

On the Plural Feature and Its Syntactic Implications

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Cho, Jai-Hyoung & Chang, Soo Jung. (2017). On the plural feature and its syntactic implications. *The Linguistic Association of Korea Journal*, 25(4). 1-22. This study addresses the question of whether Korean nouns display parametric variation with the properties of [+arg, -pred] based on Chierchia (1998a, 1998b). Korean bare nouns appear in argument positions, either as singular or plural, and they can function as subjects or objects. The plural marker *-tul* and the distinctive distribution of quantity-denoting modifiers manifest the fact that Korean, as a classifier language, is not fully masslike. In turn, a classifier language can also have morphological and syntactic systems geared towards the mass/count distinction. These facts lead to the discovery that Korean bare nominals are attenuated mass nouns, rather than strict mass nouns. The current study presents syntactic manifestations of plurality in Korean NPs. Based on Heycock and Zamparelli's (2005) [+LATT] in nominal structures, the incorporation of [+LATT] in NPs is illustrated in terms of the syntactic feature-checking approach. We propose that [+LATT] in classifier languages is distributed in their nouns as default whereas [-LATT] is prevalent in non-classifier languages. Finally, we argue that the classifiers enable Korean nouns with [+LATT] to be individuated as smaller units and the widely used plural marker brings out the property of count nouns as well.

Key Words: bare nouns, classifier languages, the mass/count distinction, plurality, the Nominal Mapping Hypothesis

* Jai-Hyoung Cho is the first author and Soo Jung Chang, the corresponding author. We are very grateful that three anonymous reviewers provided us with insightful comments to improve the quality of this paper. All remaining errors are our own, of course.

1. Introduction

Bare singular nominals (bare NPs) without determiners are widely used as external arguments (subjects) and internal arguments (objects) in Korean as an article-less language.

- (1) a. *kkoch-i situl-ess-ta*
 flower-Nom wither-Pst-Dec
 ‘The flower withered.’
 b. *Mary-ka kkoch-ul sa-ss-ta*
 Mary-Nom flower-Acc buy-Pst-Dec
 ‘Mary bought a flower.’

This phenomenon may provoke controversy with the widely accepted generalization that DPs are arguments, and NPs are not:

- (2) a. The flower withered.
 a’. *Flower withered.
 b. Mary bought a flower.
 b’. *Mary bought flower.

Chierchia (1998a, 1998b) argues that bare NPs can function as arguments (i.e. [+arg] or kind-denoting bare arguments in a classifier language) by presenting *the Nominal Mapping Hypothesis*, in that nominals across languages show parametric variation with different distributions of a combination of [+arg] and [+pred] features.

In this study, we confirm Chierchia’s analysis of typologically different distribution of nouns (mass vs. count) across languages by demonstrating Korean NP’s mass-like trait, which affects well-formedness of bare NP arguments in syntax. This leads to more elaboration on parametric variation; for example, how *twu ai* ‘two child’ in Korean obtains grammatically well-formed interpretation without plural marking, which is not allowed in the syntax of the English NP (i.e., **two child*). In addition, we investigate the typological characteristics of Korean bare nominals and the number marking systems in

terms of UG in conjunction with Chierchia's (1998a, 1998b) *Nominal Mapping Hypothesis*, Chomsky's (1995) feature checking, and Heycock and Zamparelli's (2005) feature-split approach using lattice features of [+LATT]. We also show how Heycock and Zamparelli's (2005) approach is applied to Korean bare NP data in Chang (2009). Finally, we illustrate that Korean bare noun structures do not necessarily fit into Chierchia's frame of a classifier language and show how plurality is linked to the mass/count distinction in Korean nominal structures.

2. Singular vs. Plural

This section explores the number system, such as singular and plural forms, in Korean and how the interpretation of number in common nouns is related to the syntax of bare nouns. While it is not impossible for plurality to be morphologically marked on Korean nouns (i.e., plural marking with *-tul*¹⁾), classifiers are widely used for counting nouns as well. According to Park's (2008) analysis, *-tul*, as a distributive marker, makes Korean nouns compatible with classifiers. Kim (2009) also explains that both classifier languages and non-classifier languages have mass denotations. Thus, these previous studies have noted that classifiers and *-tul* are not mutually exclusive in Korean nominals.

Chierchia (1998a, 1998b) argue that mass nouns are always atomic²⁾ and denote entities with minimal parts (e.g., just like *chairs* and *beds* belong to *furniture*). In addition, it is a matter of the level of the lexicon whether nouns are inherently singular (e.g., a *dog*-type as in English) or inherently plural (e.g., a *furniture*-type as in English). Since inherently pluralized NPs cannot be countable, "numerals will not be able to combine directly with nouns: a

1) See Kim (2005), Borer (2005), Park (2008), and Kim (2009) for more detailed discussions.

