An experimental investigation of *why*-stripping in Korean*

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Kim, Jeong-Seok, Hye Jin Lee, Su-Hyuk Yoon, Jin Hyung Lee, Jee Young Lee, and Soohyun Kwon. 2021. An experimental investigation of *why*-stripping in Korean. *Linguistic Research* 38(2): 271-299. The present study uses an acceptability judgment experiment designed to investigate whether the acceptability of Korean *why*-stripping is affected by (i) the polarity difference of the antecedent clause, (ii) the marker *ani* 'not' immediately preceding *why*, or (iii) the type (i.e., short-form or long-form) of negation in the antecedent clause. We propose that *way* 'why' in Korean *why*-stripping originates in CP and the non-wh remnant is a focus phrase associated with *way* 'why', following Yoshida et al.'s (2015) clausal ellipsis analysis of English *why*-stripping. Based on the experimental findings, we show that Korean *why*-stripping favors affirmative antecedent contexts over negative antecedent contexts, as expected from the processing perspective (Fischler et al. 1983; Herbert and Kübler 2011). We also show that the pre-*why* (i.e., clause-initial) *ani* 'not' in Korean *why*-stripping is not a negative marker but a discourse marker of conveying elements of surprise or disbelief (cf. Koo 2008). We further show that the type (i.e., short-form or long-form) of negation in the antecedent clause does not matter in *why*-stripping. In sum, we defend a grammar-plus-processing analysis of Korean *why*-stripping. **(Korea University · Seoul National University)**

Keywords acceptability judgment, discourse marker, extra deletion, focus, processing, *why*-stripping

1. Introduction

English has *why*-stripping (Weir 2014; Yoshida et al. 2015), which is a clausal ellipsis with a wh-phrase *why* followed by a non-wh remnant, as shown below:

(1) (I heard) Mary bought apples, but why apples?
     (= but why did she buy apples?)

Following the ellipsis tradition (Merchant 2001, among others), the overt non-wh phrase in the elided clause is called the "remnant". In clausal ellipsis, the remnant typically corresponds to a particular phrase in the antecedent, called the "correlate". We will refer to the clause containing the correlate as the "antecedent clause" and the clause undergoing ellipsis as the "ellipsis clause".

Korean also has a similar construction, as illustrated in (2):[1]

(2)   Mary-ka   sakwa-lul   sassta-nuntey, way sakwa-lul?
        Mary-Nom apple-Acc   bought-but   why apple-Acc
        '(I heard) Mary bought apples, but why apples?'

In Korean *why*-stripping, a wh-phrase *way* 'why' is followed by a non-wh remnant. The remnant in *why*-stripping such as *apples* in (1) or *sakwa-lul* in (2) corresponds to its correlate in the antecedent clause such as *apples* or *sakwa-lul*, respectively. Note that in *why*-stripping, the non-wh remnant is typically identical to its correlate in the preceding clause.

Why-stripping has not been sufficiently studied in Korean linguistics (Cho and Lee 2017; J.-B. Kim 2017; J.-S. Kim 2019; Bae and Park 2021). In this experimental study, we are interested in a certain aspect of Korean *why*-stripping, as illustrated below:

(3) a. Mary-ka   sakwa-lul   sassta-nuntey, ani   way   sakwa-lul?
       Mary-Nom apple-Acc   bought-but   ANI why   apple-Acc
       '(I heard) Mary bought apples, but why apples (she bought)?'
    b. Mary-ka   sakwa-lul   an sassta-nuntey, (ani)   way   sakwa-lul?[2]
       Mary-Nom apple-Acc   not bought-but   (ANI)   why   apple-Acc

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1   The following is the list of abbreviations used in morpheme glosses throughout the paper: Acc = accusative, Conn = connective, Cop = copula, Dat = dative, Dec = declarative, Dsr = discourse, Gen = genitive, Hon = honorific, Imp = imperative, Neg = negation, Nom = nominative, NS = nominalizer suffix, Q = question, Top = topic, and Voc = vocative.

2   Compare (3b) with the following:

(i) Mary-ka   sakwa-lul   an   sassta-nuntey, (*an)   way sakwa-lul?
     Mary-Nom apple-Acc   not bought-but   (*AN) why apple-Acc
     '(I heard) Mary didn't buy apples, but why apples (she didn't buy)?'

The marker *an*, which is the contracted form of *ani*, is not tolerated in *why*-stripping in Korean. This is probably because the X^0-clitic *an* cannot be adjoined to the XP adverb *way* 'why' (cf. Merchant 2006).

'(I heard) Mary didn't buy apples, but why apples (she didn't buy)?'

The ellipsis site in (3a) has only a positive meaning, and does not have a negative meaning such as '... why didn't she buy apples?' in spite of the marker *ani*. Of interest to us is that the ellipsis site in (3b) has the negative meaning of the antecedent clause, irrespective of the marker *ani* 'not'. Notice that in *why*-stripping like (3), the non-wh remnant is identical to its correlate. If the two examples in (3) are instances of *why*-stripping, this is puzzling because the marker *ani* functions as a typical negative marker in Korean (Sohn 1999), as in (4).

(4)　　Mary-ka　　sakwa-ul {an/ani　sa-assta,　sa-ci　　anh-assta}.
　　　　Mary-Nom apple-Acc not　　　buy-Past　buy-NS　not-Past
　　　　'Mary didn't/did not buy apples.'

This fact raises a question about the status of *ani* 'not' as a negative marker in Korean, which boils down to the identity of *ani way*-stripping '*not why*-stripping' in Korean.

To our knowledge, the validity of the judgments about "Korean *why*-stripping involving the clause-initial marker *ani*", as sampled in (3), has not been seriously noted so far. In this light, we investigate whether (i) the polarity difference of an antecedent clause affects acceptability and (ii) the presence of the clause-initial marker *ani* affects acceptability in Korean *why*-stripping. We will argue that Korean *why*-stripping is explained by the analysis where *way* 'why' is base-generated in the left periphery (Ko 2005) and clausal ellipsis is operated after a non-wh remnant movement, along with extra deletion (An 2016).

The rest of this paper proceeds as follows. In section 2, we review Yoshida et al.'s (2015) work of English *why*-stripping as a theoretical background, and then briefly discuss certain theoretical issues of Korean *why*-stripping. In section 3, we report a formal experiment of Korean *why*-stripping and discuss the experimental results. In section 4, we propose a syntactic analysis of Korean *why*-stripping. Section 5 concludes.

2.　Theoretical background

2.1 English *why*-stripping

The observation that *why* is somewhat different from other wh-phrases is not uncommon. Among others, Bromberger (1992) observes that only *why* as a question operator can trigger the "association with focus" effect. For instance, the answer to a *why*-question relies on focus, as illustrated in (5).

(5) a. A: Why did MARY buy Galaxy Tab S7?
      B: Because she was the only one who could afford it.
   b. A: Why did Mary buy GALAXY TAB S7?
      B: Because it was with all the power and good looks.

