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A SEMANTIC ANALYSIS OF THE KOREAN PLURAL MARKER *TUL*

Yoon-kyoung Joh
University of Pennsylvania
ykjoh@babel.ling.upenn.edu

Abstract

I argue that Extrinsic Plural Marker *tul* in Korean has two semantic components, distributivity and maximality, that operate on the predicate that *tul* attaches to. In this paper, the universal quantificational force associated with the semantic effects of EPM-tul will be accounted for, relying on a distributivity operator and a focus-sensitive operator. The good-fitting requirement on the *Cover* variable of the distributivity operator explains the maximizing effect of the predicate marked with *tul* while the focus-sensitive operator captures the fact that different positions of EPM-tul generate different distributive relations.

1 Introduction

The plural marker *tul* in Korean has been argued to have two functions: one is enumerative and the other is distributive. The former has been termed "intrinsic" plurality as opposed to the latter, described as "extrinsic" plurality. Of particular interest in this paper is the *tul* with the distributivity function. In this paper, the two different *tul*'s will be termed Extrinsic Plural Marker (EPM-tul, henceforth) and Intrinsic Plural Marker (IPM-tul, henceforth), in accordance with Song (1997). EPM-tul will refer to the *tul* that introduces full distributivity while IPM-tul will be used for the *tul* that induces the inherent plurality interpretation.

The distinction has often been made based on the part of speech of the element that the *tul* is suffixed to. That is, it was assumed that the *tul* attached to count nouns necessarily enumerates the entities denoted by the noun while the *tul* that attaches to unorthodox categories with respect to plurality (non-nominals) does not introduce the genuine function of plurality but derives distributivity. Yet, as Chung (2003) and Song (1997) correctly describe, the extrinsic plural marker can be attached not only to categories that are inherently incompatible with nominal plurality such as adverbials and postpositional phrases but also to count nouns. That is, the function of the *tul* is determined not by the syntactic categories of the elements that host the *tul* but by the syntactic environments where it occurs.

The primary goal of this paper is to propose a semantic analysis of EPM-tul. Before jumping to the main discussion, relevant data and properties of EPM-tul will be examined in section 2. In section 3, previous studies on the semantics of EPM-tul, Yim (2002; 2003) and Kim (2004), will be reviewed. In section 4, I will show that the

semantic contribution of EPM-tul is two-fold: distributivity and maximality. Finally, I will define the semantics of Korean EPM-tul with a distributivity operator and a focus-sensitive operator.

2 Data and Properties of Extrinsic Plural Marker *Tul*

In Korean, bare nouns with or without a plural marking are ambiguous in number. For instance, *namu* 'tree' and *namu-tul* 'trees' can be either plural or singular. The ambiguity disappears when the nouns are combined with determiners or demonstratives such as *i* 'this' and *ku* 'that/the' or with numerals and classifiers. Thus, *ku namu* 'that/the tree' is only interpreted as singular whereas *ku namu-tul* 'those/the trees' and *twu kuru-euy namu(tul)* 'two CL tree(s)' are necessarily understood to be plural. That is, the plural marker *tul* added to the noun that has higher projections above a noun phrase is always intrinsic. On the other hand, the plurality of bare nouns without overt plural marking is dependent on the context.

The plurality of bare nouns with an explicit plural marking is ambiguous in a more constrained way. Overt plural marking on the subject is always inherently associated with the plurality of the entity, whereas the plural marking on the non-subject bare count noun can be either intrinsic (enumerative) or extrinsic (distributive). The *tul* marking in (1.a) is an example of Intrinsic Plural Marker *tul* that indicates that there is more than one book. The *tul* markings in (1.b) and (1.c) are examples of Extrinsic Plural Marker *tul*. The semantic contribution of EPM-tul in (1.b) and (1.c) can be spelled out as follows: 'the students drank and what each of them drank was water, with no exceptions' for (1.b) and 'the students left and each of them who left did so loudly, with no exceptions' for (1.c).

