

# Semantic Features of Countability in Korean

Eun-Joo Kwak\*

Sejong University

**Eun-Joo Kwak. 2009. Semantic Features of Countability in Korean. *Language and Information* 13.1, 21–38.** Since countability is a grammatical notion, the distinction between count and mass nouns may not reflect countability in the real world. Based on this, Chierchia (1998a; 1998b) provides a typological study of plurality and genericity, which does not account for countability in Korean. Nemoto (2005) revises Chierchia's analysis to deal with count and mass nouns in Korean and Japanese. This study discusses problems with the previous analyses and proposes that the semantic feature of humanness is the main criterion for countability in Korean. (Sejong University)

**Key words:** countability, plurality, genericity, cumulativity, homogeneity

## 1. Introduction

The most common way to categorize nouns is to divide them into count and mass. Generally, count nouns are assumed to include expressions that denote discrete individuals semantically and have plural forms morpho-syntactically. Mass nouns consist of expressions that do not have discrete identities and occur only in singular or number-neutral forms. Thus countability and plurality are parallel, making count and mass nouns easily distinguishable. Nouns with plural forms are count while those without plural forms are mass.

The classical criterion for countability works in languages with strict nominal plural marking in the grammar such as English. However, cross-linguistic studies show that plurality is expressed differently across languages. Some languages may not have plural marking at all, and others may have optional plural marking or non-nominal plural marking. Chierchia (1998a; 1998b) provides typological arguments on the relation between plurality and genericity in different languages. However, Chierchia does not account for optionality of plural forms and classifier phrases in Korean.

In this study, I provide criteria for distinguishing count and mass nouns in Korean. I critically review Chierchia (1998a; 1998b), based on earlier criticisms and

---

\* I would like to thank three anonymous reviewers for their helpful comments. Any remaining errors, however, are my own. This work was supported by the Korea Research Foundation Grant funded by the Korean Government (KRF-2008-327-A00605)

cross-linguistic data. I also summarize a revised analysis on Korean and Japanese by Nemoto (2005), highlighting several unresolved aspects of her work. Finally, I propose semantic and morpho-syntactic criteria for Korean countability.

## 2. Morpho-syntactic Criteria for Countability

### 2.1 Chierchia (1998a; 1998b)

At first glance, the distinction between count and mass nouns seems straightforward. Nouns that denote discrete objects may be pluralized while nouns that denote liquids or substances may not. This morpho-syntactic difference is regarded as a criterion for countability. Since a count noun is supposed to express a certain number of objects in its denotation, the discreteness of objects and plural morphology are consistent marks for count nouns. On the other hand, the dense nature of liquids or substances and the number-neutral or singular morphology are used as the criteria for mass nouns. Hence, countability and plurality are parallel.

Countability based on plural morphology fails to explain diverse patterns of plurality. The structure of matter in the real world is not identical to the countability of nouns. Thus, the same entities may be denoted by a pair of expressions that are distinguished only by countability. For example, count nouns like *coins*, *shoes*, and *carpets* have mass counterparts such as *change*, *footwear*, and *carpeting*. Countability detached from the structure of matter is represented in more diverse patterns cross-linguistically. Nominal plural marking may not exist in the grammar, or the plurality of nouns may be marked in other categories depending on the language.

Chierchia (1998a; 1998b) provides a typological study with the notion of a ‘nominal mapping parameter’ to account for the mismatch between countability and plurality. He classifies languages into three categories based on the values of two features, [arg] for arguments and [pred] for predicates.

- (1) a. [+arg, +pred] : English, German
- b. [-arg, +pred] : French, Italian
- c. [+arg, -pred] : Chinese, Thai

For languages with [+arg], NPs denote names of kinds typed *e*, and thus bare NPs without determiners or number inflection may appear in argument positions. On the other hand, when languages have [+pred], NPs denote predicates of type  $\langle e, t \rangle$ , and bare NPs are not allowed in argument positions due to the type-mismatch problem. Given this distinction, English and German are classified as having [+arg, +pred], and both bare NPs and NPs with determiners may occur in argument positions. French and Italian, which are assigned [-arg, +pred], do not allow bare NPs in argument positions. Finally, Chinese and Thai are languages with bare NPs in argument positions because of the features [+arg, -pred].

Chierchia (1998a) also provides a list of properties for mass nouns. The most basic property is that mass nouns do not have related plural morphology.

- (2) Property 1: the availability of plural morphology

- a. There are shoes in this store.
- b. \*There are footwears in this store.

In spite of similar denotations, the count noun shoe has a plural form, but the mass counterpart *footwear* does not. The second property for mass nouns is that they may not occur with numerals.

- (3) Property 2: the distribution of numerals
- a. three drops, four pieces of furniture, two virtues
  - b. \*three bloods, four furnitures, two honesties

Mass nouns such as *blood*, *furniture*, and *honesty* cannot combine with numerals directly. Instead, they require classifier or measure phrases for counting.

- (4) Property 3: the obligatoriness of classifier and measure phrases for combining with numerals
- a. three grains of rice, two piles of wood, two stacks of hay
  - b. two kilos of rice, a gallon of milk

Note that the occurrence of a classifier phrase itself does not show that the modified noun is mass because Chierchia states that classifier phrases are not limited to mass nouns. What matters is the obligatoriness of a classifier phrase for counting of mass nouns.<sup>1</sup>

Given the properties of mass nouns, Chierchia (1998a; 1998b) summarizes the semantic and morpho-syntactic properties of languages with [+arg, -pred] as follows:

- (5) NP [+arg, -pred] languages (Chierchia, 1998b, 354)
- a. Generalized bare arguments
  - b. The extension of all nouns is mass
  - c. No plural marking
  - d. Generalized classifier system

In languages with [+arg, -pred], nouns may occur in argument positions as bare nouns. These nouns do not have plural forms and need additional phrases to be counted. Hence, all nouns in these languages are mass nouns. Chierchia states that Chinese does not have count nouns, claiming that all these features are noted in Chinese.

