Korean classifier-less number constructions[1]

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Abstract. Korean is a generalized classifier language where classifiers are required for numerals to combine with nominals. This paper presents a number construction where the classifier is absent and the numeral appears prenominally. This construction, which I call the classifier-less number construction (Cl-less NC), results in a definite or a partitive reading where the referent must be familiar: 'the two women' or 'two of the women'. In order to account for this, I argue that Korean postnominal number constructions are ambiguous between a plain number construction and a partitive construction. After motivating and proposing an analysis for the partitive structure, I argue that Cl-less NC is derived from the partitive construction, explaining its distributional restriction and the interpretation.

Keywords: number construction, classifiers, partitives, Korean.

1. Introduction

Korean is a generalized classifier language where classifiers are required for numerals to combine with nominals. However, the language allows a construction where the classifier is absent and the numeral appears prenominally in some contexts, as shown in (1). Unlike the regular number construction shown in (2), (1) results in a definite or a partitive reading where the referent of *women* is familiar. I call the classifier-less number construction (Cl-less NC). The existence of such construction has been noted before in the literature, but it was assumed to be a special case of direct combination of a small class of human or body-part denoting nouns with numerals (cf. Choi, 2005; Shin, 2017). That this construction results in a different meaning from the regular number construction is a new observation that, as far as the author knows, has not been discussed in the literature.

(1)   sey   yeca
        three woman
        'the three women' or 'three of the women'   [Cl-less NC]

(2)   yeca sey-myeng
        three woman-CL
        'three women'   [Regular NC]

The focus of this paper is to introduce this construction, discuss its distribution and the resulting meaning more carefully in comparison to other number constructions in the language, and propose a possible analysis. I start in Section 2 with an overview of Korean nouns in argument positions, discussing how numerals combine with nouns, and how definiteness is marked. Against this background I will closely examine the meaning of the Cl-less NC in Section 3. It will be shown that the Cl-less NC seems to have a definite, anaphoric reading, but does not

require maximality. In Section 4, I present my proposal. I argue that Korean postnominal number constructions are ambiguous between two structures, one which is a plain, indefinite construction and the other which is a partitive construction. After I motivate the structure for the partitive construction, I argue that the Cl-less NC derives from the partitive structure and discuss how the proposal accounts for the properties discussed in Section 3.

2. Background: Korean bare nouns and number phrases

Korean bare nouns — nouns without a determiner — are similar to bare nouns in other classifier languages such as Mandarin and Nuosu Yi in that they can appear in argument positions and allow kind and generic readings (cf. Kang, 1994; Nemoto, 2005; Jiang, 2017; a.o.).

(3)   koray-nun phoyuryu-i-ta.
        whale-TOP mammal-COP
        'Whales are mammals.'   (Nemoto, 2005) [Kind]

(4)   kay-nun cicnunta.
        dog-TOP bark
        'Dogs bark.'   (Kang, 1994) [Generic]

In addition, similar to Mandarin, Korean bare nouns allow indefinite, definite, and plural in-definite readings (cf. Kang, 1994 and Nemoto, 2005 for detailed discussion of Korean and Japanese).

(5)   na-nun ecey   chayk-ul sa-ss-ta.
        I-TOP   yesterday book-ACC buy-PST-DECL
        'I bought books/a book/the book yesterday.'

Definite readings of bare nouns need a closer look. Investigating the distinction between uniqueness-denoting definites ('weak definites') and familiarity-denoting definites ('strong def-inites') proposed in Schwarz (2009), scholars have argued that Korean bare nouns correspond to weak definites (Cho, 2016; Ahn, 2017). For example, Korean bare nouns appear in the globally unique context in (6), and in the situationally unique context in (7).

(6)   amsuthulong-un inlyu-sasang choycholo tal-ey   chaklyukhay-ss-ta.
        Armstrong-TOP man-history first   moon-DAT land-PST-DECL
        'Armstrong was the first to land on the moon in human history.'   [Global Unique]

(7)   taythonglyeng-i hayngsa hyencang-ul pangmwunhay-ss-ta.
        president-NOM   event   venue-ACC visit-PST-DECL
        'The president visited the event venue.'   [Situational Unique]

Bare nouns allow anaphoric readings as shown in (8), but such cross-sentential anaphora are also compatible with uniqueness-based analyses (cf. Ahn, 2017).

