10.15860/sigg.33.1.202302.75.

# A Short Note on Inclusive and Exclusive Plurals in Korean*

**Michael Jonathan Mathew Barrie** · Éric Mathieu*****
**(Sogang University · University of Ottawa)**

Barrie, Michael Jonathan Mathew and Mathieu, Éric. 2023. **A Short Note on Inclusive and Exclusive Plurals in Korean.** *Studies in Generative Grammar,* 33-1, 75-92. The aim of this short article is to give a comprehensive analysis of number in Korean, adding a novel observation about the interpretation of plurals in that language. Based on the new data, our proposal is that number is distributed along the nominal spine with different effects depending on the type of functional head (and semantic features) it is associated with. In particular, we propose that number in Korean is associated with two number projections, NumP1 and NumP2, (see Watanabe 2010 for Japanese, Vazquez Rojas Maldonado 2012 for Purépecha (isolate, tsz), Dali and Mathieu 2021 for Tunisian Arabic (Afro-Asiatic, aeb)). By shedding light on the distinction between inclusive and exclusive plurals in Korean and the relationship between definiteness and plurality, we contribute to the current debate related to the distribution of the Korean plural.

*Keywords*: plurality, number, inclusive/exclusive plurals, NumP, general number

## 1. Introduction

The aim of this short article is to give a comprehensive analysis of number in

* We wish to thank the Korean speakers who provided data for our investigation. Thanks also go to Kyumin Kim for helpful discussions on plurality in Korean. This work was supported by Global Research Network program through the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2017S1A2A2039972).

** First Author, Professor
*** Corresponding Author, Professor


ⓒ 2023 by the Korean Generative Grammar Circle

www.kci.go.kr

Korean, adding a novel observation about the interpretation of plurals in that language. Based on the new data, our proposal is that number is distributed along the nominal spine with different effects depending on the type of functional head (and semantic features) it is associated with. In particular, we propose that number in Korean is associated with two number projections, NumP1 and NumP2, (see Watanabe (2010) for Japanese, Vazquez Rojas Maldonado (2012) for Purépecha (isolate, tsz), Dali and Mathieu 2021 for Tunisian Arabic (Afro-Asiatic, aeb)). The contrast we observe is the following. Non-specific plurals (in existential constructions) exhibit inclusive plural in downward-entailing contexts, while specific plurals exhibit either inclusive or exclusive plural in downward-entailing contexts. Following Dali and Mathieu we suggest this distinction can be captured by associating the plural suffix with either NumP2 (for exclusive plural) or NumP1 (for inclusive plural). By shedding light on the distinction between inclusive and exclusive plurals in Korean and the relationship between definiteness, specificity, and plurality, we contribute to the current debate related to the distribution of the Korean plural.

We begin with an illustration of the phenomenon under discussion. The usual interpretation of a plural marker as understood by most lay-people is a cardinality of two or greater (in languages that contrast only singular and plural). Thus, the following sentence is true only if there are two or more dogs in the park.

(1) There are dogs in the park.

The following question can be answered with the affirmative even if there is only one dog in the park.

(2) Are there dogs in the park?

Example (1) illustrates exclusive plural as it excludes a singular interpretation. Example (2) illustrates inclusive plural as it includes a singular interpretation. We take up in section 3 the conditions that license the inclusive and exclusive plural interpretation. For now, we show two similar examples in Korean that differ with respect to this interpretation. Consider the following examples.[1]

[1] All Korean examples are given in Yale romanization. Standard Leipzig glossing is used throughout with the following three additions: (i) CI represents a morpheme with the form *ci* of unclear function. It appears in certain negative constructions. (ii) THV stands for 'thematic vowel' and is a vowel augment on the verb stem when certain auxiliaries are present. The term here is borrowed

www.kci.go.kr

(3) Theypul-ey sakwa-tul iss-ni?[2]
table-on apple-PL be-Q
'Are there apples on the table?'

(4) Cwumal-ey nonmwun-tul ilk-ess-e?
weekend-on article-PL read-PST-INFORMAL
'Did you read (any of the) articles over the weekend?'

