Plural marking in classifier languages: a case study of the so-called plural marking -tul in Korean

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This paper presents an analysis of the so-called plural marking -tul as a distributive marker. -Tul, misleadingly known as a plural marker, signals the existence of a distributive operator in a sentence. Collective readings, despite the presence of -tul, can be accounted for by employing the idea of a scope-taking difference of a distributive operator. Nouns with -tul as such exhibit different semantic properties from those of English-like plural nouns. I hold that this contrast has a root in their distinct syntactic structures: -tul-marked nouns as QPs, contrasted with -s-marked nouns as CIPs.

1. Introduction

Chierchia (1998) proposes a semantic parameter that distinguishes two kinds of NPs; those which are predicates (marked by the feature [+pred, -arg]) and those which are arguments ([pred, +arg]). Chierchia further claims that in classifier languages which have the latter type of NPs, all nouns are mass nouns. Classifier languages, thus, require the classifier system, which is responsible for individuating stuff before quantifying it. Also, since mass nouns are inherently plural (Chierchia 1998), the absence of plural marking in classifier languages directly follows. Given Chierchia’s claims as such, a question arises as to what the identity and the function of so-called plural marking in classifier languages are.

This paper presents an analysis of the so-called plural marking -tul in Korean, as a case study to answer this question. I argue that -tul is not a plural marker, rather a distributive marker. Traditionally, -tul has been described as a plural marker (Kang 1994, Im 2000, Baek 2002, Kwak 2003, Jun 2004, Kim 2005 and many others). In this paper, however, I contend that the so-called plural marking -tul gives rise to a reading involving distributivity and signals the existence of distributive operator for its interpretation. This claim will, further, shed light on the issue of what the essence of plurality in classifier-languages such as East-Asian languages including Korean is.

This paper will proceed as follows: in section 2, I bring up the examples that cannot be accounted for under the analysis of -tul as a simple plural marker, and claim
that -tul should be analyzed as a distributive marker. In section 3, I resolve the puzzle that -tul, as a distributive marker, can appear in some collective contexts, by employing the idea of scope-interaction. In section 4, in terms of the cross-linguistic perspective, I offer an answer to the question of why -tul, in contrast to English -s, for instance, should involve distributive quantification. I provide a DP structure of -tul-marked phrases, differentiated from that of English plural nouns, which is born out to be the source of the contrast. In section 5, I summarize the key points of this paper and address several theoretical consequences.

2. -Tul is Not a Plural Marker

-Tul has been described as a plural marker in Korean (Lee 1992, Kang 1994, Im 2000, Baek 2002, Kwak 2003, Jun 2004, Kim 2005). However, the following evidence casts serious doubt on the analysis. Let us compare -tul-marked plural nouns with bare plural nouns in order to make it explicit. Bare nouns in Korean, as have been well-known, can represent both a singular meaning and a plural meaning, as in other classifier languages such as Japanese and Chinese (Chierchia 1998). Let us consider the following evidence. First of all, the examples given in (1) below clearly illustrate the distributive function of the so-called plural marking -tul.

\[(1) \quad \begin{align*}
\text{a. Wuli-nun cha-lul sassta.} & \quad \text{We-TOP car-ACC buy.PST.DC} \\
& \quad \text{‘We bought a car.’}
\end{align*}\]

\[\begin{align*}
\text{b. Wuli-tul-un cha-lul sassta.} & \quad \text{We-TUL-TOP car-ACC buy.PST.DC} \\
& \quad \text{‘We bought a car.’ / ‘All our members bought a car.’}
\end{align*}\]

Sentence (1b), in which -tul occurs in the subject of a group noun wuli ‘we’, may have a reading that all the members of us bought a car of his own, which is not possible for sentence (1a). (1a) only asserts that we, as a group, bought a car. There should be only one car in the reading of (1a), whereas there may be more than one car in (1b). This contrast tells us that -tul has a distributive function more than a mere pluralizing effect.