2) As one of the anonymous reviewers pointed out, Link (1983), Bunt (1985), and Landman (1989a, 1989b) have different views from those in Chierchia (1998a, 1998b). Link (1983), Bunt (1985), and Landman (1989a, 1989b) suggest that mass nouns refer to non-atomic domains, without having minimal parts (e.g., *water*). In this paper, with less attention paid to non-atomic views, we focus on Chierchia (1998a, 1998b), stating that mass nouns are atomic with minimal parts (e.g., *furniture*).

classifier will be necessary to individuate an appropriate counting level” (Chierchia, 1998a, pp. 353-354).

Kinds (or the nature of kind-denoting arguments) make no distinction between mass nouns and plural count nouns. Chierchia (1998a) further explains that “the property of being an instance of kind does not differentiate between singular and plural instances. This means that the property corresponding to a kind comes out as being mass...” (p. 351). If a noun comes out of the lexicon as a mass noun, no plural marking is required, which means, to put it simply, pluralization would be unnecessary; instead, classifiers are essential. Additionally, he proposes that there are languages which have no fundamental distinction between mass and count denotations. For this reason, he claims that arguments in Chinese-type languages (e.g., Chinese and Japanese) come out of the lexicon as a level of bare NPs (e.g., [+arg, -pred]³ type languages), which do not possess determiners in syntax. Only determiner-like elements such as quantifiers and demonstratives select NPs. Traditionally, DPs with e or <<e,t>,t> are analyzed as arguments while NPs with <e,t> as predicates (Chierchia, 1998a, 1998b). We assume that Chinese, Japanese, and Korean are classifier languages, in which nouns function as arguments (type e), rather than predicates (type <e,t>).

3) Table1. Chierchia’s cross-linguistic typology of bare nouns

Mapping	[+arg, -pred]	[-arg, +pred]	[+arg, +pred]
	1) all nouns are mass	1) the mass/count distinction	1) the mass/count distinction
	2) no plural marking	2) plural marking with count nouns	2) plural marking with count nouns
Properties	3) classifiers are obligatory for counting	3) classifiers or measure words for mass nouns	3) classifiers or measure words for mass nouns
	4) generalized bare arguments	4) no bare arguments	4) only mass nouns (type e) can be bare arguments (*apple, ✓furniture)
Examples	Chinese	French	English

In our current study, we do not refer to NP [-arg, +pred] type languages such as French and Italian.

- (3) a. *haksayng-i manhi wa-ss-ta*
 student-Nom in large numbers come-Pst-Dec
 ‘Many students came.’
- a’. *haksayng twu myeng-i wa-ss-ta*
 student two CL-Nom come-Pst-Dec
 ‘Two students came.’
- a”. **haksayng twu myeng-tul-i wa-ss-ta*
 student two CL-PL-Nom come-Pst-Dec
 ‘Two students came.’
- a”’. *haksayng-tul-i wa-ss-ta*
 student-PL-Nom come-Pst-Dec
 ‘Students came.’
- b. *namwu-ka manhi ssulecy-ess-ta*
 tree-Nom in large numbers fall-Pst-Dec
 ‘Many trees fell down.’
- b’. *namwu twu kulwu-ka ssulecy-ess-ta*
 tree two CL-Nom fall-Pst-Dec
 ‘Two trees fell down.’
- b”’. **namwu twu kulwu-tul-i ssulecy-ess-ta*
 tree two CL-PL-Nom fall-Pst-Dec
 ‘Two trees fell down.’
- b””’. *namwu-tul-i ssulecy-ess-ta*
 tree-CL-Nom fall-Pst-Dec
 ‘Trees fell down.’

In (3a) and (3b), each predicate has the adverb *manhi* with the meaning of ‘in large/great numbers,’ which modifies the verb. However, the bare singular NP subjects in (3a) and (3b), *haksayng* ‘student’ and *namwu* ‘tree,’ neither being modified by determiners nor plural marker appended as well, remain grammatical with the interpretation of *students* and *trees*, respectively. As shown in (3a”) and (3b”) above, classifier phrases (CIPs as in Li 1999, Cheng & Sybesma 1999, Guéron 2006) are not compatible with the plural marker *-tul* with both [+animate] (a”) and [-animate] nouns (b”). Classifiers paired with numerals inherently contain plurality⁴); therefore, the additional plural marking (i.e., **twu*

myeng-tul and **twu kukwu-tul*) naturally results in redundancy in syntax. On the other hand, bare plural NPs without classifiers such as *haksayng-tul* (3a''') and *namwu-tul* (3b''') are accepted as well-formed among Korean speakers. Under the *Nominal Mapping Hypothesis*, however, Korean nouns would not take the plural marker because nouns in a classifier language are masslike, as Chierchia proposes. Based on our empirical data, thus, Chierchia's generalization that nouns of a classifier language are masslike is not entirely supported, as is the case above where the Korean plural marker *-tul* is compatible with bare nouns to indicate plurality.