<sup>1</sup> Chierchia (1998a) mentions more properties for mass nouns. The additional properties are all related with the interaction of the determiner system with the count/mass distinction and a meaning shift between count and mass. Since they are less universal than those in (2)-(4), they are not discussed in this study.

In addition to the nominal mapping parameter, Chierchia also argues that mass nouns are lexically plural, denoting kinds. Mass nouns cannot be pluralized because they are already plural. Since *furniture* denotes entities that consist of pieces of furniture, there is no reason to introduce non-atomic entities other than atoms for pieces of furniture. Suppose that there are three pieces of furniture in a context: two chairs  $c_1$  and  $c_2$ , and one table  $t_1$ . A singular term piece of furniture denotes a set of these three pieces as in (6a).

- (6) a. [[piece of furniture]] =  $\{c_1, c_2, t_1\}$   
 b. [[pieces of furniture]] =  $\{c_1, c_2, t_1, c_1+c_2, c_1+t_1, c_2+t_1, c_1+c_2+t_1\}$   
 c. [[furniture]] =  $\{c_1, c_2, t_1, c_1+c_2, c_1+t_1, c_2+t_1, c_1+c_2+t_1\}$

Its plural counterpart *pieces of furniture* denotes a set closed under the sum operation in (6b). In Chierchia's analysis, the denotations of mass nouns are generated from atoms, and thus the mass noun *furniture* denotes a set of atoms closed under the sum operation in (6c). This amounts to the same set as the one in (6b), which means that the plural *pieces of furniture* and the mass *furniture* are interpreted in the same way.

## 2.2 Countability in Korean Based on Morpho-syntactic Criteria

Chierchia (1998a; 1998b) classifies languages into three categories with the features [arg] and [pred]. According to his analysis, the nominal mapping parameter explains nouns in Korean through [+arg, -pred] in three respects. First, bare NPs can freely occur in argument positions in Korean.<sup>2</sup>

- (7) Haksayng-i chacawassta.  
 student-Nom came  
 'A student/students came.'

*Haksayng* 'a student/students' is a bare NP without a determiner or number inflection. Just as in Chinese, the bare NP *haksayng* takes the argument position, which works as major evidence for a [+arg, -pred] language in Chierchia's analysis. Second, the bare NP may denote either singular or plural individuals as paraphrased in (7). Note that Chierchia claims that all nouns in [+arg, -pred] languages are mass and lexically plural. The plurality of mass nouns fits with the plural denotation of the bare NP. Hence, the vagueness or ambiguity of *haksayng* as to the number of students may be understood as another aspect of a [+arg, -pred] language.

Finally, Chierchia argues that the occurrence of a classifier or measure phrase is inevitable for counting of mass nouns. Although mass nouns denote plural entities

<sup>2</sup> When *haksayng* 'student' is followed by the plural morpheme *-tul*, it cannot be used for a single student. *Haksayng-tul* refers to a plural entity without ambiguity. However, the interpretation of the bare-formed NP *haksayng* is not limited to a singular. It may be used to denote a plural entity of students. Plural-formed NPs like *haksayng-tul* are discussed to denote sums of individuals in much literature. (cf. Kang (1994), Im (2000), Baek (2002), Kwak (1996), Kwak (2003), Jun (2004), Noh (2008)) However, the semantics of bare-formed NPs is much more controversial. Some argue for the sum readings of bare-formed NPs while others propose group denotations for these NPs.

generated from atoms in the lexicon, plural individuals in mass denotations are not accessible in semantics. Hence, mass nouns are countable only when they are accompanied by a classifier or measure phrase that delivers basic units for counting. All nouns in Korean may be classified as mass in this respect because they may be accompanied by a classifier phrase.

- (8) *sey myeng-uy haksayng*  
 three Cl-Gen student  
 ‘three students’

In earlier theories in which nouns having discrete denotations are classified as count, *haksayng* is understood as a count noun, referring to discrete entities of students. However, it is a mass noun in Chierchia’s analysis because it occurs with the classifier phrase *sey myeng-uy*. This mismatch is justified by Chierchia in that the structure of matter in the real world is a separate issue from the atomicity of semantics.

According to Chierchia’s analysis, Korean nouns are uniformly classified as mass nouns. The semantic and morpho-syntactic behaviors of nouns seem to be consistent with the properties of mass nouns that Chierchia discusses. However, this hasty conclusion is problematic because of the optional nature of those properties. Korean allows nouns to occur with or without determiners in argument positions.

- (9) a. *i/ce/ku haksayng*  
 this/that/the student  
 ‘this/that/the student’  
 b. *haksayng-tul*  
 student-Pl  
 ‘students’  
 c. *sey haksayng(-tul)*  
 three student(-Pl)  
 ‘three students’

The bare NP in (7), *haksayng*, may be replaced with the demonstrative NP in (9a). This means that not only bare NPs but NPs with a demonstrative may occur in argument positions. Additionally, Korean has a plural morpheme *-tul*, which may be attached to nouns as in (9b). Plural denotations are delivered by plural-formed NPs with *-tul* as well as bare-formed ones. Finally, numeral readings may be expressed by NPs combined directly with a numeral as in (9c). A classifier or measure phrase is not obligatory for Korean nouns to be counted. Therefore, Korean nouns are distinct from those of other [+arg, -pred] languages. This is shown in the following examples.