(8)   yeca-wa   namca-ka wassta. yeca-nun   kincanghan tus poy-ess-ta.
      woman-CONJ man-NOM came.   woman-NOM nervous   seem-PST-DECL
      'A woman and a man came. The woman seemed nervous'   [Anaphoric]

When a covarying interpretation is needed, a bare noun is not felicitous, and instead, an anaphoric marker *ku* is obligatory. Traditionally, *ku* in Korean has been analyzed as a distal demonstrative (Sohn, 1994; Chang, 2009; a.o.), but as Ahn (2017) argues, it is more appropriate to analyze *ku* as an anaphoric marker, because it resists an exophoric use where referents are pointed to, and only refers to entities that are familiar to the speaker and the hearer. This corresponds to the distribution of strong, familiar-denoting definites discussed in Schwarz (2009). In (9) shown below, the anaphoric link between the antecedent (the book on truffles in each library) and the pronoun is not necessary without *ku*. Without *ku*, the more natural reading is that in each library that has a book about truffles, I borrowed some books, not necessarily that particular book about truffles. With *ku*, on the other hand, the referent of *ku chayk* must covary with the quantified antecedent. Throughout this paper, I gloss *ku* simply as KU to avoid suggesting a specific analysis.

(9)   thulephul-ey tayha-n chayk-i   issnu-n motun tosekwan-eyse na-nun *(ku)
      truffle-DAT   about-RC book-NOM exist-RC every library-DAT   I-TOPIC KU
      chayk-ul   pillye-ss-ta.
      book-ACC borrow-PST-DECL
      'In every library that has a book about truffles, I checked out the book.'

In anaphoric cases, plural marking is required in Korean. While Korean plural marking has been assumed to be optional, Kim (2005) argues that the plural marker *-tul* is obligatory in demonstrative constructions.[2] In (10), for example, where *ku yeca-tul* in the second sentence refers to the same three women the speaker saw yesterday, plural marking is obligatory.

(10) na-nun ecey   yeca   sey-myeng-ul pwassta. onul tto   ku yeca-*(tul)-ul
      I-TOP   yesterday woman three-CL-ACC saw.   today again KU woman-PL-ACC
      pwa-ss-ta.
      see-PST-DECL.
      'Yesterday I saw three women. Today, I saw the women again.'

The obligatoriness of plural marking is not dependent on the presence of *ku*, however, as shown in (11). As long as the speaker intends to refer back to the three women she saw, plural marking is obligatory (Ahn and Snedeker in prep).

(11) na-nun ecey   yeca   sey-myeng-ul pwassta. yeca-*(tul)-un kincanghan
      I-TOP   yesterday woman three-CL-ACC saw.   women-PL-TOP nervous
      tus poye-ss-ta.
      seem-PST-DECL
      'Yesterday I saw three women. They/the women looked nervous.'

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[2]In Kim, the term 'demonstrative' is used traditionally to include not only the distal *ce* and the proximal *i* but the anaphoric *ku*.

As Kim (2005) notes, number constructions constitute an exception to this plural marking requirement. When a number construction appears with a demonstrative, plural marking is not necessary, and in fact not felicitous. This is shown in (12) where a) adding the plural *tul* is odd, and b) the reading of *ku yeca sey-myeng* ('the three women') remains anaphoric without the plural.

(12) na-nun ecey   yeca   sey-myeng-ul pwassta. onul tto   ku yeca-(?tul)
      I-TOP   yesterday woman three-CL-ACC saw.   today again KU woman-(PL)
      sey-myeng-ul pwa-ss-ta.
      three-CL-ACC see-PST-DECL.
      'Yesterday I saw three women. Today, I saw the three women again.'

2.1. Korean number constructions

The structure for NumP assumed in this paper is shown below. I follow Choi (2005) in arguing that Korean nominal domain should be analyzed with a head-initial structure, and that the NP moves to the spec of NumP for linear order (also see Simpson et al., 2005 for a similar structure in other languages).

(13) yeca   sey-myeng
      woman three-CL
      'three women'
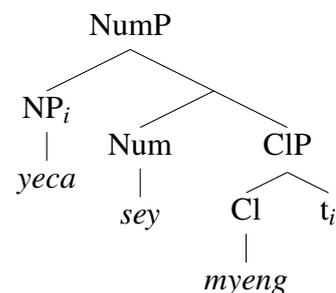
In addition to the postnominal construction in (13), Korean also allows a prenominal construction as shown in (14), and a floating quantifier construction as shown in (15) (cf. Choi, 2005; Shin, 2017). The prenominal construction involves a genitive-marked Num-Cl construction that precedes the noun, and the floating construction involves either a case-marked (15b) or a non-case-marked (15a) Num-Cl constituent that appears to be separated from the noun. Whether these are derived from the postnominal construction or not is still debated, but I focus only on the postnominal construction for this paper and refer interested readers to works like Ko (2005) and Shin (2017) for detailed syntactic and semantic discussions.

