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On Sloppy-like Interpretation of Null Arguments*

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Ahn, Hee-Don & Cho, Sungeun. 2011. On Sloppy-like Interpretation of Null Arguments. *Linguistic Research* 28(3), 471-492. This paper aims to show that what are considered to be apparent sloppy readings in the null argument construction in Korean and Japanese are well accounted for under Ahn & Cho's (2009, 2010, 2011b,c) *pro* analysis. The environments where such readings arise are categorized into five types. First, the antecedent noun includes either a reflexive possessor or a numeral quantifier. Second, the antecedent noun is a universal quantifier. Third, the antecedent noun includes a reflexive possessor and it denotes plural entities. Fourth, the antecedent is a negative polarity item. Fifth, the antecedent itself is a reflexive pronoun. By exploring these five cases, we show how far the possible interpretation of *pro* is stretched. We also show that our *pro* analysis is conceptually superior to the one that assumes an additional parameter plus *pro* drop parameter such as the agreement parameter that correlates with the presence or absence of DP ellipsis.

Key Words null argument, sloppy(-like) interpretation, *pro*, DP ellipsis, agreement parameter, *pro* drop parameter

1. Introduction

Korean allows null arguments, as shown in (1), unlike English, as shown in (2).

(1) A: na-nun John-uy hyeng-ul poa/manna-ss-ta.
I-Nom J.-Gen brother-Acc see/meet-Pst-Dec
'I saw/met John's brother.'
B: na-to __ poa/manna-ss-ta.

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I-too see/meet-Pst-Dec
'Lit. I also saw/met.'

(2) A: I saw/met John's brother.
B: I also saw/met *(him).

Otani & Whitman (1991) propose, following Huang (1987), that a sentence like (1B) is an instance of VP ellipsis where the head V has been evacuated via V-raising. Park (1994), Hoji (1998), Oku (1998), Kim (1999) and many others have pointed out non-trivial problems that the VP ellipsis analysis encounters.[1]

As one alternative to the VP ellipsis analysis, Oku (1998) and Kim (1999) propose that Japanese and Korean have an ellipsis process like argument ellipsis. Under this analysis, an argument DP itself may directly undergo ellipsis.

On the other hand, Ahn & Cho (2009, 2010, 2011b,c) propose that the Korean examples of apparent DP ellipsis exemplified in (1B) are all instances of *pro* (see also Park 1994, Hoji 1998, Moon 2010 *inter alia*); that is, Ahn & Cho argue that null arguments such as (1B) involve deep anaphora (null pronoun) *pro* but not surface anaphora ellipsis.[2] Hence (1B) should be represented as:

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[1] Park (1994), for example, has extensively discussed the problems of VP ellipsis analysis of null object constructions in Japanese and Korean. Among many arguments against Otani & Whitman's (1991) claim, Park (1994:164-165) observes the following contrasts between English and Korean, as also noted in Oku (1998) for Japanese.

(i) a. John studies English hard, and Mary does (study English hard), too.
b. John came home early, but Mary didn't (come home early).

(ii) a. Mary-ka ppalli talli-ko John-to *(ppali) talli-n-ta.
M.-Nom fast run-Conj J.-also fast run-Pres-Dec
'Intended: Mary runs fast and John does too.'
b. Mary-ka kulen iyu-lo ttena-ss-ko John-to *(kulen iyu-lo) ttena-ss-ta.
M.-Nom such reason-for leave-Past-Conj J.-also such reason-for leave-Pst-Dec
'Intended: Mary left for such a reason and John did too.'

Park (1994) points out that if VP ellipsis were available in Korean, then the sentence in (ii) would be predicted to have an equivalent reading of (i), contrary to fact. (ii) does not tell us anything about how John run or why John left. Thus, he argues that Otani & Whitman's VP ellipsis analysis of null object arguments may not be maintained in Korean.

[2] According to Ahn & Cho (2011a), case-marked fragments in Korean are instances of genuine ellipsis phenomena, i.e., surface anaphora. We will return to the difference between null arguments and case-marked fragments in section 2.

(1') na-to *pro* poa/manna-ss-ta.
I-too see/meet-Pst-Dec
'Lit. I also saw/met.'

Many researchers (Oku 1998, Kim 1999, Saito 2007, Um 2011 and others) claim that sloppy identity interpretation in (3) is a direct challenge to the *pro* analyses of null arguments.

(3) A: Yenghi-nun casin-uy emma-lul piphanhay-ss-ta.
Y.-Top self-Gen mom-Acc criticize-Pst-Dec
'Yenghi criticized her mom.'
B: Toli-to ___ piphanhay-ss-ta.
T.-Too criticize-Pst-Dec
'Lit. Toli criticized, too.'
(= Toli criticized his own mom/Yenghi's mom)

The crucial argument against *pro* analyses comes from the absence of sloppy interpretation when the null argument is replaced by an overt pronoun as shown in (4B).