- (10) NP [+arg, -pred] languages vs. Korean  
 a. Generalized bare arguments ⇒ Optional bare arguments  
 b. The extension of all nouns is mass. ⇒ ?

- c. No plural marking  $\Rightarrow$  Possible plural marking
- d. Generalized classifier system  $\Rightarrow$  Optional classifier system

Bare arguments and classifier phrases are available but not obligatory in Korean, and plural readings are delivered by NPs with or without a plural marker. Considering that the mass property in (10b) is the assumption based on the other descriptions, it is questionable whether all nouns in Korean can be classified as mass nouns.

### 3. Problems with Morpho-syntactic Distinction

#### 3.1 Cross-linguistic Counterarguments

In spite of his persuasive arguments on countability and genericity, Chierchia's (1998a; 1998b) framework fails when analyzed cross-linguistically. According to his nominal mapping parameter, Chinese is classified as a [+arg, -pred] language, which leads Chierchia to argue that Chinese has only mass nouns in its lexicon. The theoretical grounds from this argument come from the fact that Chinese nouns need classifier phrases to be counted. As for the use of classifier phrases, Zhang (2007) argues that numeral classifiers in Chinese are not simply for counting but delivering categorization parameters such as humanness, animacy, shape, function, consistence, and size. (cf. Adams and Conklin (1973), Allen (1977), Friedrich (1970)) This set of parameters is commonly observed in numerous languages, and thus research on classifiers is closely related to the cognitive processes of human beings.

In addition to the cognitive process associated with Chinese classifiers, they can be semantically distinguished between count and mass classifiers. Count classifiers are used for nouns that denote discrete and countable entities in the real world while mass classifiers are used for nouns that refer to entities without discrete units. (Cheng and Sybesma, 1999; Chien, Lust, and Chiang, 2003) For instance, the classifier *ben* in *liang ben shu* 'two books' is a count classifier whereas *ping* in *liang ping jiu* 'two bottles of wine' is a mass classifier. Count classifiers provide information on how entities named by a noun are partitioned in a natural way, and mass classifiers create a unit of measure to quantify portions of entities. This difference is related to the permanency of classifiers. Count classifiers denote inherent or permanent properties of an object while mass classifiers indicate only temporary states of an object. When the same object is modified by a different set of classifiers, it has different readings. For example, *xiangyan* 'cigarette' may occur with the count classifier *gen* or the mass classifier *bao*.

- (11) a. *yi gen xiangyan*  
           one Cl cigarette  
           'a cigarette'
- b. *yi bao xiangyan*  
           one Cl cigarette  
           'a pack of cigarette'

The count classifier *gen* in (11a) conveys the long stick-like property of a cigarette, which is inherent in a cigarette. On the other hand, the mass classifier *bao* expresses a temporary state of cigarettes such as when they are in a pack. Mass classifiers usually express scalar concepts such as length, weight, aggregation, and an open class of container objects serving as units (e.g., *box*, *pack*, and *bottle*). Therefore, Cheng and Sybesma (1999) argue that while the difference between count and mass nouns is grammatically reflected at the level of the noun in Indo-European languages, it is reflected at the level of the classifier in Chinese.

Along with the semantic differences between count and mass classifiers, Cheng and Sybesma (1999) argue that they also show differences in syntax. The modification marker *de* can be inserted between a mass noun classifier and a noun, but it cannot be inserted between a count noun classifier and a noun.

- (12) a. *san bang (de) rou*  
 three CL.pound De meat  
 ‘three pounds of meat’
- b. *liang xiang (de) shu*  
 two CL.box De book  
 ‘two boxes of books’
- c. *ba tou (\*de) niu*  
 eight CL.head cow  
 ‘eight cows’

*San bang* for the indiscrete object *rou* ‘meat’ and *liang xiang*, which conveys the temporary state of a discrete object like *shu* ‘book’, are classified as mass classifiers. The word *tou* for the inherent property of the discrete object *niu* ‘cow’ is understood as a count classifier. Note that *de* can be inserted only in (12c) but not in (12a) and (12b). Hence, Cheng & Sybesma argue that count and mass classifiers are not only distinguished in semantics but also in syntax.

Although Chinese seems to follow Chierchia’s classification on the surface, the semantic and syntactic behaviors of classifier phrases do not fit with the claim that Chinese has only mass nouns. A more serious challenge to Chierchia’s analysis is provided by Wilhelm (2008) with linguistic data in Dëne Suliné (henceforth Dëne), a Northern Athapaskan language spoken in Northern Canada. Nouns in Dëne may occur in argument positions without a determiner or number inflection, and thus Dëne nouns are better classified as mass in Chierchia’s analysis. However, they show different behaviors from typical mass nouns.

- (13) *solághe k’ásba*  
 five chicken  
 ‘five chickens’

*K’ásba* ‘chicken’ is a bare noun, and thus Chierchia predicts that it will occur with a classifier phrase. However, it combines directly with the numeral *solághe* ‘five’ like ordinary count nouns. What makes it more complex is that not all nouns may combine with a numeral directly. Some nouns need a measure or container expression when counted.

- (14) a. #solághe ejëretth'úé 'five milk'  
 b. #solághe bër 'five meat'  
 c. ??náke t'l'ólátúé 'two beer'

- (15) a. solághe ejëretth'úé tih  
 five milk container  
 'five pounds of milk'  
 b. solághe nedádhi bër  
 five pound meat  
 'five cartons of meat'  
 c. náke tutih t'l'ólátúé  
 two bottle beer  
 'two bottles of beer'

Nouns like *ejëretth'úé* 'milk', *bër* 'meat', and *t'l'ólátúé* 'beer' need a measure or container expression to be counted as shown in (15). Interestingly, nouns which need a measure phrase include expressions of liquids, substances, and some abstract concepts. The distinction of Dëne nouns for numeral expressions is quite similar to nouns in English. Nouns that combine with a numeral directly are similar to the set of count nouns in English, while nouns occurring with a measure phrase share semantic properties with English mass nouns. Therefore, Wilhelm argues that Dëne has a count and mass distinction in spite of a lack of plural marking and the occurrences of bare nouns in argument positions. The count and mass distinction in Dëne shows that plurality is a separate issue from countability.