(1) a. Chayk-**tul**-i chaeksang wi-e iss-ta.
Book-IPM-Nom desk on-Loc be-Dec.
'The books are on the desk.'

b. Haksaeng -tul-i mwul-**tul**-ul masi-ess-ta.
Student-IPM-Nom water-EPM-Add drink-Pst-Dec
'The students drank water.'

c. Haksaeng-tul-i sikkurupkke-**tul** ttena-ass-ta.
Student-IPM-Nom loudly-EPM leave-Pst-Dec
'The students left loudly.'

Chung (2003: 75-76) argues that the EPM-tul is licensed only when there is a local plural subject. The Local Plural Subject condition (LPS condition, henceforth) can be broken down into the following three parts:

(2) a. Haksaeng-tul-i ilccik-**tul** ttena-ess-ta.
Student-IPM-Nom early-EPM leave-Pst-Dec
'Students left early.'

b. *John-i ilccik-**tul** ttena-ess-ta.
John-Nom early-EPM leave-Pst-Dec

'John left early.'

(3) a. Tom-kwa Mary-ka swukcey-lul ilccik-**tul** ceychwulha-ess-ta.
Tom-and Mary-Nom assignment-Acc early-EPM submit-Pst-Dec
'Tom and Mary submitted their assignment early.'

b. *Tom-i Mary-wa Sue-lul ilccik-**tul** ponay-ess-ta.
Tom-Nom Mary-Com Sue-Acc early-EPM send-Pst-Dec
'Tom sent Mary and Sue early.'

(4) a. John-kwa Mary-ka ilccik-**tul** ttena-ess-ta.
John and Mary-Nom early-EPM leave-Pst-Dec
'John and Mary left early.'

b. *John-kwa Mary-nun [Tom-i ilccik-**tul** ttena-ess-ta]-ko sayngkakha-n-ta.
John and Mary-Top Tom-Nom early-EPM leave-Pst-C think-Prs-Dec
'John and Mary think that Tom left early.'

The plural marker *tul* in the non-subject position can be understood as extrinsic only under the conditions above. As shown in (1), plural nouns must c-command the EPM-tul. Yet, the subject nominal does not have to be explicitly marked for plurality when plural quantifiers, numerals, conjoined NPs, and lexical items inherently encoding plurality render plural marking redundant. In addition, the plural noun must be in the subject position of the same clause.

In general, it seems to be true that the LPS condition accounts for the core properties of EPM-tul, Yet, it must be noted that the local plural subject is neither a sufficient nor a necessary licensing condition for EPM-tul. There have been several counterexamples to the LPS condition. Kim (2004) claims that plural objects can license EPM-tul as in (5) and (6), even though there are various judgments on the grammaticality of the sentences.

(5) Na-nun ku ai-tul-ul sacin-eyse-tul poassta.
I-Top that child-IPM-Acc picture-Loc-EPM see-Pst-Dec.
'I saw them in the picture.'

(6) Ku kyengchal-i ai-tul-ul cip-eyse-tul ttayli-ess-ta.
That police officer-Nom child-IPM-Acc house-Loc-EPM hit-Pst-Dec.
'That police officer beat the children at their houses.'

Furthermore, passive sentences show us that plurality of the grammatical subject is not sufficient to license EPM-tul, and that the theoretical importance must be placed on the logical subject. Contrary to the LPS condition, we observe that EPM-tul is licensed even when the local subject is singular if a plural oblique agent precedes it, as shown in (7).

(7) a. Keik-i haksayng-tul-euyhae ppali-**tul** meke-chiwe-ci-ess-ta.
Cake-Nom student-IPM-by quickly-EPM eat-put-away-Pst-Dec
'The cake was eaten by the students quickly.'

b. ?Keik-i ppali-**tul** haksayng-tul-euyhae meke-chiwe-ci-ess-ta.
Cake-Nom quickly-EPM student-IPM-by eat-put-away-Pst-Dec
'The cake was all quickly eaten by the students.'

c. *Keik-i ppali-**tul** meke-chiwe-ci-ess-ta.
Cake-Nom quickly-EPM eat-put-away-Pst-Dec

'The cake was eaten quickly.'

