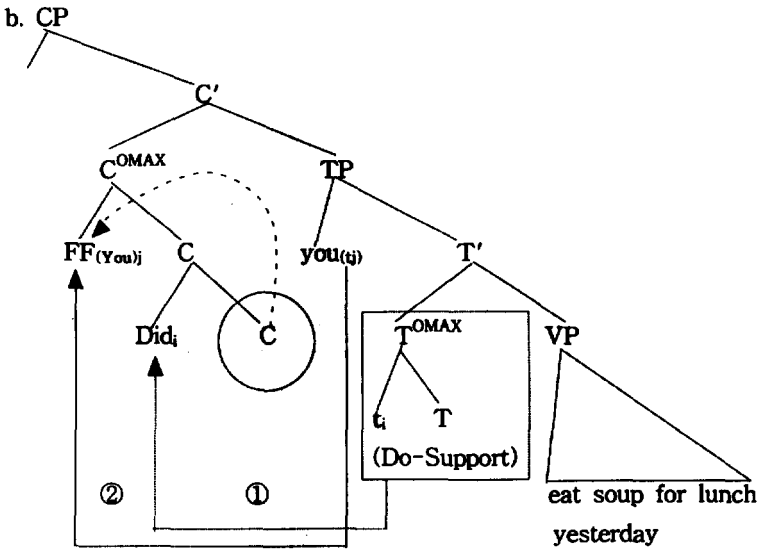
in Spec-CP (i.e. which is positioned in Spec-CP by merger rather than movement).

6) In the Strongly Cyclic Model, Spell-Out applies cyclically and syntax and phonology interact cyclically, i.e., never referring to earlier derivational stages/cycles. See Chomsky (1998).

and *yesterday*, respectively. As a result, each sentence has different semantic content from the others after Spell-Out.

The diagrams of the above questions (4a-b) can be drawn like (5a-b) below:





As proposed in Yun (1999),⁸⁾ Do-support is applied as a tense-marker at T in (5a-b). The uninterpretable Q-feature of C Attracts either the general Q-feature of *Did* in (5a) or the quasi-special Q-feature of *you* in (5b).

Let us now turn to the Attract of special Q-feature of a *wh*-phrase. I assume strongly that a matrix *wh*-subject does not move to Spec-CP for the Agree between Q-feature of its own and Q-feature of C, but it remains in situ at Spec-TP:

- (6) a. **Who** helped him?
- b. **Who** did help him?
- c. **Who_i** do you think **t_i** helped him?

8) In the case of Do-support, Yun (1999) assumes that after the main verb FF(verb) is raised to T, Do is added as the tense-maker of FF(verb). However, I do not consider the raising of the main verb FF(verb) since it is an infinitive verb without tense in a numeration.

As mentioned in Radford (1997), it is neither necessary nor possible to use an unstressed form of *do* in (6a). If we use a stressed form of *do* as in (6b), which marks contrast or emphasis, two questions (6a-b) will have different semantic contents from each other. If the matrix *wh*-subject *who* in (6a) doesn't move to Spec-CP, it must remain in situ at Spec-TP, and only its Q-feature moves covertly to C for checking. This means that interrogative clauses with matrix *wh*-subjects have the status of TPs, whereas the other types of interrogative clauses with *wh*-phrases have the status of CPs. To our surprise, an embedded *wh*-subject *who* in (6c) moves overtly to Spec-CP for the Agree between Q-feature of its own and Q-feature of C.

If so, then it seems that the questions (6a, c) have the following derivational structures:

- (7) a. [_{CP} [_C [_C FF_{(who)n} C] [_{TP} [_{T'} Who_{j(tn)} [_T^{OMAX} FF_{(helpedi-v)m} T] [_{VP} [_{V'} FF_{(him)k} [_{V'} t_j [_V helped_{i-v(tm)} [_{VP} [_{V'} [_V t_i] [_{DP} him_(tk)]]]]]]]]]]]]]?
 b. [_{CP} [_C **Who**_j [_C^{OMAX} **do** C] [_{TP} you think [_{CP} [_C t'_j [_C Φ_(that) C] [_{TP} [_{T'} t_j [_T^{OMAX} FF_{(helpedi-v)m} T] [_{VP} [_{V'} FF_{(him)k} [_{V'} t_j [_V helped_{i-v(tm)} [_{VP} [_{V'} [_V t_i] [_{DP} him_(tk)]]]]]]]]]]]]]]]]]]]]]]]?