### 3.2 A Reanalysis of Korean Nouns: Nemoto (2005)

Korean seems to be classified as a [+arg, -pred] language in the framework of Chierchia (1998a; 1998b). However, Korean shows distinct features from ordinary languages with [+arg, -pred] features, and thus Korean nouns cannot be dealt with in his analysis. Hence, Nemoto (2005) proposes a revised analysis for the countability in Korean and Japanese. Nemoto starts from the basic assumption of Chierchia: all nouns in Korean and Japanese come out of the lexicon with mass denotations. However, she does not accept the argument that all mass nouns in the lexicon remain mass in syntax and semantics.

First, Nemoto points out that Chierchia's analysis needs to be revised because Korean and Japanese allow plural-marked NPs. Along with singular NPs like *haksayng* and *gakusei* 'a student/students,' their plural counterparts such as *haksayng-tul* and *gakusei-tati* 'students' are also used. Thus, Korean and Japanese do not have one of the features of [+arg, -pred] languages, namely no plural marking.

Second, despite the possibility of plural NPs, Nemoto argues that all nouns in Korean and Japanese come out of the lexicon with mass denotations. Hence, nouns in the two languages always require a classifier phrase to be counted.<sup>3</sup>

<sup>3</sup> Some of the Korean data in Nemoto (2005) are not correctly transcribed. Thus, I change them appropriately in this study.



- (16) a. *sey myeng-uy* /\**sey-uy* *haksayng*  
 three Cl-Gen /three-Gen student  
 ‘three students’ (Korean)
- b. *san-nin-no*/\**san-no* *gakusei*  
 three-Cl-Gen/\*three-Gen student  
 ‘three students’ (Japanese)

Nemoto argues that the mandatory use of a classifier phrase for counting supports the assumption that all nouns are lexically mass in Korean and Japanese. Based on this, Nemoto proposes that nouns with non-kind denotations are embedded under the higher projections such CIP (classifier phrase) and DP (determiner phrase). CIP and DP individuate nouns, and the mass/count distinction reemerges. Following Corbett (2000), Nemoto argues that bare NPs like *haksayng* are morphologically singular but semantically ambiguous between number-neutral and singular nouns. A singular bare NP is a DP with a count denotation while a number-neutral bare NP is an NP with a mass denotation.

Third, Nemoto argues that although NPs in non-kind readings may be shifted to count nouns, NPs in kind readings retain their mass denotations. This means that all NPs occurring in generic sentences are mass nouns and cannot be pluralized.

- (17) a. *Koray*/\**koray-tul-un phoyuryu-ita*.  
 whale/whale-Pl-Top mammal-be  
 ‘Whales are mammals.’ (Korean)
- b. *Kuzira*/\**kuzira-tati-wa honyuurui-da*  
 whale/whale-Pl-Top mammal-be  
 ‘Whales are mammals.’ (Japanese)

To deliver the generic reading of ‘whales are mammals,’ only the bare NPs *koray* and *kuzira* ‘whale’ may be used in Korean and Japanese, respectively. Their plural forms are not allowed in generic sentences. In Chierchia (1998a; 1998b)’s analysis, all nouns in [+arg, -pred] languages are mass nouns with kind denotations, and plural-formed NPs are not possible in those languages. However, Nemoto revises her analysis so that nouns with kind denotations remain mass while those with non-kind readings may be shifted to count nouns.

At first glance, Nemoto’s analysis seems to revise Chierchia’s theory appropriately. However, the analysis is based on incorrect data. Although Nemoto claims that all nouns in Korean require classifier phrases for counting, direct counting with a numeral is also possible. Korean allows not only *sey myeng-uy haksayng*, with the classifier phrase, but also *sey haksayng*, without it, to deliver the reading of three students. Nemoto inserts the unnecessary genitive case in (16a) to argue for the requirement of the classifier phrase. Since Nemoto’s analysis is based on incorrect data in (16a), it is a moot point whether all Korean nouns should be mass in the lexicon.

Another empirical problem with Nemoto is that Korean generic sentences allow for plural nouns unlike Japanese ones. Although non-human nouns must be number-

neutral or singular in generic sentences, human nouns may be pluralized in Korean generic sentences.

- (18) a. Hankwukin/hankwukin-tul-un mongkolincong-ita.  
 Korean/Korean-Pl-Top mongoloid-be  
 'Koreans are mongoloids.' (Korean)
- b. Nihonzin/\*nihonzin-tati-wa mongoloid-da.  
 Japanese/\*Japanese-Pl-Top mongoloid-be  
 'Japanese are mongoloids.' (Japanese)

In contrast with the ungrammaticality of the plural generic NP in (18b), the plural noun *hankwukin-tul* 'Koreans' may also occur in a generic sentence in Korean. The plural formed generic NP is a serious problem with Nemoto's analysis because she proposes that NPs with kind readings remain mass nouns and cannot be pluralized. Hence, Nemoto states that it is an open question why human and non-humans nouns show different behaviors in Korean generic sentences.