(4) A: Yenghi-nun casin-uy emma-lul piphanhay-ss-ta.
Y.-Top self-Gen mom-Acc criticize-Pst-Dec
'Yenghi criticized her mom.'
B: Toli-to kunyey-lul piphanhay-ss-ta.
T.-Too she-Acc criticize-Pst-Dec
'Toli criticized her, too.'
(= Toli criticized *his own mom/Yenghi's mom)

Note that (4B) only yields strict interpretation in contrast to (3B) in which both sloppy and strict readings are possible.

This issue, however, seems to be related to the possible interpretation of *pro*. By exploring the cases where apparent sloppy readings arise, we show how far the possible interpretation of *pro* is stretched. In this paper we offer additional pieces of evidence to show that what are considered to be sloppy identity readings in the null

argument construction in Korean and Japanese are not in fact genuine sloppy interpretations but more or less similar to “sloppy-like” readings in the sense of Hoji (1998), and can well be accounted for under Ahn & Cho’s (2009, 2010, 2011b,c) *pro* analysis.

This paper is organized as follows: Section 2 explores five cases where sloppy interpretations seem to arise and shows that they are indeed sloppy-like readings, and how well our *pro* analysis can account for the putative interpretations. Section 3 discusses conceptual issues related to argument ellipsis and shows that our *pro* analysis is superior to DP ellipsis analyses. Concluding remarks are presented in Section 4.

2. Empirical Issues of Null Arguments

In this section, we explore five types of the so-called argument ellipsis environments where apparent sloppy interpretations arise.[3] First, let us consider the case where the antecedent noun contains a reflexive possessor.

(5) A: Yenghi-nun casin-uy emma-lul piphanhay-ss-ta.
Y.-Top self-Gen mom-Acc criticize-Pst-Dec
‘Yenghi criticized her mom.’
B: Toli-to ___ piphanhay-ss-ta.
T.-Too criticize-Pst-Dec
‘Lit. Toli criticized, too.’ (= Toli criticized his own mom/Yenghi's mom)

We suggest that the missing object in (5B) is *pro* which is equivalent to a bare nominal *emma-lul* 'mom-Acc' in the following:

(6) Toli-to emma-lul piphanhay-ss-ta.
T.-Too mother-Acc criticize-Pst-Dec

[3] Some examples and preliminary arguments are taken from Ahn & Cho (2011b), however, more explicit explanation and convincing evidence are offered here. We further elaborate more on the *pro* analysis given in Ahn & Cho (2011b) in this section.

'Lit. Toli criticized mom.'

Following Hoji (1998), Ahn & Cho (2011b) assume that a nominal projection whose sole content is its head N can be interpreted in various ways as the bare nominal in Korean. Then, the content of the null argument is supplied by the context (henceforth the supplied N head). The supplied N head can be *emma* 'mom' in (5B)/(6), and can function on a par with an indefinite in English. The noun takes a salient discourse element as its referent. Hence, the "sloppy-like" reading like 'Toli's mom' can be obtained in (5B) under an appropriate discourse context like (5).

This line of explanation can be extended to (7B). According to Takahashi (2008), (7B) has either strict or sloppy interpretation.

(7) A: Taroo-wa sanin-no sensei-o sonkeisiteiru.
T.-Top three-Gen teacher-Acc respects
'Taroo respects three teacher.'
B: Hanako-mo ___ sonkeisiteiru.
H.-also respects
'Lit. Hanako respects, too.'

Three teachers Hanako respects can be the same individuals Taroo respects (strict reading) or they can be different from individuals Taroo respects (sloppy reading). Um (2011: 85) states that a similar phenomenon is observed in Korean, which he indicates is problematic under *pro* analyses such as Moon (2010).

(8) A: Chelswu-nun sey pwun-uy sensayngnim-ul conkyengha-n-ta.
C.-Top three Cl-Gen teacher-Acc respect-Pres-Dec
'Chelswu respects three teachers.'
B: Yenghi-to ttohan conkyengha-n-ta.
Y.-also also respect-Pres-Dec
'Lit. Yenghi respects, too.'

(8B) can have the sloppy interpretation that Yenghi respects three teachers who are different from the ones that Chelswu respects. Ahn & Cho (2011b) suggest that the apparent sloppy interpretation of (8B) is in fact another instance of sloppy-like

readings that can be obtained on a par with (9).