In (7a), the matrix *wh*-subject *who* remains in situ in Spec-TP, its Q-feature Attracted by the Q-feature of C in terms of economy principle.⁹ On the contrary, the embedded *wh*-subject *who* in (7b) moves to Spec-CP so that its Q-feature may Agree with the Q-feature of the matrix C. As assumed in Chomsky (1998), the Q-feature of *who* is not deleted by the Agree between Goal *who* (=trace *t*) and Probe Φ_(that) in the embedded CP,¹⁰ since the Probe (=Φ_(that)) contains the

9) Radford (1997) offers an interesting answer to this question in terms of the economy principle. In a *wh*-subject question, the requirement for a question to have an interrogative specifier can be satisfied by simply projecting the clause as far as IP, since the relevant IP has the interrogative operator *wh*-subject as its specifier: hence, the IP is interpretable as a question at LF without the need to project the structure any further into a CP.

defective Q-feature, i.e. the “nonspecific Peripheral (=P-) feature.” On the hand, the defective Q-feature of the Probe (=Φ_(that)) deletes through such an Agree, since the Goal *who* (=trace *t*) contains no defective formal feature. Their Q-features finally delete through the Agree between Goal *who* and Probe C in the matrix CP, since they contain no defective formal features.¹¹⁾

Let us examine a non-*wh*-phrase and a *wh*-phrase such as *if* and *whether* in questions:

- (8) a. We should not question **if** that he should live.
 ...1594, *First Pt. Contention* (1843) 37
- b. He asked **if** his wife was there.
 ...1895, *Law Times Rep.* LxxxIII. 6231
- c. **Whether** does Doubting consist in embracing the Affirmative or Negative Side of a Question?
 ...1713, *Berkeley Hylas & Phil.* 1. (1725) 5
- d. **Whether** do you demonstrate these things better in Homer or Hesiod?
 ...a 1822, *Shelley Ion Pr. Wks.* (1888) II. 115
- e. Ech man loke **whether** that I ly.
 ...c 1395, *Plowman's T.* 834
 (Each man looks whether I lie down.)
- f. Tell me **whether** any such bird be known to you.
 ...1676, *Ray Corr.* (1848) 122

10) Yu (1997) assumes that a complementizer (comp) *that* is often omitted in Middle and Modern English periods. When the comp *that* is omitted in an embedded CP, an alternant of *that* with full features Φ_{(that)PSP} remains instead.

11) The Goal for Agree in *wh*-movement relations is activated by its uninterpretable *wh*-feature. And the Probe for Agree in *wh*-movement relations is activated by its uninterpretable *wh*-feature. Even the declarative C (=that) may be assigned “nonspecific P-feature (=quasi-Q-feature) contingent on assignment of the EPP-feature. The feature is the matching feature for successive-cyclic *wh*-movement.

In (8a-b), a lexical category *if* is the non-*wh*-phrase which is assumed to contain an uninterpretable Q-feature. It was often used with a conjunction *that even* in the early Modern English (ModE), as if it had been a *wh*-phrase.¹²⁾ Since it is not a *wh*-phrase, it seems to me that *if* cannot move to the Spec-CP for ancillary Merge. Therefore, I argue that a Goal *if* may be covertly Attracted by a Probe C in terms of the above assumption (3). In (8c-d), a lexical category *whether* is the *wh*-phrase which is also assumed to contain an uninterpretable Q-feature. It had been used in the Spec-CP of a direct question from Old English (OE) to late Modern English. Nevertheless, it is sure that the initial *whether* is not used any longer in present English. In (8e-f), *whether* is now used only in indirect questions just like *if*. I argue again that a Goal *whether* may be overtly raised from Probe C to Spec-CP by the Q-feature of C:

- (9) The Q-feature of *if* is checked by the Attract of Q-feature of C in syntax, deleted there right after the new whole syntactic structure was copied into phonology, whereas the Q-feature of *whether* is checked by the Agree with the Q-feature of C in syntax, deleted there right after the new whole syntactic structure was copied into phonology

According to the above assumption (9), let us take a look at the derivational structures of (8b, d, f), respectively:

- (10) a. He asked [_{CP} [_{C'} [_C ^{omax} FF_(if) *if*_i C] [_{TP} his wife was there]]]
 b. [_{CP} [_{C'} **Whether**_i [_C ^{omax} t_j do_i C] [_{TP} you t_i demonstrate these things better in Homer or Hesiod]]]
 c. Tell me [_{CP} [_{C'} **Whether**_i [_C ^{omax} t_i C] [_{TP} any such bird be known to you]]]

12) Relative or conjunctive subordinants were often re-enforced by *pat* (= that) or *as*. See Mossé (1952).

The non-*wh*-phrase *if* in (10a) merges with inner C, and subsequently its Q-feature is covertly Attracted to outer C by the Q-feature of C. In the past, the *wh*-phrase *Whether* in (10b) is assumed to have merged with C just like the non-*wh*-phrase *if* and moved to the Spec-CP just like all the other *wh*-phrases. I argue that the *wh*-phrase *whether* in the indirect question (10c) also merges with C just like the non-*wh*-phrase *if* and moves to Spec-CP just like all the other *wh*-phrases.

- (11) All the non-*wh*- or *wh*-phrases move covertly or overtly to C or Spec-CP for checking their Q-features in syntax.

I will turn to special questions such as echo questions (EQs). According to Sobin (1990), there are two types of EQs in English, classical or 'syntactic' EQs and 'pseudo' EQs.¹³ Let us consider a declarative utterance and its two types of EQs:

- (12) a. U: Bill married Greta Garbo.
 b. E: Bill married **who** †?
 c. E: **Who** did Bill marry †?

The declarative utterance (12a) may be echoed in the two ways, as shown in (12b-c). (12b) illustrates the syntactic EQ response—the structure which is in certain critical respects the copy of U. In such an EQ, any newly-introduced *wh*-phrase appears in situ. Another possible EQ to (12a) is the pseudo EQ (12c)—the apparently normally constructed question to which (12a) would be an answer. In this paper, I wish to extend the Sobin's assumption that all of the COMP positions in EQs are [-*wh*], which contributes to the freezing of the COMP-*wh*-movement dimension of a syntactic derivation. For all the

13) Sobin (1990) argues that the discourse context of an EQ is critical to explaining its syntax. Hence, an abbreviation U indicates an utterance, and E or *E indicates an acceptable or unacceptable EQ response to that utterance. Besides, the final upward intonation (†) is common to EQs of both types.

wh-phrases in EQs to follow the assumption (11), an EQ seems to have double Specs-CP—inner Spec and outer Spec—in the first clause containing a non-*wh*- or *wh*-phrase. Therefore, I assume that the outer Spec of an EQ is always vacuous so that any lexical *wh*-phrase cannot move to it in both syntax and phonology.

If so, then the EQs (12b-c) may have the derivational structures such as (13):

- (13) a. [_{CP} [_{C'} [_C [_{C^{omax}} FF_{(who)_i} C] [_{TP} Bill married **who_i**]]]]?
 b. [_{CP} [_{C'} [_C **who_i** [_C C] [_{TP} Bill married **t_i**]]]]?

In (13a-b), the derivational structures of EQs are basically different from those of the other interrogative sentences, since the outer Specs-CP of EQs are always vacuous. In the syntactic EQ (13a), the Q-feature of the Probe C covertly Attracts the Q-feature of the Goal *who* due to its Suicidal Greed, whereas in the pseudo EQ (13b), the Goal *who* overtly moves to the inner Spec-CP for the Agree with the Q-feature of C. As a result, the uninterpretable Q-feature of C deletes in syntax right after the new whole syntactic structure was copied into phonology.