Example (3) readily allows an inclusive reading. Answering "yes, one" is a perfectly acceptable response. With example (4), however, the speakers we consulted did not feel that "yes, one" is an acceptable response. In other words, an exclusive plural reading is strongly preferred here. (In the full discussion below we note that some speakers felt that an affirmative answer to (4) is truthful only if the addressee has read all the articles in question, not just a plural subset. We address this issue in the text below.) It is this point of variation that, to the best of our knowledge, has not been addressed in the literature before. This paper fills that lacuna and suggests a potential analysis for inclusive and exclusive plural in Korean. Furthermore, as (3) and (4) are both downward-entailing contexts, we argue that the semantic-pragmatic approach (Sauerland 2003; de Swart & Farkas 2010; Sağ 2022) cannot explain this contrast.

The remainder of this paper is structured as follows. Section 2 discusses relevant previous literature on the Korean plural marker *-tul*. Section 3 introduces the concept of inclusive and exclusive plural in detail and gives examples from Korean. It also discusses the environments in which these two kinds of plural are found. Section 4 proposes an analysis for the facts presented in section 3. Section 5 is a brief conclusion.

## 2. Background: the Korean Plural Marker *-tul*

The Korean morpheme *-tul* has been the subject of much discussion in the

from thematic vowels in Romance; however, they differ in that the thematic vowel in Romance is largely classificatory, while the thematic vowel in Korean is the result of a historical vowel harmony process in Korean. (iii) INFORMAL indicates informal style.

[2] A reviewer notes that all of our examples, while well-formed, do not have case markers. We do this to extract away from the interaction between case-marking and specificity. We leave to future research how case interacts with the observations here. As is well known, *-tul* can indicate plurality elsewhere in the clause. We have carefully controlled for this in the contexts for the examples discussed. This is particularly relevant in example (22) below.

www.kci.go.kr

generative literature. For convenience we will refer to it as the "plural marker", without prejudice to its analysis (though see Park 2008; 2009).

There is considerable disagreement in the literature as to the distribution of the Korean plural marker. Kim & Melchin (2018), for example, report that it does not attach readily to nouns denoting animals (5c), but is fine with human and inanimate nouns (5a, b). They cite Kang (2007), who gives quantitative data on the rarity of -tul with non-human animate nouns.[3]

(5) a. salam-tul sey myeng (Kim & Melchin, 2018: 13-14)
people-PL three CL
'four people'
b. chayk-tul sey kwen
book-PL three CL
'three books'
c. ?? kilin-tul sey mali
giraffe-PL three CL
('three giraffes')

Other sources, however, observe no difference in the acceptability of the plural marker based on the kind of noun it attaches to (Park 2022). The examples in (6) are considered grammatical.

(6) a. haksayng-tul b. cha-tul (Park 2022: 148)
student-PL car-PL

c. koyangi-tul d. mul-tul
cat-PL water-PL

e. sakwa-tul f. kulium-tul
apple-PL longing-PL

However, it must be noted more generally that the Korean plural marker is often described as an optional marker of plurality, as suggested by the following examples. The lack of a plural marker gives rise to a general number interpretation

[3] Five native speakers of Korean were consulted for this study, the oldest of whom is 42. All five speakers were born and raised in Korea. One spent two years in the US in his childhood, the others spent their entire childhoods in Korea. One Korean speaker we consulted for this study strongly prefers *-tul* with human nouns only, the others allow *-tul* on all nouns.

www.kci.go.kr

in the sense of Corbett (2000) and Rullmann & You (2006).

(7) a. sakwa iss-ta
apple be-DECL
'There is an apple./There are apples.'
b. sakwa-tul iss-ta
apple-PL be-DECL
'There are apples.'

As Kim and Melchin (2018) note, whereas there appears to be a strong link between plural marking and definiteness in many languages with optional plural marking (Li 1999; Ghomeshi 2003), this is not the case in Korean. Kim and Melchin (2018) argue, based on data similar to (7b) above, that -tul does not entail a definite interpretation.

What has been observed, however, is that -tul is obligatory in definite nominal phrases if a plural interpretation is intended (B.-M. Kang 1994; Y.-W. Kim 2009). Contrast the following examples with (7) above. If the plural marker is absent, only a singular interpretation is possible.