(9) Yenghi-to ttohan sensayngnim-ul conkyengha-n-ta.
Y.-also also teacher-Acc respect-Pres-Dec
'Yenghi respects teachers, too.'

Note that the interpretation of (9) is not exactly identical to that of (10).

(10) Yenghi-to ttohan sey pwun-uy sensayngnim-ul conkyengha-n-ta.
Y.-also also three Cl-Gen teacher-Acc respect-Pres-Dec
'Yenghi respects three teachers, too.'

Under this particular context, the utterance like (9) can be understood as (10). We suggest that the reading (10) is equivalent to the "explicature" of (9).[4] According to the relevance theory (Sperber & Wilson 1986), in the recovery of the explicature, there are three pragmatic processes involved: disambiguation, reference assignment and enrichment. With these pragmatic adjustments, (9) can yield the interpretation like (10) 'Yenghi respects three teachers'. Given that the reading is pragmatically determined, it is cancellable.[5] The following examples support our claim.

(11) A: Chelswu-nun sey pwun-uy sensayngnim-ul conkyengha-n-ta.
C.-Top three Cl-Gen teacher-Acc respect-Pres-Dec
'Chelswu respects three teachers.'

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[4] We thank Seungho Nam (p.c.) for discussing the pragmatic issue in details. He has brought the term "explicature" to our attention for our purposes. All misunderstandings for our adaptation, however, are solely ours.

[5] According to Sperber & Wilson (1986:182), an explicature is a combination of linguistically encoded and contextually inferred conceptual features. Consider (i-ii):

(i) a. He is meeting a woman this evening.
b. He is meeting a woman [who is not his wife, mother, or sister] this evening.
(ii)a. I have had breakfast.
b. I have had breakfast [today] (Agerri & Korta 2004:15)

(ib) and (iib) are the explicature of (ia) and (iia), respectively. (ib) and (iib) are the development of the logical form encoded by the utterance or the result of the process of the reference assignment and enrichment to the logical form.

B: Yenghi-to ttohan conkyengha-nuntey twu pwun-ul conkyengha-y.
Y.-also also respect-but two Cl-Acc respect-Dec
'Yenghi respects, too, but (she) respects two teachers.'

(12) Yenghi-to ttohan sensayngnim-ul conkyengha-nuntey
Y.-also also teacher-Acc respect-but
twu pwun-ul conkyengha-y.
two Cl-Acc respect-Dec
'Yenghi respects teachers, too but (she) respects two teachers.' .'

As shown in (11B) and (12), the explicature reading of 'Yenghi respects three teachers.' is cancellable, which is captured by our *pro* analysis, but not by DP ellipsis analysis. Note that under the DP ellipsis analysis, (8B) is semantically identical to (10). However, in the case of (10), the reading of 'Yenghi respects three teachers' is not cancellable, as shown in (13) (# indicates semantic ill-formedness).[6]

(13) #Yenghi-to ttohan sey pwun-uy sensayngnim-ul
Y.-also also three Cl-Gen teacher-Acc
conkyengha-nuntey twu pwun-ul conkyengha-y.
respect-Pres-but two Cl-Acc respect-Dec

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[6] We assume that unlike the null argument constructions, fragments such as (iB) are derived from movement of remnants followed by PF-deletion.

(i) A: Chelswu-nun sey pwun-uy sensayngnim-ul conkyengha-n-ta.
C.-Top three Cl-Gen teacher-Acc respect-Pres-Dec
'Chelswu respects three teachers.'
B: Yenghi-to.
Y.-also
'Lit. Yenghi, too.'

Unlike the readings in null argument constructions, we consider the sloppy reading observed with the fragment as genuine sloppy reading. The contrast between (11B) and (ii) supports our claim.

(ii) Yenghi-to. #kulentey Yenghi-nun twu pwun-uy sensayngnim-ul conkyengha-y.
Y.-also but Y.-Top two Cl-Gen teacher-Acc respect-Pres-but
'Yenghi respects three teachers, too, but (she) respects two teachers .'

As shown in (ii), in the case of fragments, the sloppy interpretation is not cancellable, which indirectly supports the analysis that fragments in Korean are derived through ellipsis operation unlike null argument constructions that are discussed in the text.

'Yenghi respects three teachers, too, but (she) respects two teachers.'

Thus, the contrast between (11B) and (13) strengthens our *pro* analysis of argument ellipsis in (8B).[7]

The second environment where an apparent sloppy reading arises is when the antecedent clause contains a universal quantifier. Consider (14).

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[7] A similar phenomenon is observed with examples containing a reflexive possessor, as shown in (i).