When the subject *Mary* is focused and thus is associated with *why*, the question is asking why Mary but not somebody else bought Galaxy Tab S7, while when the object *Galaxy Tab S7* is focused, the sentence is asking for the reason why Mary bought Galaxy Tab S7 instead of, for example, iPad air. Regarding this, it has been proposed that *why* is base-generated into Spec of CP without overt wh-movement (Rizzi 2001; Ko 2005). Therefore, the prejacent (i.e., TP) of *why* can generate focus exhaustivity. No such effect is observed with other wh-phrases such as *where*:

(6) a. A: Where did MARY buy Galaxy Tab S7?
      B: At Best Buy.
   b. A: Where did Mary buy GALAXY TAB S7?
      B: At Best Buy.

Yoshida et al. (2015) regard this as a piece of evidence that the focus-sensitive *why* in *why*-stripping is base-generated in CP. They propose that the *why*-stripping sentence in (7a) is derived as in (7b).

(7) a. John ate natto, but why natto?
   b. [$_{CP}$ why C [$_{FocP}$ natto$_1$ Foc [$_{TP}$ ~~John ate t$_1$~~]]]

In (7b) *why* in *why*-stripping originates in Spec of CP, and the non-wh remnant *natto* moves to Spec of Foc(us)P, which is placed between CP and TP. If the rest of the clause (i.e., TP) is deleted, the *why*-stripping example is derived. Under this proposal, one problem to be solved is why the non-elided sentence is ungrammatical, as shown below:

(8) *Why NATTO did John eat?

To settle this conflict, Yoshida et al. (2015) argue that focused materials always move, leaving behind their copies under the copy theory of movement (Chomsky 1995). Focus movement in English is usually covert so that the lower copy is pronounced, but if the TP containing the lower copy is deleted as in (7b), then the higher copy should be pronounced due to a principle of recoverability (Pesetsky 1997). It amounts to saying that the higher copy of the focused material is to be pronounced when followed by ellipsis such as *why*-stripping.

Moving onto *why not*-stripping, let us consider Weir's (2014) observation on *why*-stripping preceded by a negative antecedent clause as follows:

(9) A: Mary didn't fix her printer. She didn't fix her computer either.
     B1:   Why not her computer? (= Why didn't she fix her computer?)
     B2:   ?*Why her computer?   (= Why didn't she fix her computer?)

                                                              (Weir 2014: (13))

As shown by the contrast of (9B1) and (9B2), the negation in the antecedent in (9) seems to resist being construed within the *why*-stripped site. This contrasts with sluicing (Merchant 2001):

(10) Mary didn't fix her printer because she didn't have the parts. She didn't fix
     her computer, either, but I don't know why.
     (= I don't know why Mary didn't fix her computer.)
     cf. ..., but I don't know why not.[3]
     (= I don't know why Mary didn't fix her computer.)

With respect to this peculiarity, Weir (2014) agrees with Yoshida et al.'s (2015) analysis of *why*-stripping as focus movement-plus-ellipsis, but argues that the focus head directly selects VoiceP (Collins 2005) instead of TP as follows:

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3   Pollack (1976) observes that when the antecedent clause in sluicing contains a negative marker, the corresponding negative marker in the sluiced clause may be overtly realized. We thank an anonymous reviewer for bringing this point to our attention.

(11) [$_{CP}$ why C [$_{FocP}$ natto$_1$ Foc [$_{VoiceP}$ [$_{vP}$ John v [$_{VP}$ ate t$_1$]]]]]

Weir argues that the difference between (9B1) and (9B2) can be explained if *why*-stripping targets VoiceP. If (non-constituent) sentential negation originates in a position higher than VoiceP (Zanuttini 1996), then it cannot be included within the *why*-stripping site. The *why*-stripped residue in (9B2) thus cannot be interpreted as 'why didn't she fix her computer?' Weir assumes that the negation in (9B1) is not sentential negation but constituent negation. This is an unavoidable assumption under his VoiceP deletion analysis because sentential negation is usually conditioned by Tense (Zanuttini 1996).

On the other hand, Merchant (2006) presents a different analysis of *why not*-stripping. He points out that in English, adverbial or phrasal negation markers may be used in negative *why*-questions:

(12) A: Anna is not leaving.
　　 B: Why not?　(= Why isn't Anna leaving?) (Merchant 2006: fn. 1, (ii))
　　　　 cf. Why?　(= Why isn't Anna leaving?)

Even if English has head negation like *no*, that head cannot be used in negative *why*-questions. On the other hand, a language like Greek uses the word *no* instead of *not* in negative *why*-questions:

(13) a.　Why not?　　*Why no?　　　　　　　　(English)
　　 b. *Giati dhen?　　Giati oxi?　　　　　　　　(Greek)

Merchant argues that this follows if we assume that *why not* is formed with the adjunction of the negative marker to *why*. Since a head could not adjoin to a phrasal adverb such as *why*, English negation heads cannot be used in negative *why*-questions. Merchant's insight could be applied to negative *why*-stripping as in (14).

(14) [$_{CP}$ [$_{XP}$ why]-[$_{YP}$ not] [$_{FocP}$ her computer$_1$ [$_{TP}$ ... t$_1$ ...]]]

In what follows, we will discuss the properties of Korean *why*-stripping.

2.2 Korean *why*-stripping

English allows *why*-stripping in embedded clauses, as shown below:

(15) Mary bought apples, but I don't know why apples.
        (= I don't know why she bought apples.)

The following illustrates Japanese embedded *why*-stripping (Nakao et al. 2013) with a wh-phrase *naze* 'why' followed by a non-wh remnant *ringo-o* 'apple-Acc':

(16) Mary-ga   ringo-o   katta   ga,
        Mary-Nom   apple-Acc bought   but
        boku-wa   naze   ringo-o   ka   wakara-nai.
        I-Top   why   apple-Acc Q   know-not
        'Mary bought apples, but I don't know why apples.'

On the other hand, the Korean counterpart of (16) is ungrammatical presumably due to the accusative marker immediately before the embedded question morpheme *ci* as follows:[4]

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4   However, the following example with the copula *i* 'be' prior to the Q-morpheme *ci* seems to be acceptable, although it is slightly degraded:

   (i) ?Mary-ka   sakwa-lul sass-nuntey,   na-nun way sakwa-lul   i-nci   molunta.
        Mary-Nom apple-Acc bought-but   I-Top why apple-Acc be-Q   know-not
        'Mary bought apples, but I don't know why apples (is).'