Secondly, -tul is restricted in some collective contexts. In other words, -tul can appear only with collective predicates with ‘distributive sub-entailment (Dowty 1987, Taub 1989)’, as exemplified below. Such a restriction cannot be fully captured under the simple plurality analysis.

\[(2) \quad \begin{align*}
\text{a. Swuhakkwa kyoswu-ka kysil-ey moyessta.} & \quad \text{Math-department professor-NOM classroom-LOC gather.PST.DC} \\
& \quad \text{‘Professors of a Math-department gathered in the classroom.’}
\end{align*}\]

\[\begin{align*}
\text{b. Swuhakkwa kyoswu-tul-i kysil-ey moyessta.} & \quad \text{Math-department professor-TUL-NOM classroom-LOC gather.PST.DC} \\
& \quad \text{‘(All) The professors of a Math-department gathered in the classroom.’}
\end{align*}\]
(3)  a. Haksayng-i sensayngnim-ul twule ssassta.
    Student-NOM teacher-ACC surround.PST.DC
   ‘Students surrounded a teacher.’

           b. Haksayng-tul-i sensayngnim-ul twule ssassta.
    Student-TUL-NOM teacher-ACC surround.PST.DC
   ‘(All) The students surrounded a teacher.’

< Collective Predicates II> (e.g. be a group of four, be a large group, etc)

(4)  a. Swuhak-kwa-nun kyoswu-ka ney myeng-ita.
    Mathematics-dept.-TOP professor-NOM four CL-CPL.DC
   ‘The professors in Mathematics department are a group of four.’

           b. ??Swuhak-kwa-nun kyoswu-tul-i ney myeng-ita.
    Mathematics-dept.-TOP professor-TUL-NOM four CL-CPL.DC

(5)  a. Wuli-nun acwu khun tanchey-ita.
    We-TOP very big group-CPL.DC
   ‘We are a very big group.’

           b. ?? Wuli-tul-un acwu khun tanchey-ita.
    We-TUL-TOP very big group-CPL.DC

Dowty (1987) divides collective predicates into two sub-groups: those which have
‘distributive sub-entailment’ and those which do not. ‘Distributive sub-entailment’ can be
interpreted in a way that every participant has the property of taking part in some action.
In other words, it follows from this interpretation that the events which bear the feature of
distributive sub-entailment are those involving some activity events (Taub 1989).
‘Collective predicates I’ in the above examples correspond to the predicates which have
the property of distributive sub-entailment and ‘collective predicates II’ are those which
lack it. -Tul-marked phrases can be used as a subject in collective predicates I, as
exemplified in (2b) and (3b), whereas they are very marginal with collective predicates II,
as shown in (4b) and (5b). Moreover, even in collective I contexts, there is a semantic
contrast between (2a) and (2b), for instance. Sentence (2b) in which -tul is attached to the
subject has the reading that all the faculty members ‘partook in’ the gathering event (Link
1981). Sentence (2a) where -tul does not occur, however, does not require all the faculty
members to take part in the event. Sentence (2a) only means that the Mathematics
department professors gathered in the classroom as a group, which is left obscure in how
many members did such an action. This fact suggests to us that -tul somehow has a link to
distributivity, which involves universal quantification in the course of interpretation.
-Tul, as such, exhibits different distributions from those of the plural morpheme -s in
English. Compare the sentences in (2)-(5) with the English sentences in (6) below, where
-s is used in their subject nouns.
Plural noun phrases in English are free to occur both with a collective predicate I and with a collective predicate II, contrary to -tul-marked noun phrases. This contrast suggests that the so-called plural marking -tul in Korean, which corresponds to -s in English at the first sight, has different semantic features from the English plural morpheme.

Thirdly, -tul must be present in distributive contexts. Bare plural nouns cannot be licensed in those contexts (Kwak 2003).

(7)  

   Student-TUL-NOM school-LOC-TUL go.PST.DC
   ‘The students went to a school separately.’

b. *Haksayng-i hakkyo-ey-tul kassta
   Student-NOM school-LOC-TUL go.PST.DC

(8)  

   Student-TUL-NOM each school-LOC go.PST.DC
   ‘The students each went to a school.’

b. *Haksayng-i kakca hakkyo-ey kassta.
   Student-NOM each school-LOC go.PST.DC

Bare nouns cannot be used in sentence (7b), where the so-called non-nominal plural marking -tul, which triggers a distributive reading, occurs. -Tul-marked plural nouns, in sharp contrast, can be used as an antecedent over which an event is distributed, as given in (7a). On the other hand, the sentences in (8) illustrate that bare nouns cannot serve as an antecedent of a distributive floating quantifier, while -tul-marked plural nouns can.

In sum, an interesting paradigm emerges. That is, bare plural noun phrases only have collective readings, while -tul-marked phrases can have distributive readings and collective readings with the property ‘distributive sub-entailment’. This observation casts doubt on the status of -tul as the marker of simple plurality, and leads us to the conclusion that -tul is somehow associated with distributivity. The simple plural analysis cannot account for why -tul-marked nouns should be restricted in some collective contexts, in contrast to English plural -s, for instance, which does not exhibit such a restriction as shown in (6b). In what follows, I contend that -tul is rather a distributive marker which signals the presence of a distributive operator. The analysis of -tul as a distributive marker can account for the examples, which have been remained as puzzling under the plurality analysis.