3. The Mass/Count Distinction in Korean

Besides the plural marker *-tul*, the pre-nominal modifiers *talyanguy* ('much' or, literally, 'a large amount of') and *taswuuy* ('many' or, literally, 'a large number of') indicate that Korean contains distinctive properties between mass and count nouns. Examples are illustrated below: *Talyanguy* is only compatible with quantity-denoting mass nouns, which naturally rules out plural marking in mass nouns; therefore, *-tul* is not compatible with quantity-denoting NPs.

Table 2. many vs. much in Korean

Noun	[+animate][+human]	Distribution of <i>taswuuy</i> and <i>talyanguy</i> with nouns
Count	[+animate][+human]	<i>taswuuy salam(tul), taswuuy uysa(tul), taswuuy haksayng(tul)</i> 'many people, many doctors, many students'
Count	[+animate][-human]	<i>taswuuy tongmwul(tul), taswuuy kolay(tul), taswuuy saca(tul)</i> 'many animals, many whales, many lions'
Count	[-animate][-human]	<i>taswuuy namwu(tul), taswuuy chayksang(tul), taswuuy os(tul)</i> 'many trees, many desks, many clothes'

- 4) One of the anonymous reviewers noted that Korean number meaning appears to be influenced by discourse contexts. We greatly appreciate the reviewer's comments on the pragmatic aspects of the Korean number system and the interpretation of numbers in discourse contexts. We are investigating a NumP (Number Phrase) and its roles and meanings in the frame of syntax-pragmatics interface as our further research.
- 5) As one of the anonymous reviewers pointed out, plural marking on quantity-denoting mass

Mass ⁵ [-animate][-human]	<i>talyanguy mwul(*tul)</i> , <i>talyanguy sanso(*tul)</i> , <i>talyanguy milkalwu(*tul)</i> 'much water, much oxygen, much flour'
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However, there also exists a discrepancy between English and Korean, in that Korean nouns in Table 2 above have their unique matching classifiers in order to be counted individually: *myeng* with [+animate][+human], *mali* with [+animate][-human], *kulwu* with [-animate][-human] and etc. (e.g., *salam sey myeng* 'person three-CL'; *saca sey mali* 'lion three-CL'; *namwu sey kulwu* 'tree three-CL'). Examples in Table 2 support that Korean nouns' typological behaviors as a classifier language are well-maintained, and, at the same time, they also show that the plural marking system does exist in this language as well as in English.

Similar observations are found in Kobuchi-Philip's (2011) Japanese data. Kobuchi-Philip (2011) suggests that a Japanese noun denotes plurality, and a bare noun can be interpreted as either singular or plural in a given context:

- | | |
|---|---|
| (4) a. kodomo
child
'child' | b. kodomo-tachi
child-tachi
'children' |
| b. tsukue
desk
'desk' | *tsukue-tachi
desk-tachi
----- |
| c. John
John
'John' | John-tachi
John-tachi
'John and some others' |
| (adapted from Kobuchi-Philip, 2011, p. 297) | |
| d. mass: taryoo-no inku
much-GEN ink
'much ink' | *tasuu-no inku
many-GEN ink
literally, 'many ink' |
| e. count: tasuu-no isha | *taryoo-no isha |

nouns such as *umsik-tul* 'food-tul' and *mwulcil-tul* 'material-tul' is acceptable. Agreeing with the reviewer, we consider that quantity-denoting mass nouns can be shifted to count nouns when *umsik* 'food' and *mwulcil* 'material' refer to distinct types of food/material.

many-GEN doctor 'many doctors' (adapted from Kobuchi-Philip, 2011, pp. 307-308)	much-GEN doctor literally, 'much doctor'
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In Japanese, the morphological plural marker *tachi*⁶⁾ overtly expresses plural interpretation, which is similar to the fact that the Korean marker *-tul* does, as shown in (3) above. (4b) illustrates that the plural marker *tachi* with the inanimate, nonhuman noun *tsukue* 'desk' is not allowed in Japanese, which is different from the case of Korean where *caeksang* 'desk' can be used with the plural marker *-tul*. Although the distribution of the plural marker in Japanese is limited to [+animate][+human] nouns to some extent, (4a) and (4c) exemplify that it is not impossible for Japanese to select the plural marker with count nouns. In addition, her data with *tasuu* 'many' and *taryoo* 'much' support for the mass/count distinction in Japanese. Specifically, (4d) and (4e) demonstrate that the count noun *isha* 'doctor' and the mass noun *inku* 'ink' are matched with *tasuu* 'many' and *taryoo* 'much' respectively. As Chung (2000), Kim (2005), Kim (2009), and Kobuchi-Philip (2011), among others, show, the mass/count distinction and plural marking are apparent in classifier languages, and we also confirm that Korean and Japanese data above are analogous to these universal phenomena across languages.

