

## Phonological Suppression of Anaphoric *Wh*-expressions in English and Korean

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### Abstract

This paper follows the lead of Chung (2013), examining the phonological suppression of the *wh*-expression in English and Korean. We argue that the *wh*-expression itself cannot undergo ellipsis/deletion/dropping, as it carries information focus. However, it can do so, when in anaphoricity with the preceding token of *wh*-expression, it changes into an E-type or sloppy-identity pronoun. This vehicle change from the *wh*-expression to a pronoun accompanies the loss of the *wh*-feature inherent in the *wh*-expression. In a certain structural context such as a quiz question, the interrogative [+wh] complementizer does not require the presence of a *wh*-expression, thus the expression being optionally dropped.

### 1. Introduction

As Chung (2013) notes, the interrogative expression in Korean corresponding to the *wh*-expression in English cannot be phonologically suppressed<sup>1</sup>, as follows:

- (1) A: na-nun chelswu-ka ecey **mwues-ul**  
I-Top Chelswu-Nom yesterday what-Acc  
sass-nunci molu-keyss-ta.

<sup>1</sup> We occasionally use the theory-neutral notion 'phonological(ly) suppress(ion)' to refer to such terms as (phonological) dropping, copy trace deletion, ellipsis/deletion, etc.

bought-Interr don't know

'I don't know what Chelswu bought yesterday.'

- B: na-to yenghuy-ka ecey **\*(mwues-ul)**  
I-also Yenghuy-Nom yesterday what-Acc  
sass-nunci molukeyssta.

bought-Interr don't know

'I don't know what Yenghuy bought yesterday.'

In the conversation between speakers A and B, speaker B's sentence is required to bear the interrogative expression *mwues* 'what', despite the fact that another token of the same expression is mentioned in the previous sentence spoken by speaker A.

Apparently, the same distribution of the *wh*-expression is found in English, as follows:

- (2)A: I don't know what John bought yesterday.  
B: \*I don't know Bill did (~~buy what yesterday~~), either.  
B': I don't know **\*(what)** Bill did (~~buy + yesterday~~), either.

As in (2B), the *wh*-expression *what* cannot be included in the portion deleted by VP ellipsis. Nor is it phonologically suppressed after it is moved to the embedded [Spec,CP] position, as in (2B').

Chung (2013) attempts to account for the impossibility of phonologically suppressing the interrogative expression in Korean by adopting the *pro* hypothesis for the null argument. More specifically, Chung follows the line of analysis advanced by Ahn and Cho (2012), who propose that the null argument as *pro* always substitutes for NP, but not for the next higher QP projected by the functional element Q such as a quantity word or a *wh*-feature, as schematized below:

(3) [QP [NP pro ] Q ]

Chung's analysis works fine for Korean, but his analysis squarely faces a problem when it is extended to examples like (2B) and (2B') in English, where the empty *pro* is known not to be available in grammar.

We examine this issue of why the interrogative or *wh*- expression is not phonologically suppressed. We argue that the interrogative or *wh*- expression in its own form cannot be deleted, because it carries informational focus or new information. However, it can undergo deletion when it is anaphoric with the preceding interrogative or *wh*- expression and potentially changes into a pronoun. This vehicle change from the interrogative or *wh*- expression to the corresponding pronoun results in loss of the *wh*-feature inherent in the former expression, so that the resulting pronoun necessarily fails to enter into successful Agree relation with the interrogative complementizer, inducing a derivational crash.

**2. The syntax of *wh*-expression: Wisdom from English**

In this section we examine the phonological suppression of the *wh*-expression in English. First of all, the *wh*-expression or relative *wh*-operator can be phonologically suppressed in relative clauses, as follows:

- (4)a. We read the article [ (which) Smith recommended].
- b. The safe [ (which) Henry keeps his money in ] has been stolen. Baker (1995: 293)

In (4), the head of the chain formed by the relative pronoun or *wh*-operator *which* can be dropped. We understand this dropping of the relative pronoun along the line of analysis for the copy trace(s), as in (5):

- (5) What did Stacy say [(what)<sub>1</sub> Becky bought (what)<sub>1</sub>]?