Let us further examine declarative and interrogative utterances, and their EQs:

- (14) a. U: Mary believes that Bill dates Greta Garbo.
 b. E: Mary believes that Bill dates **who**?
- (15) a. U: **Does** Jill date Mozart?
 b. E. **Does** Jill date Mozart?
 c. *E **Who** does Jill date?
- (16) a. Mary believes [_{CP} [_{C'} [_C [_{C^{omax}} FF_{(who)_i} C] [_{TP} Bill dates who_(t_i)]]]]?
 b. [_{CP} [_{C'} [_C [_{C^{omax}} **Does_i** C] [_{TP} Jill t_i date Mozart]]]]?
 c. [_{CP} [_{C'} [_C [_{C^{omax}} **Does_i** t'_i C] [_{TP} Jill t_i date Mozart]]]]?
 d. [_{CP} [_{C'} **Who_i** [_C [_{C^{omax}} **does_i** C] [_{TP} Bill t_i date t_j]]]]?

(14b) is the syntactic EQ of the declarative utterance (14a). Since the embedded clause in the U is the first clause containing a *wh*-phrase, it may have double Specs-CP, as represented in (16a). The outer Spec in (16a) is always vacuous, so that the EQ (14b) is grammatical. (15b) is also the syntactic EQ of the interrogative utterance (15a), but (15c) is the pseudo EQ of (15a). (16b) is the derivational structure of the U (15a), and (16c) is that of the EQ (15b). The ungrammatical EQ (16c) makes us find the fact that the non-*wh*-phrase with Q-feature *Does* can be copied in C^{OMAX} for checking, whereas it cannot be copied into the *wh*-phrase *what*. Both *Does* and *what* with Q-feature cannot remain in the same C', since they are assumed to be in a complementary distribution with each other. Thus, if *what* in (16d) is forced to move to the outer Spec-CP, the derivation crashes due to the violation of the above assumption that the outer Spec of an EQ is always vacuous.

3. The Checking of Q-features of multiple *wh*-phrases

As discussed in Koizumi (1994), multiple *wh*-fronting sentences in Bulgarian and Romanian have different structures from those in Serbo-Croatian and Czech. In the former, all *wh*-phrases are located to the left of the head of a CP, as in (17a), while in the latter, only one *wh*-phrase is located there:

- (17) a. Bulgarian/Romanian: *wh wh...wh C*
 b. Serbo-Croatian/Czech: *wh C wh wh...*

In case of Serbo-Croatian, sequences of preposed *wh*-phrases can be interrupted by adverbs and/or clitics, but the same is not true in Bulgarian.

Based on the Chomsky's (1998) Strongly Cyclic Model of Grammar, let us consider the derivations of (17):

(18) a. Bulgarian/Romanian:

[_{CP} [_C wh [_C wh...[_C wh [_C C] [_{TP}...]]]]

b. Serbo-Croatian/Czech:

[_{CP} [_C wh [_C C] [_{PolP} [_{PolP} wh...[_{Pol} Pol] [_{TP} ...]]]]]]

In (18a), Goals—multiple *wh*-phrases—overtly Agree with the Probe C, obeying the Principle of Minimal Compliance (PMC).¹⁴ The Q-feature of the Probe C in Bulgarian/Romanian deletes through the cyclic Agree with the Q-features of multiple *wh*-phrases. In (18b), only one *wh*-phrase overtly Agrees with C like English C, but the rest of multiple *wh*-phrases overtly Agree with Pol,¹⁵ obeying the PMC. In two types of languages, multiple *wh*-phrases overtly move to the Specs-CP or Specs-PolP for the Agree with C or Pol in syntax.

