

Extraction out of overt anaphora: Korean *kule(h)* 'so' versus English *so**

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Park, Myung-Kwan. 2015. Extraction out of overt anaphora: Korean *kule(h)* 'so' versus English *so*. *Linguistic Research* 32(3), 693-718. This paper examines some novel phenomena of extraction out of overt anaphora such as Korean *kule(h)*- 'so' and English *so*. These anaphora allegedly have a grammatical role of substituting for several different syntactic constituents such as VP, AP, AdvP, TP, or CP alone or together with the Korean light verb *ha-* 'do' or the English one *do* or copula *be*. We show that Korean *kule(h)*- 'so' allows for an extraction out of it when the extraction is an instance of A-movement, but the English counterpart *so* does not. We submit the thesis that this contrast essentially follows from the so-called multiple Spec hypothesis (cf. Kuroda (1988)). Korean allows multiple Spec's, but English does not. Specifically, the Spec position of the light verb is an exit for the extraction out of the VP to be substituted for by the VP anaphora. This position can be taken advantage of by Korean with the multiple Spec strategy, but not by English without it. Furthermore, the extraction out of the *kuleh-* 'so' anaphora renders support to Lasnik's (1999) proposal that A-movement, unlike A-bar movement, does not necessarily leave a trace/copy. (Dongguk University)

Keywords anaphora, Korean *kule(h)*- 'so', English *so*, light verb, extraction out of VP or TP anaphora, A-movement, multiple Spec's

1. Introduction

This paper examines *kule(h)* 'so' anaphora in Korean that substitutes for a VP/AP/AdvP/TP in an anaphoric relation with its corresponding antecedent constituent. The following are representative examples illustrating *kule(h)* 'so' anaphora in Korean:

* I am grateful to the two anonymous reviewers of this journal for the helpful comments and suggestions. All the remaining errors are, of course, mine.

- (1) Korean **VP anaphora**: (cf. Yang (1998: 113, 126))
 present tense form: *kulenta* vs. past tense form: *kulayssta*
 na-to nolay-lul pwulu-ko/pwulesse-ko, tongsayng-to kule-nta/kulayssta.
 I-also song-Acc sing/sang brother-also so do/so did
 'I sing/sang, and (my) brother does so/did so, too.'
- (2) Korean **AP anaphora**: (cf. Yang (1998: 115))
 present tense form: *kulehta* vs. past tense form: *kulayssta*
 na-to hayngpokha-ko/hayngpokhayss-ko, tongsayng-to kulehta/kule-assta.
 I-also (am) happy/(was) happy brother-also so am/so was
 'I am/was happy, and my brother is/was happy, too.'
- (3) Korean **AdvP or TP/CP anaphora**: *kulehkey*
 a. cheli-ka ppalli ttwiess-ko, yengi-to kulehkey ttwiesssta.
 Cheli-Nom fast ran Yengi-also so ran
 'Cheli ran fast, and Yengi ran so, too.'
 b. A: emci-nun cengmal yeypu-kwuna.
 Emci-Top really cute-Exclamative
 'Emci is really cute.'
 B: ne-to kulehkey(=*emci-ka cengmal yeypputako*) sayngkaka-ni?
 you-also so think-Q
 'Do you think so, too?' (cf. Yang (1998: 118))

As Yang (1998) notes, VP and AP anaphora in present tense use different forms: the former is *kule* 'do so,' substituting for the VP *nolay-lul pwulu-* 'sing a song' in (1), whereas the latter is *kuleh* 'be so,' substituting for the AP *hayngpokha-* 'be happy' in (2). VP and AP anaphora in past tense use the same form: *kulayss* 'did so' or 'was/were so'. AdvP and TP/CP also use another identical form: *kuleh-key* 'so.'

Given the fact that *kule(h)* 'so' anaphora in Korean substitutes for several different syntactic constituents, this paper narrows down to investigate the more specific issue of extraction from such anaphora. The following example illustrates the extraction from one type of such anaphora, i.e., VP anaphora:

- (4) A: chelswu-ka say-lul koylophi-nta.
Chelswu-Nom bird-Acc nag-Decl
'Chelswu is nagging a bird.'
- B: yenghuy-nun cwi-lul kulay. Chang (1976: 114)
Yenghuy-Top mouse-Acc so do-Inform
'(Lit.) Yenghuy is doing so to a mouse'

The example in (4B) was initially reported by Chang (1976), and examples similar to it were also noted by Yang (1998), Um (1999), and Lee (2010). The most remarkable aspect of (4B) in comparison to (1), where the whole VP is replaced by the VP anaphora *kule* 'do so', is that the presumably VP-internal direct object element *cwi-lul* 'mouse-Acc' occurs outside the portion substituted for by the VP anaphora. In this regard, the direct object is understood to have been extracted from the VP before the VP anaphora substitution applies to it.

In the following sections, we bring forth more examples similar to (4B) and compare them with the counterpart examples in English. By doing so, we explore theoretical implications that such examples cast on the deeper understanding of substitution *kule(h)* in Korean and *so* in English.

2. *Kule(h)* in Korean and *so* in English as simple predicate (VP/AP) substitution

As noted by Chang (1976) for (4B), the direct object occurs outside the portion substituted for by the VP anaphora. Chang (1976) however reports that unlike (4B), (5B) is not acceptable:

- (5) A: na-n hyenca-lul cohaha-ysse.
I-Top Hyenca-Acc liked
'I liked Hyenca.'
- B: (*na-n huya-lul kulaysse. Chang (1976: 114)
I-Top Huya-Acc so did
'(Lit.) I did so to Huya.'

Two notes on (5B) are in order. First, Hong (1993) argues that the VP anaphora substitution applies when the verb within the antecedent VP like *koylophi* 'nag' in (4B) is 'informationally/semantically contentful'. The essence of this argument is that when the verb within the antecedent VP like *cohaha* 'like' in (4B) is informationally/semantically not contentful, we don't have to and thus do not use the VP anaphora, which is likewise informationally/semantically not contentful on its own. Since anaphora is used for the sake of linguistic economy, the VP anaphora applies substituting for only the VP containing the verb that is informationally/semantically contentful, thereby reducing the load of processing it on the part of a hearer.¹ Second, despite this restriction on VP anaphora, some native speakers of Korean that we consulted claimed that (5B) is acceptable like (4B).² This implies that the alleged distinction between informationally/semantically light and heavy verbs is not a solid one, being subject to speaker variation.