In the course of the *wh*-movement, the moving *wh*-expression leaves behind its copy trace(s) along the way to its target position. The difference between the movement of the relative

*wh*-operator and the regular *wh*-movement is that in the case of the former, the chain created by the relative *wh*-operator forms an 'extended' chain with the relative antecedent. This results in allowing the head of the chain created by the relative *wh*-operator to be dropped, in identity with the relative antecedent, which is now the head of the extended chain.

A question that arises is why the following sentence is ungrammatical:

- (6) \*Who<sub>1</sub> do you wonder [CP t'<sub>1</sub> [TP t<sub>1</sub> won the trace]]?

It is argued in Lasnik and Saito (1984) that the intermediate trace t'<sub>1</sub> cannot qualify as an operator since it does not contain the relevant feature. Their argument, however, does not seem to hold water, in light of the copy trace analysis of *wh*-movement, which dictates that the literal copy of the moving *wh*-expression occurs instead of the trace, as follows:

- (6)' \*Who<sub>1</sub> do you wonder [CP who<sub>1</sub> [TP who<sub>1</sub> won the trace]]?

The ill-formedness of (6)' is, in the more recent analysis (cf. Chomsky (2000), (2001a, b)), attributed to the illegitimate step of movement from the embedded to the matrix [Spec,CP] position, as the moving *wh*-expression has its featural requirement met in the embedded [Spec,CP] position, being unable to undergo further movement.

One thing to note regarding the copy trace deletion of the chain formed by the *wh*-expression or the relative *wh*-operator is that the copy trace left behind by the *wh*-expression or the relative *wh*-operator changes into a resumptive pronoun (though as well-known, the resumptive pronoun in English allegedly occurs within an island structure), as follows:

- (7)a. This is the chef<sub>1</sub> that Ted inquired how \*e<sub>1</sub>/she<sub>1</sub> prepared the potatoes
- b. The detective interrogated a man<sub>1</sub> who the prosecutor knows why the officer arrested \*e<sub>1</sub>/him<sub>1</sub>.

The availability of a resumptive pronoun instead of a copy trace linked to the moved *wh*-expression clearly points to the fact that the copy trace is a kind of pronoun realized in anaphoricity with the head of the chain (i.e., the

*wh*-expression or the relative *wh*-operator).

Not only do the *wh*-expression and the relative *wh*-operator undergo phonological suppression as part of copy trace deletion, but the *wh*-expression is also part of Sluicing or TP deletion, as follows:

- (8)a. The report details what<sub>1</sub> IBM did and why  
 [TP e].  
 b. Who<sub>1</sub> did the suspect call and when  
 [TP e]?

Merchant (2001: 201)

Drawing attention to examples like (8a-b), Merchant (2001: 201-4) argue that the second conjunct clause in (8a-b) involve deletion of TP where the expression corresponding to the *wh*-expression is an E-type pronoun. In other words, the elided TP in (8a-b) is understood as the reconstructed or actually attested TP in (9a-b):

- (9)a. The report details what<sub>1</sub> IBM did and why  
 [TP IBM did it<sub>1</sub>].  
 b. Who<sub>1</sub> did the suspect call and when [TP the  
 suspect called him<sub>1</sub>]?

Merchant (2001: 203)

This shows that the questioning *wh*-expression can be substituted for by the (E-type) pronoun. Note that the E-type pronoun as part of the full or elided clause covaries in reference with the questioning *wh*-expression. The availability of (9a-b) corresponding to (8a-b) involving ellipsis renders compelling evidence showing that the *wh*-expression is represented as a pronoun inside a portion to be deleted. The form change (or vehicle change, following Fiengo and May's (1994) and Merchant's (2001) terminology) of the *wh*-expression into a pronoun inside the portion to be deleted seems to be a reasonable option, as the whole portion to be deleted or the expressions within it are construed as discourse-given or anaphoric to the previous verbal discourse.

It seems, however, that the anaphoric substitution of the E-type pronoun for the *wh*-expression is restricted to Sluicing or TP ellipsis. The following sentences accommodate the interpretation where the *wh*-expression in the first conjunct clause and the substituting pronoun that putatively occurs in the elided VP of the second conjunct clause can be referentially distinct:

- (10)a. I know when John read what, but I don't know where Bill did.  
 b. John asked me why Mary bought what, but John didn't ask me how Susan did.