(8) a. ku haksayng-i kongpwu-ha-n-ta
DEM student-NOM study-do-PRS-DECL
'That student is studying.' (singular interpretation only)
b. ku haksayng-tul-i kongpwu-ha-n-ta
DEM student-PL-NOM study-do-PRS-DECL
'Those students are studying.'

The descriptive generalization, then, is that number marking is obligatory for definite nominal phrases (or at least nominal phrases modified by a demonstrative) and optional for indefinite nominal phrases.[4]

The following section discusses an additional property of number, which, to the best of our knowledge, has not been discussed extensively in the literature on Korean number. Specifically, we examine a property known as inclusive and exclusive plurality, in which inclusive plurals can include a singular reading and exclusive plurals exclude it.

[4] This pattern is similar to Blackfoot (Algic, bla), in which number marking is obligatory in definite DPs but optional in indefinite DPs (K. Kim et al. 2017). Corbett (2000) also notes that in Aari (Afro-Asiatic, aiw) only definite nouns inflect for number and case. We leave to future research whether this is a universal trend.

www.kci.go.kr

## 3. Inclusive and Exclusive Plurals

### 3.1. Properties of Inclusive and Exclusive Plurals

The semantic literature on number has identified an interesting aspect of number marking that has played a smaller role in the syntactic literature. To wit, some uses of the plural have a so-called inclusive reading, defined as follows.

(9) a. Inclusive plural - includes a singular interpretation
b. Exclusive plural - excludes a singular interpretation

Typical examples illustrating these kinds of plural marking in English are as follows. Example (10a) shows an example of inclusive plural. A sign stating "no dogs allowed" does not indicate a prohibition against a plurality of dogs. Having even just one dog is a violation of this rule. Example (10b) shows the more well known exclusive plural, which refers exclusively to a plurality of dogs. Crucially, (10b) would be false if John saw only one dog.

(10) a. No dogs allowed. (prohibits possession of even one dog)
b. John saw the dogs. (true only if there is more than one dog that John saw)

The semantic literature typically capitalizes on the fact that the inclusive plural is licensed only in downward entailing contexts (Sauerland 2003; de Swart & Farkas 2010; Sağ 2022). They use this to argue for a semantic-pragmatic explanation of number in which a singular reading is excluded in examples such as (10b) through a Gricean scalar implicature rather than by a morphosyntactic explanation of number.[5] The logic goes as follows. Assume a uniform denotation of PL that includes both atoms and groups of atoms (their joins). Consider the following example.

(11) There are dogs in the park.

Under the assumption above, this is consistent with a reading in which there is

[5] A reviewer reminds us of the relevance of Heim's (1991) *Maximize Presupposition!* especially in regards to the notion of the expectation of plurality discussed below. Since we ultimately reject a semantic analysis of the facts we do not pursue this idea further. We leave the semantic implications to future research.

www.kci.go.kr

a plurality of dogs in the park, but also one in which there is a single dog in the park. However, the following statement offers the stronger meaning of there being one dog in the park.

(12) There is a dog in the park.

The assumption is that if the speaker wished to convey this stronger statement, they would have done so. The hearer, then, draws a Gricean implicature that (11) refers only to a plurality of dogs. Consider now the negation of (11), which is a downward entailing context.

(13) There aren't any dogs in the park.

The singular version in (14), now, is a weaker version of (13) because (14) is true in a wider set of contexts than (13) is. In other words (12) entails (11) and (13) entails (14).

(14) There isn't exactly one dog in the park.

Since (14) is a weaker statement, there is no impetus to infer a Gricean implicature to rule out the potential singular reading of (13). Thus, the hearer assumes that (13) is false even if a single dog is present in the park (see Sağ 2022 for more details and the most recent account of this proposal).

Recently, however, Dali and Mathieu (2021) have pin-pointed some problems with the semantic-pragmatic approach illustrated above. If the exclusive plural reading is merely in implicature rather than an entailment, then it should be able to be cancelled. They offer the following examples showing that the putative implicature cannot easily be cancelled (Dali & Mathieu 2021: 14).