3. -Tul Occurring with Collective Predicates

-Tul-marked phrases can occur with some of the collective predicates such as
gather, surround, and meet, as illustrated in (2) and (3). Moreover, a collective reading is not always blocked in the use of -tul, as we saw in (1b) before. If -tul is uniformly taken to be a distributive marker, these facts wait for more elaborated explanation. I address this problem from the perspective of scope-taking differences of a distributive operator.

-Tul contributes a distributive reading of a sentence. However, unlike each or every in English, -tul-marked phrases can occur in collective contexts. This peculiarity closely resembles that of a quantifier all, as shown below (Vendler 1967, Dowty 1987).

(9)  
   a. The girls jumped in the lake.  
   b. Every/Each girl jumped in the lake.  
   c. All the girls jumped in the lake.

(10)  
   a. The girls gathered in the hallway.  
   b. *Every/Each girl gathered in the hallway.  
   c. All the girls gathered in the hallway.

All in (9c), like every and each in (9b) and unlike a plural in (9a), has a ‘maximizing’ effect. In other words, (9c) and (9b) imply that every girl did a jumping and there is no girl who did not jump. However, all in (10c), unlike every and each in (10b) and like a plural in (10a), can appear with a collective predicate. These are the exactly same properties of -tul, as we have discussed so far. -Tul-marked NPs, like all, imply the participation of all the participants to an event, and can be used in a collective context.

Link (1983) argues that all is a ‘partake-in’ operator, which distributes the property of taking part in the action down to every individual that an argument denotes. Dowty (1987) develops this idea and claims that all can appear only with predicates which have a ‘distributive sub-entailment’. He does not provide an explicit definition of ‘distributive sub-entailment’, but illustrates the case of gather in order to clarify this notion. The distributive sub-entailment of gather amounts to the things like ‘come to be in the same place at the same time as a lot of other people’. According to Dowty, all distributes this sub-entailment down to every individual of a subject. On the other hand, the predicates which do not allow all, such as be a big group, are ‘pure cardinality predicates’, which do not have any sub-entailment for all to operate on. Taub (1989) further makes an important observation that the collective predicates which disallow all are those of state and achievement events, which has been well-known as ‘Taub’s generalization’.

Brisson (2003) elaborates Dowty (1987) and Taub (1989), and claims that although collectivity has been widely treated as being the absence of distributive quantification, this is true only for a subset of collective predicates. In contrast to activities and accomplishments, states and achievements lack a DO-ing event sub-component, and the possible insertion sites of a distributive operator are assumed to be ‘DO’ or a higher VP of event composition. Collective activity and accomplishment verbs do involve distributive quantification, because these verbs can contain ‘DO’ where a distributive operator can reside. This is the reason that all, which signals the presence of a distributive operator, can appear with these collective predicates. If the operator is inserted into a ‘DO’ sub-part, this configuration, as given in (11a) and as exemplified in (12b), yields a collective reading of distributive sub-entailment, which is interpreted in
such a way that a unique collective event is done by the different doing events. However, a distributive reading is derived if the operator is inserted into the higher VP, as given in (11b) and as illustrated in (12c).

(11)  \(<\text{Activities \& Accomplishments}>\)

\begin{itemize}
  \item a. \textless Collective Readings \rangle
  \begin{align*}
  \text{D-operator} & \rightarrow V \\
  \text{DO} & \text{carry a piano}
  \end{align*}
  \item b. \textless Distributive Readings \rangle
  \begin{align*}
  V & \leftarrow \text{D-operator} \\
  \text{DO} & \text{carry a piano}
  \end{align*}
\end{itemize}

(12)  

a. The boys carried a piano.

b. \[
\exists e [(\text{carry}'(e) \& \text{Th}(e, \text{a.piano}') \& \exists e' \forall x \exists e'' [x \leq [[\text{the.students'}]] \rightarrow [\text{DO}(e'') \& \text{Ag}(e'', x)] \& e'' \leq e' \& e' \leq e]]]
\] (in the configuration of 11a)

c. \[
\exists e \forall x \exists e' [x \leq [[\text{the.students'}]] \rightarrow \text{carry}'(e') \& \text{Th}(e', \text{a.piano}') \& \exists e'' [\text{DO}(e'') \& \text{Ag}(e'', x) \& e'' \leq e' \& e' \leq e]]
\] (in the configuration of 11b)

(12b) has a collective reading, where for each boy there is different ‘DO’-ing event e” which is part of the unique carrying event e. (12c), however, gives rise to a distributive reading that for each boy there is different carrying a piano event e’.