There is a high degree of variation in the grammaticality judgments of the sentences with EPM-tul, so it is difficult to propose a definite set of strict conditions on the occurrence of EPM-tul. However, the dialectal and idiolectal variations reveal an interesting aspect of EPM-tul. It seems that, for some speakers, the occurrence of EPM-tul strictly requires a local plural subject. For others, the licensing condition can be more lenient, so that plural nominal antecedents in the local domain – such as plural oblique agents or plural direct objects – can license EPM-tul.

3 Previous Studies

3.1 Yim (2003)

Yim (2002; 2003) provides a semantic account for EPM-tul. He argues that EPM-tul introduces a collectivity-internal distributivity. He suggests that the sentence with EPM-tul is collective and distributive at the same time in the sense that EPM-tul adds distributivity down to each individual in collectively-read sentences. He accounts for the semantic effect of EPM-tul, relying on Schwarzschild (1996)'s Partition-Cover theory, which has the advantage of accounting for the distinction between collectivity and various types of distributivity. The sentences in (8) reveal a minimal pair with respect to EPM-tul. According to Yim (2003), the sentence in (8.a) without EPM-tul has two salient readings: i.e, a collective reading and a distributive reading. The sentence in (8.b), which is the same as (8.a) except the fact that it is attached with EPM-tul, has the collectivity-internal distributive reading,

(8) a. Ku haksaeng-tul-i kongwon-e katta.
The student-IPM-Nom park-at went
'The students went to a park/parks.'
b. Ku haksaeng-tul-i kongwon-e-**tul** katta.
The student-IPM-Nom park-at-EPM went
'The students went to a park/parks.'

He portrays the semantic difference between the sentence (8.a) and the sentence (8.b) by assigning different values to *Cover*. The formulas in (9) and (10) are the denotations of the sentences (8.a) and (8.b), respectively. Under the universe of discourse described in (11), the formula in (9) generates the collective reading, when it selects K in (12) as the value of *Cover*. However, it elicits the nominal distributive reading when the value of *Cover* is I. The collectivity-internal distributive reading for (8.b) is claimed to be derived when both I and K are simultaneously selected for the value of *Cover* in (10).

(9) $\forall x[(x \in [[Cov]] \,\&\, x \subseteq [[the.students']]) \rightarrow x \in [[go.to.a.park']]\ ]$
(10) $\forall x \exists X \exists Y[(x \in Cov \,\&\, x \subseteq X[X \text{ is a set of students}] \,\&\, \exists y \in Y[Y \text{ is a set of park}])$
$\rightarrow \exists e \exists e'\ [GO(e') \,\&\, Agent(e',x) \,\&\, TO(e',Y) \,\&\, e' \subseteq e]]$

(11) U = {a, b, c, d, e, f, {a,b}, {a,c}, {a,d}…}
(12) [[the.students]] = {alex, bill, chan, dick}
I = {{a}, {b}, {c}, {d}} J = {{a}, {c}, {b,d}}
K = {{a,b,c,d}} L = {{a,b}, {c,d}}

His analysis is highly significant in the respect that it is the first semantic work that seriously deals with the core semantic property of EPM-tul. Yet, there are some limitations. First of all, it is hard to imagine exactly what interpretation can be derived when the value of *Cover* is both I ({{a},{b},{c},{d}}) and K ({{a,b,c,d}}) at the same time. It seems that the meaning extracted by selecting the two values simultaneously for the same *Cover* would be neither collective nor distributive, since the intended meanings of the two different values are incompatible.

Furthermore, according to the analysis above, what EPM-tul does is ensure that there is a distributive relation between the plural subject and the "whole" VP predicate. The inadequacy of his analysis crucially lies in the fact that it makes no semantic difference where EPM-tul actually occurs within the VP. Regardless of which element EPM-tul is attached to, the entire predicate is distributed to each individual of the set denoted by the plural subject.