In other words, in (10a) what John read may be referentially different from what Bill did. Note that the pronoun in the elided VP of the second conjunct clause, which is vehicle-changed from the *wh*-expression in the first conjunct clause, may be understood as a sloppy-identity pronoun.

The difference between (8a-b) and (10a-b) in regard to the interpretation of the ellipsis-internal pronoun anaphoric to the preceding *wh*-expression reminds us of the contrast between TP and VP ellipsis in regard to the ability to introduce new discourse referents by using indefinite expressions, which Chung et al. (2011) discuss. In fact, Chung et al. suggest that the contrast in question is correlated with the size of ellipsis site and the domain of existential closure that unselectively binds all indefinite expressions. Chung et al. argue that TP ellipsis involves LF reconstruction or re-use of the antecedent TP into the ellipsis site, whereas VP ellipsis involves PF deletion/unpronunciation of a vP. Departing from Chung et al., let's instead assume that both cases of ellipsis involve PF deletion. Furthermore, we take the domain of existential closure to be the smallest constituent in which all the predicate's arguments have had a chance to be introduced, presumably the position adjoined to vP. Given these assumptions, the two cases of deletion are taken to proceed in the following fashion:

(11) TP ellipsis:

[CP [TP  $\exists$  [VP ~~subject DP [VP object DP ]]]]~~

(12) VP ellipsis:

[CP [TP  $\exists$  [VP ~~subject DP [VP object DP ]]]]~~

TP and VP deletion differ in regard to whether the ellipsis site includes the existential closure operator ( $\exists$ ). The ellipsis site of the former case DOES include the existential operator as in (11). As the identity/parallelism condition on deletion demands that the indefinite expressions (including *wh*-expressions) in the ellipsis TP be identical/parallel in reference to their correlate expressions in the antecedent TP, TP ellipsis requires strict identity/parallelism. However, VP ellipsis allows looser or sloppy

identity/parallelism, because the existential operator is outside of the vP to be deleted as in (12)<sup>2</sup>.

Returning to the examples in (2), repeated below as (13), we are now in a position to account for the impossibility of phonologically suppressing the *wh*-expression in (13B) and (13B').

- (13)A: I don't know what John bought yesterday.  
 B: \*I don't know Bill did (~~buy what yesterday~~), either.  
 B': I don't know \*(~~what~~) Bill did (~~buy t yesterday~~), either.

Recall that the portion to be deleted or the expressions within it are discourse given, so that the *wh*-expression changes into a corresponding pronoun. Otherwise, the *wh*-expression carries information focus and so cannot be subject to deletion, as stated below:

- (14) The *wh*-expression carries information focus and so cannot be subject to deletion.

In Merchant's (2001) notion of e-givenness, the *wh*-expression cannot count as e-given information.

To repeat, the *wh*-expression has to change into an (E-type or sloppy-identity) pronoun to be included in the portion to be deleted. However, the resulting pronoun vehicle-changed from the *wh*-expression does not carry the *wh*-feature inherent in the *wh*-expression. This anaphoric process is a culprit for the ungrammaticality of (13B) and (13B'). For the sake of the exposition, we represented the *wh*-expression in (13B) and (13B') as undergoing deletion or dropping, but the *wh*-expression in (13B) and (13B') that undergoes deletion or dropping has to be represented as a pronoun corresponding to it. Under this circumstance, the pronoun fails to enter into successful Agree relation with the interrogative complementizer, resulting in a derivational crash (cf. Chung (2013)).

<sup>2</sup>The contrast between TP and VP ellipsis in terms of existential closure reminds us of the parallel difference between them in terms of voice match. Merchant (2013) argues that TP ellipsis requires voice match, whereas VP ellipsis does not. This difference follows from the fact that TP ellipsis always includes a Voice head, but VP ellipsis does not.

Leaving this section, we note that there is an additional set of examples where the *wh*-expression is phonologically suppressed. The relevant examples are as follows:

- (15)a. The first emperor of the Roman empire was?  
 b. In ancient Rome, Nero tried to destroy the city by?  
 c. The Christian movement to reclaim the Iberian Peninsula was called?  
 d. The three most well-known teas are Darjeeling, Assam, and?