In the case of state and achievement events, on the other hand, ‘DO’ cannot be contained in their event composition. In the presence of \textit{all}, therefore, only a distributive reading can be allowed excluding a collective reading as represented in (14), because the possible insertion site of a distributive operator is only a VP, as represented in (13).

(13) \(<\text{States \& Achievements}>\)

\[
\text{be heavy}
\]

(14) \textit{All} the bags are heavy.  \quad \text{(Distributive reading only)}

In brief, whether a distributive reading or a collective reading is obtained depends on the embedded depth of a distributive operator and consequently on a scope difference it may take with respect to an existential quantifier of an event taking VP scope.

-\textit{Tul}-marked NPs exhibit the same pattern of distribution with \textit{all} in terms of aspectual classes of predicates, which is subject to Taub’s generalization.

(15)  
a. Activities:  
\begin{align*}
\text{Haksayng-tul-i sangca-lul wunpanhayessta.} & \quad \text{(All) The students carried a box.} \\
\text{student-TUL-NOM box-ACC carry.PST.DC} & \quad (\sqrt{\text{Collective}}, \sqrt{\text{Distributive}})
\end{align*}
child-TUL-NOM box-ACC make.PST.DC 'All) The children made a box.'
(√ Collective, √ Distributive)

This bag-TUL-TOP carry-to too heavy.DC 'All) These bags are too heavy to carry.'
(* Collective, √ Distributive)

d. Achievements: Ai-tul-i (swunsikkaney) sathang-ul palkyenhayessta. 
Child-TUL-NOM instantly candy-ACC discover.PST.DC '(All) The children discovered candy in an instant.'
(?? Collective, √ Distributive)

We can confirm that -tul-marked noun phrases in Korean show the same distribution with all, as the sentences in (16) illustrate, but they exhibit the different distributions with definite plural noun phrases in English as given in (17) below, which is not surprising to us now. Plural NPs in English can represent both a collective reading and a distributive reading, regardless of the types of aspectual classes of predicates.

(16) a. Activities: All the students carried a box. 
(√ Collective, √ Distributive)

b. Accomplishments: All the children made a box. 
(√ Collective, √ Distributive)

c. States: All the bags are too heavy to carry. 
(* Collective, √ Distributive)

d. Achievements: All the children discovered candy in an instant. 
(?? Collective, √ Distributive)

(17) a. Activities: The students carried a box. 
(√ Collective, √ Distributive)

b. Accomplishments: The children made a box. 
(√ Collective, √ Distributive)

c. States: The bags are too heavy to carry. 
(√ Collective, √ Distributive)

d. Achievements: The children discovered a candy in an instant. 
(√ Collective, √ Distributive)
I argue that -tul induces a distributive operator, in sharp contrast to English plural noun phrases which are not directly relevant to distributivity. In the case of -tul-marked phrases, there are two possible options in the insertion sites of a distributive operator in the same way as all, which is the source of ambiguity. A distributive operator can be inserted into ‘DO’, which gives rise to a collective reading involving distributive quantification, as exemplified in (18b). It has another option to be inserted into a higher VP, which yields a distributive reading, as illustrated in (18c). Sentence (18a), therefore, has a possibility to have both a collective reading and a distributive reading. But, note the fact that distributive quantification is involved in both cases.

(18) a. Ai-tul-i sangca-lul mantulessta.  
child-TUL-NOM box-ACC make.PST.DC  
‘(All) The children made a box.’

b. \[\exists e [\text{make}’(e) & \text{Th}(e, a.\text{box})] & \exists e’ \forall x \exists e” [x \leq \left| \text{the.children} \right| \rightarrow [\text{DO}(e”) & \text{Ag}(e”, x)] & e” \leq e’ & e’ \leq e] \] (Collective)

c. \[\exists e \forall x \exists e”[x \leq \left| \text{the.children} \right| \rightarrow \text{make}’(e”) & \text{Th}(e”, a.\text{box})] & \exists e”[\text{DO}(e”) & \text{Ag}(e”, x) & e” \leq e’ & e’ \leq e] \] (Distributive)

Let us turn to the problem regarding why -tul-marked phrases can occur in collective contexts, which now became self-evident. Adopting the idea of scope interaction as such, we can account for the contrast which was shown between (2b) and (4b), repeated in (19) below. -Tul-marked noun phrases can be used in collective I contexts which have distributive sub-entailment, namely, collective activity and accomplishment events as in (19a), whereas they are excluded in collective II which lack distributive sub-entailment as given in (19b).