The same fact that Yim (2003) analyses EPM-tul relying on the distributivity operator at the VP level brings about another problem. The maximizing effect introduced by Korean EPM-tul differs from the maximizing effect at the VP level. EPM-tul does not function to make sure that all the first-year students who are contextually-relevant built a raft. Instead, in the following example (13.b), EPM-tul guarantees that each student who actually participated in the building of a raft did so loudly.

(13) a. Ilhaknyon haksaeng-tul-i sikkurupkke ttaesmok-ul mandul-ess-ta.
The first-year student-IPM-Nom loudly raft-Acc build-Pst-Dec
'The first-year students built a raft loudly.'
b. Ilhaknyon haksaeng-tul-i sikkurupkke-**tul** ttaesmok-ul mandul-ess-ta.
The first-year student-IPM-Nom loudly-EPM raft-Acc build-Pst-Dec
'The first-year students built a raft loudly.'

The last point I would like to make with regard to Yim (2003)'s proposal on the semantics of EPM-tul is that the distributivity introduced by Korean EPM-tul is not confined to collectivity. That is, the distributivity caused by EPM-tul does not become vacuous with inherently distributive predicates. The EPM-tul in sentence (14.b) functions as an overt indicator that makes sure that the manner described by the adverbial distributes over each agent of the sentence. Even though the sentence (14.a) has the distributive reading, the semantic contribution of EPM-tul in (14.b) is as salient as it is in collective sentences. The sentence in (14.b) with EPM-tul can only be used in a situation where each first-year student who left did so early, whereas the sentence in (14.a) without EPM-tul can encode a situation where five first-year students left early but one first-year student left late.

(14) a. Ilhaknyon haksaeng-tul-i ilccik ttena-ss-ta.
First-year student-PL-Nom early leave-Pst-Dec
'First-year students left early.'
b. Ilhaknyon haksaeng-tul-i ilccik-**tul** ttena-ss-ta.
First-year student-PL-Nom early-EPM leave-Pst-Dec
'First-year students left early.'

3.2 Kim (2004)

Kim (2004) claims that the contribution of EPM-tul is weaker than truth conditional. He proposes that Korean EPM-tul imposes the presupposition that its plural antecedent and the category it attaches to are in a distributive relation, defining the denotation of EPM-tul as follows:

(15) $[[tul]] = \lambda x[\lambda y: \exists R \forall z.\ z \leq x \rightarrow R(y)(z).\ [y]]$

According to his analysis, the following sentence (16) presupposes the distributive relation expressed in (17.a). In this way, he allows the sentence in (16) to be used in a situation where there is only one snowman as well as in a situation where there are 10 snowmen.

(16) Yelmyeng-uy ai-tul-i nwunsalam-**tul**-ul mantul-ess-ta.
Ten-Poss child-IPM-Nom snowman-EPM-Acc make-Pst-Dec
'Ten children made snowmen.'

(17) a. Presupposition: $\exists R \forall x[x \leq$ ten students $\rightarrow R($a snowman$)(x)]$
b. Assertion: $\exists y[$snowman(y) & made $(y)($ten students$)]$ or
$\forall x[x \leq$ ten students $\rightarrow$ made $($a snowman$)(x)]$

The denotation of EPM-tul defined in (15) allows us to derive the semantics of the sentence (18) as (19). As shown in (19), EPM-tul does not contribute to the truth conditions of the sentence where it appears, but imposes the presupposed distributive relation between its plural antecedent, *ku ai-tul* 'those children,' and the adverbial, *ppali* 'fast,' that the tul is suffixed to.

(18) Ku ai-tul-i ppali-**tul** taly-ess-ta.
That child-IPM-Top fast-EPM run-Pst-Dec
'Those children ran all fast.'