Our observation on the presence of the mass/count distinction is supported by Nemoto (2005) as well. The singular form of bare nouns in Korean/Japanese can be kind-denoting (e.g., *Kakwu-nun pothong namwu-lo mantun-ta*. 'Furniture is usually made of trees.'). She further explains in the perspectives of comparative linguistics that, without determiners, English mass nouns cannot refer to specific individuals, while Korean/Japanese bare nouns can refer to the equivalents without determiners (e.g., **I saw furniture this morning*. vs. *Na-nun achim-ey kakwu-lul po-ass-ta*). Korean/Japanese bare nouns, possibly as kind-referring arguments, can be pluralized (e.g., *Kakwu-tul-un pothong namwu-lo mantun-ta*. '(Lit.) Furniture-PL are usually made of trees.'), whereas English mass nouns cannot be pluralized (e.g., *Furniture is usually made of trees*. vs. **Furnitures are*

6) She points out that the productivity of the morphological plural marking in Japanese is rather limited; thus, Japanese lacks a systematic plural marking system in a non-classifier language such as that in English.

usually made of trees.). Besides the case of *furniture*, there are three kind-referring bare nouns in the following sentence: *Water is composed of hydrogen and oxygen*. However, pluralization of mass nouns in English is not allowed: **Waters are composed of hydrogens and oxygens*. Likewise, confirming the similar behaviors of bare nouns in classifier languages, we summarize the difference between Korean/Japanese bare noun(s) and conventional English mass noun(s) in the following table, based on Nemoto (2005):

Table3. *furniture* vs. *kakwu* (adapted from Chang, 2009, p. 116)

English Bare NP	Korean Bare NP
not pluralized ex) * <i>furnitures</i>	pluralized ex) <i>kakwu-tul</i> 'furniture-PL'
not refer to specific individuals → <i>furniture</i> [-spec]	possibly refer to specific individuals → <i>kakwu</i> [+spec]
as true mass, kind-referring expressions	as mass, possibly non-kind-referring arguments

4. Heycock & Zamparelli (2005)

According to Link (1983), treating the domain of entities as an algebraic (nominal) structure, the distinction between mass and count nouns is marked by different syntactic and semantic features: particularly, plural entities and mass nouns are classified as *non-atoms*, whereas only the singular entities are *atoms*. This analysis is in line with the fact that collective nouns such as *furniture* and *clothing* can be divided into smaller units, such as *chairs*, *desks*, *pants*, *skirts*, and etc.; thus, these smaller units may be semantically atomic as well. Link's (1983) distinction of semantic domains, i.e. *non-atomic join-semilattice* and *atomic join-semilattice*, captures the properties of mass and count nouns respectively. However, Stark (2008) assumes that nominals themselves do not exhibit specific interpretations regarding mass or count denotations because those denotations are just a set of singleton elements regardless of their morphological number, following Heycock and Zamparelli's (2003) proposal with respect to English indefinite nominals. When an interpretation of a noun has the one as being

semantically pluralized, it is assumed that the noun ultimately has a *join-semilattice structure* (Heycock & Zamparelli, 2003), irrespective of *atomic* and *non-atomic* distinctions. Based on the presuppositions of a *join-semilattice structure* in previous studies from Link (1983), Heycock and Zamparelli (2003), and Stark (2008), we assume that nouns in so-called classifier languages such as Korean, Japanese, and Chinese have inherent semantic pluralization, and we additionally adopt semantic typologists' arguments that classifiers play a role of individuating nominal notions (Gil, 2005; Greenberg, 1990).

Heycock and Zamparelli (2005) argue that the split of semantic and syntactic numbers (e.g., [PLUR] or [SG] feature is associated with syntactic number) is consistent across DP constituents, such as determiners and nouns, even including adjectives (e.g., *les arbres verts*: French has agreement in number among an adjective, a determiner, and a noun). The number feature-checking process, associated with a NumP as the number filter, in the following examples show how a NumP is involved with numerals cross-linguistically:

- (5) a. Öt hajót láttam
 five ship_{SG} I saw
 b. Hajókat láttam
 ships_{PL} I saw
 'I saw (five) ships.'

(Hungarian, Heycock & Zamparelli, 2005, p. 228)

- c. Taset saram-ul na-nun po-ass-ta
 five man-ACC I-Top see-Pst-Dec
 d. Saram-tul-ul na-nun po-ass-ta
 man-PL-ACC I-Top see-Pst-Dec
 'I saw (five) men/persons.'

(Korean, Chang, 2009, p. 126)

Shown in the given examples (5) above, both Hungarian and Korean illustrate the same behavior: when numerals occur, the noun is morphologically singular in (5a) and (5c); however, plural morphemes are used without numerals in (5b) and (5d).

Based on the Hungarian and Korean data, following Heycock and

Zamparelli's (2005) feature-split approach, we agree that syntactic and semantic number features should be split. If those two features (i.e., semantic and syntactic number) were concomitant with each other, the mismatch between [5+SINGULAR] in (5a) and (5c) would trigger ill-formedness. However, they are grammatical in both languages; therefore, we verify the cross-linguistic data in (5) are strong evidence for the feature-split approach, regarding the semantic/syntactic number. According to Heycock and Zamparelli, the semantic feature LATT⁷⁾ has two values: [-LATT] (semantically singular) or [+LATT] (semantically plural). A more detailed explanation of the feature-split approach is given below:

(The abstract functional head) PI (syntactically singular or plural) performs two distinctive semantic operations, depending on the value of its feature PLUR at LF: PI_[+PLUR] denotes star (*), the pluralizer for count nouns, PI_[-PLUR] denotes div (ˆ), the pluralizer for mass nouns. ...semantic pluralization is not performed at N, but is left to the abstract functional head PI, which takes the NP as its complement.