Meanwhile, Kim (1995) and Um (1999) note that in the following example, the VP anaphora substitution excluding an object element applies to the so-called serial verb complex that is composed of more than one verb, and also to the VP inside it.

- (6) *mati-to pwul-ul kke pelyess-ko, maknay-to pwul-ul*
 the eldest-also light-Acc put off finished the youngest-also light-Acc
 {*kulayssta(=kke pelyessta)/kulay(=kke) pelyessta*}. Kim (1995), Um (1999: 411)
 so do finished so did.
 'The eldest put off the light, and the youngest did too.'

Since in a serial verb sequence, the first verb or the first and second verb complex is substituted for by the VP anaphora, the former and the latter each constructs the embedded and the matrix VP from where the direct object *pwu-lul* 'the light-Acc' escapes.

Note that an element escaping from the VP anaphora is not only an Accusative-Case-marked direct object element but also a postposition phrase, as in (7) and (8):³

¹ The VP anaphora substitution process in Korean can be understood in the similar way as Heavy NP Shift in English, in that they both are governed by such non-syntactic factors as informational/semantic content or phonological length.

² We thank Cheng-Yoon Kim (perl. comm.) for informing us of such a claim.

³ Assuming that an X'-level category is not accessible to a syntactic operation (cf. Chomsky (1995)),

- (7) cheli-ka yengi-eykey imeyil-ul ponayss-ko, toli-to swuni-eykey
 Cheli-Nom Yengi-Dat e-mail-Acc sent Toli-also Swuni-Dat
 kulayssta(=*imeyil-ul ponayssta*).

so did

'Cheli sent an e-mail to Yengi, and Toli also did so to Swuni.'

- (8) cheli-ka yengi-lopwuthe ton-ul patass-ko, toli-to
 Cheli-Nom Yengi-from money-Acc received Toli-also
swuni-lopwuthe kulayssta(=*ton-ul patassta*).

Swuni-from so did

'Cheli received money from Yenghi, and Toli did so from Swuni.'

In (7), the Dative Case-marked element *swuni-eykey* 'Swuni-to' and in (8), the postposition-marked element *swuni-lopwuthe* 'Swuni-to' occur outside the VP anaphora.

We have seen that an element extracted out of a VP occurs immediately before its anaphorical form. It is also possible for the former to be discontinuous from the latter, as in (9)⁴, where a VP-internal object element has undergone scrambling or contrastive focalization to a clause-initial position:

we suppose that the VP anaphora substitution cannot apply to the non-maximal VP excluding the Dative Case-marked element in (7).

⁴ The example in (9) is attributed to one of the anonymous reviewers, who suggests that the original example below in (i) should be replaced by it:

- (i) sakwa-lul/nun nay-ka mekci anhassta.
 apple-Acc/Top I-Nom eat didn't
 haciman photo-?lul/nun nay-ka kulayssta(=*mekessta*).
 but grape-Acc/Top I-Nom so did
 'An apple, I didn't eat, but grapes, I did (*so).'

Compared to the example in (9) in the text, that in (i) is degraded particularly when the remnant *photo-* 'grape' is Accusative Case-marked. The anonymous reviewer goes on to point out that the degradedness of the example in (i) may be due to the polarity reversal that the Korean *kule(h)*- 'so' anaphora resists, which was already noted by Chung (2014). We thank the anonymous reviewer for constructing the example in (9) and informing us of the reason for the degradedness of the example in (i).

(9) *Scrambling or Contrastive Focalization:*

sakwa-lul/sakwa-nun nay-ka mayil mek-nunta.
 apple-Acc/apple-Top I-Nom everyday eat-Decl
 photo-lul/photo-nun nay tongsayng-i kule-nta(=*mayil meknuta*).
 grape-Acc/grape-Top my brother-Nom so-do
 'An apple, I eat, but a grape, my brother does (*so).'

Likewise, when a relative head is associated with a direct object gap position inside a relative clause, the VP where a direct object has undergone relativization can also be substituted for by its anaphorical form, as in (10):

(10) *Relativization:*

?emma-nun [cheli-ka simhakey koylophiten koyangi-lul] tolpwacwess-ko,
 mother-Top Cheli-Nom severely nagged cat-Acc looked after
 appa-nun [yengi-ka kulayssten(=*simhakey koylophiten*) kangaci-lul] tolpwacwessta.
 father-Top Yengi-Nom so did puppy-Acc looked after
 'Mother looked after the cat that Cheli nagged severely, but Papa
 looked after the puppy that Yengi did so to.'

What happens when a direct object moves to the subject of a clause? The following example involving transitive-ergative verb alternation makes such a case:

(11) *Transitive-Ergative Verb Alternation:*

?cheli-nun [nay-ka changmwun-ul tatasstako] cwucangha-ciman,
 Cheli-Top I-Nom window-Acc closed claimed-but
 sasil-un changmwun-i cecello kulayssta(=*tathita*).
 fact-Top window-Nom on its own so did.
 'Cheli claimed that I closed the window, but in fact it did so.'

The first clause contains a transitive verb, and the second clause contains its alternating form of ergative verb whose thematic object has undergone A-movement to the subject position. Notwithstanding speaker variation on the acceptability of this example, there are Korean native speakers that perceive (11) to be acceptable.