(19) 1. $[\![\text{pro1 tul}]\!] = \lambda e: \exists R \forall z \leq g(1) \rightarrow R(z)(e).[e]$
2. $[\![\text{fast}]\!] = \lambda e.$ fast(e)
3. $\lambda Q \lambda P: P(\exists e\ Q(e)).P$
4. $[\lambda Q \lambda P: P(\exists e\ Q(e)).\ [P]\ ]\ (\lambda e: \exists R \forall z \leq g(1) \rightarrow R(z)(e).[e])$
$= \lambda P: P(\exists e \exists R \forall z \leq g(1) \rightarrow R(z)(e).[e])\ [P]$

5. λP: P(∃e∃R∀z ≤ g(1) → R(z)(e).[e]) [P] (λe. fast(e))
6. [[ran]] = λxλe[agent(x)(e) & fast(e)]
7. λxλe[agent(x)(e) & ran (e) & fast(e)]
8. ∃e[agent(x)(e) & ran (e) & fast(e)]

Overcoming the limitation of Yim (2003), Kim (2004) correctly captures the fact that EPM-tul does not induce semantic effects over the whole VP predicate, but just over the predicate marked with EPM-tul. However, the critical drawback of his analysis is that the distributive relation is actually asserted rather than presupposed. The evidence comes from the fact that the distributive relation does not remain when the sentence containing it is negated. That is, the distributive presupposition does not survive under negation. The following sentence (20) can felicitously be used in the context where some first-year students who built a raft did so loudly while other first-year students who built a raft were not loud in the building event.

(20) Ilhaknyon haksaeng-tul-i sikkurupkke-**tul** ttaesmok-ul mandul-ci-anh-ass-ta.
First-year student-IPM-Nom loudly-EPM raft-Acc build-not-Pst-Dec.
'The first-year students did not build a raft all loudly.'

4 A New Analysis

In this section, I will provide an alternative analysis for the semantics of EPM-tul that overcomes the limitations found in previous approaches. In contrast to Yim (2003) and Kim (2004), I will introduce a distributivity operator and a focus-sensitive operator to account for the universal quantification associated with EPM-tul.

4.1 Two Semantic Components of EMP-tul

An adequate analysis must account for the following semantic properties of EPM-tul. All the examples below share the common propositional core. However, as Song (1997) and Kim (2004) point out, each sentence in (21) yields a different distributive relation. That is, the different position of EPM-tul must induce a different meaning.

(21) a. Haksaeng-tul-i kongweneyse-**tul** sikkurupkke ttamok-ul ci-ess-ta.
Student-IPM-Nom park-Loc-EPM loudly raft-Acc build-Pst-Dec.
'The students built a raft in the park loudly.'
b. Haksaeng-tul-i kongweneyse sikkurupkke-**tul** ttamok-ul ci-ess-ta.
Student-IPM-Nom park-Loc loudly-EPM raft-Acc build-Pst-Dec.
'The students built a raft in the park loudly.'
c. Haksaeng-tul-i kongweneyse sikkurupkke ttamok-**tul**-ul ci-ess-ta.
Student-IPM-Nom park-Loc loudly raft-EPM-Acc build-Pst-Dec.
'The students built a raft in the park loudly.'

What is also crucial in the analysis of EPM-tul is that it consists of two semantic components that are described in (22). Kim (2004) describes the semantics of EPM-tul

only as distributivity. Yim (2003) discusses a maximizing and a distributivity effect but incorrectly describes that the two semantic effects apply at the VP level. The accurate semantics of EPM-tul is as follows:

(22) a. Distributivity: EPM-tul distributes the predicate it attaches to over the denotation of the agent nominal.
b. Maximality: EPM-tul indicates that, in this distribution, each individual denoted by the agent nominal must be exhausted.

The two semantic components of EPM-tul explain why there are salient differences in meaning not only between (23) and (24) but also between (25) and (26). EPM-tul in (24) alters the possible collective and non-maximal readings induced by *sikkurupkke* 'loudly' in (23) into the necessary distributive and maximal readings as in (24).