#### 4. Further Discussion of Korean Countability

##### 4.1 Countability and Plural Morphology

Chierchia (1998a; 1998b) predicts that languages where bare nouns occur in argument positions have only mass nouns and do not have plural-marked NPs. Korean is difficult to classify in Chierchia's analysis because bare nouns in plural forms appear in argument positions. A more serious problem is that terms for materials as well as those for individuals may be followed by the plural morpheme *-tul*.<sup>4</sup>

- (19) a. Yeki ceki-se haksayng-tul-i pointa.  
 here there-Loc student-Pl-Nom be-seen  
 'Students are seen here and there.'
- b. Yeki ceki-se sakwa-tul-ul sassta.  
 here there-Loc apple-Pl-Acc bought  
 '(pro) bought apples here and there.'
- c. Yeki ceki-se kakwu-tul-ul swuciphayssta.  
 here there-Loc furniture-Pl-Acc collected  
 '(pro) collected the furniture here and there.'
- d. Yeki ceki-se mwul-tul-i ssotacyessta.  
 here there-Loc water-Pl-Nom be-poured  
 'Water was poured here and there.'

<sup>4</sup> Terms for individuals are considered as count while those for materials are mass. Kang (1994) argues that quantifiers such as *kak* 'each' and *yele* 'several' precede only count nouns and that a suffix particle *mata* 'each' may follow only count nouns. According to these criteria, *sakwa* is a count noun, and *mwul* is a mass noun. However, Park (2008) provides appropriate contexts in which *mwul* may be preceded by *kak* and *yele* as well as followed by *mata*. Then, the countability of a noun cannot be solely determined by the occurrences of the distributive quantifiers or particle.

*Haksayng* ‘student’ and *sakwa* ‘apple’ are usually understood as count nouns while *kakwu* ‘furniture’ and *mwul* ‘water’ are classified as mass nouns.<sup>5</sup> Despite their different countability in the real world, these nouns may be followed by *-tul*. If we assume that plural morphology is the main criterion to distinguish count and mass nouns, the nouns in Korean should be classified as count nouns. Chierchia (1998a) states that there is no language that has only count nouns. Languages may have only mass nouns but not count nouns only. Hence, the generalized plural forms in (19) are quite unexpected in the typological point of view.

Further scrutiny reveals that although the nouns in (19) are all in plural forms, they have distinct semantic properties. Note that the sentences in (19) include the distributive adverbial *yeki ceki-se* ‘here and there.’ If we take this out from the sentences, the plural nouns in (19b)-(19d) sound very awkward. Only *haksayng-tul* may occur without the distributive adverbial. This distinct acceptability triggers a question: do the plural-formed nouns in (19) have plural denotations?<sup>6</sup> A possible answer to this question comes from the different occurrences of anaphoras for the nouns. *Haksayng-tul* may not be followed by the singular *ku* ‘he’ as in (20a).

- (20) a. \**Yeki ceki-se haksayng-tul<sub>i</sub>-i poinunte ku<sub>i</sub>-ka chwukkwu-lul*  
 here there-Loc student-Pl-Nom be-seen-Conj he-Nom soccer-Acc  
*hanta.*  
 do  
 ‘Students are seen here and there, and they play soccer.’
- b. *Yeki ceki-se sakwa-tul<sub>i</sub>-ul sase kukes<sub>i</sub>-ul ta mekessta.*  
 here there-Loc apple-Pl-Acc bought-Conj it-Acc all ate  
 ‘(pro) bought apples here and there and ate them all.’

<sup>5</sup> Although *kakwu* and *mwul* are named as mass nouns here, they are semantically distinct. *Kakwu* is a collection term made out of countable objects such as desks and chairs; *mwul* denotes a material that cannot be divided into atoms. Hence, the atomicity for the denotations of mass collections and ordinary mass nouns is an important topic for the semantics of mass nouns. Earlier approaches such as Link (1983) and Landman (1989) opt for a non-atomic domain for mass nouns while Chierchia (1998a; 1998b) and Rothstein (2007) argue for an atomic domain.

<sup>6</sup> Park (2008) argues that a human noun with *-tul* can be followed by a numeral but a non-human noun cannot.

- (i) a. *haksayng-tul sey myeng*  
 student-Pl three Cl  
 ‘three students’
- b. \**sakwa-tul sey kay*  
 apple-Pl three Cl  
 ‘three apples’
- c. \**mwul-tul sey tong*  
 water-Pl three Cl  
 ‘three buckets of water’

If the judgments in (i) are correct, the different acceptability in (i) may be considered as further evidence for the different countability between human and non-human nouns. However, (ib) is judged to be acceptable in Kang (1994). Since the judgment for (ib) is subtle, more research is needed for a concrete conclusion.

- c. Yeki ceki-se **kakwu-tul<sub>i</sub>**-ul swuciphayse **kukes<sub>i</sub>**-ul  
 here there-Loc furniture-Pl-Acc collected-Conj it-Acc  
 kesil-ey twuessta.  
 living room-Loc put  
 '(pro) collected the furniture here and there and put it in the living room.'
- d. Yeki ceki-se **mwul-tul<sub>i</sub>**-i ssotacyese **kukes<sub>i</sub>**-i khapheythu-lul  
 here there-Loc water-Pl-Nom be-poured-Conj it-Nom carpet-Acc  
 mangchyessta.  
 ruined  
 'Water was poured here and there, and it ruined the carpet.'

Only a plural pronoun *kutul* 'they' is a legitimate anaphora for *haksayng-tul*. However, the other plural-formed nouns may be followed by the singular anaphora *kukes* 'it' as shown in (20b)-(20d). The occurrences of the singular anaphora show that the plural-formed non-human nouns may not have plural denotations in spite of their plural forms. The function of the plural morpheme *-tul* is debatable between an authentic plural marker and a distributive marker.<sup>7</sup> No matter what kind of role *-tul* plays in semantics, human nouns are differentiated from non-human nouns in two respects. One is that human nouns may occur in plural forms without another distributive source while non-human nouns need separate distributive properties to take the plural morpheme. The other is that pluralized human nouns may not be referred to by a singular pronoun whereas non-human nouns may be denoted by a singular anaphora regardless of their plural morphology.