   An anonymous reviewer points out that since the grammatical marker of a single remnant has a tendency to decrease the acceptability of embedded sluicing and stripping, the status of the accusative marker of the remnant *sakwa* may not be crucial for the acceptability of (i).
      The reviewer further points out that unlike embedded *why*-stripping, matrix *why*-stripping (or fragments) cannot be uttered to a socially superior person in general (cf. Ahn and An 2011). See J. Kim (2017) for other limitations of (*why*-)stripping in matrix contexts. In addition, we acknowledge that the example in (18) sounds more natural in dialogue contexts as follows:

   (ii) A: Mary-ka   sakwa-lul   sasse.   B: Way   sakwa-lul?
           Mary-Nom apple-Acc bought   why   apple-Acc
           'Mary bought apples.'   'Why apples?'

   Further, in addition to our baseline as in (18), the following seems to be acceptable, as well:

(17) *Mary-ka   sakwa-lul   sass-nuntey,

     Mary-Nom   apple-Acc   bought-but

     na-nun way   sakwa-lul ci molunta.

     I-Top   why   apple-Acc Q   know-not

     'Mary bought apples, but I don't know why apples.'

In this light, we will shift our interest from Korean embedded *why*-stripping to Korean matrix *why*-stripping, which permits the overt Case-marker of a *why*-stripped remnant, as in (2), repeated below as (18).[5]

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(iii) Mary-ka   sakwa-lul sassta-nuntey, sakwa-lul way?
       Mary-Nom apple-Acc bought-but   apple-Acc why
  a. '(I heard) Mary bought apples, but (when it comes to) apples, why (did she buy)?'
  b. '(I heard) Mary bought apples, but why (did she buy) apples (instead of, e.g., oranges)?'

It seems that the example in (iii) is ambiguous in that the non-wh remnant *sakwa-lul* may be interpreted as topic (as in (iiia)) as well as focus (as in (iiib)). We thank the anonymous reviewer for bringing these cases to our attention. In this study, however, we will focus on the derivation of (18).

5 Ross (1969) was the first to note that in clausal ellipsis, specifically sluicing, a remnant and its correlate must match in Case. This is known as the Case-matching generalization, which is detectible in languages like German that overtly Case-mark nominals. We observe that Korean *why*-stripping usually disallows Case mismatches as follows:

(i) John-i   samchon-eykey hyepcohayssta-nuntey,
     John-Nom   uncle-Dat   assisted$_{Dat}$-but
     way samchon-eykey/*samchon-ul?
     why uncle-Dat/*uncle-Acc
     '(I heard) John assisted$_{Dat}$ his uncle, but why his uncle$_{Dat}$?'
(ii) John-i   samchon-ul   towassta-nuntey,
     John-Nom   uncle-Acc   helped$_{Acc}$-but
     way samchon-ul/*samchon-eykey?
     why uncle-Acc/*uncle-Dat
     '(I heard) John helped$_{Acc}$ his uncle, but why his uncle$_{Acc}$?'

Case-matching effects are widely attested across languages with overt Case-marking. In Korean, some verbs like *uycihata* 'to rely on' are compatible with dual Case forms, in which instance the Case of the remnant and that of its correlate may differ in *why*-stripping, as shown below:

(iii) John-i   samchon-eykey uychihayssta-nuntey,
      John-Nom   uncle-Dat   relied.on$_{Dat/Acc}$-but
      way   samchon-eykey/samchon-ul?
      why   uncle-Dat/uncle-Acc
      '(I heard) John relied on$_{Dat/Acc}$ (his) uncle, but why (his) uncle$_{Dat/Acc}$?'

(18) Mary-ka   sakwa-lul   sassta-nuntey,   way sakwa-lul?
     Mary-Nom apple-Acc   bought-but   why apple-Acc
     '(I heard) Mary bought apples, but why apples?'

In addition, English has *why not*-stripping (Weir 2014; Yoshida et al. 2015) as follows:

(19) (I heard) Mary bought apples, but why not oranges?
     (= but why didn't she buy oranges?)
     cf. *(I heard) Mary bought apples, but why not apples?
     (= but why didn't she buy apples?)

Notice that in *why not*-stripping, the stripped non-wh remnant must be different from the correlate in the antecedent clause. Meanwhile, the Korean counterpart of English *why not*-stripping in (19) is not grammatical:

(20) *Mary-ka   sakwa-lul   sassta-nuntey,   way orange-lul   ani-ci?
      Mary-Nom apple-Acc   bought-but   why orange-Acc   not-Q
      '(I heard) Mary bought apples, but why not oranges?'

What is interesting is that if the accusative marker of the non-wh remnant *orange-lul* is replaced with the topic marker *(n)un*, *why not*-stripping seems to be tolerated in Korean, too, as in (21).

(21) Mary-ka   sakwa-lul   sassta-nuntey,   way orange-nun   ani-ci?
     Mary-Nom apple-Acc   bought-but   why orange-Top   not-Q
     '(I heard) Mary bought apples, but why not oranges?'

This fact undermines the spirit of the non-structuralist approach according to which Case matching is directly encoded (Sag and Nykiel 2011; Jacobson 2016). Notice that under the non-structuralist approach, the identity condition for the syntax is on the overt material (i.e., a remnant and its correlate). In contrast, under the structuralist approach, the identity condition holds between what is missing and its antecedent—not on what is overt (Ross 1969; Merchant 2001). We thus may argue that the nature of when Case mismatches are allowed and when they are not allowed endorses the structuralist approach to ellipsis. See Wood et al. (2020) and J.-S. Kim (2021) for details.

Although J.-B. Kim (2017) does not explore the consequence of the Case-mismatch effect between a non-wh remnant and its correlate in Korean *why not*-stripping, he offers the following example:

(22) Mimi-ka   kimchi-lul   mek-ko   iss-nuntey,   way phica-ka   ani-nci
　　 Mimi-Nom kimchi-Acc eat-Conn exist-but   why pizza-Nom not-Q
　　 molu-keysse.
　　 not-know
　　 'Mimi is eating kimchi, but I wonder why not pizza.'

<div align="right">(J.-B. Kim 2017: (13))</div>

In (22) the correlate *kimchi-lul* and the remnant *phica-ka* have different Case, being in a contrastive relation. We further observe that if the nominative marker of the remnant in (22) is replaced with the accusative marker, the *why*-stripped sentence is ungrammatical, as demonstrated in (23).

(23) *Mimi-ka   kimchi-lul   mek-ko   iss-nuntey,   way phica-lul   ani-nci
　　 Mimi-Nom kimchi-Acc eat-and   exist-but   why pizza-Acc not-Q
　　 molu-keysse.
　　 not-know
　　 'Mimi is eating kimchi, but I wonder why not pizza.'

Given that Yoshida et al.'s (2015) movement-plus-ellipsis account is mainly motivated by connectivity effects, the Case (in a broad context, postnominal) mismatch requirement between remnants and correlates in Korean *why not*-stripping is very intriguing.[6]

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6   An anonymous reviewer has suggested that the missing Case connectivity effect in Korean *why not*-stripping is due to the special property of *ani*, which may function as a negative copula, as illustrated below:

(i) John-i   haksayng-i/un/*ul   ani-ta.
　 John-Nom   student-Nom/Top/*Acc   Neg.Cop-Dec
　 'John is not a student.'