(14) sey-myeng-uy yeca
      three-CL-GEN woman
      'three women'   [Prenominal]

(15) a. yeca-ka   sey-myeng wa-ss-ta.
          woman-NOM three-CL   come-PST-DECL
          'Three women came.'   [Floating Quantifier]

    b.   yeca-ka   sey-myeng-i wa-ss-ta.
          woman-NOM three-CL   come-PST-DECL
          'Three women came.'   [Case-marked Floaing Quantifier]

Korean number phrases result in an indefinite reading, as shown by the example below.

(16)   na-nun ecey   yeca   sey-myeng-ul pwassta. onul tto   yeca   sey-myeng-ul
        I-TOP   yesterday woman three-CL-ACC saw.   today again woman three-CL-ACC
        pwa-ss-ta.
        see-PST-DECL.
        'Yesterday I saw three women. Today, I saw three women again.'

In (16), the three women the speaker saw today are not the three women she saw the day before. It is infelicitous to use the regular number construction to refer to the same women anaphorically.

Thus, what we have seen so far is that Korean bare nouns allow kind, generic, indefinite, and weak definite readings. In strong definite readings, *ku* is obligatory. Number constructions in Korean require classifiers and receive indefinite readings. When *ku* or the plural marker *tul* is added, a number construction in Korean receives a definite, maximal reading. I discuss a new observation that Korean sometimes allows the classifier to be absent in certain contexts. What stands out about this construction is that unlike other number constructions possible in the language, it is restricted to an anaphoric, or a partitive anaphoric reading: 'the two women' or 'two of the women'.

3. Classifier-less number construction

In Cl-less NC, the numeral appears prenominally without a classifier.[3]

(17)   sey   yeca
        three woman
        'the three women'

The presence of phrases like *sey yeca* has been noted in the literature, but it has been analyzed as certain human or body-part denoting nouns directly combining with numerals (Choi, 2005; Shin, 2017). However, Cl-less NC is not restricted to human or body-part nouns. In appropriate contexts, inanimates can appear in this construction too, as the examples below show.

(18)   twu uyca-(lul) ta kacyewa.
        two chair-ACC all bring.IMP
        'Bring both chairs.'

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[3]Here, I am only focusing on the Korean numerals rather than Sino-Korean numerals which do combine directly with certain measure nouns such as 'centimeter' and 'liter'. With Sino-Korean numerals, measure words seem to take the role of the classifier. With Korean numerals, however, classifiers are obligatory.

(19)   sey   maul-i   hana-lo thonghaptoy-ess-ta.
        three village-NOM one-to be.integrated-PST-DECL
        'The three villages were integrated into one.'[4]

Moreover, the construction is restricted to simplex numerals from two to nine. For example, (20a) is felicitous, while (20b) sounds odd. While we are dealing with gradient judgements need more empirical data to confirm this, the generalization from consulting five Korean speakers was that the higher the number, the less felicitous the construction became.

(20)   a.   yeset namca-nun wus-ess-ta.
              six   man-TOP   smile-PST-DECL
              'The six men smiled.'
        b.   ??yel.han namca-nun wus-ess-ta.
              eleven   man-TOP   smile-PST-DECL
              (Intended) 'The eleven men smiled.'

This restriction cannot be explained by an account that proposes a direct combination of nouns. Instead, the restriction seems to come from structural constraints. I explore this idea further in my analysis.

Another property of Cl-less NC is that plural marking cannot co-occur with the construction, as shown in (21).

(21)   sey   yeca-(*tul)
        three woman-PL

Semantically, what is interesting about this construction is that it receives what looks like an anaphoric or an anaphoric partitive interpretation. That is, *sey yeca* in (17) can be interpreted as 'the three women' or 'three of the women'. The referent women must be familiar to both the speaker and the hearer. I discuss the definite-like interpretation in more detail below.

3.1. Definite reading

Cl-less NC is notable in that it is restricted to a definite or a definite partitive reading. More specifically, it requires the referent to be familiar. It resists an indefinite reading, as the oddness of a presentational context in (22) shows. This was confirmed by six native speakers.

(22)   pang-ey   twu yeca-ka   iss-ess-ta.
        room-DAT two woman-NOM exist-PST-DECL
        'The two women were in the room.'
        #'There were two women in the room.'   [# Presentational]

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[4][http://www.cybernk.net/infoText/InfoHumanCultureDetail.aspx?mc=CC0701&sc=A34005001&tid=
CC0700105418]

The anaphoric reading is evident in the following two examples. The first involves a sentential anaphora, where *twu yeca* ('two women') in the second sentence must refer anaphorically to the two women that came.