(taken from

<http://shrines.rpgclassics.com/psx/mml2/poktevilleagequiz.shtml>)

In these sentences that are used as quiz questions, the expected Subject-Aux Inversion does not apply, which indicates that the examples in (15) are assimilated to the echo *wh*-questions in (16) which are also used as quiz questions.

- (16)a. Christianity became the official religion of the Roman empire **with what**?  
 b. 300 years ago, the first roller coaster was built **in what country**?

In this regard, it seems right to say that what is phonologically suppressed in (15a-d) is the echoic *wh*-expression as found in (16). It is also to be noted that the phonological suppression takes place only at the right edge of the sentence.

Why is it possible to drop the echoic *wh*-expression in quiz questions as in (15)? The answer to this question may be that the echoic *wh*-expression can be dropped in register-dependent contexts such as quizzes. Still the more important aspect of quiz questions using echoic *wh*-expressions is that they do not bear the interrogative complementizer (cf. Sobin (2010)). Therefore, the optional dropping of an echoic *wh*-expression in quiz questions does not result in a derivational crash.

### 3. Extension to Korean

In the previous section, we saw that the *wh*-expression undergoes phonological suppression as part of copy trace deletion or TP- or VP-deletion. Especially in the latter case, the *wh*-expression can be part of TP- or VP-deletion when it vehicle-changes into an (E-type or

sloppy-identity) pronoun, (though in the former case, the copy trace changes into a resumptive pronoun in restricted structural contexts). However, it itself cannot be part of TP- or VP-deletion because it is inherently construed as new information.

We turn to Korean, where the *wh*-expression can be scrambled out of the embedded interrogative clause, unlike in (6) of English:

- (17)a. *chelswu-ka* [*yenghuy-ka* ***mwues-ul***  
*Chelswu-Nom Yenghuy-Nom what-Acc*  
*sassnun-ci*] *alko siphehanta.*  
*bought-Interr know want*  
*'Chelswu wants to know what Yenghuy*  
*bought.'*
- b. ***mwues-ul***<sub>1</sub> [*chelswu-ka* [*yenghuy-*  
*kamwues-ul*<sub>1</sub>/*t*<sub>1</sub> *sassnunci*] *alko*  
*siphehanta*].

Unlike in (6) of English, in (17b) the scrambling of the *wh*-expression proceeds to the matrix clause without entering into Agree relation with the embedded interrogative complementizer, anticipating the undoing of it to its original position in the covert syntax (cf. Saito (1989)). The copy trace left behind by the overt-syntax scrambling of the *wh*-expression undergoes copy trace deletion, in identity with the head of the chain formed by this scrambling.

The *wh*-expression can also be part of ellipsis, as follows:

- (18)a. *chelswu-ka* ***mwues-ul*** *sass-nunci*  
*Chelswu-Nom what-Acc bought-Interr*  
*alko iss-ciman,*  
*know-Concessive -*  
***way-i-nci-nun*** *molukeyssta.*  
*way-Copu-Interr-Contrast don't know.*  
*'I know what Chelswu bought, but I don't*  
*know why.'*
- b. *chelswu-eykey* ***etten mwuncey-lul***  
*Chelswu-to which question-Acc*  
*phwuless-nunci mwuless-ciman,*  
*solved-Interr asked-Concessive*  
***ettehkey-i-nci-nun*** *mwutci anhassta.*  
*how-Copu-Interr-Contrast ask didn't*  
*'I asked Chelswu which question he*  
*solved, but I didn't ask how.'*

In (18), either *nwues* 'what' or *ettenmwuncey* 'what question' can be part of clausal ellipsis (or Pseudosluicing, following Merchant's (1998) terminology). Given the analysis for English,

we can say that the *wh*-expressions in (19a-b) each changes into an E-type pronoun in the context of clausal ellipsis.

However, returning to the example in (1), repeated below as (19), (19B) turns out to be unacceptable, if the *wh*-expression is phonologically suppressed.