Unlike overt extraction of a direct object from a VP-internal position, its covert

lowering/reconstruction into a VP-internal position seems to be allowed. The following example makes such a case:

(12) *Quantifier Lowering*:

namhaksayng motwu-lul han sensayng-nim-i simhakey kkwucicessta.
 male student all-Acc one teacher-Hor-Nom severely scolded
 tto yehaksayng motwu-lul kulayssta(=simhakey kkwucicessta).
 also female student all-Acc so did
 'All the male students, one teacher scolded severely. All the female
 students one teacher scolded severely.' $\exists > \forall, \forall > \exists$ in the
 'kule' sentence

Suppose that when a quantificational direct object has scrambled to a clause-initial position, its lowering/reconstruction into its original position induces a scopally ambiguous interpretation in Korean (cf. Ahn (1990)). This means that as the second clause of (12) is scopally ambiguous, the scrambled object *yehaksayng motwu-lul* 'all the female students' is taken to move back to its original direct object position that is within the VP anaphora in surface structure.

Now turning to the *so* anaphora in English. the following examples show that the VP anaphora in English is *do so*, the AP anaphora is *(be) so*, and the clausal anaphora is *so*, as in (13)

- (13) a. A: Has he informed the police? B: No, but he will **do so** tomorrow.
 b. He liked it; at least he said he did/***did so**.
 c. If you're visibly attentive, the passengers around you will **be so**
 (=visibly attentive), too.
 d. It's a statement of how important I think immunization is and why
 I think **so** (=immunization is important).

The VP anaphora *do so* tends to be used for the VP formed by an action verb rather than a stative verb, which is shown by the contrast between (13a) and (13b). This restriction does not hold for VP ellipsis/deletion involving *did* instead of *did so* as in (13b). (13c) illustrates the AP anaphora. (13d) is an example of clausal anaphora; the peculiar aspect of (13d) is that the antecedent clause of the clausal anaphora involves

movement of one of its constituents, viz., *how important*.⁵

Concentrating on the VP anaphora in English,⁶ extraction out of such an anaphora is not allowed, as in (14)-(16), where are taken from Huddleston and Pullum (2002: 1530):

(14) I didn't invite Kim, but I did Pat/*but I **did so** Pat.

(15) She earns more than I do/*than I **do so**.

(16) He thought it was good, as I did/*as I **did so**.

In these examples, the clauses containing the VP anaphora involve a movement out of such an anaphora. In (14), as Levin (1979/1986) and Lasnik (1995) argue, Pseudogapping allows the movement of a direct object from the VP to be elided/deleted, but the VP anaphora does not allow such a movement from within it. In (15) and (16), a null operator has been known to move in the comparative *than* or *manner* clause (Pinkham (1985)). The movement of a null operator from the VP anaphora in such clauses is to blame for the unacceptability of (14)-(16).

The ban on extraction out of the VP anaphora in English is more pervasive in other familiar syntactic constructions, as shown in (17)-(20) ((17)-(20a), from Thompson (2012); (20b), from Houser (2010)):

(17) *Object wh-questions*:

*I don't know which puppy you should adopt, but I know which one you shouldn't do so.

(18) *Topicalization*:

*Hazelnuts, I'll eat; but peanuts, I won't do so.

(19) *Relativization*:

⁵ The following example of VP anaphora also involves movement of one constituent *Tom* from its antecedent VP:

(i) Tom, I invited to the party, and Bill did so(=invited Tom to the party) too.

⁶ In their seminal (1976) paper Hankamer and Sag show that anaphora comes in two basic types: deep vs. surface anaphora. They classify (*do*) *so* as surface anaphora (pp. 413-418). One problematic aspect of their classification of (*do*) *so* as surface anaphora is that it is expected to allow for extraction out of it, but it does not. The main concern of this paper is to answer the very question of why this is so, by investigating the asymmetry in extraction between English (*do*) *so* and its Korean counterpart *kule(h)* (*ha-*).

*I sold the furniture that I knew my cat might scratch, and I kept the pieces that he already had done so.

(20) *Passivization:*

- a. *This cat was adopted, but that one was not done so.
- b. *The vase was broken by the children, and the jar was done so, too.

Wh-movement in (17), topicalization in (18), and relativization in (19) are known to involve A'-movement, and passivization in (20), A-movement.⁷

(21) involves a mismatch in voice and argument structure.

(21) *Voice and argument structure mismatch:*

- a. As an imperial statute the British North America Act could be amended only by the British Parliament, which **did so** on several occasions.
- b. %John told Steve to hang the horseshoe over the door, and it **does so** now.
- c. %Mary claimed that I closed the door, but it actually **did so** on its own.
- d. %I was told that this new peanut butter spreads very easily, and I am very excited to **do so**. ((21a-d) from Thompson (2012))

In (21a), the antecedent clause of the VP anaphora is passive, but the clause affected by the VP anaphora is active. (21b-d) involve argument structure alternations; the first clause contains a transitive or causative verb, whereas the second clause contains an ergative or middle verb or vice versa. Thompson (2012) reports that (21b-d) are subject to speaker variation on acceptability, thus marking them with the sign % in front.

⁷ Unlike the examples in (20) in the text, the following examples we found through the internet search are attested with the passive VP replaced by the VP anaphora:

- (i) We would wait for the other kid's balloon being bursted; and would clap loudly after being done so.
- (ii) This indicates that the consolidation temperature does not influence the strain limit of the compact, thus the sum of the deviation of C and D is chosen as the deviation of the error. After being done so, it is clearly from Table 3 that the preforming pressure and consolidation pressure both significantly influence the strain limit of the compact.

The generalization that emerges concerning extraction from VP anaphora in English is that no movement is permitted, except that some speakers allow for A-movement from the VP that is formed by a middle/ergative verb. Provisionally suggesting that the surface subject of a middle/ergative verb is base-generated outside VP (along the same line of analysis as Lasnik and Saito (1992) take in their treatment of *likely* either as a raising or a control predicate), we can make a stronger generalization on it: No extraction is allowed from within VP anaphora in overt syntax in English.

In covert syntax, however, a different picture comes up. Baltin (2012: 418)⁸ and Thompson (2012) note that in (22), *do so* anaphora allows inverse scope, but *do it* anaphora does not.

(22) ***Inverse scope:***

At least one representative will support each new measure, and I expect at least one senator to do so/do it, too.