(23)   yeca   twu-myeng-kwa namca-ka tulewa-ss-ta.   twu yeca-nun
        woman two-CL-CONJ   man-NOM come.in-PST-DECL. two woman-TOP
        yeypp-ess-ta.
        pretty-PST-DECL
        'Two women and a man came. The two women/*Two women were pretty.' [Anaphoric]

The second involves a donkey type covarying example, where the referent of *se ai* ('three child') must be the three children of each mother that the universal quantifier ranges over.

(24)   ai   sey-myeng-ul twu-n   motwun emma-nun sey ai-lul   ttokkathi iphinta.
        child three-CL-ACC have-RC every   mother-TOP three child-ACC same   dress
        'Every mom who has three children dresses *(the) three children the same.' [Donkey]

There are three alternative constructions that result in the same covarying reading. These all make use of the anaphoric *ku*: *ku* with the full postnominal number construction in (25a), *ku* with plural *tul* in (25b), and *ku* with the Cl-less NC in (25c). Recall that Cl-less NC is not possible with plural marking, so adding a plural marker in (25c) would be infelicitous.

(25)   ai   sey-myeng-ul twu-n   motwun emma-nun ...
        child three-CL-ACC have-RC every   mother-TOP
        'Every mom who has three children...'
        a.   ku ai   sey-myeng-ul ttokkathi iphinta.
             KU child three-CL-ACC same   dress
             'dresses the three children the same.'
        b.   ku ai-tul-ul   ...
             KU child-PL-ACC
        c.   ku sey ai-(*tul)-ul   ...
             KU three child-PL-ACC

If only plural *tul* is present without *ku*, it has two readings: one that is identical to the covarying reading above, and another that refers to a different set of contextually salient children. For example, if there is a class full of children, and each week one of the mothers dresses the whole class, (26) could mean that every mom who has three children dresses the whole class the same.

(26)   ai   sey-myeng-ul twu-n   motwun emma-nun ai-tul-ul   ttokkathi iphinta.
        child three-CL-ACC have-RC every   mother-TOP child-PL-ACC same   dress
        a. 'Every mom who has three children dresses the three children the same.'
        b. 'Every mom who has three children dresses the children the same.'

Thus, we see that Cl-less NC behaves just like a number construction that is accompanied by *ku*, or a noun accompanied by both *ku* and plural *tul*. Another property Cl-less NC shares with *ku* and *tul* is that it always receives a wide-scope reading, unlike specific indefinites that

allow quantificational or intermediate scope (Fodor and Sag, 1982; Ionin, 2006). Specifically, indefinites are ambiguous between quantificational and referential readings as shown in (27): either Mary read every book that a specific teacher recommended, or any book that any teacher recommended. Indefinites also allow intermediate scope as shown in (28): the resulting reading is that for every student, there was some teacher such that the student read every book that the teacher recommended.

(27)   Mary read every book a teacher recommended. (Fodor and Sag 1982)

(28)   Every student read every book that some teacher (of hers) had recommended.

The same kinds of ambiguity is available in number constructions in English.

(29)   Mary read every book two teachers recommended.

(30)   Every student read every book that two teachers (of hers) had recommended.

Cl-less NC in Korean, however, only allows the referential, wide-scope reading:

(31)   Jimin-un twu yeca-ka   chwuchenhan   motun chayk-ul ilk-ess-ta
         Jimin-TOP two woman-NOM recommended-RC every   book-ACC read-PST-DECL
         'Jimin read every book two women recommended.'

(32)   motun haksayng-un twu yeca-ka   chwuchenhan   motun chayk-ul
         every   student-TOP two woman-NOM recommended-RC every   book-ACC
         ilk-ess-ta
         read-PST-DECL
         'Every student read every book the two women recommended.'

The same pattern is shown by the full number construction with *ku* (*ku yeca twu-myeng*) and the noun with *ku* and plural marking (*ku yeca-tul*), as well as *ku* with Cl-less NC (*ku twu yeca*).

Thus far, we have seen that Cl-less NC receives a definite meaning, just like the full postnominal number construction with anaphoric *ku* or the noun with *ku* and plural marking *tul*. In the next section, I present one important property that distinguishes the Cl-less NC from others: the lack of the maximality requirement.

3.2. No requirement of maximality

The data discussed so far suggests that the Cl-less NC results in a definite, anaphoric interpretation. However, the construction does not always require maximality, which is not compatible with the hypothesis that Cl-less NC is definite. For example, in (33), the reference to two of the women out of the three who came is possible with the Cl-less NC.