Math-department professor-TUL-NOM classroom-LOC gather.PST.DC  
‘(All) The professors of a Math-department gathered in the classroom.’

b. ??Swuhak-kwa-nun kyoswu-tul-i ney myeng-ita.  
Mathematics-dept.-TOP professor-TUL-NOM four CL-CPL.DC  
‘The professors in Mathematics department are a group of four.’

-tul can occur with collective predicates, as given in (19a), if the predicates have a ‘DO’ sub-part, another possible insertion site of a distributive operator. The -tul-marked subject is licensed by a distributive V head where a distributive operator is inserted. In the configuration of (20) below, the -tul-marked subject is base-generated under the Spec of the higher VP whose head is ‘DO’, which has the distributive feature by the insertion of a distributive operator, and -tul is licensed by virtue of the Spec-Head relationship. A collective reading is derived, because in this configuration, as represented in (20), a distributive operator takes narrower scope than an existential quantifier of a whole event which targets a higher VP. The interpretation process of (19a) is given in (21) below.
(20) \[\begin{array}{c}
\text{IP} \\
\text{DP} \quad \text{I'} \\
\text{professor-TUL-NOM}_i \quad \text{VP} \quad \text{I} \\
\text{DP} \\
\text{DVP} \\
\text{VP} \quad \text{DO} \\
\text{PP} \\
\text{V} \\
\text{classroom-LOC} \quad \text{gathered}
\end{array}\]

(21) a. \(\lambda e[\text{gather}'(e) \& \text{in(classroom}', e)]\)
b. \(\lambda x\lambda e[\text{DO(e)} \& \text{Ag(e, x)}]\)
c. \(\lambda P\lambda y\forall z[z \leq y \rightarrow P(z)]\) (the meaning of D)
d. \(\lambda y\forall z[z \leq y \rightarrow \lambda x\lambda e[\text{DO(e)} \& \text{Ag(e, x)}](z)]\) (the result of c(b))
e. \(\lambda y\forall z[z \leq y \rightarrow \lambda e[\text{DO(e)} \& \text{Ag(e, z)}]]\)
f. \(\lambda e[\text{gather}'(e) \& \text{in(classroom}', e) & \lambda y\forall z[z \leq y \rightarrow \lambda e'[\text{DO(e')} \& \text{Ag(e', z)} & e' \leq e]]]\) (event composition, a and e)
g. \(\exists e[\text{gather}'(e) \& \text{in(classroom}', e) \& \forall z[z \leq |\text{the professors}| \rightarrow \exists e' [\text{DO(e')} \& \text{Ag(e', z)} \& e' \leq e]]]\) (existential closure)

(21g) is read as follows: for each professor, there is a different DO-ing event e’ which is a part of the unique collective gathering event e. This is felicitous and can be ruled in.

On the other hand, -tul cannot occur with collective state verbs as in (19b), because the only insertion site of a distributive operator is a VP. This configuration leads to an obligatory distributive reading, which is incompatible with the inherent lexical meaning of the predicate.

(22) \[\begin{array}{c}
\text{IP} \\
\text{DP} \quad \text{I'} \\
\text{professor-TUL-NOM}_i \quad \text{VP} \quad \text{I} \\
\text{DP} \\
\text{DVP} \\
\text{VP} \\
\text{PP} \\
\text{V} \\
\text{are (a group of) four}
\end{array}\]
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(23)  a. \( \lambda x \lambda e[\text{be.a.group.of.four}'(e) \& \text{Th}(e, x)] \)
b. \( \lambda P \lambda y \forall z [z \leq y \rightarrow P(z)] \)  (the meaning of D)
c. \( \lambda y \forall z [z \leq y \rightarrow \lambda x \lambda e[\text{be.a.group.of.four}'(e) \& \text{Th}(e, x)](z)] \)
   (the result of b(a))
d. \( \lambda y \forall z [z \leq y \rightarrow \lambda e[\text{be.a.group.of.four}'(e) \& \text{Th}(e, z)] \)
e. \( \forall z [z \leq \text{the.professors} \rightarrow \lambda e[\text{be.a.group.of.four}'(e) \& \text{Th}(e, z)] \)
f. \( \forall z [z \leq \text{the.professors} \rightarrow \exists e[\text{be.a.group.of.four}'(e) \& \text{Th}(e, z)] \)
   (existential closure)

(23f) means that for each professor, there is an event of being a group of four, which is semantically an anomaly and should be ruled out. In sum, -tul is a distributive marker, and a collective reading, in the presence of -tul, can be obtained if a distributive operator is inserted in DO, which yields the collective reading of distributive sub-entailment consisting of different DO-ing events.