(i) A: John-un caki kwa haksayng-ul manna-ss-ta.
J.-Top self department student-Acc meet-Pst-Dec
'John met students of his own department.'
B: Yenghi-to ____ manna-ss-ta.
Y.-also meet-Pst-Dec
'Yenghi met, too.'

(iB) can have the interpretation like 'Yenghi met students of her own department'. This reading too is equivalent to the sloppy-like reading induced by (ii).

(ii) Yenghi-to haksayng-ul manna-ss-ta.
Y.-also student-Acc meet-Pst-Dec
'Yenghi met students.'

In (iB) and (ii), the sloppy(-like) reading of 'Yenghi met students from her own department' is cancellable as shown in (iii) since it is pragmatically invoked as an explicature.

(iii) a. Yenghi-to ____ manna-ss-nuntey talun kwa haksayng-ul manna-ss-e.
Y.-also meet-Pst-but, different department student-Acc meet-Pst-Dec
'Yenghi met, too, but (she) met students of other departments.'
b. Yenghi-to haksayng-ul manna-ss-nuntey talun kwa haksayng-ul manna-ss-e.
Y.-also student-Acc meet-Pst-but, different department student-Acc meet-Pst-Dec
'Yenghi met students, too, but (she) met students of other departments.'

Note that the DP ellipsis analysis for (iB) is untenable since the genuine sloppy reading is not cancellable unlike (iiia):

(iv) #Yenghi-to caki kwa haksayng-ul manna-ss-nuntey talun kwa
Y-also self department student-Acc meet-Past-but, different department
haksayng-ul manna-ss-e.
student-Acc meet-Pst-Dec
'Yenghi met students of his own department, too, but (she) met students of other departments.'

(14) A: Cheli-ka nwukwuna cohaha-y.
Cheli-Nom whoever like-Dec
'Cheli likes everyone.'
B: Tongswu-to ___ cohaha-y.
T.-also like-Dec
'Lit. Tongswu likes, too.'

Lee & Kim (2010) point out that sloppy reading is obtained in (14B); (14B) can have the interpretation that Tongswu likes the people who are different from the ones that Cheli likes. They further indicate that sloppy reading is not available when the null object is replaced by an overt pronoun, as shown in (15a), which, they argue, indicates that the *pro* analysis of (14B) is not tenable.

(15) a. Tongswu-to ku-lul cohaha-y.
T.-also he-Acc like-Dec
'Tongswu likes him, too.'
b. Tongswu-to ku-tul-ul cohaha-y.
T.-also he-Pl-Acc like-Dec
'Tongswu likes them, too.'

Ahn & Cho (2011b), however, propose that the *pro* in (14B) is not equivalent to the singular pronoun *ku-lul* 'he-Acc', as in (15a), but must be a counterpart of the plural pronoun *ku-tul-ul* 'he-Pl-Acc' as shown in (15b) where sloppy-(like) reading can be obtained. Hence, our *pro* analysis can be maintained in this case too.

Interestingly, Kang (2009:6) indicates that overt singular pronoun *ku* 'he' in Korean can never induce sloppy interpretation, as shown in (16), due to the same restriction prohibiting a bound variable interpretation of *ku* 'he' as shown in (17).[8]

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[8] Kang (2009:7) also indicates that the overt singular pronoun *kunye* 'she' doesn't allow sloppy-like interpretation, either:

(i) Motun sonye-ka kunye-ka ihasenyem-ey kely-ess-ta-ko sayngkakhay-ss-ko
every girl-Nom she-Nom mumps have-Pst-Dec-C think-Pst-C
ku sensayngnim-to kule-hay-ss-ta.
the teacher-also so-do-Pst-Dec
'Every girl thought that she had the mumps, and the teacher did too.'

(16) John$_i$-i ku$_i$-uy emeni-lul miweha-ko Bill-to kule-ha-ta.
J.-Nom he-Gen mother-Acc hate-C Bill-also so-do-Dec
'John hates his mother and Bill does, too.'
a. (sloppy) *Bill is an x such that x hates x's mother.
b. (non-sloppy) Bill is an X such that x hates John's mother.

(17) *Motuni$_i$-ka John-i ku$_i$-lul piphanhay-ss-ta-ko malhay-ss-ta.
everyone-Nom J.-Nom he-Acc criticize-Pst-Dec-C say-Pst-Dec
'Everyone said that John criticized him.'

It seems that with the help of the plural suffix *tul*, sloppy interpretation arises in (15b), which reminds us of Kang's (2011) claim that the plural suffix *tul* semantically functions both as singular (a bound variable reading) and plural (a group reading and mixed reading). Given that only plural overt pronouns can be interpreted as bound variables in Korean, the counterpart of the bound variable *pro* which can be interpreted as a universal quantifier in (14B) should be the plural pronoun in (15b).[9]

The third environment in which seemingly sloppy reading arises is the one where the antecedent contains a reflexive possessor and it denotes group or distributional entities, as noted in Saito (2007:5) (here we provide Korean counterparts of Japanese examples given in Saito 2007 with slight modification).