(15) a. Some of the professors left. In fact, all of them did.
b. Mary bought books. # In fact, she bought exactly one.

Dali and Mathieu also note that inclusive plurals can be found in some upward-entailing contexts, which is a puzzle for the semantic approach. They note the following example from Farkas and de Swart (2010), among others. The statement in (16) is true even if a single mouse is found to be dwelling in the house.[6]

www.kci.go.kr

(16) [Speaker walks into basement, and notices mouse droppings]:
Arghh, we have mice!

Dali and Mathieu instead offer a morpho-syntactic analysis of inclusive and exclusive number based largely on Tunisian Arabic. The structure they propose is the following. Crucially, the NumP projection (Ritter 1991; 1992) is split into two projections.

(17) DP > NumP2 > NumP1 > nP > √

They propose that the inclusive plural is encoded on Num1, while the exclusive plural is encoded on Num2. The next section describes the distribution of inclusive and exclusive plurals in Korean.

### 3.2. Inclusive and Exclusive Number in Korean

As mentioned in the background section above, inclusive and exclusive plural interpretations have not received much attention, at least in the generative literature. In an upward-entailing context plural marked nouns in Korean are interpreted specifically as plurals. Recall that while this is often the case for English, it is not always so. The following sentence is true if there are two or more apples on the table and false if there is only one apple on the table.

(18) Theypul-ey sakwa-tul iss-ta
table-on apple-PL be-DECL
'There are apples on the table.'

Consider, now, downward-entailing contexts, in which an inclusive plural interpretation is typically found in many languages. As is found in other languages, an inclusive plural interpretation is found. Consider the following example.

(19) Theypul-ey sakwa-tul iss-ni?
table-on apple-PL be-Q
'Are there apples on the table?'

[6] See Dali and Mathieu (2021) for more examples of inclusive plural in upward-entailing contexts and for relevant discussion. Chapter 7 of Corbett (2000) also provides such examples from other languages.

www.kci.go.kr

For the speakers who accepted this sentence (see footnote 2), they replied that an affirmative answer is possible even if there is only one apple on the table. Specifically, an answer such as "yes, one" is possible, while an answer such as "no, one" is not possible.

The following control shows that a general number interpretation holds without the plural marker. Speakers generally detect very little difference in meaning between (19) and (20).

(20) theypul-ey sakwa iss-ni?
table-on apple be-Q
'Are there apples on the table?'

An affirmative answer is permitted if there is a single apple on the table or if there is a plurality of apples on the table. The following example illustrates the same principle. All speakers we consulted confirmed that an affirmative answer is acceptable even if there is only one child in the park.

(21) kongwen-ey ay-tul iss-ni?
park-at child-PL be-Q
'Are there children at the park?'

Before continuing we wish to clarify the difference between general number and inclusive plurals here. The most immediate difference is that general number in Korean (and in general cross-linguistically) is unmarked for number, inclusive plurals, as the name implies, appear with an overt plural marker. Inclusive plurals may show sensitivity to entailment directionality. In Korean, the data we have reviewed show that inclusive plurals are found only in downward-entailing contexts. General number shows no such sensitivity.

We now consider various environments in which only an exclusive plural interpretation holds in downward-entailing contexts. Consider the following example.

(22) context: The speaker is having a discussion with one fellow classmate in a graduate class in which a number of journal articles have been assigned for reading. The speaker asks to the one classmate the following question.

Cwumal-ey nonmwun-tul ilk-ess-e?
weekend-on article-PL read-PST-INFORMAL
'Did you read (any of the) articles over the weekend?' [+specific]

www.kci.go.kr

For speakers who accept this as grammatical, it presupposes a specific set of articles to read (say for a graduate seminar). This question cannot be used to ask if the addressee has read any non-specific articles on the weekend. Speakers were split between an affirmative answer meaning all of the papers were read or that only a plural subset of papers were read. No speaker accepted that an affirmative answer could be used if the speaker had read only one article. Thus, while no one accepts an inclusive plural reading, speakers were split between an exclusive plural reading and a universally quantified reading. Since universal quantification is not the topic of the current investigation, we set this reading aside under the assumption that it does not play a role in distinguishing between the two readings of interest–namely inclusive and exclusive plural. Example (22) crucially contrasts minimally with the following example with general number. Example (23) can be answered affirmatively even if the addressee has read only one article. Note also, there no specific set of articles is presupposed.