(33)   yeca   sey myeng-i wassta. twu yeca-nun   anc-ass-ta.
         woman three CL-NOM came   two woman-TOP sit-PST-DECL
         'Three women came. Two of the women sat down.'

This lack of maximality requirement is what distinguishes Cl-less NC from other constructions that make use of *ku* or plural marking *tul*. Compare this with the construction with *ku* in (34) and with the plural marker *tul* in (35) below, where maximality is required.

(34)   yeca   sey myeng-i wassta. {*ku twu yeca   / ku yeca   twu-myeng}-nun
         woman three CL-NOM came   KU   two woman KU woman two-CL-TOP
         anc-ass-ta.
         sit-PST-DECL
         'Three women came. The two women sat down.'

(35)   yeca   sey myeng-i wassta. (ku) yeca-tul-un   anc-ass-ta.
         woman three CL-NOM came   KU woman-PL-TOP sit-PST-DECL
         'Three women came. The women sat down.' (False if two women sat down)

The absence of a maximality requirement can be shown on the covarying example discussed above as well.

(36)   ai   sey-myeng-ul twu-n   motwun emma-nun twu ai-lul   ttokkathi iphinta.
         child three-CL-ACC have-RC every   mother-TOP two child-ACC same   dress
         'Every mom who has three children dresses two of the children the same.'

In (36), the Cl-less NC that appears in the scope of the sentence must covary with the mother that is quantified over. Thus, there is still an anaphoric link between the mother and the two of the children she has. However, maximality is not required, and thus, it is okay for Cl-less NC to pick out only two out of the three that the mother has.

Cl-less NC thus seems to have a (partitive) definite interpretation, where the referent must be familiar, but there is no requirement of a maximal reference. There is one exception, which is the numeral one. Unlike other simplex numerals, *han* ('one') in a Cl-less NC allows an indefinite reading that is shown in the presentational example in (37).

(37)   enu   maul-ey   han wang-i   sal-ass-ta.
         some village-DAT one king-NOM live-PST-DECL
         'There lived a king in some village.'

Numeral one does appear in partitive definite contexts, as shown in (38), but it resists a definite reading that refers to a familiar entity. For example, in (39), *han yeca* cannot refer to the same woman that came.

(38)   yeca   sey myeng-i wassta. han yeca-nun   anc-ass-ta.
         woman three CL-NOM came   one woman-TOP sit-PST-DECL
         'Three women came. One of the women sat down.'

(39)   yeca   han myeng-i wassta. han yeca-nun   anc-ass-ta.
        woman one CL-NOM came   one woman-TOP sit-PST-DECL
        'One woman came. One woman sat down.'

In the next section, I suggest one possible analysis of Cl-less NC, where it is a partitive struc-
ture with a familiar entity for the referent. I start with a general proposal of Korean number
constructions where they are ambiguous between a plain indefinite construction and a partitive
construction, and then suggest that the Cl-less NC is derived from the partitive construction.

4. Proposal

Following other works on classifier languages such as Chierchia (1998b), Dayal (2004), Jiang
(2012), and others, I assume that Korean bare nouns are kind-denoting, and that a classifier is
what turns kinds into sets of object level individuals, as shown in (40) and (41).

(40) $[\![\mathbf{Cl}]\!] = \lambda k \, \lambda x \, [AT(^{\cup}k(x))]$
        AT: predicate denoting set of atoms

(41)
$$\langle e,t \rangle$$

```
                    ⟨e,t⟩
                   /     \
        NumP⟨et,et⟩       ⟨e,t⟩
                         /     \
                   CL⟨e,et⟩    NPₑ
```

I also assume that numerals are predicate modifiers (Ionin and Matushansky, 2006), as shown
below.

(42) $[\![\mathbf{three}]\!] = \lambda P_{et} \, \lambda x \, \exists Y_{et} \, [\prod(Y)(x) \wedge |Y|{=}3 \wedge \forall y{\in}Y \, P(y)])$

In addition to these assumptions, I make the following proposals. First, I argue that Korean
number construction is ambiguous between the plain structure in (43) and the partitive structure
in (44). Second, I argue that the Cl-less NC is derived from the partitive structure, which
accounts for its distribution and interpretation.