Given the distinct behaviors of human and non-human nouns, there are two possible ways to pursue this dilemma. One is to assume that all the nouns in Korean are count nouns due to the occurrence of generalized plural forms. This assumption needs an independent account for the different restrictions on the occurrences of the plural nouns and the anaphoras in (19) and (20). It is questionable why the plurality of the human noun is free from the occurrence of the distributive adverbial unlike other non-human nouns, and why the plural-formed non-human nouns may be followed by singular pronouns. Another way would be to assume that human nouns in Korean are count nouns while non-human nouns are mass nouns. Under this assumption, the plural morphology of human nouns is a marker for plural denotations while the plural morpheme for non-human nouns has some other function like a distributive marker. The distinct distribution of the anaphoras in (20) also follows this assumption.

#### 4.2 Countability and Classifier Phrases

Chierchia (1998a) states that mass nouns cannot combine with a numeral directly but need a classifier phrase instead to be counted. The mandatory use of a classifier

<sup>7</sup> The semantic function of *-tul* is claimed to be a distributive marker depending on researchers. Part of the empirical evidence for this claim comes from the fact that plural students can be referred not only by the pluralized noun *haksayng-tul* but also by the singular-formed *haksayng*. The plural denotation of *haksayng* is shown by the occurrence of the plural pronoun *kutul*. Since the semantic properties of *-tul* are another topic that needs extensive arguments, I will not go into details in this study.

phrase is named as one of the morpho-syntactic properties of mass nouns. According to this criterion, Chierchia claims that Chinese has only mass nouns. However, this claim is challenged in a number of the studies on Chinese as surveyed in section 3.1. Chinese classifiers are distinguished between count and mass classifiers in their semantic and syntactic properties.

Note that even in English, the occurrence of a classifier phrase does not guarantee that its co-occurred noun is a mass noun. According to Chierchia (1998a), the category of classifiers includes containers and collective nouns as well as ordinary classifiers.<sup>8</sup> Given this, the expressions in (21) have classifier phrases.

- (21) a. two slices of cake, four drops of water  
       b. two packs of cigarettes  
       c. a bunch of flowers

The ordinary classifiers in (21a) combine with the mass nouns such as *cake* and *water*. However, the container expression *two packs of* occurs with the count noun *cigarettes*, and the collective noun *bunch* forms a noun phrase with the count noun *flowers*. Count nouns may also occur with a classifier phrase even in English, when count and mass nouns are morpho-syntactically distinct. This means that the countability of nouns may not be determined solely by the occurrence of a classifier phrase.

Although count nouns may occur with a classifier phrase, mass nouns may not combine directly with a numeral. English, Chinese, and Dëne show different patterns of countability and plurality, in which mass nouns require a classifier phrase to be counted. In Korean, only human nouns may combine with a numeral, and other categories of nouns sound awkward when counted directly.<sup>9</sup>

- (22) a. sey haksayng-tul  
       three student-Pl  
       'three students'  
       b. \*sey sakwa-tul  
       three apple-Pl  
       'three apples'

<sup>8</sup> Chierchia (1998a) discusses differences between classifier and measure phrases. Measure phrases are similar to classifier phrases in that they are inherently relational and quantize a certain domain of objects. However, unlike classifier phrases, measure phrases combine only with a restricted range of numeral determiners and hardly allow adjectival modification.

<sup>9</sup> The acceptability judgments for (22a), (22b), and (22d) are from Kang (1994). As for the acceptability judgment for (22c), one of the reviewers points out the fact that a non-human noun can be preceded by a numeral with the example of *i sey kakwu* 'these three pieces of furniture.' When *sey kakwu* is preceded by the demonstrative, the resulting expression sounds much better. The acceptability difference between *sey kakwu* and *i sey kakwu* seems to root in a more general issue of interaction between specificity and plurality. The plural reading of *haksayng* 'students' is not maintained in *i haksayng* 'this student.' This interaction is an interesting point worth pursuing in a separate study.

- c. \*sey kakwu-tul  
 three furniture-Pl  
 'three furniture'
- d. \*sey mwul-tul  
 three water-Pl  
 'three water'

To denote three students, *haksayng-tul* may take the numeral *sey* 'three' without the insertion of a classifier phrase. However, the other nouns cannot combine with *sey* directly. The use of a classifier phrase is mandatory or preferred in (22b)-(22d). The different patterns for counting show that only human nouns denote discrete entities that may be counted.<sup>10</sup> Non-human nouns denote dense entities which need additional phrases for the units of counting. This means that human nouns are count nouns whereas non-human nouns are mass nouns.

Korean and Dëne show close similarities in countability judgments. As discussed in section 3.1, Dëne is a language without plural morphology. In spite of singular or number-neutral forms, nouns with discrete denotations may combine with a numeral directly. Therefore, they are classified as count nouns. Korean is distinct from Dëne in that nouns may be morphologically pluralized in Korean. However, countability judgments in Korean are the same as in Dëne. Nouns that may be counted without a classifier are countable and categorized as count nouns. Nouns that need a classifier phrase for counting are grouped as mass nouns. According to this criterion, the semantic feature of humanness is the property shared by Korean count nouns.