As correctly pointed out by the reviewer, the nominal preceding *ani* may have either *i/ka* (as a focus marker) or *(n)un* (as a topic marker). If so, (22) could be derived from (ii).

(ii) … way ku kes-i   phica-ka   ani-nci molu-keysse.
　　 why it-Nom   pizza-Nom not-Q   not-know

In addition to the Case connectivity mentioned in footnote 5, Korean *why*-stripping also exhibits binding connectivity and voice connectivity, as illustrated below:

(24) A: Mimi$_1$-uy   oppa-ka$_2$ caki$_2$ kulim-ul   phal-ass-e.
        Mimi-Gen   brother-Nom self   pictures-Acc   sell-Past-Dec
        'Mimi's brother sold pictures of himself.'
    B: Way   caki$_{2/*1}$ kulim-ul?
        why   self   pictures-Acc?
        'Why pictures of himself?'   (J.-B. Kim 2017: (32))

(25) a. John-i   sinmwun-ul   paytalhayssta-nuntey,
        John-Nom   newspaper-Acc   delivered-but
        way   John-i/*John-eyuyhayse?
        why   John-Nom/*John-by
        '(I heard) John delivered the newspaper, but why John?'
    b. Sangphwum-i Mary-eyuyhayse   wunpantoyewassta-nuntey,
        goods-Nom   Mary-by   be.delivered-but
        way   Mary-eyuyhayse/*Mary-ka?
        why   Mary-by/*Mary-Nom?
        '(I heard) the goods were delivered by Mary, but why by Mary?'
                            (based on J.-S. Kim 2019: 190, (98)-(100))

As in (24), the subject-oriented anaphor *caki* refers only to the subject referent *oppa* but not to the specifier *Mimi* of the subject in the antecedent clause. Also, Korean *why*-stripping does not tolerate active-passive mismatches: an active correlate cannot antecede a passive remnant, as in (25a), and vice versa, as in (25b). These binding and voice connectivity effects are easily subsumed under a movement-plus-ellipsis approach.

    With this brief history of *why*-stripping in mind, we will embark on an experimental and theoretical investigation of Korean *why*-stripping from now on.

'… I wonder why it was not a pizza.'

This seems like a highly promising approach to handle the broken Case connectivity in Korean *why not*-stripping. However, it is beyond the scope of this experimental study to explore the postnominal mismatch effect of Korean *why not*-stripping in detail. We leave an investigation of this issue to future work.

3. Experiment

We hypothesize that (i) the polarity difference of an antecedent clause affects acceptability of Korean *why*-stripping and (ii) the marker *ani* 'not' prior to *why* in *why*-stripping is a discourse marker of expressing emotion rather than a negative marker. Based on this hypothesis, we predict that negative antecedents decrease acceptability ratings of *why*-stripping since processing negation necessitates more computation, regardless of ellipsis types. We also predict that there will be no acceptability difference between *way*-stripping '*why*-stripping' and *ani way*-stripping '*not why*-stripping' in Korean, regardless of the polarity of antecedent clauses. In this light, we conducted an acceptability judgment experiment which explored the acceptability difference between *why*-stripping and apparent *not why*-stripping, preceded by either affirmative or negative antecedents.

Participants, materials, and design: Fifty-one self-reported native Korean speakers (age *mean* (*SD*): 21.38 (1.36)) were recruited. All were undergraduate students at a university in South Korea. They participated in this experiment in exchange for course credit. In general, participants completed the online experiment within 15 minutes. Three participants were excluded because they did not pay attention during the task (by the procedure described below). Accordingly, only the responses from 48 participants (eight participants for each of the six lists) were included in the analysis.

The experiment employed a 2 × 3 design, crossing ANTECEDENT (Affirmative (antecedent) vs. S-Neg (antecedent with short-form negation) vs. L-Neg (antecedent with long-form negation)) and ELLIPSIS (Why (stripping) vs. NotWhy (stripping)). Eighteen lexically matched sets of the six conditions were constructed, as sampled below:

(26) a. [Affirmative | Why]
      John-i   achim-ulo   sakwa-lul   mekessta-nuntey, way sakwa-lul?
      John-Nom breakfast-for apple-Acc   ate-but   why apple-Acc
      (way   sakwa-lul   John-i   mekess-ni?)
      why   apple-Acc   John-Nom   ate-Q
      '(I heard) John ate apples for breakfast, but why ~~did he eat~~ apples?'
    b. [S-Neg | Why]
      John-i   achim-ulo   sakwa-lul an mekessta-nuntey, way sakwa-lul?
      John-Nom breakfast-for apple-Acc not ate-but   why apple-Acc

(way   sakwa-lul   John-i   an-mekess-ni?)

why   apple-Acc   John-Nom not-ate-Q

'(I heard) John didn't eat apples for breakfast, but why ~~didn't he eat~~ apples?'

c. [L-Neg | Why]

John-i   achim-ulo   sakwa-lul mek-ci   anh-assta-nuntey,

John-Nom breakfast-for apple-Acc eat-NS   not-Past-but

way   sakwa-lul?

why   apple-Acc

(way   sakwa-lul   John-i   mek-ci   anh-ass-ni?)

why   apple-Acc   John-Nom eat-NS   not-Past-Q

'(I heard) John did not eat apples for breakfast, but why ~~didn't he eat~~ apples?'

d. [Affirmative | NotWhy]

John-i   achim-ulo   sakwa-lul   mekessta-nuntey,

John-Nom breakfast-for apple-Acc   ate-but

ani   way   sakwa-lul?

ANI   why   apple-Acc

(way   sakwa-lul   John-i   mekess-ni?)

why   apple-Acc   John-Nom ate-Q

'(I heard) John ate apples for breakfast, but why ~~did he eat~~ apples?'

e. [S-Neg | NotWhy]

John-i   achim-ulo   sakwa-lul   an mekessta-nuntey,

John-Nom   breakfast-for apple-Acc   not ate-but

ani   way   sakwa-lul?

ANI   why   apple-Acc

(way   sakwa-lul   John-i   an-mekess-ni?)

why   apple-Acc   John-Nom not-ate-Q

'(I heard) John didn't eat apples for breakfast, but why ~~didn't he eat~~ apples?'

f. [L-Neg | NotWhy]

John-i   achim-ulo   sakwa-lul   mek-ci   anh-assta-nuntey,

John-Nom   breakfast-for apple-Acc   eat-NS   not-Past-but

ani   way   sakwa-lul?

ANI	why	apple-Acc		
(way	sakwa-lul	John-i	mek-ci	anh-ass-ni?)
why	apple-Acc	John-Nom	eat-NS	not-Past-Q

'(I heard) John did not eat apples for breakfast, but why ~~didn't he eat~~ apples?'