(43)
```
                NumP
               /    \
           NP_i      \
            |      Num      ClP
          woman     |      /   \
                    3    Cl    t_i
                         |
                      CL_person
```

(44)
```
                    PartP
                   /     \
                 DP       \
                  |  [+part]   NumP
               woman         /     \
                          NP_i      \
                           |      Num     ClP
                         woman     |     /   \
                           3     Cl    t_i
                                       |
                                   CL_person
```

The structure in (43) is repeated from above, where NP is assumed to move to the specifier position of NumP as Choi (2005) proposes. The partitive structure in (44) is inspired by the claim in Shin (2017) that the postnominal construction is a true partitive, though the structure I propose is quite different. For instance, in Shin (2017), the partitive structure does not involve two noun positions with ellpisis, and the partitive meaning is lexically encoded in the classifier. Moreover, unlike Shin who argues that all postnominal constructions are true partitives, I assume that the partitive structure is only made available when necessary. In regular, indefinite contexts, (43) is sufficient, so (44) is not motivated.

In (44), a PartitiveP projected above the plain NumP has an abstract [+part] head with a DP *yeca* (written with *women* for clarity) in its specifier. I assume an analysis of partitives that involves two noun positions with ellipsis targeting one or both of the two nouns (Jackendoff, 1977; Sauerland and Yatsushiro, 2017; a.o.). There is one crucial difference between partitive constructions proposed in works like Sauerland and Yatsushiro (2017) and the one proposed here, which is the order of the arguments. In Sauerland and Yatsushiro (2017), the partitive first takes as its argument the whole NP which provides the domain, and then takes the unit NP which specifies how many. In (44), [+part] first takes as its argument the NumP and then the DP. Thus, I call the first *woman* in the DP the whole NP, and *woman* in spec of NumP the unit NP. In (44), I argue that the unit NP is ellided because the null [+part] requires some lexical element to its left to incorporate into.

While the structure in (44) has not been proposed for Korean partitives or number constructions prior to this paper, motivations can be found from constructions in Korean that seem to involve an overt counterpart of [+part]. Specifically, the interpretation of (45) where the anaphoric *ku* is followed by *cwung* ('among', 'between') and a number construction is that of a partitive.

(45)   ku cwung ai   twu-myeng
        KU among child two-CL
        'two of the children'   [http://blog.naver.com/chic_sisters/220089721837]

Because *ku* requires a nominal argument except when it is a singular masculine pronoun, one could analyze this as involving ellipsis of the NP *ai* as in (46). The ellided NP serves as the whole NP, so (45) can be analyzed as having the same partitive structure as (44).

(46)   ku a̶i̶ cwung ai twu-myeng

Note that it is also possible to pronounce both NPs in (46), further supporting the structure in (44). Thus, if we argue that [+part] is a covert variant of *cwung* that appears in partitive structures, both the structure and the ellipsis process can be motivated.

The semantics for the [+partitive] head is similar to the entry proposed for partitives in other works such as Ionin and Matushansky (2006) and Sauerland and Yatsushiro (2017), but different in the order in which the arguments are taken: as mentioned above, the NumP consisting of the unit NP is taken as the first argument of [+part].

(47) $[\![\textbf{+part}]\!] = \lambda P \, \lambda y \, \lambda x \, [P(x) \wedge x \leq y]$

With these semantic entries the meanings of the two constructions can be composed. In both the plain number construction and in the partitive construction, the classifier combines with the kind-denoting noun *yeca* ('woman'), resulting in (48). Then, the numeral *sey* is combined in (49). Note that while I follow Dayal (2012) in using a shorthand **3** in (49), the full form of which is shown in (49a).

(48) $[\![\textbf{Cl NP}]\!] = \lambda x \, [AT^{\cup} woman(x)]$

(49) $[\![\textbf{3 Cl NP}]\!] = \lambda x \, [AT^{\cup} woman(x) \wedge \textbf{3}(x)]$
    a. $= \lambda x \, [AT^{\cup} woman(x) \wedge \exists Y_{et} \, [\prod(Y)(x) \wedge |Y|=3 \wedge \forall y \in Y \, P(y)]]$

This is the semantics of the plain number construction in (43), where the property is turned into an argument using common type-shifting operators (Dayal, 2012; Chierchia, 1998b; a.o.).

For the partitive construction, the resulting property in (49) is further taken as an argument of [+part], resulting in (50), which then combines with the DP. For (44), I assume that the DP takes a unique *yeca* in the context, but the DP can involve *ku*, resulting in an anaphoric reference.

(50) $[\![\textbf{+part 3 Cl NP}]\!] = \lambda y \, \lambda x \, [AT^{\cup} woman(x) \wedge \textbf{3}(x) \wedge x \leq y]$

(51) $[\![\textbf{DP +part 3 Cl NP}]\!] = \lambda x \, [AT^{\cup} woman(x) \wedge \textbf{3}(x) \wedge x \leq \iota y[woman(y)]]$

Thus, (44) is true of any x such that x is composed of woman atoms, has a cardinality of three, and is a part of 'the women'. This results in a partitive construction that has a definite referent.