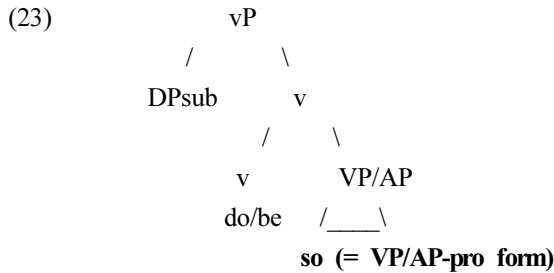
$\exists > \forall$, $\forall > \exists$ in the ‘do so’ sentence, $\exists > \forall$, $*\forall > \exists$ in the ‘do it’ sentence

The availability of inverse scope in the sentence like (23) means that the quantifier inside the structure substituted for by the VP anaphora undergoes covert quantifier raising (QR) over the subject quantificational phrase (QP) in the second conjunct clause.

To account for a substitution by the VP anaphora and an extraction from it in English, we adopt the following structure initially proposed by Stroik (2001) and later embraced by Haddican (2007), Houser (2010), and Thompson (2012):

⁸ Baltin (2012) mentions that one of the reviewers for *Natural Language and Linguistic Theory* notes that in (i), *do so* anaphora allows inverse scope, but *do it* anaphora does not.

(i) Many men read five books, and many women did so/did it well. (*do so*: five > many, many > five; *do it*: five > many, *many > five)



The essence of the proposed structure is that *so* is a replacement of VP or AP and that the light verb *do* occupies the little *v* that selects VP or AP.^{9, 10} Given the structure for the VP anaphora in English, to account for impossible extraction out of such a VP anaphora, we suggest that an EPP feature be lacking or inactive in the [Spec,vP] position. We speculate that the lack or inactivity of an EPP feature in the [Spec,vP] position is ascribed to the unusual overt realization of the light verb in the little *v* position. This reminds us of Koopman's (1996) and Kim's (2003) note that languages have either overt heads with silent Specs or silent Specs with overt heads.¹¹ Koopman derives this new reformulation of generalized 'doubly-filled Comp filter' from Kayne's (1994) linear correspondence axiom. If Koopman is right, the

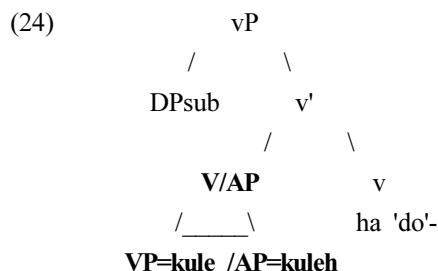
⁹ Stroik (2001), Haddican (2007), Houser (2010), and Thompson (2012) discuss only the VP anaphora, but not the AP anaphora. We extend their idea to the analysis of the latter type of anaphora.

¹⁰ We assume that the replacement of VP or AP by *so* is not literally a replacement process in syntax but a lexical realization process in PF. The similar conception of the idea has been employed for the lexical realization of a 'copy trace' in Copy Raising Constructions in English (cf. Landau (2011)). See also Merchant (2001) for the view of ellipsis/deletion as 'un-pronunciation'.

¹¹ One of the anonymous reviewers rightfully asks how to proceed with the typical *wh*-extraction of an object element out of VP in English. In the recent analysis adopting a vP system, an object element is known to use [Spec,vP] to undergo *wh*-movement. This movement would be prohibited if it proceeded in the same way as the extraction of an object element out of the VP anaphora in English. Note, however, that regular *wh*-extraction does not involve an overt element in the *v* position, though extraction out of the VP anaphora DOES involve an overt element *do* in the *v* position. By adopting Koopman's (1996) generalization of either overt heads with silent Specs or silent Specs with overt heads, we can say that regular *wh*-extraction can proceed safely using the Spec of a silent head *v*, but extraction out of the VP anaphora cannot use [Spec,vP] because its head is overt. More specifically, since as argued in the text, extraction out of VP anaphora is allowed when it is an instance of A-movement, what is needed for extraction out of VP anaphora is the availability of [Spec,vP] as an A-position, which is lacking in English as the Spec of the phrase formed by the anaphora *do/be so*. See also Baltin (2012) for the relevant fact that *wh*-extraction in English cannot be made either when the British light verb *do* occupies the *v* position.

unusual lexical realization of the little ν in the VP anaphora prohibits its Spec from being available or active. This accounts for the general ban on the extraction out of the VP anaphora in English.¹²

Following the same line of analysis as for the VP anaphora in English, we present the structure of the VP/AP anaphora in Korean as follows:¹³



In this structure, extraction out of the VP anaphora in Korean is allowed thanks to the well-known multiple Spec strategy available in this language (Kuroda (1988))¹⁴. The presence of the light verb *ha-* in the little ν position is not pernicious at all for the availability of the [Spec,vP] position, as Korean does not obey the strict

¹² Sun-Woong Kim and Jong-Un Park (perl. comm.) raised a question about the availability of rightward movement to the element out of the VP anaphora in the following example, repeated from (14) in the text:

(i) I didn't invite Kim, but I did Pat/*but I **did so** Pat.

Following Kayne (1994), we simply assume that the heavy NP shift (HNPS) can be reanalyzed as an operation undergoing leftward movement.

¹³ The structure in (24) postulated for the Korean *kule(h)-* 'so' anaphora is adopted apparently on the basis of comparative considerations relying on the previous analyses of *do so* in English (cf. Stroik (2001), Haddican (2007), Houser (2010), and Thompson (2012)). Recall that the initial motivation for the parallelism between the Korean *kule(h)-* 'so' anaphora and the English *so* anaphora comes from the similar syntactic behaviors of substitution as noted in (1)-(3) of Korean and (13a-d) of English, particularly when they do not involve extraction out of them. Based on this parity between the Korean *kule(h)-* 'so' anaphora and the English *so* anaphora, in the text we concentrate on accounting for the difference between them when extraction occurs out of them.

¹⁴ Whether multiple specifiers are available or not in a certain language is generally attributed to the property of a functional head that licenses such specifiers. It is also often conceived that a functional head licenses a specifier or specifiers via agreement/Case relations between them (cf. Saito and Fukui (1998)). This amounts to saying that an intermediate position that a moving element moves through does not always count as a specifier position.

one-head or one-Spec restriction. The [Spec,vP] position is available as an exit for a VP-internal element before the VP anaphora substitution applies to the VP.