(adapted from Heycock & Zamparelli, 2005, pp. 219-230)

Following Heycock and Zamparelli (2005), Stark (2008)⁸⁾ also explains that merge of N with PI* creates a [+LATT] denotations, regardless of the morphological number of a noun; then, PIP is merged with Num that hosts cardinals.

Based on Chomsky (1995), Heycock and Zamparelli (2005), and Stark (2008), Chang (2009) applies the agreement process of the semantic number and the

7) [+LATT] indicates that some entities contain semantic pluralization and the others with [-LATT] do not. Similarly, MAN and WOMAN have the combination of the following binary semantic features to construct the meaning of an entire entity: 1) MAN [+animate] [+human] [+male]... or 2) WOMAN [+animate] [+human] [-male]... While features illustrated in 1) and 2) are interpretable, we assume that [±LATT] are uninterpretable features with merely grammatical arbitrariness: some NP structures in English are identical between singular and plural forms, and the distribution of uninterpretable features [±LATT] displays the internal numeral structure of each noun, for instance, [*deer*] vs. *a lot of* [*deer*] or [*fish*] vs. *a lot of* [*fish*].

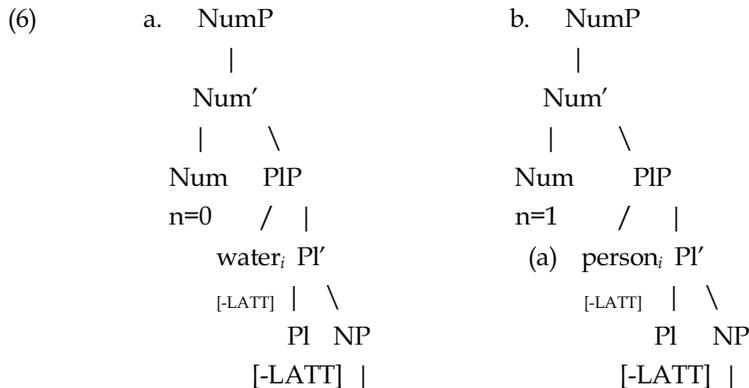
8) See Stark (2008) for a more detailed discussion of the agreement operation.

syntactic number (SG or PL) to a syntactic computation within the NumP. In this computation, PIP is only concerned with semantic number, and it is not responsible for morphological number. As a result, the morphological number in PI should be erased; otherwise, the remaining morphosyntactic number features in PI leads to the derivation crashes at LF because they are uninterpretable features in PIP. However, the number features in NP can remain after Spell-Out at PF because they are interpretable (categorical) features on nouns (Stark, 2008). Vice versa, the semantic number features on N should be checked off before Spell-Out as they are uninterpretable on N.

In the next section, the syntactic approach is as follows: the split-feature approach and the agreement process are able to explain how the plural NPs without plural marking (e.g., *öt hajót* 'lit. five ship' and *taset saram* 'lit. five person') are grammatical, in contrast to English, as we have observed so far.