Why-stripping was preceded by an affirmative antecedent clause in the [Affirmative | Why] condition, while it was preceded by a negative antecedent clause with short-form negation in the [S-Neg | Why] condition and by a negative antecedent clause with long-form negation in the [L-Neg | Why] condition. More precisely, the ANTECEDENT factor was implemented as a three-level factor in order to verify whether two types of negation in Korean influence acceptability ratings of *why*-stripping. On the other hand, the [Affirmative | NotWhy] condition contained *ani way*-stripping '*not why*-stripping' preceded by an affirmative clause, while the [S-Neg | NotWhy] and [L-Neg | NotWhy] conditions contained *ani way*-stripping '*not why*-stripping' preceded by a negative clause with either short-form or long-form negation, respectively. Each set contained *why*-stripping or *not why*-stripping with linguistic contexts (parenthesized interpretations added here for clarity). The full list of test items is available online.[7]

The experimental items were counterbalanced across six lists using a Latin square design so that the items were equally distributed into each list. The items appeared in one of six pseudorandomized orders such that no consecutive items were of the same type or condition. Accordingly, each participant was provided with three tokens from six conditions (i.e., 18 experimental items). The 72 filler items were of comparable length but with varying acceptability—24 good fillers, 18 mid fillers, and 30 bad fillers—based on the results from our previous tests. We controlled the number of good, mid, and bad fillers in order to help create a list of stimuli that are roughly balanced in terms of acceptability, so that participants will use the full range of the response scale provided.

Procedure: We programmed the experiment with a web-based experiment platform Ibex (Drummond 2016). Sentences were presented one at a time on a computer screen and participants were asked to make acceptability judgments on the basis of a 1-7 Likert scale (1 corresponding to a *completely unacceptable* sentence and 7 to a *fully acceptable* one). In addition to test items, there were 16 "gold standard" filler items. These filler

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7   https://www.researchgate.net/publication/348977235_Appendix_why-stripping

items included eight good and eight bad filler items, which showed either the highest or the lowest acceptability most clearly in the previous tests conducted on about 200 participants prior to the experiment. We obtained the expected value of these fillers (i.e., 1 for the bad ones and 7 for the good ones) from the results of these previous tests. For each gold standard item, we calculated the difference between each participant's response and its expected value (i.e., 1 or 7). In order to compare the size of the differences that were either positive or negative numbers, we squared each of the differences and summed the squared differences for each participant. This gave us the sum-of-the-squared-differences value of each participant. We excluded any participants whose sum-of-the-squared-differences value was greater than two standard deviations away from the mean, suggesting that they were not paying attention during the task.

Data analysis: First, the raw judgment ratings, including both experimental and filler items, were converted to z-scores in order to eliminate certain kinds of scale biases between participants (Schütze and Sprouse 2013). This procedure corrects the potential that individual participants treat the scale differently (e.g., using only a subset of the available ratings), because it standardizes all participants' ratings to the same scale. We analyzed the data with linear mixed effects (regression) models estimated with the *lme4* package (Bates et al. 2015) in the R software environment (R Core Team 2020). Linear mixed effects models allow the simultaneous inclusion of random participant and random item variables (Baayen et al. 2008). We always used the maximal random effect structure by participant and item (Barr et al. 2013). *P*-value estimates for the fixed and random effects were calculated by the Satterthwaite's approximation (Kuznetsova et al. 2017). A likelihood ratio test (using the *anova( )* function in R) was used to compare multiple models and determine the final model that provided the best fit to the data.

Results and discussion: Figure 1 presents the mean of the z-scored ratings for the six experimental conditions. The zero represents the mean, so that a positive z-score means that the structure is rated above the mean, while a negative z-score means that the structure is rated below the mean. The ANTECEDENT effect is represented by the downward slope of the lines, and the ELLIPSIS effect is represented by a vertical separation between the lines. For the analysis, a 2 × 3 linear mixed effects model was run with ANTECEDENT and ELLIPSIS as fixed factors, participant and item as random intercepts, and the maximum number of random slopes, given that the data were justified (Barr et al. 2013). This revealed a significant main effect for ANTECEDENT ($\chi^2(2) =$ 44.575, $p < .001$; Affirmative (*mean*: 0.531) vs. S-Neg (*mean*: 0.012); $\beta = -0.519$, *SE*

= 0.066, $t = -7.839$, $p < .001$; Affirmative (*mean*: 0.531) vs. L-Neg (*mean*: 0.063); β = −0.468, *SE* = 0.067, $t = -6.934$, $p < .001$). No significant main effect of ELLIPSIS was found (Why (*mean*: 0.190) vs. NotWhy (*mean*: 0.213); $\chi^2(1) = 0.307$, $p = .580$). The interaction between ANTECEDENT and ELLIPSIS was not significant ($\chi^2(2) = 0.471$, $p = .79$).
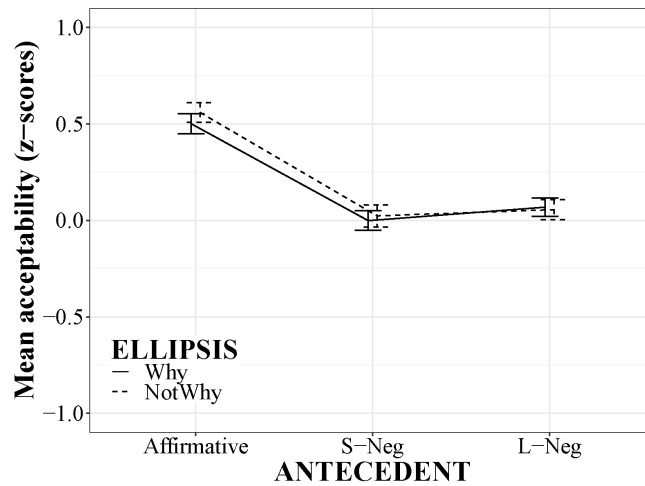

Figure 1. Mean acceptability of experimental conditions (error bars indicate *SE*)

To obtain pairwise comparisons, a post-hoc test with Bonferroni correction was performed using the *emmeans* function (Lenth et al. 2018). First, consider the following table, which demonstrates the results of the post-hoc pairwise comparisons showing the effect of ANTECEDENT:

Table 1. Post-hoc pairwise comparisons between ANTECEDENT types by ELLIPSIS

Contrast	Estimate	SE	t	p
[Affirmative | Why] - [S-Neg | Why]	0.502	0.085	5.882	< .0001
[Affirmative | Why] - [L-Neg | Why]	0.432	0.086	5.009	< .0001
[S-Neg | Why] - [L-Neg | Why]	−0.070	0.075	−0.925	1.0000
[Affirmative | NotWhy] - [S-Neg | NotWhy]	0.536	0.085	6.280	< .0001
[Affirmative | NotWhy] - [L-Neg | NotWhy]	0.503	0.086	5.836	< .0001
[S-Neg | NotWhy] - [L-Neg | NotWhy]	−0.032	0.075	−0.428	1.0000

The analysis confirmed that the [Affirmative] condition was more acceptable than either the [S-Neg] or [L-Neg] conditions, without being affected by the [Why] and [NotWhy]

conditions. It also confirmed that the [S-Neg] conditions and the [L-Neg] conditions were judged statistically non-distinct, regardless of ELLIPSIS types.[8]

Table 2 provides the results of the post-hoc pairwise comparisons showing the effect of ELLIPSIS.