3. *Kule(h)* in Korean and *so* in English as simple TP & CP/Complex VP substitution

Turning to the substitution of the bigger category than VP, we present the following examples in (25) and (26):

- (25) A: cheli-nun yengi-**lul** chakhatako sayngkakhaysse/mitesse.
Cheli-Top Yengi-Acc good-hearted kind-hearted thought/believed
'Cheli thought/believed Yengi to be kind-hearted.'
- B: **TP substitution:**
yengswu-nun swuni-**lul** kulehkey sayngkakhaysse/*kukes-ul mitesse.
Yengswu-Top Swuni-Acc so thought /it-Acc believed
'Yengswu thought/believed Swuni to be so/*it.'
- B': **AP substitution:**
yengswu-nun swuni-**lul** kulehtako sayngkakhaysse.
Yengswu-Top Swuni-Acc be so thought
'Yengswu thought/believed Swuni to be so.'
- B'': %yengswu-nun swuni-**lul** kulaysse.
Yengswu-Top Swuni-Acc so did.
'(Lit.) Yengswu did so to Swuni
- (26) A: cheli-nun yengi-**ka** chakhatako sayngkakhaysse/mitesse.
Cheli-Top Yengi-Nom good-hearted kind-hearted thought/believed
'Cheli thought/believed Yengi was kind-hearted.'
- B: **TP substitution:**
yengswu-nun swuni-**ka** ?*kulehkey sayngkakhaysse/*kukes-ul mitesse.
Yengswu-Top Swuni-Nom so thought/ it-Acc believed
'Yengswu thought/believed Swuni was so/*it.'
- B': **AP substitution:**
yengswu-nun swuni-**ka** kulehtako sayngkakhaysse.
Yengswu-Top Swuni-Nom be so thought

'Yengswu thought/believed Swuni was so.'
 B": *yengswu-nun swuni-ka kulaysse.
 Yengswu-Top Swuni-Nom so did.
 '(Lit.) Yengswu did so to Swuni

(25) and (26) have verbs such as *sayngkakha-* 'think' or *mit-* 'believe' in the matrix clause. Such verbs are known to allow exceptionally Case-marking for the embedded subject, as in (25). When the embedded subject is Nominative or Accusative Case-marked, the embedded AP can be substituted for by *kuleh-* 'be so', as in (25B') and (26B').

We now move on to (25B) and (26B), which involve either TP substitution by *kuleh-* 'so' or CP substitution by *kukes* 'it'. (25B) where the embedded subject is Accusative is acceptable, but (26B) where it is Nominative is not. It is argued in Park (2013) and Park and Yoo (2013) that this contrast comes about in the following way. They first adopt the idea that in Korean, exceptional Case-marking (ECM) applies to the embedded subject in the [Spec,CP] position (cf. Lee (1992); Kim (1996)). Thus, in (25B), the substitution by *kuleh-* 'so' kicks in after the embedded subject undergoes A-movement to the [Spec,CP] position. In (26B), however, the substitution by *kuleh-* 'so' cannot be fulfilled because the embedded subject is Nominative Case-marked in the [Spec,TP] position, thus leaving an A'-trace in its position if it moves to the embedded [Spec,CP] position to feed the TP substitution.¹⁵ This amounts to saying that the TP substitution by *kuleh-* 'so' cannot replace a constituent containing an A'-trace, extraction out of the TP substitution being required to be an example of A-movement; Following Lasnik (1999), A-movement, unlike A-bar movement, does not necessarily leave a trace/copy, feeding the application of TP/VP anaphora rightfully. (In this analysis, the CP substitution by *kukes-* 'it' in (25B) cannot be fulfilled either because the Accusative-marked embedded subject has to undergo illegal A'-movement completely out of the embedded clause to be substituted for). One more word is in order about the

¹⁵ The difference between (24B) and (9) & (10) lies in the fact that the moving embedded subject in the former example leaves an A'-trace in its position when it moves to the embedded [Spec,CP] position before feeding the TP *kuleh* substitution, but the moving object in the latter examples may leave an A-trace in its position when it moves through the [Spec,vP] position to the clause-initial position in (9a) or the relative-clause-internal [Spec,CP] position in (10) before feeding the VP *kule* substitution.

morpheme *-key* that is attached to the TP substitution by *kuleh-* 'so'. This morpheme is regarded as an adverbializer/complementizer by attaching to an adverb, an adverbial clause, or a causative complement clause. In this regard, it is unreasonable to say that the morpheme *-key* after the TP substitution is a complementizer.

What happens when the embedded and matrix predicate complex is substituted for by the VP anaphora? When the embedded subject is Nominative, the sentence in (26B") is definitely ruled out. This is because the embedded Nominative subject leaves behind an A'-trace when it moves to the edge of the matrix VP that is replaced by the VP anaphora. (25B"), on the other hand, is rated as unacceptable by most Korean native speakers we consulted. The unacceptability of (25B") can be analyzed on a par with (26B). The embedded ECMed subject has its Accusative Case checked in the embedded [Spec,CP], thereby its extraction to the edge of the matrix VP counting as an instance of A'-movement, bleeding the application of the VP anaphora substitution for the embedded and matrix verb complex. However, a minority of Korean speakers rate (25B") as acceptable. This is because we conjecture that for these speakers, the embedded Accusative Case-marked subject in (25B") undergoes Case-checking not in the Spec of CP but in Spec of matrix vP. This alternative option circumvents leaving behind an A'-trace in the matrix VP that is to be replaced by the VP anaphora.