Note that, on the surface, the plain number construction and the partitive construction cannot be distinguished. The partitive construction would only be motivated when proper subsethood reading to a familiar referent is required, as in (52).

(52)   na-nun ecey   yeca   sey-myeng-ul pwassta. onul   yeca   twu-myeng-ul tasi
         I-TOP   yesterday woman three-CL-ACC saw.   today woman two-CL-ACC   again
         pw-ass-ta.
         see-PST-DECL.
         'Yesterday I saw three women. Today, I saw two of the women again.'

4.1. Accounting for the Cl-less Construction

In the last section, I proposed that Korean postnominal number construction is ambiguous between two structures: the plain number construction that results in an indefinite reading, and the partitive construction with a familiar referent. The two constructions are not distinguishable on the surface because of the same ordering of the noun, the classifier, and the numeral. The Num Noun order of the Cl-less NC, however, is only compatible with one of the two structures, namely the partitive construction. I show in the rest of this section that the Cl-less NC is derivable from the partitive construction, and discuss how its properties can be accounted for.

In order to derive the Cl-less NC, I first focus on the distinction between complex and simplex numerals. I argue that simplex numerals, unlike complex numerals that require a full NumP (Ionin and Matushansky, 2006), can appear as simple Num heads. I will further argue that this allows simplex numerals to move, unlike complex numerals. Such constraints on the movement of larger items have been seen elsewhere, such as in V2 movements in German.

Second, I argue that in Cl-less NC, the classifier head is null. I argue that this has consequences for linear order. The numeral that usually appears with a classifier differs in form from numerals used in counting in that it is adjectival. For example, while counting numbers are of the form in (53), numerals that appear with classifiers are shorter and require the lexical element that is modified to appear on the right.

(53)   Counting: *hana*, *twul*, *ses*, *nes*, *taset*

(54)   In number constructions: *han*, *twu*, *sey*, *ney*, *taset*

I posit that the numeral, when the classifier is null, must move to a position where there would be an appropriate lexical element to its right. Thus, I argue that the Num head moves to occupy the [+part] head. This results in the structure in (55).

(55)

$$
\begin{array}{c}
\text{PartP} \\
\diagdown \\
\text{DP} \quad \\
| \quad \text{sey}_i[\text{+part}] \quad \text{NumP} \\
\text{yeca} \quad\quad\quad \text{NP}_j \;\; t_i \;\; \text{ClP} \\
\quad\quad\quad\quad | \quad\quad \diagdown \\
\quad\quad\quad\quad \text{yeca} \quad\quad \varnothing \;\; t_j
\end{array}
$$
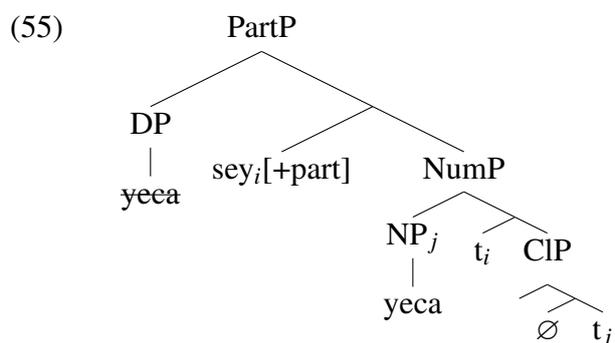
In this construction, the unit NP is not ellided because *sey* requires a phonological element to its right due to the reason above. Thus, the whole NP in the DP argument is ellided. This, unlike the regular partitive construction, is possible now since [+part] is no longer null. The meanings compose in the same way as in the partitive construction.

4.2. Accounting for data

The characteristics of the Cl-less NC observed in the previous section are summarized below:

(56)   a.   Classifier is null
        b.   Results in a Num Noun order with no plural marking
        c.   Restricted to simplex numerals
        d.   Results in an (improper subsethood) partitive reading with a familiar referent
        e.   Numeral one only allows a proper subset partitive reading

In my analysis, I propose that Cl-less NC is derived from the partitive construction. This accounts for the definite-like, but not maximal reading that we saw with Cl-less NC. While in the regular partitive construction, the unit NP is ellided (because the null [+part] requires a lexical element to its left to incorporate into, and thus the whole NP cannot be ellided), in Cl-less NC, I argue that the whole NP (the DP argument) is ellided. This was motivated by two processes: a) movement of the Num head into [+part] head, licensing it, and b) the adjectival numeral *sey* requiring a nominal element to its right. I argue that the movement of Num head is only possible when the numeral is occupying the Num head position, and this accounts for the restriction to simplex numerals. The adjectival nature of the numeral is not an issue when there is a classifier, but because there is no classifier, movement is triggered to position the numeral before some lexical element. The movement of the Num head to the [+part] head and the ellision of the whole NP (the DP argument) together account for the right Num Noun order.