(18) A: Sensayngnim-un motun il haknyen haksayng-eykey
teacher-Top all first grader student-Dat
caki-uy kong-ul chakey ha-yess-ta.
self-Gen ball-Acc kick make-Pst-Dec
'The teacher let all the first-graders kick their own balls.'

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[9] Kang (2011:16) independently observes that the Korean plural pronoun *ku-tul* 'they', but not the singular pronoun *ku* 'he', can induce group reading and bound variable reading, as shown in (i).

(i) a. *[enu bes hoysana$_i$] [ku$_i$]-uy hoysa-lul chwuchenhay-ss-ta.
every bus company he-Gen company-Acc recommend-Pst-Dec
'Every bus company recommended its company.'
b. [enu bes hoysana$_i$] [ku-tul$_i$]-uy hoysa-lul chwuchenhay-ss-ta.
every bus company he-Pl-Gen company-Acc recommend-Pst-Dec
'Every bus company recommended their company.'

B: i haknyen haksayng-eykey-to ___ chakey ha-yess-ta.
second grader student-Dat-also kick make-Pst-Dec
'Lit. she/he also let the second-graders kick.'

Note that a sloppy reading 'she/he also let the second-graders kick their own balls.' seems to be possible in (18B). Saito (2007) further indicates that the sloppy reading is not obtained if the missing argument is replaced by an indefinite argument contra Hoji (1998).

(19) I haknyen haksayng-eykey-nun kong-ul chakey ha-yess-ta.
second grader student-Dat-Top ball-Acc kick make-Pst-Dec
'She/he also let the second-graders kick a ball.'

Saito notes that the Japanese counterpart of (19) neither yields sloppy reading nor sloppy-like reading but simply means that the teacher let the second-graders kick balls. It seems that the same is true for Korean.

Note, however, that in contrast to (19), the sloppy-like interpretation seems to be possible with a plural noun, as shown in (20).

(20) i haknyen haksayng-eykey-to kong-tul-ul chakey ha-yess-ta.
second grader student-Dat-also ball-Pl-Acc kick make-Pst-Dec
'She/he also let the second-graders kick balls.'

In other words, as a result of pragmatic processes like disambiguation, reference assignment, and enrichment, (20) may have the sloppy-like reading that the teacher also let the second-graders kick their own balls.[10] Then, (20) may be a possible counterpart of (18B) when the missing object is pronounced.[11] Thus, under our

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10 This reading which we have termed explicature is also cancellable on a par with other sloppy-like readings pragmatically determined, as shown in (i).

(i) i haknyen haksayng-eykey-to ___ chakey ha-yess-ta. kulentey
second grade student-Dat-also kick make-Past-Dec. but
nam-uy kong-ul chakey hay-ss-ta.
other people's ball-Acc kick make-Pst-Dec
'She/he also let the second-graders kick balls, but she/he let them kick other people's balls.'

11 An alternative possibility is that the missing object is pronounced as a plural pronoun, as in (i).

analysis of *pro*, the missing argument in (18B) is equivalent to plural arguments like *kong-tul-ul* 'ball-Pl-Acc' or *kukes-tul-ul* 'it-Pl-Acc'. Our proposal is partially in line with Kang's (2011:17) claim that the plural suffix *tul* has at least four functions: one for 'general plurality' (ordinary plural), one for acting as a singular denoting expression (a bound variable reading), one for 'x and others' (overlapping reference), and one for 'all x' (a group reading). We assume that the sloppy interpretation in (20) is closely related to the plural *tul* which the head noun contains.

Fourth, Lee & Kim (2010) note that sloppy interpretation arises when the antecedent is a negative polarity item.[12]

(21) A:na-nun amwuto an manna-ss-e.
I-Top anyone neg meet-Pst-Dec
'I did not meet anyone.'
B:na-to ___ an manna-ss-e.
I-too neg meet-Pst-Dec
'I did not meet anyone, either.'

(i) kulena, i haknyen haksayng-eykey-nun kukes-tul-ul chakey ha-yess-ta.
but second grader student-Dat-Top it-Pl-Acc kick make-Pst-Dec
'But she/he let the second-graders kick them.'

To our ears, this sentence also seems to yield the sloppy-like reading like (16B) and (18).

One might point out the number disagreement between the singular noun *kong-ul* 'ball-Acc' and the plural pronoun *kukes-tul-ul* 'it-Pl-Acc'. As pointed out by Cho (1996), number agreement is sometimes not obligatory in Korean, as shown in (ii).