Countability divided by humanness may sound rather abrupt because humanness is not the main source for dividing countable and non-countable objects in the real world. However, countability is a grammatical notion. It is not about whether countable nouns denote entities that are countable in the real world. Chierchia (1998a) spares enough space to discuss grammatical countability that may be independent from real world countability. Second, the feature of humanness is not an unordinary way of categorizing nouns. Corbett (2000) suggests the Animacy Hierarchy along with a constraint on the hierarchy.

(23) The Animacy Hierarchy

speaker > addressee > 3<sup>rd</sup> person > kin > human > animate > inanimate

<sup>10</sup> The feature of humanness alone is not sufficient to categorize count nouns in Korean because nouns for the dead body of a person are treated like mass nouns.

- (i) a. \*sey sichey/sisin  
 three dead body/dead body  
 'three dead bodies'
- b. sey kwu-uy sichey/sisin  
 three Cl-Gen dead body/dead body  
 'three dead bodies'

*Sichey* and *sisin*, referring dead bodies, need a classifier phrase for counting. This shows that humanness and animacy work together to define count nouns in Korean.

- (24) Constraint of the Animacy Hierarchy on the singular-plural distinction  
The singular-plural distinction in a given language must affect a top segment of the Animacy Hierarchy.

(23) and (24) show that number distinction is made along the Animacy Hierarchy, in which humanness is one of the important features. Corbett also observes that humanness is the main feature to distinguish count and mass nouns in Manchu, a Tungusic language of northern China, in which number is marked on pronouns and most nouns denoting humans. Given the hierarchy, it is plausible to argue that countability is determined by humanness in Korean just as in Manchu.

### 4.3 Countability and Genericity

To resolve the problem of plural nouns in Korean and Japanese, Nemoto (2005) revises Chierchia's (1998a; 1998b) analysis. As with Chierchia, Nemoto also assumes that all nouns in Korean and Japanese come out of the lexicon with mass denotations. Unlike Chierchia, however, Nemoto argues that nouns in non-kind readings may undergo meaning shifts to become count nouns whereas nouns in kind readings retain their mass denotations. As pointed out in section 3.2, the occurrence of a plural generic NP in Korean is a serious problem with Nemoto's proposal. Nemoto cannot account for the distinct patterns between human and non-human nouns in generic sentences.

Contrasting with Chierchia and Nemoto, I argue that human nouns are lexically count nouns while non-human nouns are mass nouns in Korean. Since non-human nouns are mass nouns, they cannot be pluralized in generic sentences. However, human nouns are count nouns, and thus plural human nouns may appear in generic sentences. The following distinction follows from the different types of countability for nouns.<sup>11</sup>

- (25) a. Haksayng/ haksayng-tul-un sihem-ul silhehanta.  
student/student-Pl-Top exam-Acc dislike  
'Students dislike exams.'

<sup>11</sup> Generic sentences discussed in this study are restricted to 'characterizing generics,' which describe the regularity of facts or episodes, and 'normative generics,' which state regulations or social norms. In addition to these, genericity includes 'direct kind predication.' (cf. Krifka and others (1995))

- (i) a. Inkan/#inkan-tul-un chimphaynci-lopwuthe cinhwahayssta.  
human being/human being-Pl-Top chimpanzee-from were-evolved  
'Human beings were evolved from chimpanzees.'
- b. Kamca/#kamca-tul-un 17 seyki-ey cheum allyecyessta.  
potato/potato-Pl-Top 17 century-Loc first were-introduced  
'Potatoes were first introduced in the 17<sup>th</sup> century.'

(ia) and (ib) are the sentences of direct kind predication describing a single event of the evolution of human beings or the introduction of potatoes. As the generic terms in (i) denote a special entity of kind individual, the sentence interpretations do not involve a generic operator quantifying over individuals. In other words, plurality is not relevant in (i). This is related to the fact that both the human and non-human nouns occur without *-tul*.

- b. Kamca-nun/#kamca-tul-un kkepcil-i cal peskyecinta.  
 potato-Top/potato-Pl-Top skin-Nom well peel  
 'Potatoes peel well.'

Without any contextual information, the human noun *haksayng* may be either singular or plural when deriving generic readings. However, the non-human noun *kamca* cannot be pluralized in (25b).

Given the distinct patterns of genericity in (25), one of the questions raised here is why *kamca* cannot be pluralized in the generic sentence. The ungrammaticality of *kamca-tul* in (25b) does not fit with the fact that it can occur in the plural form in non-generic sentences. In section 4.1, I argued that the plural morphology for non-human nouns is not for plural denotations. It is more like a distributive marker. Depending on the theory, it is debatable whether a generic operator involves distributivity. In Carlsonian theories, which posit 'stages,' specific instantiations of a kind, the generic operator distributes a predicate reading over the stages of a kind. However, in Neo-Carlsonian approaches, the generic operator binds a kind variable without distributivity over stages. Then, the non-distributive *kamca* is a proper NP for a kind denotation in this analysis. The other aspect of this argument is that when generic sentences involve distributive readings, the plural *kamca-tul* should be allowed. When generic sentences assert generalizations over species, they involve distributivity. For example, when the property of peeling well is asserted for the species of potatoes, it is a generalization distributed over the species. In this species reading, the plural *kamca-tul* is the appropriate one.

Another question related to genericity is why human nouns occur either in singular or plural forms in generic sentences as shown in (25a). Burton-Roberts (1977) and Cohen (2001) argue that generic sentences may include either singular indefinite NPs or bare plurals. However, they induce different generic readings. Although bare plurals provide the descriptive readings of general tendencies, indefinite singulars trigger the readings of rules or regulations. For example, (26a) makes a generalization about gentlemen, i.e., gentlemen in general open doors for ladies.

(26) a. Gentlemen open doors for ladies.

b. A gentleman opens doors for ladies.