Table 2. Post-hoc pairwise comparisons between ELLIPSIS types by ANTECEDENT

Contrast	*Estimate*	*SE*	*t*	*p*
[Affirmative | Why] - [Affirmative | NotWhy]	−0.059	0.075	−0.779	1.0000
[S-Neg | Why] - [S-Neg | NotWhy]	−0.025	0.075	−0.328	1.0000
[L-Neg | Why] - [L-Neg | NotWhy]	0.013	0.077	0.169	1.0000

The analysis confirmed that there was no significant difference of the acceptability ratings between [Why] and [NotWhy] conditions, irrespective of whether the antecedent clause was affirmative or negative.

The results of the experiment suggest that processing negation costs more because, cross-linguistically, negation contains a syntactic or pragmatic content (e.g., *no*, *not*, or *never* in English and *an(i)/mos* 'no/not' or *keylkho/celtay(lo)* 'never' in Korean), which is found to impede processing in general (Fischler et al. 1983; Carpenter et al. 1999; Kaup et al. 2006; T. Kim 2008; Herbert and Kübler 2011). The results also point to no acceptability difference between *why*-stripping and *not why*-stripping when the polarity of the antecedent context was controlled. This suggests that the role of *ani* 'not' in both *why*-stripping and *not why*-stripping is insignificant.

4. General discussion and analysis of Korean *why*-stripping

Results from the experiment revealed three findings. First, the acceptability was higher when the antecedent clause was affirmative than when it was negative. It suggests that processing negative contexts is harder than processing affirmative contexts (Fischler et al. 1983; Carpenter et al. 1999; Kaup et al. 2006; T. Kim 2008; Herbert and Kübler 2011). That is, our experimental results bear out the claim that the polarity difference

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8   We also ran a 2 × 2 linear mixed effects model excluding the [Affirmative] conditions—ANTECEDENT (S-Neg vs. L-Neg) × ELLIPSIS (Why vs. NotWhy). The linear mixed effects model revealed that there was no main effect (ANTECEDENT (p = .331) and ELLIPSIS (p = .734)) nor interaction (p = .711), meaning that there was no statistic difference between [S-Neg] and [L-Neg] conditions.

of the antecedent context is responsible for the acceptability difference in ellipsis. Second, there was no acceptability difference between ellipsis conditions. It suggests that the marker *ani* 'not' did not play a significant role in both *way*-stripping '*why*-stripping' and *ani way*-stripping '*not why*-stripping' in Korean. Third, the type of negation of the antecedent clause, whether it is short-form or long-form, is insignificant in both *why*-stripping and *not why*-stripping.

In what follows, we will launch an analysis into the experimental findings. Along the line of Bromberger (1992), Ko (2005) argues that Korean *way* 'why' is base-generated in Spec of CP, while other Korean wh-phrases undergo covert wh-movement to Spec of CP at LF. Her argument is based on the intervention effect between wh-phrases and some non-polarity quantifiers (NPQs) like *man* 'only'. As shown in (27a), there is an intervention effect when a wh-phrase is lower than *man* 'only'. On the other hand, there is no intervention effect when *way* 'why' is lower than *man* 'only' as in (27b).

(27) a. *John-man   mwues-ul   ilk-ess-ni?
         John-only   what-Acc   read-Past-Q
         'What did only John read?'
      b. John-man   way   Boston-ul   ttena-ss-ni?
         John-only   why   Boston-Acc   leave-Past-Q
         'Why did only John leave Boston?'

She reasons that the lack of the intervention effect between *way* 'why' and the NPQ *man* 'only' is due to the origin of *way* 'why', as shown below:

(28) a. *[$_{CP}$ [$_{IP}$ John-only what-Acc read-Past] Q]
      b. John$_1$-only [$_{CP}$ why [$_{IP}$ t$_1$ Boston-Acc leave-Past] Q]

In (28a) the object wh-phrase *mwues-ul* 'what-Acc' undergoes LF wh-movement beyond the NPQ subject *John-man* 'John-only', which induces an intervention effect. The adjunct-wh *way* 'why' in (28b), on the other hand, is base-generated in Spec of CP and thus does not need to undergo LF wh-movement. The NPQ subject *John-man* 'John-only' has undergone scrambling across *way* 'why', but this overt movement does not induce the intervention effect unlike LF wh-movement. This is why other wh-phrases except *way* 'why' exhibit the intervention effect. Based on her argument, we now assume that *way*

'why' in Korean *why*-stripping is base-generated in Spec of CP. We further assume that the non-wh remnant is a focus phrase that is associated with *way* 'why'.

Following Yoshida et al.'s (2015) analysis of English *why*-stripping, we propose that Korean *why*-stripping is derived as follows:

(29) a. Korean *why*-stripping has the silent structure of a *why*-question.
    b. *Way* 'why' in Korean *why*-stripping originates in Spec of CP.
    c. The non-wh phrase in Korean *why*-stripping is a focus phrase associated with *why*.

In order to put the discussion of Korean *why*-stripping into perspective, we now need to address the sentential negation in Korean. Placing negative adverbs immediately before predicates is the most common way of negating sentences in Korean. The simple negation or negative intent is usually expressed by *an/ani* 'not'. The contracted form *an* is usually used in speech, while *an* and *ani* are both used in writing. As mentioned above, Korean negation is expressed in two different ways: a short form and a long form, repeated below as in (30).

(30) a. Mary-ka   sakwa-ul   an/ani   sa-assta.   (short-form negation)
      Mary-Nom apple-Acc not   buy-Past
      'Mary didn't buy apples.'
    b. Mary-ka   sakwa-ul   sa-ci   anh-assta.   (long-form negation)
      Mary-Nom apple-Acc buy-NS not-Past
      'Mary didn't buy apples.'

In general, the two types of negation are semantically non-distinct only with slight stylistic difference; short-form negation is less formal than long-form negation.[9]

Up to the early 20th century, the marker *ani* and its contracted form *an* both were used as negative markers prior to verbal forms in Korean. Koo (2008) observes, however, that since 1960s, there has been no token of *ani* as a negative marker based on the

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9   Note, however, that short-form negation is generally restricted to taking narrow scope, while long-form negation is able to take wider scope, suggesting that they occupy different hierarchical positions. There has been a lot of discussion in the Korean literature regarding the scope differences between short-form negation and long-form negation (cf. Sohn 1995; Hagstrom 2000; Sells 2001; T.-S. Kim 2002; Han et al. 2007, etc.)

Sejong Corpus (https://ithub.korean.go.kr). It seems that the contracted marker *an* has (almost completely) replaced *ani* as a negative marker in Modern Korean.