(23) Cwumal-ey nonmwun ilk-ess-e? [same context as (22)]
weekend-on article read-PST-INFORMAL
'Did you read (any) articles over the weekend?' [-specific]

The following example illustrates the same phenomenon. Note crucially that example (24) can be used only if the speaker has a specific set of cakes in mind, as suggested by the context. This sentence cannot be used in a context where there is no set of cakes in mind, say if the addressee simply enjoys decorating cakes and may or may not have done so recently.

(24) context: You work in a bakery and it's your job to decorate cakes once they're baked and have cooled down. It's a large establishment, so other people also have this task. In addition to decorating cakes you have other tasks, too.

kheykhu-tul teykho-ha-yess-ni?
cake-PL decorate-do-PST-Q
'Have you decorated (any of the) cakes? [+specific]

As with the previous example, speakers uniformly judged an affirmative answer to be infelicitous if only a single cake had been decorated.

Downward-entailing contexts are also found in negative sentences. The

www.kci.go.kr

following minimal pairs illustrate an exclusive plural reading.

(25) a. nonmwun-tul-un mos ilk-ess-e
article-PL-TOP NEG.MOD read-PST-INFORMAL
…hana-man ilk-ess-e
…one-only read-PST-INFORMAL
'I wasn't able to read the articles…I only read one.'
b. nonmwun-un mos ilk-ess-e
article-TOP NEG.MOD read-PST-INFORMAL
#…hana-man ilk-ess-e
…one-only read-PST-INFORMAL
'I wasn't able to read the articles #…I only read one.'

We note here that this point of variation is problematic for approaches that assume a purely semantic-pragmatic solution to the distribution of inclusive and exclusive plural. Crucially examples (19), (21), (22), (24), and (25a) are all downward-entailing; however, they differ in the availability of an inclusive and exclusive plural interpretation. Thus, the notion of downward- and upward-entailment alone cannot explain the facts here. It is true for the Korean data here exclusive plurals cannot appear in upward-entailing contexts, perhaps due to a Gricean implicature. This does not explain, however, the variation in downward-entailing contexts. Thus, a syntactic explanation must be pursued.

The astute reader may have noticed in the two examples above that there is an expectation of plurality in the question. If there is more than one article to read for a graduate seminar, the expectation or the hope is that the students will have read most or all of them. Also, if it is someone's job to decorate cakes, there is an expectation that they will decorate most or all of them.

Consider the following example, in which there is no expectation of a plural interpretation. Silkworm larvae are a common snack in Korea. Although they are small (about the size of a small grape) and thus several are typically consumed, it is not unreasonable for someone to try just one. Crucially, there is no expectation out of a sense of duty to consume more than one larva. However, as with the examples above, a specific set of larvae is presupposed.

www.kci.go.kr

(26) penteyki-tul mek-ess-ni?
silkworm.larva-PL eat-PST-Q
'Did you eat (any of the) silkworm larvae?' [+specific]

This contrasts minimally with the following example, in which no specific set of silkworm larvae is presupposed. As is expected, an affirmative answer is felicitous even if the addressee has eaten only one larva.

(27) penteyki mek-ess-ni?
silkworm.larva eat-PST-Q
'Did you eat (any) silkworm larvae?' [±specific]

Thus, an exclusive plural reading is found in the following environments.

(28) a. specific reading only
b. expectation of plurality

Recall the existential examples above from above. In example (21), for instance, there is a clear expectation of plurality as one expects several children to be playing in the park. Nevertheless, an affirmative answer was shown to be felicitous even if only one child is in the park. In the following example there is also a clear expectation for a plural interpretation. Nevertheless, an affirmative answer is felicitous even if there is only one student in class.

(29) swuep-ey haksayng-tul iss-ni?
class-at student-PL be-Q
'Are there students in class?'