The embedded predicate in (25) and (26) is an adjective. The following examples in (27) and (28) contain a verb in the embedded clause:

- (27) A: *cheli-nun yengi-lul kongpwuhantako sayngkakhaysse/mitesse.*
 Cheli-Top Yengi-Acc good-hearted study thought/believed
 'Cheli thought/believed Yengi to be studying.'
- B: **TP substitution:**
*yengswu-nun swuni-lul kulehkey sayngkakhaysse/*kukes-ul mitesse.*
 Yengswu-Top Swuni-Acc so thought /*it-Acc believed
 'Yengswu thought/believed Swuni to be doing so/it.'
- B': **VP substitution:**
yengswu-nun swuni-lul kulentako sayngkakhaysse.
 Yengswu-Top Swuni-Acc so do thought
 'Yengswu thought/believed Swuni to be doing so.'
- B'': %*yengswu-nun swuni-lul kulaysse.*

- Yengswu-Top Swuni-Acc so did.
'(Lit.) Yengswu did so to Swuni
- (28) A: cheli-nun yengi-**ka** kongpwuhantako sayngkakhaysse/mitesse.
Cheli-Top Yengi-Nom good-hearted study thought/believed
'Cheli thought/believed Yengi to be studying.'
- B: **TP substitution:**
yengswu-nun swuni-**ka** *kulehkey sayngkakhaysse/*kukes-ul mitesse.
Yengswu-Top Swuni-Nom so thought /*it-Acc believed
'Yengswu thought/believed Swuni to do so/it.'
- B': **VP substitution:**
yengswu-nun swuni-**ka** kulentako sayngkakhaysse.
Yengswu-Top Swuni-Nom so do thought
'Yengswu thought/believed Swuni to be doing so.'
- B'': *yengswu-nun swuni-**ka** kulaysse.
Yengswu-Top Swuni-Nom so did.
'(Lit.) Yengswu did so to Swuni.'

The pattern of the acceptability for (27) and (28) is commensurate with that for (25) and (26). One difference between the former and the latter is that the former involve the VP anaphora for the embedded VP in the (B') examples, but the former involve the AP anaphora for the embedded AP in the (B'') examples.

Now we move on the instances where the embedded object undergoes scrambling to the beginning of the embedded clause, as follows:

- (29) A: cheli-nun [LGB-lul_i [yengi-ka t_i ilknuntako]] sayngkakhaysse.
Cheli-Top [LGB-Acc [yengi-Nom read thought
'Cheli thought Yenghi to be reading *LGB*.'
- B: toli-nun [Barriers-lul_i [yengi-ka t_i ilknuntako]] sayngkakhaysse.
toli-Top [Barriers-Acc [yengi-Nom read thought.
'Toli thought Yengi to be reading *Barriers*.'
- B': **TP substitution:**
*toli-nun [Barriers-lul kuleh-key] sayngkakhaysse
toli-Top [Barriers-Acc so] thought
'(Lit.) Toli thought Yengi to be doing so with *Barriers*.'

B'': **VP substitution:**

toli-nun [Barriers-lul [yengi-ka kulentako]] sayngkakhaysse.

toli-Top [Barriers-Acc [yengi-Nom so do thought

'Toli thought Yenghi to be doing so with *Barriers*.'

B''': *toli-nun Barriers-lul kulaysse.

toli-Top Barriers-Acc so did

'Toli did so with *Barriers*.'

In response to (29A), we can use the full sentence in (29B), but not the sentence in (29C), where the embedded clause excluding the scrambled embedded object is substituted for by the TP substitution *kule-* 'so'. In a parallel fashion of analysis for (26B'') and (28B''), we blame the unacceptability of (29B) on the fact that a scrambled object participates in Case-checking inside a TP, thus leaving an A'-trace within it. However, when we apply the VP anaphora substitution to the embedded VP, the resulting sentence in (29B'') is acceptable. Even though the embedded object applies in the clause-initial position, it is taken to have moved through the embedded [Spec,νP] position. This position is instrumental in enabling the embedded object to undergo A-movement, entering into Accusative Case-checking in the embedded [Spec,νP] position. Now why is (29B''') completely unacceptable? This example is unacceptable for the same reason as (26B'') and (28B'') are. The remnant *Barriers-lul* from the embedded object position is Case-checked inside the matrix VP substituted for by the VP anaphora.

The parallelism between the embedded Nominative subject and the embedded Accusative object is confirmed by the following set of examples:

(30) A: na-nun [yengi-ka LGB-lul ilknuntako] alko issta.
 I-Top [Yengi-Nom LGB-Acc read know
 'I know that Yengi read *LGB*.'

B: na-to kuleh-key/kukes-ul alko issta.

B': *na-nun **Barriers-lul** kuleh-key alko issta. (☞ TP substitution)

B'': *na-nun **Barriers-lul** kukes-ul alko issta. (☞ CP substitution)

B''': *na-nun **swuni-ka** kuleh-key alko issta. (☞ TP substitution)

B''': *na-nun **swuni-ka** kukes-ul alko issta. (☞ CP substitution)

In these examples, the whole embedded clause can be substituted by *kulehkey* 'so' or *kukes* 'it', as in (30B). However, when the embedded subject or the embedded object is extracted out of the TP anaphora *kulehkey* 'so', the resulting sentences (30B') and (30'') are ruled out because the extraction is an instance of A'-movement. In a parallel fashion, when the embedded subject or the embedded object is extracted out of the CP anaphora *kukes* 'it', the resulting sentences (30B'') and (30''') are also ruled out because the extraction is an instance of A'-movement too. These examples render conclusive evidence in favor of the analysis proposed so far.

We now turn to the examples where the matrix verb that selects a complement clause is of passive form, as follows:

- (31) A: pwumonim-eykey-nun [swuni-ka cheli-lul ttaylyesstako] allyecyessta.
 parents-Dat-Top Swuni-Nom Cheli-Acc hit was known
 'It was known to the parents that Swuni hit Cheli.'
- B: tamimsensayngnim-eykey-to kulehkey/ kukes-i allyecyessta.
 homeroom teacher-Dat-also so it-Nom was know
 'It was known to the homeroom teacher that Swuni hit Cheli.'
- B': tamimsensayngnim-eykey-nun [yengswu-ka ?kuleh-key/ *kukes-i]
 homeroom teacher-Dat-also Yenswu-Nom so it-Nom
 allyecyessta.
 was known
 'It was known to the homeroom teacher that Yengswu hit Cheli.'
- B'': tamimsensayngnim-eykey-nun [toli-lul *kuleh-key/ *kukes-i] allyecyessta.
 homeroom teacher-Dat-also Toli-Acc so it-Nom was known
 'It was known to the homeroom teacher that Swuni hit Toli.'
- (32) A: [pak hoycangu-lopwuthe kim uywen-i noymwul-ul patasstako] pototoyessta.
 Park chairman-from Kim senator-Nom bribe-Acc receive was reported
 'It was reported that Senator Kim received a bribe from Chairman Park.'
- B: ttohan **ceng uywen-i** kuleh-key/ *kukes-i pototoyessta.
 also Chung senator-Nom so / it-Nom was reported
 'It was reported that Senator Chung also received a bribe from Chairman Park.'