(23) Ilhaknyen haksaeng-tul-i sikkurupkke ttamok-ul ciessta..
First-year student-IPM-Nom loudly raft-Acc build-Pst-Dec.
'First-year students built a raft loudly.'
◇ collective building event
◇ non-maximality of the plural agent noun
◇ collectivity in the being loud event
◇ non-maximality of the plural agent noun in the being loud event

(24) Ilhaknyen haksaeng-tul-i sikkurupkke-**tul** ttamok-ul ciessta.
First-year student-IPM-Nom loudly-EPM raft-Acc build-Pst-Dec.
'First-year students built a raft in the park all loudly.'
◇ collective building event
◇ non-maximality of the plural agent noun
□ distributivity in the being loud event
□ maximality of the plural agent noun in the being loud event

The two semantic components also naturally account for why the semantic contribution of EPM-tul is not entirely nullified even when the main predicate is inherently distributive. EPM-tul occurring with inherently distributive main predicates still yields a maximizing effect, even though it does not introduce distributivity. That is, EPM-tul in (26) alters the possible non-maximal reading of the plural agent into a necessary maximal reading with respect to the plural agent involved with the being early event.

(25) Ilhaknyon haksaeng-tul-i ilccik ttena-ss-ta.
First-year student-PL-Nom early leave-Pst-Dec
'First-year students left early.'
□ distributive leaving event
□ non-maximality of the plural agent noun
□ distributivity in the being early event
◇ non-maximality of the plural agent noun in the being early event

(26) Ilhaknyon haksaeng-tul-i ilccik-**tul** ttena-ss-ta.
First-year student-PL-Nom early-EPM leave-Pst-Dec
'First-year students left all early.'
□ distributive leaving event
□ non-maximality of the plural agent noun
□ distributivity in the being early event
□ maximality of the plural agent noun in the being early event

4.2 A Semantic Account of EPM-tul

In explaining the two semantic effects of EPM-tul, I will introduce a distributivity operator accompanying a contextual variable and a focus-sensitive operator. The good-fitting requirement on the *Cover* variable of the distributivity operator accounts for the maximizing effect of the predicate marked with *tul*, while the focus-sensitive operator captures the fact that different positions of EPM-tul generate different distributive relations.

EPM-tul as a focus-sensitive operator is primarily based on the observations made in Song (1997). He describes that EPM-tul marks "a focus of emphasis in terms of distribution." First, he observes that topic-marked nominals cannot be suffixed with EPM-tul as in (27) due to the functional clash.

(27) Ku ai-eykey (*-tul)-un(*-tul) salam-tul-i ton-ul cwu-ess-ta.
The child-Dat (-EPM)-TOP(-EPM) person-IPM-Nom money-Acc give-Pst-Dec.
'People gave the child money.'

The second argument comes from the nonrandom occurrence of EPM-tul in question-answer pairs. As Rooth (1996) also finds, the position of focus in an answer correlates with the questioned position in the corresponding question. The following question-answer examples borrowed from Song (1997) reveal the congruence between question and answer with respect to focus. When the questioned element is attached with EPM-tul, the answer sounds natural. However, as shown in (28.c), it sounds awkward when EPM-tul is attached to non-questioned elements.

(28) a. Mwues-ul ai-tul-i kongwon-eyse culkepkey ha-ess-nya?
What-Acc Child-IPM-Nom park-Loc cheerfully do-Pst-Q
'What did the children cheerfully do in the park?'
b. Ai-tul-i kongwon-eyse culkepkey kongnoli-**tul**-ul ha-ess-ta.
Child-IPM-Nom park-Loc cheerfully ball game-EPM-Acc do-Pst-Dec
'The children cheerfully played ball in the park.'
c. # Ai-tul-i kongwon-eyse-**tul** culkepkey kongnoli-lul ha-ess-ta.
Child-IPM-Nom park-Loc-EPM cheerfully ball game-Acc do-Pst-Dec
'The children cheerfully played ball in the park.'

What has to be further taken into account in the argument above is the case where the question itself contains EPM-tul. When a question includes EPM-tul, the corresponding

answer can have EPM-tul in the corresponding position, even though it is not necessary. Also, the direct answer to the questioned element can have EPM-tul as shown in (29.b). However, parallel to (28), it sounds very awkward when the unquestioned element has EPM-tul attached as an answer to the question as in (29.c).