- (19)A: *na-nun chelswu-ka ecey* ***mwues-ul***  
*I-Top Chelswu-Nom yesterday what-Acc*  
*sass-nunci molu-keyss-ta.*  
*bought-Interr don't know*  
*'I don't know what Chelswu bought*  
*yesterday.'*
- B: *na-to yenghuy-ka ecey* ***\*(mwues-ul)***  
*I-also Yenghuy-Nom yesterday what-Acc*  
*sass-nunci molukeyssta.*  
*bought-Interr don't know*  
*'I don't know what Yenghuy bought*  
*yesterday.'*

Continuing on extending the analysis proposed for English to Korean, we account for (19B) without the overtly-realized *wh*-expression by saying that the *wh*-expression itself cannot be phonologically suppressed haphazardly, since it carries new information. However, it can be dropped only when it changes into a discourse-old pronoun. As correctly argued by Chung (2013), *mwues-ul* 'what' can change into the empty pronoun *pro* that Korean utilizes but English does not. When this applies, however, there is no expression that the embedded interrogative complementizer can partake in legitimate Agree relation with, thus ultimately resulting in a derivational crash. By contrast, though the *wh*-expression within clausal ellipsis in the second conjunct clause of (18a-b) changes (in fact, has to change) into a pronoun, the additional *wh*-expression such as *way* 'why' and *ettehkey* 'how' steps in to successfully establish Agree relation with the interrogative complementizer.

The following example (with some slight modification) reported by Chung (2013) can be accounted for along the same line of analysis as (18):

- (20) *chelswu-nun* ***nwu-ka encey*** *ttenass-nunci*  
*Chelswu-Top who-Nom when left-Interr*  
*Cosaha-ko,*  
*examine-Conj*  
*yenghuy-nun* ***(nwuka) eti-lo.***  
*Yenghuy-Top who-Nom where-for*

Ttenass-nunci cosahay-la  
 left-Interr examine-Imper  
 'Chelswu, you examine who left when, and  
 Yenghuy, you examine who left for where.'

The difference between (18) and this example is that, on the one hand, the former contains one single *wh*-expression, but the latter contains multiple *wh*-expressions in the first conjunct clause. Unlike (19B), on the other hand, both (18) and (20) contain an additional *wh*-expression in the second conjunct clause, which participates in Agree relation with the interrogative complementizer, despite the other anaphoric argument *wh*-expression changing into a pronoun.

One thing worth noting is the referentiality of the *wh*-expression that is phonologically suppressed in the second conjunct clause of (18) and (20). It seems that there is no disagreement about the *wh*-expression that is part of clausal ellipsis in (18). It is construed as an E-type pronoun, as found in the similar structural context of (8a-b) in English. Several linguists that I consulted about (20) also claimed that the phonologically suppressed *wh*-expression in the second conjunct clause of (20) is only interpreted as an E-type pronoun. However, I concur with Chung's (2013) report that the phonologically suppressed *wh*-expression *nwu-ka* 'who' in the second conjunct clause of (20) allows for sloppy-identity interpretation. In our analysis, the *wh*-expression *nwu-ka* 'who' in the second conjunct clause of (20) changes into an empty pronoun that is construed as a sloppy-identity one in the interpretive component. Note at this point that the size of phonological suppression is critical for the interpretation of the pronoun which is vehicle changed from the *wh*-expression. In (18), the pronoun is part of clausal ellipsis, allowing for E-type interpretation. In (20), by contrast, the pronoun is a null argument, allowing for sloppy-identity interpretation in addition to E-type interpretation. As suggested above for English, the domain of existential closure and parallelism in ellipsis come into play, distinguishing the pronoun in (18) and that in (20) in terms of interpretational aspects.

Now turning to quiz questions in Korean, we note the usual instances of such questions, as follows:

(21)a. seykyey-eyse kacang kin kang-**un**?

world-in most long river-Top  
 'The longest river in the world is?'  
 b. seykyey-eyse kacang manhi phallin cha  
 world-in most many sold car  
 TOP 3-nun  
 TOP 3-Top  
 thoyothakhololla, photu F silicu, **kuliko**  
 Toyota Corolla, Ford F Series, and  
**(ikes-un)**?  
 (this-Top)  
 'The 3 best-selling cars in the world are  
 Toyota Corolla, Ford F Series, and  
 (this)?'