Let us look at the Agree or Attract of English multiple *wh*-phrases:

(19) a. **What** did John buy **where**?b. **Where** did John buy **what**?c. ***What** did John say **where** he bought?d. ***Where** did John say **what** he bought?e. **What** moves **where** **when** in **which** language?(20) a. [_{CP} [_C **What**_i [_C^{OMAX} FF_{(where)k} did_i C] [_{TP} John t_i buy t_j where_(t_k)]]]?b. [_{CP} [_C **Where**_j [_C^{OMAX} FF_{(what)k} did_i C] [_{TP} John t_i buy what_(t_k) t_j]]]?

14) Once an instance of movement to *a* has obeyed a constraint on the distance between source and target, other instances of movement to *a* need not obey the constraint. See Richards (1997, 1998).

15) Koizumi (1994) refers to the second complementizer type projection as Polarity Phrase, or PolP. Culicover (1991) argues for the existence in English of a second complementizer type position that he calls PolP. He also proposes that PolP can appear not only as a complement to C but also as a complement to I, in which case its specifier can function as the location of pre-V focus in language like Hungarian. See also Authier (1992) and Johnson (1989).

- c. [_{CP} [_{C'} **What**_k [_C^{OMAX} did_j C] [_{TP} John t_i say [_{CP} [_{C'} t'_k [_C **where**_i [_C C] [_{TP} he bought t_k t_i]]]]]]]])?
- d. [_{CP} [_{C'} **Where**_k [_C^{OMAX} did_j C] [_{TP} John t_i say [_{CP} [_{C'} t'_k [_C **what**_i [_C C] [_{TP} he bought t_i t_k]]]]]]]])?
- e. [_{CP} [_{C'} [_C^{OMAX} FF_(what)_i FF_(where)_j FF_(when)_k FF_(in which language)_m C] [_{TP} what_(i) moves where_(j) when_(k) in which language_(m)]]]?

(20a-e) are the derivational structures of multiple *wh*-Questions (19a-e), respectively. According to Kuno and Robinson (1972),¹⁶ time and place *wh*-phrases such as *when* and *where* can cross over another *wh*-phrase, as shown in (20a-b). In fact, it seems that (20b) violates the Minimal Link Condition (MLC). In (20a), *FF*_(where) is covertly Attracted by the Q-feature of C right after *what* was overtly raised to the Spec-CP by the Q-feature of C, and in (20b), *FF*_(what) is covertly Attracted by the Q-feature of C right after *where* was overtly raised to the Spec-CP by the Q-feature of C. In (20c-d), *what* cannot cross over *where*, and *where* cannot cross over *what*, either. That is why C in an English clause never Agrees with more than one lexical *wh*-phrase in the same CP unlike C in a Bulgarian or Romanian clause. Nevertheless, it can Attract the Q-features of multiple *wh*-phrases in C^{OMAX}, as in (20e). First of all, *FF*_(who) is covertly attracted by the Q-feature of C for checking, since an interrogative clause with a *wh*-subject has the status of TP. By turns, *FF*_(where), *FF*_(when), and *FF*_(in which language) are covertly Attracted by the Q-feature of C in C^{OMAX}, Tucking in C.¹⁷

To promote a better understanding of the deletion of Q-feature of C, let us take a careful look at the diagram of (20e):

16) Confer Bach (1971) and Aoun and Li (1993)

17) Yun (1999) assumes that 'who' is overtly moved to the initial position of the sentence and three other *wh*-phrases are in situ... *Wh*-adjuncts also have to move covertly to check their features.

- b. [_{CP} [_{C'} **What**_k [_{C'} **Who**_j [_C do_i C] [_{TP} you t_i think [_{CP} [_{C'} t'_k [_{C'} t'_j [_C Φ_(that) C] [_{TP} t_j will say what_(tk)]]]]]]]])?