I follow Sauerland and Yatsushiro (2017) in assuming that when the whole NP is ellided, proper subsethood is not required. This means that the partitive construction in principle can be used for improper subset partitives such as 'two of the two women', which is semantically not distinguishable from the regular 'the two women'. Thus, the anaphoric uses found with Cl-less NC with improper subsethood are also accounted for.
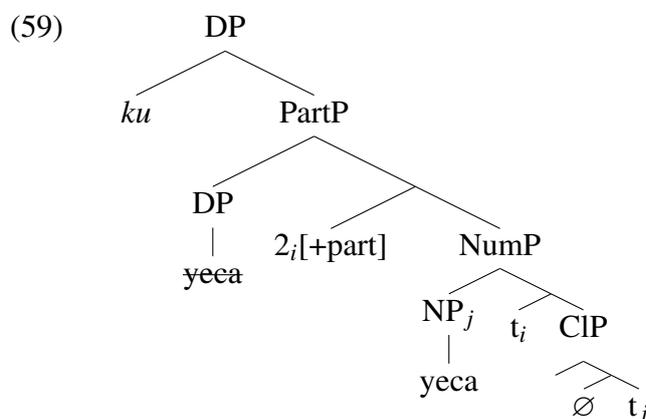
What about numeral one which receives an indefinite reading and a proper subset partitive reading, but no definite reading? One possible reason for the absence of the definite reading is a competition with a simpler alternative, which is the bare noun. For example, in (39) repeated below, one could use the bare noun.

(57)   yeca   han myeng-i wassta. han yeca-nun   anc-ass-ta.
        woman one CL-NOM came   one woman-TOP sit-PST-DECL
        'One woman came. One woman sat down.'

(58)   yeca   han myeng-i wassta. yeca-nun   anc-ass-ta.
        woman one CL-NOM came   woman-TOP sit-PST-DECL
        'One woman came. The woman sat down.'

The use of the marked Cl-less NC may suggest that the speaker did not have enough information to use the less marked counterparts. This pragmatic story could account for why numeral one resists a definite, maximal reading, and is desirable because it would only work with numeral one, which the bare noun competes with, but not other numerals.

Recall that maximality was required when *ku* was added to the Cl-less NC. This can be done straightforwardly by the following structure, if *ku* is analyzed as a strong definite that adds the meaning of ι with an index (Ahn, 2017).

(59)

```
                    DP
                  /    \
              ku        PartP
                       /      \
                    DP          \
                    |   2_i[+part]   NumP
                  yeca              /    \
                              NP_j   t_i   ClP
                               |          /  \
                             yeca        ∅    t_j
```

(60) $[\![\mathbf{ku}_i\ \mathbf{yeca\ sey\ yeca}]\!]^g = \iota x\ [AT^\cup yeca(x) \wedge \mathbf{3}(x) \wedge x \leq \iota y[yeca(y)]\ \&\ x=g(i)]$

Lastly, plural marking in some classifier languages is analyzed as a plural classifier (Dayal, 2012). If we assume that Korean plural marking is also a classifier, the empirical observation that the Cl-less NC does not co-occur with plural marking may be explained. The consequences of analyzing Korean plurals as a classifier should be further investigated.

5. Conclusion

In this paper, I presented a new observation that Korean sometimes allows the classifier to be dropped in a number construction, in which the numeral appears prenominally. The resulting meaning of this Cl-less NC was closely investigated, showing that while Cl-less NC resembles a definite, anaphoric reading that results from adding the anaphoric marker *ku* to a number construction, there is no requirement of maximality. In order to account for this meaning, I first proposed that Korean postnominal number construction is ambiguous between a plain, indefinite construction and a partitive construction. The structure for the partitive construction where there is a covert [+part] head was motivated by an overt counterpart that makes use of *cwung* ('among'). Then, I argued that Cl-less NC is derived from the partitive construction.

There are remaining details to be worked out. For example, one of the main novelties of the partitive structure I proposed is that the order of the arguments is flipped. It would be worth investigating how this is related to the assumption of head initialness that I adopted from Choi (2005). Also, while the absence of an overt classifier in Cl-less NC is compatible with the partitive construction in which the Num head moves to the partitive head position, it is not yet clear whether this movement would be necessary. These issues are left for future investigation.

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