On the other hand, (26b) is about a 'moral necessity' that is required of a gentleman; to be a gentleman, a man should open doors for ladies. Contrasting with the general description of gentlemen in (26a), (26b) is a statement about a social norm. (26a) is called a 'characterizing' generic sentence, and (26b) a 'normative' generic sentence. Burton-Roberts further argues that since a normative generic denotes a rule, (26b) is true when the rule is in effect. The distinct generic readings with the count noun are noticed in the same way in Korean. The plural NP *sinsa-tul* is appropriate for conveying the characterizing generic reading as in (26a) while the singular *sinsa* is the best term for a normative generic sentence like (26b). This shows that plurality in Korean makes a difference between characterizing and normative generic sentences just as in English. Since only count nouns make a distinction between two readings, countability divided by humanness in Korean is further supported by genericity.



## 5. Conclusion

As with other linguistic phenomena, countability in the real world is not directly reflected by countability in linguistics. Objects that are countable in the real world may be lexicalized as mass nouns while materials that are non-countable may be count nouns. Countability is a grammatical notion that explains how the grammar of a given language states for each noun.

In this study, I have discussed how nouns in Korean are distinguished between count and mass nouns. I have reviewed the typological study of Chierchia (1998a; 1998b) and shown that Korean nouns do not fit within the categories that Chierchia proposes. I have also reviewed a revised analysis of Chierchia's work by Nemoto (2005), pointing out that differences between human and non-human nouns are not properly dealt with in this revised analysis.

I have proposed that human nouns in Korean are count nouns while non-human nouns are mass nouns. Countability divided by humanness is supported by different anaphors and classifier phrases as well as different forms of generic NPs. Human nouns are consistently used as singular and plural in these constructions. However, non-human nouns have singular denotations even when they are in plural forms.

### <References>

- Adams, K. L. and N. F. Conklin. 1973. Toward a Theory of Natural Classification. In *Papers from the Ninth Regional Meeting*, pp. 1–10. Chicago Linguistic Society.
- Allen, K. 1977. Classifier. *Language* 53, 285–311.
- Baek, M. 2002. Hankwuke Pokswu Uymi Yenkwu (A Study of Plural Meaning in Korean). *Discourse and Cognition* 9, 59–78.
- Burton-Roberts, N. 1977. Generic Sentences and Analyticity. *Studies in Language* 1, 155–196.
- Cheng, L. and R. Sybesma. 1999. Bare and Not-so-Bare Nouns and the Structure of NP. *Linguistic Inquiry* 30, 509–542.
- Chien, Y., B. Lust, and C. Chiang. 2003. Chinese Children Comprehension of Count Classifiers and Mass Classifiers. *Journal of East Asian Linguistics* 12, 91–120.
- Chierchia, G. 1998a. Plurality of Mass Nouns and the Notion of Semantic Parameter. In S. Rothstein (ed.), *Events and Grammar*. Kluwer, Dordrecht.
- Chierchia, G. 1998b. Reference to Kinds across Languages. *Natural Language and Semantics* 6, 339–405.
- Cohen, A. 2001. On the Generic Use of Indefinite Singulars. *Journal of Semantics* 18, 183–209.
- Corbett, G. 2000. *Number*. Cambridge University Press, Cambridge.
- Friedrich, P. 1970. Shape in Grammar. *Language* 46, 370–407.
- Im, H. 2000. Pokswu Phyoci 'tul'kwa Sakenseng (The Plural Marker *-tul* and Eventuality). *Aysanhakpo* 24, 3–50.

- Jun, Y. 2004. Hankwuke-uy Pokswuseng-kwa Chongchingseng/hancengseng (Plurality and Its Effects on Genericity and Definiteness in Korean). *Language and Information* 8, 27–44.
- Kang, B. 1994. Plurality and Other Semantic Aspects of Common Nouns in Korean. *Journal of East Asian Linguistics* 3, 1–24.
- Krifka, M. et al. 1995. Genericity. In G. Carlson and F. Pelletier (eds.), *The Generic Book*. The University of Chicago Press, Chicago.
- Kwak, E. 1996. *The Event-dependency of Noun Phrases*. Ph.D. thesis, Brown University.
- Kwak, E. 2003. Interpretations of Plural Nouns Phrases in Korean. *Korean Journal of Linguistics (Enehak)* 35, 3–36.
- Landman, F. 1989. Groups I & II. *Linguistics and Philosophy* 12, 559–606 & 723–744.
- Link, G. 1983. The Logical Analysis of Plurals and Mass Terms: A Lattice Theoretical Approach. In N. Bäuerle et al. (eds.), *Meaning, Use, and Interpretation of Language*. Walter de Gruyter, Berlin, pp. 302–323.
- Nemoto, N. 2005. On Mass Denotations of Bare Nouns in Japanese and Korean. *Linguistics* 43, 383–413.
- Noh, E. 2008. Hankwukeuy Mwuphyohengkwa ‘Tul’-Pokswuhenguy Uymi (A Study of the Meaning of Korean  $\emptyset$ -marked and ‘tul’-Marked Nouns). *Discourse and Cognition* 15, 43–62.
- Park, S. 2008. *Functional Categories: The Syntax of DP and DegP*. Ph.D. thesis, University of Southern California.
- Rothstein, S. 2007. Counting and the Mass/Count Distinction. Master’s thesis, Bar-Ilan University.
- Wilhelm, A. 2008. Bare nouns and number in Dëne Suliné. *Natural Language Semantics* 16, 39–68.
- Zhang, H. 2007. Numeral Classifiers in Mandarin Chinese. *Journal of East Asian Linguistics* 16, 43–59.

Submitted on: April 1, 2009

Accepted on: June 5, 2009