On the other hand, it seems that the marker *ani* has taken a different path as a discourse marker, as observed by M.-S. Kim (1997). First, the adverb *ani* functions as an exclamatory in the sense of 'dear me' or 'good heavens' showing surprise when something occurs unexpectedly:

(31) A: Kwacang-nim, ikes   com,   pwa   cwu-sipsio.
          boss-Hon   this   a.bit   review   give-Hon.Imp
          'Boss, please review this.'
      B: Ani, caney-nun ike-l   il-ilako   hayss-na?
          Dsr you-Top   this-Acc   job-even   did-Q
          'ANI (= good heavens!), did you do this awful job?'

<div align="right">(M.-S. Kim 1997: (12))</div>

Second, the adverb *ani* can be used to change conversation topics:

(32) [complaining about something]
      A: Ne   cikum   mwelakwu   hayss-ni?
          you   now   what.the.hell talked-Q
          'What the hell did you say?'
      B: Ani, nalssi   cohtakwu.
          Dsr weather   is.nice
          'ANI (= well), the weather is nice.'   (M.-S. Kim 1997: (20))

Third, the adverb *ani* can be meant to correct the mistake to be made in the previous utterance:

(33) Chelswu-ya,   Yenghuy,   ani, Swunhuy   olako   hay-la.
      Chelswu-Voc   Yenghuy   Dsr   Swunhuy   to.come   tell-Imp
      'Chelswu, tell Yenghuy, ANI (= no), Swunhuy to come.'

<div align="right">(M.-S. Kim 1997: (28))</div>

Now that we have all the ingredients for the analysis of Korean *why*-stripping

constructions, we return to the basic data as follows:

(34) *John-i   sakwa-lul   sassta-nuntey,
      John-Nom   apple-Acc   bought-but
      [CP way   [FocP sakwa-lul   [TP ~~John-i   t   sass~~]]   ci]?
            why   apple-Acc   John-Nom   bought Q
      '(I heard) John bought apples, but why apples?'

Assimilating Yoshida et al.'s (2015) analysis of English *why*-stripping, let us suppose that Korean *way* 'why' is base-generated in Spec of CP and the non-wh remnant moves to Spec of FocP. An immediate question is then why (34) with the overt Q-morpheme *ci* is unacceptable. We suggest that the affixal property of Q requests an adjacent verbal host, but the absence of the latter triggers the deletion (or drop) of the former as long as recoverability is maintained:[10]

(35) [CP why [FocP apple₁-Acc [TP ~~John-Nom t₁ bought~~] ~~Q~~]

The next ensuing question is then how a deletion operation can target a non-constituent (cf. Mukai 2003; An 2007, 2016).

Regarding this non-constituent ellipsis issue, we adopt An's (2016) extra deletion approach. Observing that P/Case markers on ellipsis remnants can be missing only in string-final position, An argues that PF deletion extends into the part of ellipsis remnant —such as a P/Case marker or a head noun—insofar as recoverability and adjacency are satisfied.[11] This extra deletion process is totally dependent upon the PF deletion operation. Although syntax decides what to be deleted, PF deletion also has its own

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10 As pointed out by an anonymous reviewer, the ungrammatical *why*-stripped output in (34) is remedied by the insertion of the copula *i* 'be' as follows:

(i) ?John-i   sakwa-lul sassta-nuntey, way   sakwa-lul   i-ci?
     John-Nom   apple-Acc bought-but   why   apple-Acc   be-Q
     '(I heard) John bought apples, but why apples (be)?'

At the moment, we speculate under an ellipsis approach that the stranded Q due to the deletion of the verbal host is rescued by the copula insertion.

11 For reference, the essence of An's (2016) extra deletion proposal was preceded by J.-S. Kim's (1997) suggestion of P/Case-drop in Korean RNR (*aka* gapping): The P/Case-marker in Korean RNR may drop only if the remnant is immediately adjacent to the ellipsis site.

tenacity; i.e., to be elided is to be continuous. Under An's proposal, PF deletion can thus ignore syntactic constituency (cf. Mukai 2003). Given this extra deletion proposal, we can derive any of the following from (34):

(36) a. *[$_{CP}$ why [$_{FocP}$ apple$_1$-Acc [$_{TP}$ ~~John-Nom t$_1$ bought~~]] Q]
      b. [$_{CP}$ why [$_{FocP}$ apple$_1$-Acc [$_{TP}$ ~~John-Nom t$_1$ bought~~]] ~~Q~~]
      c. [$_{CP}$ why [$_{FocP}$ apple$_1$-~~Acc~~ [$_{TP}$ ~~John-Nom t$_1$ bought~~]] ~~Q~~]
      d. [$_{CP}$ why [$_{FocP}$ ~~apple$_1$-Acc~~ [$_{TP}$ ~~John-Nom t$_1$ bought~~]] ~~Q~~]

Since the Q-morpheme *ci* should be affixal to a verbal host, (36a) is unacceptable after TP deletion. If *ci* is deleted via extra deletion for convergence, the *why*-stripped output in (36b) is then acceptable.[12] Note that the Q-morpheme *ci* is recoverable from the wh-element *why* in the operator position. If the accusative marker of the non-wh remnant is further deleted by extra deletion, (36c) is derived. Since extra deletion can repeatedly apply up to recoverability and convergence, it can delete the non-wh remnant itself, deriving (36d).[13]

Given the above theoretical devices, we propose that the experimental stimuli in (26) are derived in the following way:

12 As an alternative, Bae and Park (2021: fn. 6) simply assume, following Ahn and An (2011), that the *why*-stripping output like *way sakwa-lul* 'why apples' is derived from the *why* question in (i), but not from (34).

   (i) John-i   sakwa-lul sassta-nuntey, [$_{CP}$ way [sakwa-lul [$_{TP}$ ~~John-i   t   sass-e~~]]   ∅]?
        John-Nom apple-Acc bought-but   why apple-Acc John-Nom bought-Dec Q
        '(I heard) John bought apples, but why apples?'

   They assume that Korean *why*-stripping targets TP, which contains the declarative marker *e*; *e* functions as a question operator with a rising intonation and may appear with a null Q in C. We suspect, however, that this is not a genuine solution, merely going back to square one. A question remains why the full *why* question source of *why*-stripping in (i) must have the declarative *e* marker and a null Q instead of a normal question morpheme like *ci* or *ni*.

13 Ackema and Szendroi (2002), extending Williams's (1997) theory of dependent ellipsis, analyze determiner sharing:

   (i) Few girls will drink whiskey and ~~few~~ boys ~~will~~ drink wine.

   They treat determiner sharing as a type of dependent ellipsis because the null head in coordinate ellipsis permits the heads of its dependents to be null; i.e., in (i) deletion of the determiner relies on the deletion of the T head. As an alternative to An's (2016) extra deletion analysis, we might resort to a dependent ellipsis formulation of the current concern.