This approach, based on scope interactions, provides an explicit answer to the examples in section 2 before, which are problematic under the plurality analysis. The analysis gives a systematic account to the ambiguity of (1b), in contrast to (1a). (1b) is ambiguous between a distributive reading and a collective reading. Under my account, the -tul-marked subject is required to be licensed by a distributive head. The event of ‘buying a car’ is an accomplishment which has a ‘DO’ sub-part, and hence there are two possible insertion sites of a distributive operator. When the operator is inserted into a higher VP, this yields a distributive reading. But when the operator is inserted into ‘DO’, this yields a collective reading in which all the participants take part in the collective event. However, sentence (1a), in which no -tul occurs, is construed only as a collective reading that does not contain any distributive quantification. The event of ‘buying a car’, as a whole, takes a group argument.

In this section, I argued that -tul is a distributive marker which signals the presence of a distributive operator. Collective readings, in spite of the existence of -tul, are due to the embedment of a distributive operator in ‘DO’ not in a VP, which derives a reading that a certain collective event is done by the participation of all the individuals. -Tul-marked NPs, therefore, can co-occur with collective activity and accomplishment predicates which contain ‘DO’ in their event composition, whereas they cannot cooccur with collective state predicates which lack ‘DO’ which a distributive operator can be inserted into. This account also provides a straightforward explanation of the examples as we saw in section 2 before, which cannot be accounted for under the analysis of -tul as a simple plural marker.

4. The Syntax of -tul-marked Nouns

From the cross-linguistic perspective, a question arises as to why -tul, in contrast to English -s, always involves distributive quantification. English plurals are blind to the collective vs. distributive distinction; they can freely occur with collective II predicates as exemplified in (6) and can yield collective readings even when employed in state and achievement events as illustrated in (16) and (17). By contrast, -tul-marked nouns are marginal in collective II contexts as in (4) and (5) and they cannot yield collective readings when combined with state and achievement events, as we have seen from (15).
I claim that this contrast is reduced down to their distinct syntactic structures. That is, English \(-s\)-marked nouns construct CIP (Classifier Phrase, Borer 2005), and hence they can be a target of further quantification such as being closed by a determiner or by a quantifier being left their D/Q positions open. Therefore, depending on the types of quantifiers or determiners which embed them, English plural nouns can be matched with any types of predicates, either set predicates or atom predicates (Winter 2002). More specifically, English plurals can be further embedded within the definite determiner \(\text{the}\), for instance, presumably the source of group formation operation (Winter 2002), and can be mapped to an atomic group entity. The noun phrases, in turn, can combine with genuine collective predicates, and consequently distributive readings are blocked.

In contrast, Korean \(-tul\)-marked nouns have distinct syntactic structures, QPs, and hence no quantification rule is further applicable to them because their D/Q positions are supposed to be lexically filled. \(-Tul\)-marked nouns are irrelevant to any group formation operation at all. Due to the need for type-match between an argument and a predicate, \(-tul\)-marked nouns always combine with predicates which are semantically plural or set predicates, consequently resulting in readings associated with distributivity. The contrast between \(-tul\)-marked nouns and \(-s\)-marked nouns as such can be represented as the following structures. I assume the DP-structure, proposed by Li (1999) and Borer (2005).

(24)  
\[ \text{\textbf{< Korean >}} \]
\[ \text{Spec} \]
\[ \text{DP/QP} \]
\[ \text{Spec} \]
\[ \text{NumP} \]
\[ \text{Spec} \]
\[ \text{CIP} \]
\[ \text{Spec} \]
\[ \text{NP} \]
\[ \text{D/Q} \]
\[ \text{Num} \]
\[ \text{Spec} \]
\[ \text{Cl} \]
\[ \text{\textbf{< English >}} \]
\[ \text{Spec} \]
\[ \text{DP/QP} \]
\[ \text{Spec} \]
\[ \text{NumP} \]
\[ \text{Spec} \]
\[ \text{CIP} \]
\[ \text{Spec} \]
\[ \text{NP} \]
\[ \text{D/Q} \]
\[ \text{Num} \]
\[ \text{Spec} \]
\[ \text{Cl} \]