To construct a quiz question, Korean utilizes the Topic marker with somewhat peculiar intonation on it, with the immediately following string of words phonologically suppressed at the right edge of the sentence. This formulaic device is extended to the non-quiz type of sentences in (22), reported by Chung (2013):

(22)A: chelswu-ka sakwa-lul swunhuy-eykey  
 Chelswu-Nom apple-Acc Swunhuy-to  
**encey cwuess-ni**?  
 when gave-Interr  
 'When did Chelswu give an apple to  
 Swunhuy?'  
 B: ecey  
 yesterday  
 'Yesterday.'  
 A: kulem, yengswu-ka sakwa-lul  
 then, Yengswu-Nom apple-Acc  
 yenghuy-eykey-nun  
 Yenghuy-to-Top  
**(enceyewuessi)**?  
 when gave-Interr  
 'Then, Yengswu gave an apple to  
 Yenghuy when?'

As in (22), the second sentence by speaker A has its right edge dropped immediately after the Topic marker.

It seems that the dropping of the right of the sentence does not obey such a syntactic condition as constituent-hood, allowing the embedded predicate and the matrix predicate to be phonologically suppressed, excluding the other embedded constituents.

(23)A: chelswu-ka [swunhuy-ka  
 Chelswu-Nom Swunhuy-Nom  
 nonmwun-ul manswu-eykey  
 article-Acc Manswu-to

**encey ponayntako] malhayss-ni?**  
 when sent said-Interr  
 'When did Chelswu say Swunhuy sent an article to Manswu?'  
 B: nayil  
 tomorrow  
 'Tomorrow.'  
 A: kulem, yengswu-ka [minhuy-ka  
 Then Yengswu-Nom Minhuy-Nom  
 nonmwun-ul  
 article-Acc  
 kyengswu-eykey-nun  
 Kyengswu-to-Top  
~~(encey ponayntako)] malhayssni?~~  
 when sent said-Interr  
 'Then, Yengswu said Minhuy sent an article to Kyengswu when?'

We take the insensitivity to constituent-hood in the course of producing a quiz question to indicate that the dropping of the string of words is non-syntactic and the quiz question like (21a-b), just as in English, does not involve the interrogative complementizer, so that it does not require the presence of the *wh*-expression within it.

#### 4. Conclusion

This paper has investigated why the *wh*-expression cannot be deleted/elided nor part of the portion to be deleted/elided. We have argued that the *wh*-expression is construed as information focus, not being able to undergo deletion, otherwise impinging on the recoverability condition on deletion/ellipsis. However, it can be substituted for by a pronoun in an anaphoric relation with the preceding token of *wh*-expression. Under this circumstance, it can be deleted/elided or part of the portion to be deleted/elided, but at the cost of losing the *wh*-feature inherent in it. Thus, if the *wh*-feature is in demand for the Agree relation with the interrogative complementizer, the pronoun that is vehicle-changed from the *wh*-expression cannot provide such a feature. In fact, this is the paradoxical situation for the *wh*-expression to be deleted/elided or part of the portion to be deleted/elided. If it remains in its form, it cannot be subject to deletion/ellipsis. If it changes into an anaphoric pronoun, the resulting pronoun ends up with losing the *wh*-feature the corresponding *wh*-expression used to have.

In passing, we have first discussed the two different types of pronouns that are vehicle-changed from *wh*-expressions: E-type pronoun and sloppy-identity pronoun. This distinction follows from the domain of existential closure and the parallelism/identity condition on deletion/ellipsis. Second, as Merchant (2001) and Chung (2013) note, when one *wh*-expression changes into an anaphoric pronoun, failing to enter into Agree relation with the interrogative complementizer, the multiple *wh*-question makes available an additional *wh*-expression, which steps in to do so instead. Third, the quiz question construction employs the echo *wh*-question strategy, thereby the interrogative complementizer in the construction not requiring for the expected Agree relation with an expression with the *wh*-feature. Thus, the dropping of the *wh*-expression in this construction does not lead to a derivational crash.

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