(22-23b) are the derivational structures of (22-23a), respectively. In (22b), the *wh*-subject *who* can be raised from the Spec-TP of the embedded clause through the intermediate Spec-CP to the matrix Spec-CP. As mentioned in Chomsky (1998), the Probe C (=Φ_(that)) in the embedded CP is active due to its uninterpretable nonspecific P-feature (=quasi-Q-feature), and the Goal *who* is also active due to its uninterpretable Q-feature. For the matrix CP, the Probe C is active due to its uninterpretable Q-feature, and the Goal *who* is again active since its uninterpretable Q-feature is not deleted due to the defectiveness of the embedded C.¹⁹ In short, a CP in an embedded clause has the EPP-feature by which a *wh*-subject may be overtly raised to a matrix Spec-CP for checking. As illustrated in (23b), English never permits two lexical *wh*-phrases in the same CP.

Let us finally consider the Agree or Attract of Q-features of Korean and Chinese multiple *wh*-phrases:

- (24) a. Sunhee-ka **enchey edise mues-ul** sa- ss- upnikka?
 Sunhee-NOM when where what-ACC buy PST-Q
 (What did Sunhee buy where when?)
 b. [_{CP} [_{C'} [_C FF_{(enchey)_i} FF_{(edise)_j} FF_{(mues-ul)_k} C] [_{TP} Sunhee-ka enchey_(i) edise_(j) mues-ul_(k) sa-ss-upnikka]]]?
 (25) a. Ni xiangzhidao **shei weishenmo** cizhi.
 You wonder who why resign
 (you wonder who resigns why.)
 b. [_{CP} [_{C'} [_C C] [_{TP} Ni xiangzhidao [_{CP} [_{C'} **shei**_i [_{C'}

19) The Goal for Agree in *wh*-movement relations is activated by its uninterpretable *wh*(=Q)-feature. The Probe for Agree in *wh*-movement relations is activated by its Q-feature. An uninterpretable feature of the Goal deletes if the Probe contains no defective formal feature, whereas an uninterpretable feature of the Probe deletes if the Goal contains no defective formal feature.

- weishenmo**_j [c C] [TP t_i t_j cizhi]]]]]]]
- c. [CP [c' [c FF_{(shei)k} C] [TP Ni xiangzhidao [CP [c' shei_i(tk) [c' **weishenmo**_j [c C] [TP t_i t_j cizhi]]]]]]]]]]]?]
- d. [CP [c' [c FF_{(weishenmo)k} C] [TP Ni xiangzhidao [CP [c' shei_i [c' **weishenmo**_j(tk) [c C] [TP t_i t_j cizhi]]]]]]]]]]]?]

As assumed in the Cheng's (1991), C in Korean questions seems to have no EPP-feature since its Q-feature is lexically realized.²⁰ In (24a), the Q-feature of C is lexically realized by *upnikka*, due to which C does not require EPP-feature for ancillary merge. As a result, all the multiple *wh*-phrases in (24b)—*FF(enchey)*, *FF(edise)*, and *FF(mues-u)*—are cyclically Attracted by the same Q-features of C. According to Shi (1994), the verb *xiangzhidao* (=want to know, wonder) in (25a-d) selects a Q-complement, so that the Q-feature of C must be generated in the embedded clause as in (25b). However, when the additional Q-feature of C is generated in the matrix clause, the indirect question (24a) allows two direct question readings through the Attract of either of *wh*-phrases, as in (25c-d). It seems that C in a Chinese embedded clause has the optional full or quasi-Q-feature. I wish to leave this matter open.

4. Conclusion

Every question has the Q-feature of C, which checks the Q-feature of a non-*wh*- or (a) *wh*-phrase(s) through the Attract or Agree in syntax, deleting there right after the new whole syntactic structure was copied into phonology.

In this paper, I call a verb or (pro)noun with Q-feature a non-*wh*-phrase. Its Q-feature is covertly Attracted from inner C to outer C in C^{OMAX}. Interrogative clauses with matrix *wh*-subjects have the status of TPs,

20) In case of Cheng (1991), [+Q]-feature of C seems to include the selectional feature of C, that is, EPP-feature.