Before summarizing this section, we discuss further the role of specificity in the data presented here. In arguing against the link between definiteness and -tul, Kim and Melchin (2018: 16) present the following data in which the plural-marked object is indefinite. Note, however, that the object receives a specific interpretation. The notes given after the idiomatic translations are those of Kim and Melchin.

(30) Mina-nun chayk-tul-ul ilk-ci anh-ass-ta.
Mina-TOP book-PL-ACC read-CI NEG-PST-DECL
'Minna didn't read some books.' (i.e., 'There are some books that Minna

www.kci.go.kr

didn't read.')

(31) Chelswu-nun cengchiin-tul-ul manna-ko sip-e-ha-n-ta.
Chelsu-TOP politician-PL-ACC meet-COMP want-THV-do-PRES-DECL
'There are some politicians that Chelsu wants to meet.'

To summarize this section, we note the following properties of plural marking in Korean. Number marking is obligatory in definite-marked nominal phrases. In most of the examples discussed here, plural marking entails a specific reading. In existential constructions, however, a non-specific reading is naturally available. While upward-entailing environments (declaratives) allow only exclusive plurals, downward-entailing environments (negatives and interrogatives) allow both inclusive and exclusive plurals. This, coupled with the observations above that some languages allow inclusive plurals in upward-entailing environments, poses a serious problem for the semantic-pragmatic approach to the distribution of inclusive and exclusive plurals. In the next section we suggest that the morpho-syntactic approach proposed by Dali and Mathieu (2021) may offer a better solution.

## 4. Towards an Analysis

We assume an articulated DP structure for nominals in Korean (Szabolcsi 1983; Abney 1987) along with a bipartite NumP (Dali & Mathieu 2021) as discussed above. The Num1 head is associated with inclusive number, and the Num2 head is associated with exclusive number. The structure is repeated here.

(32) DP > NumP2 > NumP1 > *n*P > √

Following a long line of research, we propose that definite and specific-indefinite nominals are full DPs, while non-specific nominals are reduced (van Geenhoven 1998; Massam 2001; Farkas & de Swart 2003; Dayal 2011; 2015; López 2012; K. Kim et al. 2017). As such, the non-specific nominals in existential constructions have either of the following structures.[7]

[7] Note that we set aside the projection of Case here, and whether there is an independent KP in Korean or not. A fuller investigation would have to take into account the interaction between Case, specificity, and the interpretation of plural marking. We leave this to future research.

www.kci.go.kr

(33) a. NumP1 > *n*P > √
b. *n*P > √

Since the bare *n*P in (33b) contains no Number projection, it is not differentiated and has general number (either a singular or plural interpretation). The NumP1 in (33a) can appear with the plural marking giving rise to a plural interpretation. Since the singular interpretation of a NumP1 without the plural marker is subsumed by a bare *n*P, there is no way to distinguish between a singularly specified NumP1 and an *n*P with general number that is being used in the context of a singular interpretation. Recall further that Num1 encodes inclusive plural, so the plural-marked argument in an existential construction will receive an inclusive plural interpretation in a downward-entailing context.

Moving now to specific and definite nominals, we assume these are full DPs. Since DP entails the presence of NumP2, which in turn encodes either a singular or plural interpretation, number marking is obligatory on such nominals. We start with definite DPs (those which contain a demonstrative). Here is example (8) repeated.

(34) a. ku haksayng-i kongpwu-ha-n-ta
DEM student-NOM study-do-PRS-DECL
'That student is studying.' (singular interpretation only)
b. ku haksayng-tul-i kongpwu-ha-n-ta
DEM student-PL-NOM study-do-PRS-DECL
'Those students are studying.'

Both of these nominal expressions are obligatorily DPs, with a NumP2 specified either as singular or plural. As in many languages, there is no overt morpheme that corresponds to the singular.

Consider now the exclusive plural, which has a specific interpretation. Note that when plural marking is absent, the nominal has a non-specific and general number interpretation.