(ii) a. John-i caki-ka iky-ess-ta-ko malhay-ss-ta.
John-Nom self-Nom win-Pst-Dec say-Pst-Dec
'Lit. John said that self won.'
b. John-i caki-tul-i iky-ess-ta-ko malhay-ss-ta.
John-Nom self-Pl-Nom win-Pst-Dec say-Pst-Dec
'Lit. John said that selves won.'

In (iia), the singular reflexive form *caki* is used and the sentence is interpreted as 'John said John won'. In (iib), the plural reflexive form *caki-tul* is used and the sentence is interpreted as 'John said that John and others won'. Either way, *caki* is properly bound by the antecedent *John* in (ii) irrespective of number agreement. We thank an anonymous reviewer for bringing this problem to our attention.

12 Here the term "sloppy interpretation" is used in non-technical (loose) sense to cover this case. The precise definition of it awaits further research.

Note that the *amwuto* 'anybody' (21A) can be paraphrased as *salam-tul-ul amwuto* 'people-Pl-Acc anybody' in Korean. Thus, NPIs in Korean can be analyzed as a complex nominal; namely, head noun + NPI. The property of the head noun is determined by an appropriate context that the NPI is employed. The default head N can be *salam-tul-ul* 'people-Pl-Acc'.

We further argue that the missing object in (21B) is roughly equivalent to the default head N *salam-tul-ul* 'people-Pl-Acc'. Then, the interpretation of (21B) can be semantically similar to ‘I didn’t meet anyone’. Thus, it is not necessary to assume the NPI *amwuto* deletion to account for the seemingly sloppy reading in (21B); it is indeed another instance of sloppy-like readings in our sense.

Fifth, an apparent sloppy interpretation of missing nominal is observed with the deletion of a reflexive itself, as shown in (22). As pointed out by Um (2011), the seemingly sloppy interpretation in (22B) can be problematic under *pro* analyses of null arguments.

(22) A: Chelswu-ka casin-ul pinanhay-ss-ta.
C.-Nom self-Acc criticize-Pst-Dec
'Chelswu criticized himself.'
B: Yenghi$_i$-to ec$_i$ pinanhay-ss-ta.
Y.-also criticize-Pst-Dec
'Lit. Yenghi criticized, too.'

Hoji (1998) explores a similar phenomenon in Japanese.

(23) A: John-ga zibunzisin-o suisensita.
John-Nom self-Acc recommended
'John recommended himself.'
B: Bill$_i$-mo ec$_i$ suisensita.
Bill-also recommended
'Lit. Bill recommended too.'

Hoji claims that the sloppy interpretation in (23B) can be explained as sloppy-like reading which is of the same nature as the coreferential interpretation in (24B).

(24) A:John-ga zibunzisin-o suisensita.
John-Tom self-Acc recommended
'John recommended himself.'
B:$Bill_i$-mo $Bill_i$-o suisensita.
Bill-also Bill-Acc recommended
'$Bill_i$ recommended $Bill_i$, too.'

Hoji (1998:138) further argues that Principle B of the Binding theory is not violated in (23B) since bound variable anaphora is not involved here, following the spirit of Reinhart (1983), according to which the (syntactic) binding theory, namely, the Principle B, concerns only the distribution of bound variable anaphora, and not the possibilities of coreference.

Kim (1999), following Huang (1987), further indicates that coreference between subject and null object doesn't occur in the out-of-the-blue context as shown in (25).

(25) Yenghi-ka _____ pinanhay-ss-ta.
Y.-Nom criticize-Pst-Dec
'Lit. Yenghi criticized.'

Apparently, (25) doesn't seem to have the interpretation like (26) when it is uttered discourse-initially in neutral contexts.

(26) Yenghi-ka $Yenghi_i$-lul/$casin_i$-ul_i pinanhay-ss-ta.
Y.-Nom Y-Acc/self-Acc criticize-Pst-Dec
'Yenghi criticized herself'

However, although the coreference between subject and null object in (25) is not a preferred reading, it is not impossible. The case like (27) supports our claim.

(27) A: Yenghi-ka _____ pinanhay-ss-ta.
Y.-Nom criticize-Pst-Dec
'Lit. Yenghi criticized.'
B: Nwukwu-lul?
who-Acc

'Who did Yenghi criticize?'
A: Casin-ul.
self-Acc
'Yenghi criticized herself.'