As clearly shown in (24a) and (24b), the so-called plural marking \(-tul\) in Korean and English plural morpheme \(-s\) are different. \(-Tul\)-marked NPs are base-generated under N and head-raise up to D/Q, via Cl and Num to check their composite features. \(-Tul\)-marked nouns, as being quantificational, cannot be a target of different value-assignment to a D/Q or to a Num, and furthermore cannot have any chance of the application of group-formation operation, which blocks the derivation of a genuine collective reading. This aspect is sharply contrasted with the case of English plural morpheme \(-s\). Borer (2005) argues that \(-s\) is classifier inflection, namely a spell-out of an abstract ‘dividing’ head feature\(^1\). Given this claim, we can straightforwardly predict that for English \(-s\)-marked noun phrases, combining with other quantifiers or determiners, which assign a value to a D/Q, should be required in order to be used as an argument, on the grounds that

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\(^1\) Borer (2005) argues that both plural inflection and classifiers create count nouns from unstructured stuff. Mass interpretation is defined associated with the absence of dividing structure, which is default interpretation. The difference between the two classifier inflections lies in the fact that the former is a spell-out of a head feature \(<\text{div}>\), while the latter is an independent morpheme. Consider the following examples. Refer to Borer (2005) for the detailed discussions.

(i)  
\[ \text{a. 1.0/0.5/0 apple-*(s)} \]
\[ \text{b. [DP the [NumP three [CIP \text{boy-s} [NP boy]]]]} \]
only DPs can function as an argument (Longobardi 1994). In contrast to -tul-marked nouns, English plural nouns are free to application of other value-assignments either to a Num or to a D, which makes it far away from distributivity.

I proposed that in addition to the classifier function, -tul, furthermore, assigns a value to a Num and to a D/Q, so that the assignment of a value to a D/Q position by other determiners or quantifiers is not possible for -tul-marked noun phrases. Recall the examples such as wuli ‘we’-tul ‘the members of us’ or kacak ‘family’-tul ‘the members of a family’, etc. These examples clearly tell us that -tul serves to individualize each member which belongs to the denotation of a noun to which -tul is attached. This property of -tul, syntactically, can be viewed as corresponding to a classifier function in terms of a DP-structure. There is also a piece of syntactic evidence clearly showing that -tul has a classifier function. Korean is a classifier language, in which a particular classifier is required for a noun to interact with a counting system. This claim of -tul as having a classifier function is confirmed by the fact that -tul exhibits complementary distribution with a classifier as exemplified below.

\[
\begin{align*}
\text{(25) a.} & \quad *\text{sakwa-tul} & \text{sey kay} \\
& \quad \text{apple-TUL} & \text{3 CL} \\
\text{b.} & \quad *\text{chayk-tul} & \text{tases kwen} \\
& \quad \text{book-TUL} & \text{5 CL}
\end{align*}
\]

‘three apples.’ ‘five books.’

The incompatibility of -tul with a classifier tells us the fact that they have the identical function. In other words, nominal -tul cannot be allowed in a classifier construction because of a double-marking effect for a classifier projection, as given in (26) below.

\[
\begin{align*}
\text{▼ conflict}
\text{(26) a.} & \quad [\text{DP} [\text{NumP} [\text{ClP} [\text{NP sakwa-tul}]_{\text{NP}} *\text{seay-kay}]_{\text{ClP}} \text{sey-kay}]_{\text{NumP}}]_{\text{DP}} \\
& \quad \text{apple-TUL} & \text{three-CL}
\end{align*}
\]

I propose that numbers and classifiers, as a form of a complex word, are both base-generated in a Cl position and this complex moves up to a Num head to check its number feature (the detailed discussion omitted). Given this assumption, a -tul-marked noun, which should raise to a Cl to check its dividing feature, gives rise to a conflict with a complex of a number and a classifier which already resides in a Cl. In other words, the movement of a -tul-marked noun yields a violation of Head-Movement Constraints (HMC), and hence a construction like (26) is not allowed.