(35) a. Cwumal-ey nonmwun-tul ilk-ess-e?
weekend-on article-PL read-PST-INFORMAL
'Did you read (any of the) articles over the weekend?' [+specific]
b. Cwumal-ey nonmwun ilk-ess-e?
weekend-on article read-PST-INFORMAL
'Did you read an article/any articles over the weekend?' [-specific]

www.kci.go.kr

We propose that the object nominal expression in (35a) is a full DP, with NumP2 specified as plural. Since the presence of D entails a [+specific] interpretation, and DP entails NumP2, we obtain the correlation between exclusive number and specificity.[8] Again, if NumP2 is specified singular, no overt singular marker is present, and the expression is string identical to (35b), which is a bare nP with general number.

## 5. Conclusion

We have presented novel data on Korean number that shows a distinction between inclusive and exclusive plurals. The two main kinds of constructions we reviewed were existential constructions (There are apples on the table) and basic sentences (Mary ate an apple). Unmarked nouns in existential constructions have general number. Adding a plural marker to the core argument of an existential gives rise simply to a plural interpretation. Non-specific nominals, as in existential constructions, are either bare nPs or bare NumP1s, thus accounting for either general number (*n*P) or inclusive plurals (NumP1). In non-existential basic sentences plural marking gives rise to an obligatorily specific reading. We assume that D entails a specific interpretation and also that DP entails NumP2. We thus account for the correlation between exclusive plurals (NumP2) and specificity. Furthermore, in upward-entailing contexts exclusive plural was observed across the board. Downward-entailing contexts, however, produced two different results. In basic sentences, where a specific reading obligatorily holds, an exclusive plural reading was observed in contexts where a plural interpretation is expected, otherwise an inclusive plural interpretation is found. Recall that in existentials, an inclusive plural reading is found regardless of the expectation of plurality.

We reviewed semantic-pragmatic approaches to the distribution of inclusive and exclusive plurals and showed that they do not work for the Korean data presented here. Specifically, such semantic approaches assume that there is a strict one-to-one correlation between upward-entailing contexts and exclusive plural on the one hand, and downward-entailing contexts and inclusive plural on the other. As we showed here and summarized in the preceding paragraph, this does not align with the Korean facts. Instead, we suggested that the morpho-syntactic approach of Mathier and Dali (2021) may offer a better solution.

[8] The reader may recall that the specific examples with exclusive plural have an expectation of plurality. We leave the interaction between this expectation and NumP2 to future research.

www.kci.go.kr

Specifically, number is split into two projections, the higher NumP2, which encodes exclusive plural, and the lower NumP1, which encodes inclusive plural. The higher NumP2 appears only when DP is present. By hypothesis D entails a [+specific] interpretation, thus accounting for the correlation between exclusive number and specificity. Two unanswered questions that we leave to future research are why only [+specific] D licenses NumP and how to implement the expectation of plurality into the analysis of number.

## References

Abney, Stephen. 1987. The English Noun Phrase and its Sentential Aspect. Cambridge, MA: MIT, doctoral dissertation.

Corbett, Greville G. 2000. *Number*. Cambridge: Cambridge University Press.

Dali, Myriam & Mathieu, Éric. 2021. *A Theory of Distributed Number*. Amsterdam: John Benjamins Publishing Company.

Dayal, Veneeta. 2011. Hindi Pseudo-Incorporation. *Natural Language & Linguistic Theory* 29: 123-167.

Dayal, Veneeta. 2015. Incorporation: Morpho-Syntactic vs. Semantic Considerations. *Syntax and Semantics* 40: 47-87.

de Swart, Henriëtte & Farkas, Donka. 2010. The semantics and pragmatics of plurals. *Semantics and Pragmatics* 3: 1-54.

Farkas, Donka & de Swart, Henriëtte. 2003. *The semantics of incorporation: From argument structure to discourse transparency*. Stanford, CA: CSLI Publications.

Ghomeshi, Jila. 2003. Plural Marking, Indefiniteness, and the Noun Phrase. *Studia Linguistica* 57: 47-74.

Heim, Irene. 1991. Artikel und Definitheit. *In Semantics: An International Handbook of Contemporary Research* ed. by Arnim von Stechow and Dieter Wunderlich 487-535: Berlin: de Gruyter.