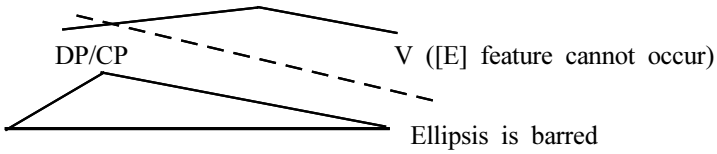
As shown in (27), even in the out-of-the-blue context, the coreference between subject and null object is possible if the reading is forced in the relevant context.

3. Conceptual Issues of Null Arguments

Our *pro* analysis of null arguments is based on Ahn & Cho (2009, 2010). Ahn & Cho (2009, 2010) propose that ellipsis of DP and CP is not possible since they are not complements of functional heads such as C, T, and D which can bear an [E] feature (cf. Merchant 2001) and that apparent DP and CP ellipsis in Korean are all instances of null pronoun, the so-called *pro*.

Since DP and CP are arguably complements of a theta-role assigning lexical category like V which cannot have an [E] feature, DP or CP ellipsis cannot occur.

(28) *



The ellipsis feature [E] instructs the post-PF phonological interpretative component not to parse its complement. Since the lexical V cannot have the [E] feature by assumption, DP/CP ellipsis isn't possible. Thus, the CP ellipsis in (29B), for example, is ruled out correctly on a par with the absence of DP ellipsis that we have discussed in the previous section.

(29) A: na-nun [Yenghi-ka Toli-lul salangha-n-ta-ko] sayngkakha-n-ta.
I-Top Y.-Nom T.-Acc love-Pres-Dec-C think-Pres-Dec
'I think Yenghi loves Toli.'

B: *na-to __ sayngkakha-n-ta.
I-also think-Pres-Dec
'Lit. I also think.'

Ahn & Cho (2009, 2010, 2011b,c) further indicate that English does not allow CP ellipsis either on a par with the absence of DP ellipsis (recall (2)).[13]

(30) *John says [$_{CP}$ that she is a genius], but Bill doesn't think ___.

Under our analysis, the absence of CP and DP ellipsis can be accounted for in both languages in a unified way.

Furthermore, Ahn & Cho's (2009, 2010, 2011b,c) *pro* analysis is conceptually superior to DP ellipsis analyses. In order to account for the presence and absence of argument ellipsis in Japanese and English, Saito (2007) proposes an agreement parameter. He suggests that argument ellipsis or radical pro-drop is possible only in languages without obligatory agreement. Saito (2007:225) further indicates that *pro* is needed independently of argument ellipsis in Japanese. For example, he notes that the following sentence in Japanese can be uttered without any relevant discourse when the teacher comes into the classroom:

(31) *pro* kita.
came
'She/he came.'

If he is right, two independent parameters are at least required for the difference between English and Japanese/Korean: namely, agreement parameter and pro-drop parameter; the agreement parameter is responsible for argument ellipsis and the latter for pro-drop, respectively.

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13 DP ellipsis in English is ruled out as shown in the following.

(i) *John met my brother, and Mary met, too.

Note that for the missing (object) argument, *pro* option is not available in English unlike in Korean. Hence, unlike Korean, DP ellipsis is completely illicit on a par with CP ellipsis in English.

Our *pro* analysis of null arguments is conceptually simpler than his since it provides a uniform account for both cases, and desirably reduces two parameters into one (an Occam's Razor), namely, into the pro-drop parameter which is independently needed anyway in other analyses including Saito (2004, 2007).

We further indicate that the existence of sloppy reading may not be a reliable diagnostic for ellipsis phenomena *per se*. Note that even standard deep anaphora in English such as *do it* anaphora and null complement anaphora sometimes gives rise to sloppy identity interpretation for anaphora.

Hankamer & Sag (1976:392) observe that surface anaphora "VP deletion" cannot be pragmatically controlled, as shown in (32a), while deep anaphora *do it* can, as seen in (32b).

(32) a. [Hankamer attempts to stuff a 9-inch ball through a 6-inch hoop]
Sag: #It's not clear that you'll be able to.
b. [Same context]
Sag: It's not clear that you'll be able to do it.

Bach, Bresnan & Wasow (1974:611) further note that *do it* anaphora contrasts with VP deletion in the missing antecedent arguments (see also Bresnan 1971 and Hankamer & Sag 1976).

(33) a. *My father has never shoot himself with a crossbow, but my grandmother did it, and it was buried with him. [it = crossbow]
b. My father has never shoot himself with a crossbow, but my grandmother did, and it was buried with him. [it = crossbow]

(33) shows that VP deletion allows control of *it* from the missing antecedent, while *do it* anaphora can't.

Note, however, that *do it* anaphora allows sloppy interpretation as shown in (34).