- B': ttohan **hyangung-ul** ?*kuleh-key/*kukes-i pototoyessta.
 also entertainment-Acc so it-Nom was reported
 'It was reported that Senator Kim also received an entertainment
 treat from Chairman Park.'
- B'': ttohan **i hoycangu-lopwuthe** *kuleh-key/ *kukes-i pototoyessta.
 also Lee chairman-from so it-Nom was repor
 'It was reported that Senator Kim also received an entertainment
 treat from Chairman Lee.'

In these examples, the whole complement clause of a matrix verb can be substituted for by the *kulekey* 'so' or *kekes* 'it' substitution as in (31B). When, however, an embedded clause element occurs outside the portion substituted for by either *kulekey* 'so' or *kekes* 'it' substitution, all the examples are ruled out except when the embedded Nominative subject occurs with the *kulekey* 'so' substitution as in (31B') and (32B). We provisionally assume that when the complement clause-selecting matrix verb is of passive form, the matrix T enters into Case Agree with and checks Nominative Case for the embedded subject in the embedded [Spec,CP] position. This enables the TP anaphora to substitute for the TP from where the embedded subject has escaped.

In addition to (31B'') and (32B'), the following examples confirm that it is not possible to extract the embedded object from the portion to be replaced by either *kulekey* or *kekes*.

- (33) A: [Kayne-uy nonmwun-ul [yengi-ka palphyohantako]] allyecyessta.
 Kayne-Gen paper-Acc Yengi-Nom present was known
 'It was know that Yengi would present Kayne's paper.'
- B: ttohan **Chomsky-uy nonmwun-ul** ?*kuleh-key/ *kukes-i allyecyessta.
 also Chomsky-Gen paper-Acc so it-Nom was known
 'It was know that Yengi would present Chomsky's paper.'
- (34) A: uymilon-ul [yengi-ka yelsimhi kongpwuhantako] chwuchuktoynta.
 semantics-Acc Yengi-Nom diligently study is guessed
 'It is suspected that Yenghi is studying semantics diligently.'
- B: ttohan **thongsalon-ul** ?*kuleh-key¹⁶/ *kukesi chwuchuktoynta.

¹⁶ Cheng-Yoon Kim (perl. comm.) claimed that the sentence with the *kulekey* substitution is acceptable.

also syntax-Acc so it-Nom is guessed
'It is suspected that Yenghi is studying syntax diligently.'

As argued above, the embedded object leaves behind an A'-trace within the embedded TP, bleeding the application of the substitution by either *kulekey* or *kekes*.

We now move on to the possibility of the VP anaphora substituting for the complex verb phrase including an adverbial phrase or clause. The relevant examples are (35) and (36):

- (35) A: na-n iPhone 6-lul salye-ko myech tal-ul kitalyesse.
I-Top iPhone 6-Acc buy-to some month-Acc wait
'I waited some months for an iPhone to buy it.'
- B: **apparent complex VP substitution:**
na-n (cinanpen-ey) galaxy 5-lul kulaysse.
I-Top last time-at galaxy 5-Acc so did
'I did so with galaxy 5 last time.'
(WooSeung Lee, pers. comm. (May 19, 2015))
- (36) A: na-nun iPhone 6-lul mwul-ey ppattulyesski ttaymwun-ey tasi sasse.
I-Top iPhone 6-Acc water-into drop because again bought
'I bought iPhone 6 again because I dropp it into water.'
- B: na-nun galaxy 5-lul kulaysse (=mwul-ey ppattulyesse/tasi sasse/mwul-ey
ppattulyesski ttaymwuney tasi sasse).
I-Top galaxy 5-Acc so did/so did
'I did so with galaxy 5.'

A question is where the Accusative Case-marked element *galaxy 5-lul* in (29B) comes from. Is it from the object position of the purpose clause or from that of the matrix clause? We argue that it stems from the object position of the matrix clause, as represented in (35)B':

- (35) B' na-n (cinanpen-ey) galaxy 5-lul_i [pro_i salye-ko myech ta-lul t_i kitalyesse]
↑ _____

The key feature of (35B') is that the purpose clause contains the empty *pro* that is construed as coreferential with the matrix object. This matrix object is extracted from within the underlined complex VP before the VP anaphora substitution applies to it. Note that in (36B), the VP anaphora is multiply ambiguous, being interpreted as the embedded VP, the matrix VP, or the complex VP, as represented with three italicized strings.

The prediction we can make is that if the matrix verb does not select an object, the VP anaphora cannot be construed as the complex VP. This prediction is borne out in the following examples of (37B) and (38B-B"):

- (37) A: na-n i-phone 6-lul ilhepely-ese emma-hanthey honnassesse.
 I-Top iPhone 6-Acc lose-because of mother-from be scolded
 'I was scolded by my other because I lost my iPhone 6.'
- B: ?na-n galaxy 5-lul kulayssesse (=icepelyessesse/=*ilhepelyeseemmahanthey honnassesse).
 I-Top galaxy 5-Acc so did/so did
 'I did so with galaxy 5.'
- (38) A: cheli-ka tampayl-ul salyeko haysski ttaymwun-ey
 Cheli-Nom cigarette-Acc buy attempt because-of
 tamimsensayngnim-eykey pelpatassta
 homeroom teacher-from be punished
 'Cheli was punished by his homeroom teacher because he attempted to buy cigarettes.'
- B: minswu-ka kulayssesse (=salyeko hayssesse/=salyeko haysski ttaymwuney tamimsensayngnim-eykey pelpatassta).
 Minswu-Nom so did
 'Minswu did so.'
- B': ttohan pro swul-ul kulayssesse (=salyeko hayssesse/=*salyeko haysski ttaymwuney tamimsensayngnimeykey pelpatassta).
 also liquor-Acc so did
- B'': minswu-ka swul-ul kulayssesse (=salyeko hayssesse/=*salyeko haysski ttaymwuney tamimsensayngnim-eykey pelpatassta).
 Minswu-Nom liquor-Acc so did
 'Minswu did so with (bottles of) liquor.'