Kang, Beom-Mo. 1994. Plurality and other semantic aspects of common nouns in Korean. *Journal of East Asian Linguistics* 3: 1-24.

Kang, Beom-mo. 2007. Plurality and the Plurality Marker 'deul'. *Eoneohak Eoneohak* 47: 3-31.

Kim, Kyumin & Melchin, Paul B. 2018. Modifying plurals, classifiers, and co-occurrence: The case of Korean. *Glossa: A Journal of General Linguistics* 3: 25.

Kim, Kyumin & Ritter, Elizabeth & Wiltschko, Martina & Rullman, Hotze. 2017. 2 + 2 = 3: Number contrasts in Blackfoot. *Glossa: A Journal of General*

www.kci.go.kr

*Linguistics* 2: 1-15.
Kim, Young-Wha. 2009. The Syntax of the Plural Marker -tul and Classifiers in Korean. *Korean Journal of Linguistics* 34: 829-852.
Li, Yen-Hui Audrey. 1999. Plurality in a Classifier Language. *Journal of East Asian Linguistics* 8: 75-99.
López, Luis. 2012. *Indefinite Objects: Scrambling, Choice Functions, and Differential Marking*. Cambridge, MA: MIT Press.
Massam, Diane. 2001. Pseudo Noun Incorporation in Niuean. *Natural Language & Linguistic Theory* 19: 153-197.
Park, So-Young. 2008. Plural marking in classifier languages: a case study of the so-called plural marking -tul in Korean. *Toronto Working Papers in Linguistics* 28: 281-295.
Park, So-Young. 2009. Anatomy of Plural Expressions: Pseudo-Plurality and Real Plurality. *Korean Journal of Linguistics* 34: 25-52.
Park, So-Young. 2022. Two types of plurals and numeral classifiers in classifier languages: the case of Korean. *Journal of East Asian Linguistics* 31: 139-177.
Ritter, Elizabeth. 1991. Two functional categories in noun phrases: evidence from Modern Hebrew. *Syntax and semantics, Volume 25: Perspective on phrase structure*, ed. by Susan Rothstein 37-62. New York: Academic Press.
Ritter, Elizabeth. 1992. Cross-Linguistic Evidence for Number Phrase. *Canadian Journal of Linguistics* 37: 197-218.
Rullmann, Hotze & You, Aili. 2006. General Number and the Semantics and Pragmatics of Indefinite Bare Nouns in Mandarin Chinese. *Where Semantics Meets Pragmatics*, ed. by Klause von Heusinger & Ken Turner 175-196. Amsterdam/Boston: Elsevier.
Sağ, Yağmur. 2022. Bare singulars and singularity in Turkish. *Linguistics and Philosophy* 45: 741-793.
Sauerland, Uli. 2003. A new semantics for number. *Proceedings of semantics and linguistic theory (SALT 13)*, ed. by Robert Young & Yuping Zhou: 258-275. Ithaca, NY: CLC Publications.
Szabolcsi, Anna. 1983. The Possessor that Ran Away from Home. *The Linguistic Review* 3: 89-102.
van Geenhoven, Veerle. 1998. *Semantic Incorporation and Indefinite Descriptions: Semantic and Syntactic Aspects of Noun Incorporation in West Greenlandic*. Stanford, CA: Center for the Study of Language and Information.
Vázquez Rojas Maldonado, Violeta. 2012. he Syntax and Semantics of Purepecha Noun Phrases and the mass/count Distinction. New York City, NY: New York University, doctoral dissertation.

www.kci.go.kr

Watanabe, Akira. 2010. Vague Quantity, Numerals, and Natural Numbers. *Syntax* 13: 37-77.

Michael Jonathan Mathew Barrie
Professor
Division of English Language and Literature
Sogang University
35 Baekbom-ro Mapo-gu
Seoul 04107
Korea

mikebarrie@sogang.ac.kr

Éric Mathieu
Professor
Department of Linguistics
University of Ottawa
70 Laurier Ave. East
Ottawa, ON K1N 6N5
Canada

emathieu@uottawa.ca

Received: 2023. 1. 15
Revised: 2023. 2. 22
Accepted: 2023. 2. 26

www.kci.go.kr