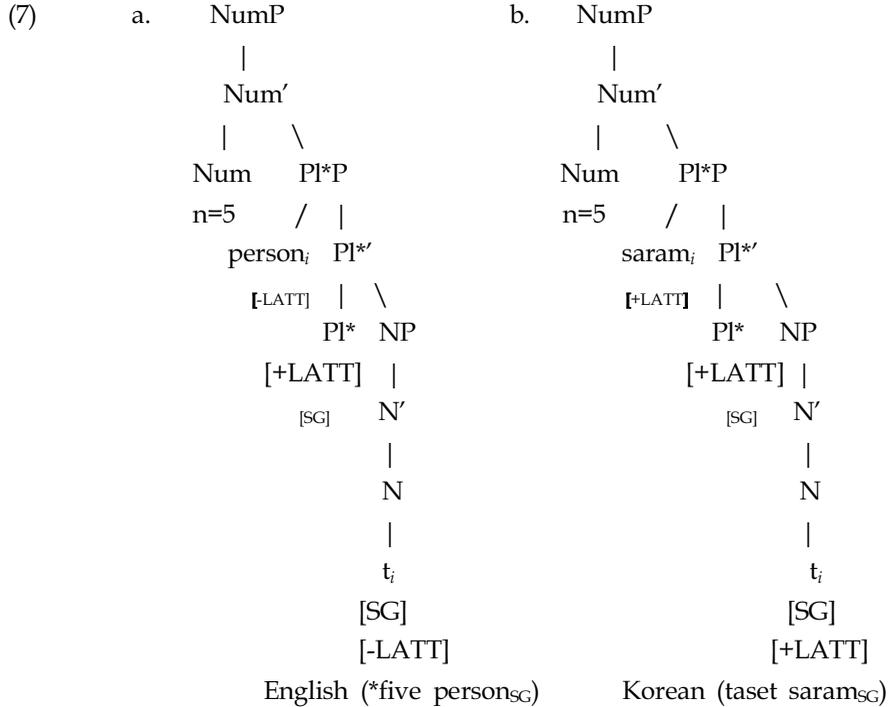
5. The Syntactic Analysis of Plurality

This section demonstrates how semantic plurality and the mass/count nouns are mapped into the domain of syntax cross-linguistically, mainly between Korean and English. We show how Heycock and Zamparelli's (2005) lattice features are incorporated into Korean bare NPs based on Chang's (2009) data. First of all, the example below illustrates the mass/count distinction based on English words:



[SG]	N'		[SG]	N'
	N			N
	t_i			t_i
	[SG]			[SG]
	[-LATT]			[-LATT]
	water(MASS)			a person(COUNT)

The mass noun *water* in (6a) has the features [SG], morphological number, and [-LATT], pure semantic number. [+LATT] feature in Pl need not be checked because it is interpretable in Pl as a categorial feature. In the same way, [SG] in N is an interpretable, categorial feature of itself; therefore, [SG] in Pl and [-LATT] in N should be erased against to each other. N moves to Spec PIP to check off the uninterpretable [-LATT] via Spec-Head agreement with Pl. Finally, $n=0$ in Num informs the lack of overt numerals in the whole nominal phrase (i.e. NumP). Similarly, the count noun *a person* (6b) has the features [SG] and [-LATT]. N moves to Spec PIP for checking its uninterpretable [-LATT] against Pl via Spec-Head agreement. The only difference between (6a) and (6b) is that the computation with *water* in (6a) is specified in Num position: *a person*, as a count noun, Num has the value $n=1$, and this value results in taking the indefinite article *a*, which corresponds to an indefinite singular nominals in the overt syntax. These computations of agreement operation show how the English mass noun *water* and the count noun *a person* are interpreted differently in relation to semantic and syntactic number features and, as a result, converge at LF. Therefore, we argue that NumP is the filter of number in nominals, not DP. Also, the same process is applied to the cross-linguistic data given in (7):



As we have already observed, cross-linguistic data show that, not only *öt hajót* 'lit. five ship' in Hungarian, but also *taset saram* 'five man,' *taset ai* 'five child,' *twu sonyen* 'two boy' and etc. in Korean are grammatical with the absence of overt (or morphological) number agreement, which is different from the presence of the obligatory plural *-s* morpheme with the English count nouns. In both trees, following Heycock and Zamparelli (2005), PI is marked as PI* because * identifies the fact that the semantic number value is $n > 1$. The count noun *person* in (7a) has the features [SG], morphological number, and [-LATT], pure semantic number, in N, which is different from the Korean counterpart because the Korean N is believed to have [+LATT] as default due to its property of a classifier language. *Person* in (7a) moves to Spec PIP in order to check off its uninterpretable feature [-LATT]; however, the checking process fails due to the mismatch between [-LATT] in Spec and [+LATT] in Head. Therefore, the derivation crashes at LF because of the remaining uninterpretable feature in N at LF; as a result, the English *five person* in (7b) is ungrammatical. On the other

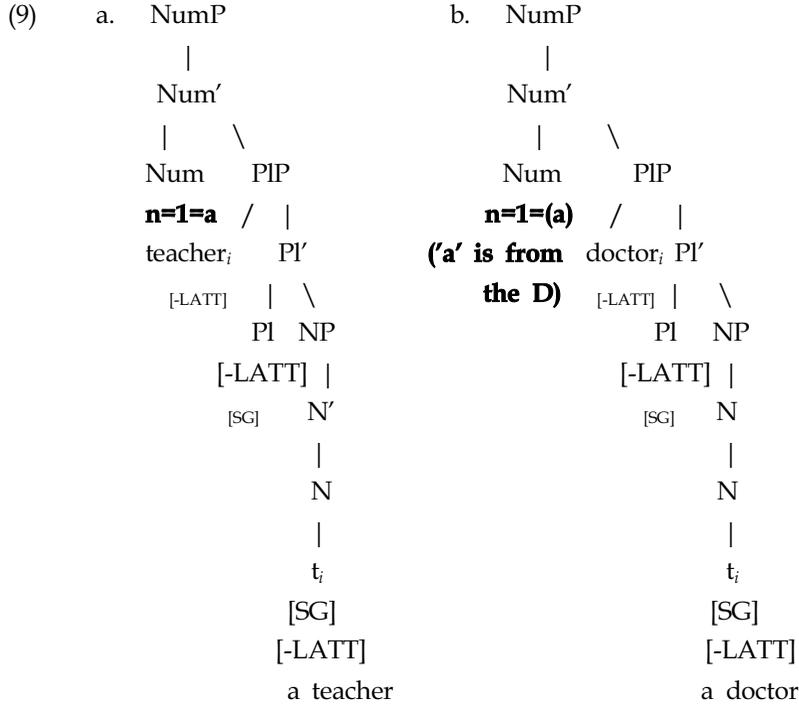
hand, the Korean example *taset saram* 'five person' is grammatical in the following ways: *saram* with [SG] and [+LATT] enters into the same checking process as in English, but the uninterpretable feature [+LATT] in N is successfully erased in Spec-Head agreement after movement at LF. Therefore, this derivation converges at LF.