The configuration of a -tul-marked noun given in (24a), where the D/Q position is lexically filled, predicts that -tul-marked phrases would have strong readings (Borer 2005). This prediction turns out to be correct, as illustrated in (27) and (28) below. -Tul-marked nouns exhibit wide-scope preference with respect to other quantificational elements. A -tul-marked noun in relation to negation and question, for instance, shows a relatively wide scope.

\[
\begin{align*}
\text{(27) a.} & \quad \text{I kos-ey sensayngnim-un an kyesita.} \\
& \quad \text{This place-LOC teacher-TOP NEG exist.DC} \\
& \quad \text{‘There is no teacher in this place.’} \\
& \quad \text{‘The teacher is not in this place.’}
\end{align*}
\]
b. I kos-ey sensayngnim-tul-un an kyesita.
   This place-LOC teacher-TUL-TOP NEG exist.DC
   ‘The teachers are not in this place.’

(28) a. I kos-ey sensayngnim-i kyesieyo?
   This place-LOC teacher-NOM exist.Q
   ‘Is there a teacher in this place?’ / ‘Is the teacher in this place?’

b. I kos-ey sensayngnim-tul-i kyesieyo?
   This place-LOC teacher-TUL-NOM exist.Q
   ‘Are the teachers in this place?’

Sentence (27b), where a -tul-marked noun occurs with negation, cannot have a reading that the noun is inside of the scope of negation. Similarly to this, a -tul-marked noun should be outside of the scope of question, as exemplified in (28b).

The structural distinction between -tul-marked NPs and -s-marked NPs, as represented in (24a) and (24b), is also reflected in distributional behaviors. They exhibit contrasting distributions. In particular, -tul-marked NPs, in contrast to English plural nouns, can not be used as a predicate or a part of a predicate, as illustrated in (29) below.

(29) a. Wuli-nun haksayng-ita.
   we-TOP student-be.DC
   ‘We are students.’

b. ??Wuli-nun haksayng-tul-ita.
   We-TOP student-TUL-be.DC

According to Longobardi’s (1994) generalization, a nominal expression is an argument only if it is a DP. If this is indeed the case, the non-DPs’ predicative function directly follows. English plural nouns constitute a ClP and hence can be freely used as predicates, while -tul forms a DP/QP, which yields the ungrammaticality of the above sentences in (29b).

In this section, I addressed the question why -tul-marked nouns involve distributive quantification, in sharp contrast to English plural nouns. A distributive reading is triggered when a set predicate takes a plural entity-denoting argument, while a distributive reading is blocked when a group formation operation, which targets a D position, the locus for referentiality/specificity, takes place. When it comes to the D position, English plurals are open and waiting for a further assignment (i. e. the, presumably the source of group-formation), which makes them far away from distributivity. -Tul-marked nouns, however, are closed in the D/Q position and cannot have any chance of group formation operation. By matching with set predicates, -tul-marked nouns always give rise to distributive readings.

5. Conclusion

In this paper, I proposed the analysis of -tul, which traditionally has been known as a plural marker. -Tul was claimed to be a distributive marker, and to signal the
existence of a distributive operator, giving rise to a distributive reading of a sentence. This conclusion, further, amounts to the implication that Korean has no genuine plural morpheme. Why is it the case that Korean lacks a plural morpheme?

Chierchia (1998) argues that all nouns are mass nouns in classifier-languages, which necessitate the existence of classifier system, responsible for portioning out stuff before quantifying it. Moreover, since mass nouns are inherently plural, classifier-languages do not have plural inflection. Borer (2005), however, rejects the idea that the claim of mass nouns is only peculiar to classifier-languages, and generalizes it: all nouns are mass in the absence of dividing structure across all languages. Both classifier-languages and non-classifier languages, then, need a dividing system in order to count. Borer (2005) argues that both plurals and classifiers serve to create count nouns from unstructured stuff. That is to say, plural inflection in non-classifier languages such as -s in English, for instance, is classifier inflection, which corresponds to classifiers in classifier-languages. In light of the insight from Borer (2005), I argue that the elements which overtly mark plurality in Korean are classifiers and numbers, not the so-called plural marking -tul. Korean is a language that lacks a genuine plural morpheme.

This conclusion, furthermore, sheds light on the issue of why the so-called plural marking -tul is apparently optional in representing plurality, which is also true of other classifier-languages. -Tul is always associated with distributivity, and hence in the contexts where distributive quantification is not involved, -tul cannot be used. For instance, in genuine collective predicate contexts that do not involve distributive quantification but require plural entities for their argument in terms of their lexical meanings, -tul, as a distributive marker, cannot occur, and bare nouns should be used as an argument instead. This is the very reason that -tul, misleadingly known as a plural marker, appears to be optional in expressing plurality. In fact, it is not the case that -tul is optional at all. There is a proper reason that -tul does not occur in representing plurality. That is, -tul is restricted in some of plural nouns because of its distributivity effect.

References
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