whereas the other types of interrogative clauses with *wh*-phrases have the status of CPs. All the non-*wh*- or *wh*-phrases including *if* or *whether* move cyclically to C or Spec-CP for the checking of their Q-features. An EQ seems to have double Specs-CP—inner Spec and outer Spec—in the first clause containing a non-*wh*- or *wh*-phrase. I assume that the outer Spec of an EQ is always vacuous so that any lexical *wh*-phrase cannot move to it in both syntax and phonology. English never permits more than one lexical *wh*-phrase in the same CP. Nevertheless, the Q-feature of C can Attract the Q-features of multiple *wh*-phrases. C in Korean questions seems to have no EPP-feature since its Q-feature is lexically realized. As a result, multiple *wh*-phrases are covertly Attracted by the same Q-feature of C. In case of Chinese questions, if the additional Q-feature of C is generated in a matrix clause, an indirect question allows two direct question readings through the Attract of either of *wh*-phrases.

References

- 양동휘. 1998. "최소주의의 최근 동향과 문제점들," 특강 자료 모음집, 한국언어학회.
- 양동휘. 1999. "Recent Developments in Minimalist Syntax," 문법이론과 영어교육 현대문법학회·대한언어학회.
- 유종택. 1997. "The Missing Features of Alternants after Spell-Out," 언어학 제5권 제2호, 대한언어학회.
- 유종택. 1998. "On Multiple Spec-CP Structures," 언어학 제6권 제1호, 대한언어학회.
- 윤만근. 1999. "Unselective Binding and Multiple *Wh*-Fronting Constructions," 현대문법연구 제15권, 현대문법학회.
- Aoun, J. & Y. A. Li. 1993. "*Wh*-Elements in situ: Syntax or LF?" *Linguistic Inquiry* 24.
- Authier, J.-M. 1992. "Iterated CPs and Embedded Topicalization," *Linguistic Inquiry* 23.
- Bach, E. 1971. "Questions," *Linguistic Inquiry* 2.
- Cheng, I. 1991. *On the Typology of Wh-Questions*, Ph.D dissertation, MIT.

- Chomsky, N. 1957. *Syntactic Structures*, Mouton and Co., The Hague.
- Chomsky, N. 1995. *The Minimalist Program*, MIT Press, Cambridge, Mass.
- Chomsky, N. 1998. "Minimalist Inquiries: the Framework," ms., MIT.
- Cole, P & G. Hermon. 1994. "Is There LF-Wh Movement?" *Linguistic Inquiry* 25.
- Culicover, P. 1991. "Topicalization, Inversion, and Complimentizers in English," ms., The Ohio State University, Columbus.
- Gimshaw, J. 1993. "Minimal Projections, Heads, and Optimality," ms. Rutgers University, New Brunswick.
- Jacobs, R. A. & P. S. Rosenbaum. 1968. *English Transformational Grammar*, Walton, Mass.: Blaisdell.
- Johnson, K. 1989. *Clausal Architecture and Structural Case*, ms. University of Wisconsin-Madison.
- Karz, J. J. & P. M. Postal. 1964. *A Integrated Theory of Linguistic Descriptions*, MIT Press, Cambridge, Mass.
- Koizumi, M. 1994. "Layered Specifiers," *NELS* 24.
- Kuno, S. and J. Robinson. 1972. "Multiple Wh Questions," *Linguistic Inquiry* 3.
- Mossé, F. 1975. *A Handbook of Middle English*, The Johns Hopkins University Press, Baltimore, Maryland.
- Radford, A. 1997. *Syntax: A Minimalist Introduction*, Cambridge University Press, New York.
- Richards, N. 1997. *What Moves Where When in Which Language?* Ph.D. dissertation, MIT.
- Richards III, N. 1998. "The Principle of Minimal Compliance," *Linguistic Inquiry* 29:4.
- Shi, D. 1994. "The Nature of Chinese Wh-Questions," *Natural Language Linguistic Theory* 12.
- Sobin, N. 1990. "On the Syntax of English Echo Questions," *Lingua* 81.

Dept. of English, College of Humanities
Howon University
727, Wolha, Impi
Kunsan, Chonbuk 573-718, Korea
E-mail: yuct@sunny.howon.ac.kr
Fax: (0652) 224-9807