The projection of PIP in nominals also plays important role in distinguishing a predicate NP (i.e., type <e,t>) and an argument DP (i.e., type <<e,t>,t>) as shown below:

- (8) a. John became [NP *a teacher*].
 a'. John was [NP *a teacher*].
 b. This morning, John met [DP *a doctor*].
 b'. John talked with [DP *a doctor*].

A teacher in (8a & a') is a predicative NP (i.e., non-argument), whereas *a doctor* in (8b & b') is a DP argument. These two parallel schemes highlight a fundamental difference between the indefinite article *a* both in NP and DP frames with respect to *the split-number hypothesis*. *A* in [NP *a teacher*] in (8) is base-generated as a numeral in the Num head because it purely corresponds to the numeral *1*, without engaging in any referential interpretation but number; in this case, *a* does not play any role but a number marker. The counterpart of Romance language data, for example, is realized without an indefinite article, such as *Je suis infirmire* (**Je suis une infirmire*) in French, which also supports the classification of *a* in (8a) as a number marker, rather than a semantic marker. Therefore, *a* in (8a) denotes purely a number (i.e., SG), which is ambiguously homophonous⁹⁾ to the indefinite article.

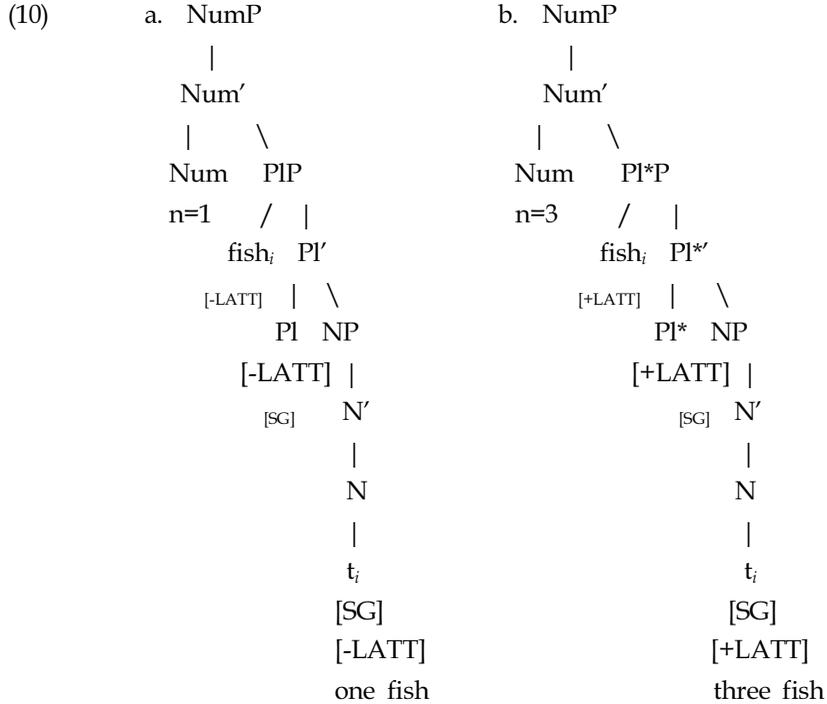
9) We suppose this phenomenon as an example of dual functions of human language. Unfortunately, however, further examples about this topic will not be discussed in our current study.



On the other hand, *a* in [DP a doctor] in (9b) is an indefinite article, which is base-generated in the D head as a determiner (i.e., [DP [NumP [PIP [NP]]]]). Therefore, the role of *a* in (8b) is originally an indefinite article; however, due to its homophonous counterpart, (i.e., the number marker *a* in (8a)), it is not only involved as an indefinite marker but also as the numeral *1* at the same time. In order to distinguish those two words, we mark an indefinite article in Num as (*a*) in the tree in order to highlight that it is not fundamentally an element of Num but an element of D, as shown in the tree (9b).