(34) a. My father has never shot himself with a crossbow, but my grandfather did it in 1984, during the suicide craze.
(Bach, Bresnan & Wasow 1974:611)
b. Max hit his friend, and Oscar did it, too.

(Fiengo & May 1994:248, fn.13)

In (34a) *it* can mean 'shoot himself with a crossbow', where *himself* refers to *my grandfather* and not *my father*. In (34b), it can mean *Oscar's friend*.

Null complement anaphora such as (35) is also usually analyzed as deep anaphora (Hankamer & Sag 1976:411).

(35) a. I asked Bill to leave, but he refused.
b. Sue was attempting to kiss a gorilla, and Harry didn't approve.
c. We needed somebody to carry the oats down to the bin, but nobody volunteered.

As pointed out by Shopen (1972), it can be pragmatically controlled:

(36) a. [Indulgent father feeds baby chocolate bar for dinner]
Mother: I don't approve.
b. [Two people are distributed by loud noises of popcorn-eating in adjacent row]
One to the other: Don't you think we should complain.

Null complement anaphora furthermore cannot contain missing antecedents (Hankamer & Sag 1976:412):

(37) a. *He said that one of us had to give up his seat, so Sue volunteered, because it was too narrow for her anyway. [it = her seat]
b. *I never managed to ride a camel, but Sue succeeded, and it was the two humped variety. [it = a camel that Sue rode]

Null complement anaphora, however, sometimes allows sloppy interpretation (Houser 2010:18):

(38) Jordan$_i$ was happy to help her mom in the greenhouse, but Jacqueline$_j$ refused Ø. (Ø = to help her$_{i/j}$ mother in the greenhouse)

Thus, it seems that the availability of sloppy interpretation *per se* cannot be crucial evidence for ellipsis (or surface anaphora), and hence the putative sloppy identity interpretations for missing arguments discussed in this paper (and in the previous literature) cannot be utilized as an indicative of pure ellipsis phenomena.

For these reasons, some researchers utilize diagnostics of sloppy interpretation for ellipsis phenomena limited to non-anaphoric exemplars including quantifiers, NPIs and the like (cf. Takahashi 2008, Lee & Kim 2010, Um 2011). Thus, regardless of our sloppy-like reinterpretations of apparent sloppy readings as observed in the previous literature, the whole picture of "sloppy reading" issues on null arguments in Korean and Japanese is far from empirically conclusive, and hence should be more carefully treated.

4. Concluding Remarks

We have shown that apparent sloppy interpretations of null argument phenomena in Korean are well accounted for under *pro* analyses. More specifically, by exploring the five cases where sloppy(-like) interpretation is observed, we have shown how far the possible interpretation of *pro* is stretched. First, when the antecedent noun includes either a reflexive possessor or a numeral quantifier, *pro* is interpreted as a bare nominal in Korean. *Pro* in this case functions on a par with the indefinite in English. Then, with relevant pragmatic adjustments, the apparent sloppy readings can be accommodated under sloppy-like interpretations; the sloppy-like reading is further obtained as a result of an explicature. Second, when the antecedent noun is a universal quantifier, *pro* is interpreted as a plural pronoun. We observed that only plural pronouns in Korean can be interpreted as bound-variables that can induce sloppy(-like) readings. Third, when the antecedent noun includes a reflexive possessor and it denotes plural entities, the sloppy(-like) interpretation occurs on a par with a bare plural noun or a plural pronoun. Again, the sloppy-like reading can be obtained through pragmatic strategies, namely, explicature. Fourth, when the antecedent is a negative polarity item, the sloppy-like interpretation arises when the missing argument, i.e. *pro*, is roughly equivalent to the bare plural noun that heads the complex nominal containing the NPI. We suggest that it is not the NPI but the head nominal modified by it that the *pro* refers to, hence another instance of

sloppy-like readings. Fifth, when the antecedent itself is a reflexive pronoun, the seemingly sloppy interpretation is just another instance of coreference phenomena as indicated in Hoji (1998).

We have further shown that our *pro* analysis is superior to ellipsis analyses not only in empirical perspectives but also in conceptual respects: (i) our *pro* analysis can offer a uniform account for the absence of DP and CP ellipsis in English and Korean; (ii) the sole *pro*-drop parameter can correctly capture the presence or absence of null argument phenomena in Korean and English.

We have also noted that sloppy identity interpretation is a neither necessary nor sufficient condition for ellipsis analyses of null arguments, in particular, when anaphoric interpretation is involved: Even certain deep anaphora in English which doesn't usually pattern with standard ellipsis exhibits sloppy reading in some anaphoric contexts. Further research is required to clarify the nature of sloppy identity interpretations as one of useful diagnostics for ellipsis phenomena (see Houser 2010 for further discussion).

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