(29) a. Mwues-ul ai-tul-i kongwon-eyse-**tul** culkepkey ha-ess-nya?
What-Acc Child-IPM-Nom park-Loc-EPM cheerfully do-Pst-Q
'What did the children cheerfully do in the park?'
b. Ai-tul-i kongwon-eyse(-**tul**) culkepkey kongnoli-**tul**-ul ha-ess-ta.
Child-IPM-Nom park-Loc-EPM cheerfully ballgame-EPM-Acc do-Pst-D
'The children cheerfully played ball in the park.'
c. #Ai-tul-i kongwon-eyse(-**tul)** culkepkey-**tul** kongnoli-lul ha-ess-ta.
Child-IPM-Nom park-Loc-EPM cheerfully-EPM ballgame-Acc do-Pst-D
'The children cheerfully played ball in the park.'

Based on the evidence discussed above, I would like to claim that EPM-tul is a focus sensitive operator that includes a distributivity operator in its restrictor domain. As a focus operator, EPM-tul serves to re-structure the information of the sentence by placing the focused element in the nuclear scope, which is how Beaver & Clark (2003) and Nakanishi & Romero (2003) define a focus operator. Furthermore, the relevant maximizing and distributive interpretation are arrived at, by imposing the good-fitting restriction on the *Cover* of the distributivity (Partition) operator encoded in the lexical meaning of EPM-tul. I would like to suggest the truth condition of EPM-tul as in (30).

(30) Truth condition of EPM-tul
NP(x) [$_{VP}$ XP-**tul**]
$\forall e[\forall y[y \in Cov^{good\text{-}fitting} \& y \subseteq x \& Ag(e,y) \rightarrow q(e)]]$,
where q is XP that hosts EPM-tul.

Now, we are ready to illustrate the semantic contribution of EPM-tul based on the denotation given in (30). The sentences in (31), (33) and (35) commonly express the same proposition. Yet, EPM-tul attached to the oblique nominal as in (33) and EPM-tul suffixed to the adverbial as in (35) further contribute distributive and maximizing senses to the core proposition, as illustrated in (34) and (36). The EPM-tul in (33) maximally distributes certain aspects of the events specified by the oblique nominal over each individual agent involved. EPM-tul attached to an adverb as in (35) fully distributes the manner expressed by the adverbial over the action performed by each of the agents involved. The denotations of the sentences (33) and (34) are described as (34) and (36), respectively.

(31) Ilhaknyen haksaeng-tul-i kongweneyse sikkurupkke ttamok-ul ciessta..
First-year student-IPM-Nom park-Loc loudly raft-Acc build-Pst-Dec.
'The first-year students built a raft in the park loudly.'

(32) $\exists e \forall x [x \in Cov \& x \subseteq [\![\text{the.first.year.students}]\!] \rightarrow \exists e'[e' \subseteq e \& Ag(e',x) \&$
Build (e') & Theme (e', a raft) & AT(e', park) & loudly(e')]]

(33) Ilhaknyen haksaeng-tul-i kongweneyse-**tul** sikkurupkke ttamok-ul ciessta.
First-year student-IPM-Nom park-Loc-EPM loudly raft-Acc build-Pst-Dec.
'The first-year students built a raft all in the park loudly.'

(34) $\exists e \forall x$ [x $\in$ Cov & x $\subseteq$ [[the.first.year.students]] $\rightarrow$ $\exists$e'[e' $\subseteq$ e & Ag(e',x) & Build (e') & Theme (e',a raft) & loudly(e') & AT(e', park) & $\forall$e''[e'' $\subseteq$ e' & $\forall$y[y$\in$Cov$^{\text{good-fitting}}$ & y $\subseteq$ x] & Ag(e'',y) $\rightarrow$ AT(e'', park)]]]

(35) Ilhaknyen haksaeng-tul-i kongweneyse sikkurupkke-**tul** ttamok-ul ciessta.
First-year student-IPM-Nom park-Loc loudly -EPM raft-Acc build-Pst-Dec.
'The first-year students built a raft in the park all loudly.'