The object *i-phone 6-lul* 'i-phone 6-Acc' is semantically not compatible with the matrix verb *honna-* 'be scolded' in (37A), nor is the object *tampayl-ul* 'cigarette', with *pelpat-* 'be punished' in (38A). They are understood only as the direct objects of the immediately following verbs in the adverbial clauses. Thus, the VP anaphora in (37B) and in (38B'-B'") are construed only as the embedded VPs, but not as the matrix complex VPs, as represented with italicized strings.¹⁷

We turn now to CP or TP substitution in English. The following examples make a case:

- (39) A: Will George help us?
 B: I think *so*.
- (40) A: George will help us.
 B: I hope *so*.
- (41) Was this woman a representative payee?
 If *so*, she didn't have to sign anybody's name but her own.

(40) and (41) each illustrates CP substitution, but English also allows TP substitution after the conditional complementizer *after* as in (41).

Since, as seen above, English does not allow for extraction out of VP/AP, it is predicted that it does not allow for extraction of the bigger category such as CP or TP. The prediction is achieved as follows:

- (42) A: I thought John conservative.
 B: I thought Bill *so*, too.
- (43) A: I thought John is conservative.
 B: ?I thought Bill *so* (= conservative/ *is conservative), too.
- (44) A: I thought John to have left already.
 B: ?*I thought Bill *so* (=to have left yesterday).
- (45) A: I thought John left yesterday.
 B: *I thought Bill *so* (=left yesterday).
- (46) A: I thought *LGB* John read.
 B: *I thought *Barriers* *so* (=John read t).

¹⁷ One of the anonymous reviewers claims that when the VP anaphora in (37B) and in (38B'-B'") are construed as the matrix complex VPs, the sentences are still grammatical.

In (42) and (43), the AP can be substituted for by *so* in the embedded small-clause complement of *think*. The AP anaphora *so* occurs in the structural context of (42B) and (43B), so that we construct the same structure of sentences in (43B)-(46B), but the anaphora *so* is understood to substitute for not AP but TP. All these examples are unacceptable.

Two reasons for the unacceptability of (44B), (45B) and (46B) are conceivable. One is that the extraction of the embedded clause element out of the CP or TP substitution *so* needs a position through which it moves through. If the CP substitution applies as in (46B), it leaves behind an A'-trace inside it, which is prohibited on a par with the examples that are ruled out in Korean. If the TP substitution applies as in (44B) and (45B), the word order of these two examples implies that the embedded subject has to adjoin to the embedded complement clause, which is also prohibited for the reason suggested by Chomsky (1986).¹⁸ The other second reason is that whether either the CP or the TP substitution is involved, extraction of the embedded subject or object out of the embedded complement clause leaves behind an A'-variable within it, precluding the application of the CP or TP anaphora substitution.

It seems that the *so* substitution of the raising complement clause in the second conjunct clause of (47a-b) avoids the two problematic situations that the ECMed complement clause confronts:

- (47) a. ?John seems to have dropped out of school, and Bill seems so too.
 (so = to have dropped out of school)
 b. ?John is believed to have flunked, and Bill is believed so too. (so
 = to have flunked)

The movement of the matrix subject from the raising complement clause circumvents adjunction to the latter clause and is an instance of A-movement. English native speakers are not willing to rate (47a) or (47b) as acceptable, but they perceive them as definitely better in acceptability than (44B) or (45B).

¹⁸ Chomsky (1986) suggests that the adjunction to a complement clause is banned; otherwise, it tampers with theta-marking the embedded complement clause by the matrix verb.

4. Conclusion

This paper started with presenting a set of data showing that the Korean *kule(h)*- 'so' allows for an extraction out of the VP anaphora that is composed of it and the following light verb *ha-*, but its English counterpart element *so* does not. We suggested that this contrast between Korean and English in extractability from VP anaphora is attributed to the effects of the multiple Spec hypothesis. Multiple Specs are available to Korean, but they are not to English. The [Spec,vP] position of the light verb that selects a VP counts as an escape hatch for the extraction out of the VP to be substituted for by the VP anaphora. This position can be capitalized on by Korean with the multiple Spec strategy, but it cannot be by English without it.

Moving on to the TP substitution by the Korean *kuleh*- 'so' and the English *so*, we saw that the TP substitution obtains in Korean when the embedded subject is ECMed, but not when it is Nominative Case-marked. Assuming that Accusative Case checking for the ECMed embedded subject applies in the [Spec,CP] position in Korean, we argued that the contrast between the ECMed and the Nominative embedded subjects as a remnant/survivor out of the TP anaphora is ascribed to the ban on gap-containing overt anaphora. Following Lasnik's (1999) proposal that A-movement, unlike A-bar movement, does not necessarily leave a trace/copy, we blame the illegal TP anaphora with the Nominative embedded subject as a remnant/survivor on the fact that it contains an A'-trace left behind by the Nominative embedded subject. However, the legal TP anaphora with the ECMed embedded subject does not face such a problem because the movement from the embedded subject position to the embedded [Spec,CP] position for exceptional Case checking is an instance of A-movement, not leaving a trace/copy. By contrast, English does not take the option of Case-checking the embedded subject in the [Spec,CP] position. Thus, English *so* does not allow for the extraction out of TP anaphora as its Korean counterpart *kuleh*- 'so' does. All in all, this paper showed that the multiple Spec hypothesis and A-movement not leaving a trace/copy are the two important ingredients in accounting for (im)possible extraction out of overt anaphora in Korean and English.

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