(37) a. [Affirmative | Why]

   $[_{CP}$ why $[_{FocP}$ apple$_1$-Acc $[_{TP}$ ~~John-Nom t$_1$ eat-Past]]~~ ~~Q]~~

   b. [S-Neg | Why]

   $[_{CP}$ why $[_{FocP}$ apple$_1$-Acc $[_{TP}$ ~~John-Nom t$_1$ not-eat-Past]]~~ ~~Q]~~

   c. [L-Neg | Why]

   $[_{CP}$ why $[_{FocP}$ apple$_1$-Acc $[_{TP}$ ~~John-Nom t$_1$ eat-CI not-Past]]~~ ~~Q]~~

   d. [Affirmative | NotWhy]

   $[_{CP}$ $[_{YP}$ ANI]-$[_{XP}$ why] $[_{FocP}$ apple$_1$-Acc $[_{TP}$ ~~John-Nom t$_1$eat-Past]]~~ ~~Q]~~

   e. [S-Neg | NotWhy]

   $[_{CP}$ $[_{YP}$ ANI]-$[_{XP}$ why] $[_{FocP}$ apple$_1$-Acc $[_{TP}$ ~~John-Nom t$_1$not-eat-Past]]~~ ~~Q]~~

   f. [L-Neg | NotWhy]

   $[_{CP}$ $[_{YP}$ ANI]-$[_{XP}$ why] $[_{FocP}$ apple$_1$-Acc $[_{TP}$ ~~John-Nom t$_1$ eat-CI not-Past]]~~ ~~Q]~~

As for the acceptability of [Affirmative | Why] in (37a), we propose that *way* 'why' is base-generated in Spec of CP and the non-wh remnant *sakwa-lul* 'apple-Acc' moves to Spec of FocP. Although the Q-morpheme is stranded after PF deletion of TP, it can be deleted via extra deletion, which is contingent on the deletion operation in PF. As for the acceptability of [Affirmative | NotWhy] in (37d), we propose that the phrasal-level discourse marker *ani* is adjoined to the XP wh-adjunct *way* 'why', which is base-generated in Spec of CP. After PF deletion of TP and extra deletion of the Q-morpheme *ci*, (37d) is derived.

   Much the same point could be made for (37b/c) and (37e/f), both of which are relatively less acceptable than (37a) and (37d), respectively. All natural languages express negation (Horn 2001). Although negative expressions appear frequently in natural languages, they increase processing effort in comparison with equivalent affirmative expressions (Fischler et al. 1983; Carpenter et al. 1999; Kaup et al. 2006; T. Kim 2008; Herbert and Kübler 2011). For the decreased acceptability of (37b/c) and (37e/f), we propose that processing negative clauses is costlier than processing affirmative clauses. More precisely, we suggest that a processing result and a syntactic analysis can conspire to advance our understanding of complex syntactic phenomena such as ellipsis. Note that the negative meaning of [Neg] conditions such as (37b/c) and (37e/f) can be construed in the ellipsis site, which is recoverable from the antecedent clauses.

   Concluding this section, it should be noted that certain questions may be raised

regarding the current ellipsis analysis of Korean *why*-stripping. In particular, an anonymous reviewer was skeptical of how the current analysis may handle the Case-drop effect in Korean *why*-stripping. Consider the following examples provided by the reviewer:

(38) a. John-i   sakwa-lul sassta-nuntey, way sakwa(-lul)?
         John-Nom apple-Acc bought-but   why apple(-Acc)
         '(I heard) John bought apples, but why apples?'
     b. John-i   sakwa-lul sassta-nuntey, way John(-i)?
         John-Nom apple-Acc bought-but   why John(-Nom)
         '(I heard) John bought apples, but why John?'

The reviewer asked us (i) how the current analysis may explain the reversed word order in the ellipsis clause (e.g., *sakwa-lul way* and *John-i way*) if this pattern is not much different from the baseline data in (38), (ii) how it may explain the Case-drop possibility of *why*-stripped remnants in (38) if Case-drop affects acceptability, and (iii) how it may explain the potential difference between nominative Case-drop and accusative Case-drop if any exists.[14] While these issues are beyond the scope of this experimental study, it should be examined via theoretical debates in future research.

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14 Regarding the reviewer's first question, we speculate that scrambling may be involved in "reversed" *why*-stripping. Refer back to footnote 4. Regarding the second and third questions, we would like to mention our work in progress (an experiment with 2 × 3 design) on "Accusative vs. dative Case-drop in Korean *why*-stripping". The results of the experiment suggest that there is a difference between accusative Case-drop and dative Case-drop in Korean *why*-stripping. For accusative Case-drop, the difference of acceptability ratings between full *why*-questions and their *why*-stripping counterparts with an accusative-marked remnant was not significant (p = 1.0000), but it was significant between *why*-stripping with an accusative-marked remnant and that with an accusative-less remnant (p = .0001). For dative Case-drop, the difference of acceptability ratings between full *why*-questions and their *why*-stripping counterparts with a dative-marked remnant was not significant (p = .1346), but it was significant between *why*-stripping with a dative-marked remnant and that with a dative-less remnant (p < .0001). Of particular interest was that dative-less *why*-stripping was less acceptable than accusative-less *why*-stripping (p = .0380), although there was no statistic difference of acceptability ratings between dative-marked *why*-stripping and accusative-marked *why*-stripping (p = 1.0000) and between the full *why*-questions with a dative nominal and those with an accusative nominal (p = 1.0000). As pointed out by the reviewer, if any difference exists regarding the Case type (e.g., nominative, accusative, and dative) of the non-wh *why*-stripped remnant, An's (2016) extra deletion account should be further articulated.

5. Conclusion

In this study, we have argued that the apparent negative marker *ani* 'not' prior to *why* is not a negative marker but a discourse marker in Korean *why*-stripping (cf. Koo 2008). Korean *why*-stripping appeared to favor affirmative antecedents over negative antecedents, which is expected from the processing perspective (Fischler et al. 1983; Carpenter et al. 1999; Kaup et al. 2006; Herbert and Kübler 2011). The negation would generally increase processing load due to the conceptual complexity as well as its marked status (T. Kim 2008). We showed that the XP adverbial *ani* 'not' as a discourse marker adjoins to the base-generated *way* 'why' in Spec of CP and that it does not play a significant role in the acceptability of Korean *why*-stripping. In addition, we demonstrated that the two types of negation in Korean—short-form negation vs. long-form negation—are not crucial for the acceptability of *way*-stripping '*why*-stripping' and *ani way*-stripping '*not why*-stripping'. In short, this study presented how processing results and syntactic analyses can be used to inform each other and facilitate the understanding of ellipsis such as *why*-stripping. Overall, the findings of the present experiments would contribute to articulating and developing further studies in *why*-stripping in Korean and other languages including Japanese (Nakao et al. 2013) and Spanish (Ortega-Santos et al. 2014).

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