Following Chang (2009), we assume that the distribution of the uninterpretable feature [+LATT] in N is arbitrary, which, as a result, would determine typological classifications. For example, the English *person* in (7a) contains [-LATT], whereas the Korean counterpart *saram* has [+LATT]. In other words, English nouns seem to have more distribution of [-LATT] as default than that of [+LATT], more prevalently found in Korean nouns. On the other hand, however, some nouns with [+LATT] are not absent in English¹⁰ either, whose

distribution is still much more common in Korean nouns. Consequently, the following examples demonstrate that the arbitrary distribution of [+LATT] in N is not just restricted to a classifier language such as Korean:



An English collective noun such as *fish* in (10) is ambiguous between a plural and singular form due to its lack of explicit morphological marking; additionally, the semantic value of either [-LATT] or [+LATT] is randomly distributed in N, such as *one fish* and *three fish*, which are analogous to (7a) (i.e., [-LATT]) in English and (7b) (i.e., [+LATT]) in Korean respectively. We assume that some nouns like *fish* and *deer* may have [+LATT] but the number of this type of nouns is rather limited in English, compared to that of Korean counterparts. Therefore, the arbitrary distribution of those features can occur language-internally either in Korean or in English, or can occur across languages

10) Refer to footnote viii) regarding the singular/plural forms of *fish* and *deer*.

as well. As we have demonstrated, the phonetic form (or the morpheme itself, such as *fish*, *deer*, *committee*, and so forth) of an NP does not contribute largely to the overt realization of the semantic number feature in language; as a result, [+LATT] are not directly associated with the number morphemes. This argument strongly supports Heycock and Zamparelli's (2005) feature-split approach that suggests the semantic number features, regardless of the morphological marking, are controlled by PIP with the agreement operation. In addition, we assume that [+LATT] is relatively more distributed in (bare) nominals in the languages which belong to mass-denoting NP groups characterized by Chierchia (1998).

Bare NPs in NP [+arg, -pred] languages come out of the lexicon with mass denotations (Chierchia, 1998; Nemote, 2005; Kobuchi-Philip, 2011, and many more), which are already semantically pluralized (Heycock & Zamparelli, 2005), and the nouns exist as a set composed in all the ways in which these (elements) can be grouped together into pluralities (recited from Stark, 2008, p. 65). We argue that Korean nominals are more atomic-like, which is in the similar line with, so called, a furniture-type in Chierchia (1998a, 1998b), regarding classifier languages as mass-denoting NP languages. Thus, our observation appears to be linked to the distribution of more [+LATT] in Korean nouns than in English counterparts, which implies that English nouns possibly contain [+LATT] (e.g., *five fish*, *three deer*, and etc.). We further claim that plurality is the realization of [+LATT] in nouns, which is supported by Kim (2005), Park (2008), and Kim (2009), among others, acknowledging that classifiers¹¹⁾ and *-tul* are not mutually exclusive in Korean nominals.

11) We greatly appreciate an anonymous reviewer's comment on number and countability in Korean: Chung (2000), Kim (2005), Nemoto (2005), Park (2008), Kim (2009), Kim (2010), Kobuchi-Philip (2011), Nomoto (2013), and many others have shown the roles of classifiers within DPs/NPs as well as the syntactic (and semantic) relations between CLPs and the plural markers in natural languages. As mentioned above, we confirm that classifiers and plural markers are not necessarily in complementary distribution. In addition, we attempt to explain the presence of more [+LATT] in Korean as a classifier language in relation to inherent plurality across languages (e.g., without overt PL marking on *taset ai* 'five children,' *sey salam* 'three persons,' *five fish*, *three deer*, and etc.).

6. Conclusion

In this paper, we showed whether Korean nouns display parametric variation with the properties of [+arg, -pred] as Chierchia proposed. Korean bare nouns can appear in argument positions, either as singular or plural, and they can function as subjects or objects; thus, they are argument expressions (i.e., type *e* or a DP) without determiners/determiner-like elements specified. We also investigated Korean (singular/plural) nouns to classify the presence or absence of the mass/count distinction. Quantity-denoting modifiers of Korean and Japanese were investigated to attest to the presence of the mass/count distinction in both languages, which led to the fact that the distinctive distribution between *talyang* vs. *taswu* in Korean and *taryoo* vs. *tasuu* in Japanese, linked to the mass and count nouns respectively, is parallel with each other. In this regard, we verified that Korean is a classifier language and nouns are not fully masslike. Observing Korean NPs, thus, we argued that Chierchia's typological parametric generalization is not accurately predictable. However, as Kobuchi-Philip (2011) pointed out with her empirical Japanese data, Korean also lacks the obligatory plural marking system with count nouns as often found in English. Korean bare nominals are attenuated mass nouns, rather than strict mass nouns, because they originally appear in the lexicon with mass meanings, but, when they take classifiers, they flexibly turn into count meanings. This approach is in line with Chierchia's (1998a, 1998b) proposal to a certain extent.

Lastly, by giving syntactic schemes with [+LATT] in nominal structures, we confirmed that, in a classifier language such as Korean and Japanese, [+LATT] is distributed in their nouns as default whereas [-LATT] is prevalent in a non-classifier language such as English. We further claimed that the distribution of either [+LATT] or [-LATT] as default in nouns cross-linguistically determines whether nouns in a particular language come out of the lexicon as inherently singular or plural. In sum, Korean is a classifier language with [+LATT] in its nouns as default; therefore, this language shows the property of (attenuated) mass denotations. On one hand, thanks to the classifiers, nouns are individuated as smaller units. On the other hand, at the same time, the widely used Korean plural marker gives rise to the property of count nouns as well.

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