(36) $\exists e \forall x$ [x $\in$ Cov & x $\subseteq$ [[the.first.year.students]] $\rightarrow$ $\exists$e'[e' $\subseteq$ e & Ag(e',x) & Build (e') & Theme (e',a raft) & loudly(e') & AT(e', park) & $\forall$e''[e'' $\subseteq$ e' & $\forall$y[y$\in$Cov$^{\text{good-fitting}}$ & y $\subseteq$ x & Ag(e'',y) $\rightarrow$ loudly (e'')]]]]

When one sentence has more than one EPM-tul marking, the multiple elements attached with it shift to the nuclear scope as follows:

(37) Ilhaknyen haksayng-tul-i kongweneyse sikkurupkke-**tul** ttamok-**tul**-ul ciessta..
First-year student-IPM-Nom park-Loc loudly-EPM raft-EPM-Acc build-Pst-Dec.
'First-year students built a raft in the park loudly.'

(38) $\exists e \forall x$ [x $\in$ Cov & x $\subseteq$ [[the.first.year.students]] $\rightarrow$ $\exists$e'[e' $\subseteq$ e & Ag(e',x) & Build (e') & Theme (e',a raft) & cheerfully (e') & AT(e', park) & $\forall$e''[e'' $\subseteq$ e' & $\forall$y[y$\in$Cov$^{\text{good-fitting}}$ & y $\subseteq$ x & Ag(e'',y) $\rightarrow$ loudly (e'') & Theme(e'', raft)]]]]

In (34), (36) and (38), there appear two *Cover*s. One is induced by the plural subject and the other is elicited by EPM-tul. The possible types of *Cover*s in each case are summarized in (39). The *Cover* variable introduced by the main predicate can generate both distributive/collective and maximal/non-maximal readings. However, the *Cover* variable induced by EPM-tul is restricted to be distributive and good-fitting so that it necessarily generates a distributive and a maximal reading.

(39) Four possible cases for *Covers*

Main predicate	Distributive/Collective	Good-fitting/Ill-fitting
Tul-predicate	Distributive	Good-fitting

However, it is the case that the *Cover* for the *tul*-predicate has to be good-fitting but is not necessarily distributed down to the atomic level. When the *Cover* for the main predicate is of a mid-size type, or when EPM-tul attaches to the adverbial *hamkkey* 'together,' as in the examples like (40.a) and (40.b), the distributivity induced by EPM-tul does not necessarily go to the atomic level.

(40) a. Ye-haksaeng-tul-kwa nam-haksaeng-tul-i sikkurupkke-**tul** tten-ass-ta.

Female students and male students-Nom loudly-EPM leave-Pst-Dec.
'The female students and the male students left all loudly.'

b. Haksaeng-tul-i hamkkey-**tul** ttamok-ul ci-ess-ta.
Student-IPM-Nom together-EPM raft-Acc build-Pst-Dec.
'The students built a raft all together.'

5 Conclusion

In this paper, I have addressed the semantic properties associated with Extrinsic Plural Marker *tul*. Introducing a focus-sensitive operator, I have explained that the different position of EPM-tul generates a different meaning. The core semantic components of EPM-tul have been accounted for by the distributivity operator with a contextual variable. EPM-tul induces a distributive reading and a maximizing effect on the predicate it attaches to regardless of the readings of the main predicate. I have addressed the fact that the semantic contribution of EPM-tul on its predicate is independent of the semantic characteristics of the main predicate by introducing a separate *Cover* in the restrictor domain of the focus operator.

In the current analysis of the semantics of EPM-tul, I have employed two operators: a distributivity operator and a focus-sensitive operator. However, it will be highly preferable if a single operator can uniformly account for all the semantic properties of EPM-tul. Furthermore, what has been assumed in the current analysis is that Korean plural marker *tul* has two different functions. As discussed, it can yield a genuine plural meaning and a distributive meaning. Yet, it will be intriguing to see whether there is any correlation between these two functions.

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