

How does distributivity induce emphasis?

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1. Introduction

The particle *ssik* in Korean has been regarded either as an overt marker of distributivity (Oh, 2001 & 2006; Gil, 1990; Choe, 1987) or as a multiple group forming device (McKercher & Y Kim, 2000). However, there are instances where *ssik* is used seemingly as an emphatic marker (Y-K Kim, 1991). Consider (1):

- (1) a. *phillip-un khi-ka 188-(seynchi)-i-ta.*
Philip-TOP height-NOM 188-(cm)-be-DECL
'Philip is 6 feet 2 inches tall.'
- b. *phillip-un khi-ka 188-(seynchi)-ina toyn-ta.*
Philip-TOP height-NOM 188-(cm)-INA be-DECL
'Philip is 6 feet 2 inches tall.' (entails: Philip is tall)
- c. *phillip-un khi-ka 188-(seynchi)-ssik-ina toyn-ta.*
Philip-TOP height-NOM 188-(cm)-SSIK-INA be-DECL
'Philip is 6 feet 2 inches tall.' (entails: Philip is VERY tall)

The sentence shown in (1a) is not too interesting other than the fact that the dimension of measurement is overt (*khi* 'height'). The entailment arises when *-ina*¹ or *-ssik-ina* appears in a position where its preceding noun phrase induces a scalar implicature, as in (1b) and (1c).

As can be seen in (1c), when *ssik* appears between a number (or number plus classifier) and a morpheme *ina*, the entailment is intensified within a

¹The particle *ina* follows gradable expressions and adds meanings such as 'high in quantity/quality' or 'high in degree' to the expression. Also, these meanings entail a degree of surprise, that is, quantity/quality/degree/extent is above expectation of the speaker.

measure phrase such that the speaker entails that the height of Philip is way above the standard of comparison, i.e., Philip is very tall.

Constructions almost identical to (1) can be found in Japanese as in (2):

- (2) a. *firippu-wa shinchou 188-(senchi) dearu.*
Philip-TOP height 188-(cm) is
'Philip is 6 feet 2 inches tall.'
- b. *firippu-wa shinchou 188-(senchi) aru.*
Philip-TOP height 188-(cm) is
'Philip is 6 feet 2 inches tall.' *?(entails: Philip is tall)
- c. *firippu-wa shinchou 188-(senchi) mo aru.*
Philip-TOP height 188-(cm) also is
'Philip is 6 feet 2 inches tall.' (entails: Philip is tall)

However, the entailment in (2b) did not exist at all for some speakers, and the addition of *mo* was imperative to get the entailment for such speakers, as shown in (2c). If (2b) indeed entails 'Philip is tall,' we may expect *mo* in (2c) to function like *ssik* in (1c). However, it rather seems that what *mo* does is simply inducing the entailment, like *ina* in (1b).

In this talk, I will only focus on Korean *ssik*. I would like to mention again that *ssik* is normally used as a distributive marker with an exception in its sorts of usages shown in (1c). A goal of this talk is to examine and explain how it is possible for the marker of distributivity to mark an emphasis. We will begin by assessing the status of *ssik*.

2. Background

2.1 Oh (2001 & 2006) *inter alia*: *ssik* as a marker of distributivity

The particle *ssik* usually occurs with a numeral-classifier sequence within a noun phrase (Oh, 2001).² In (3), *ssik* appears in the object position,

²Oh (2001) argues that "only numeral NPs (numerals and quantifiers which can be construed as 'how many') can host *ssik*." However, *ssik* can also appear postpositionally with adverbs that express frequency, degree or extent. That is, not all adverbs can precede *ssik*. For example, adverbs that have meanings equivalent to *all*, *every*, *almost* and *always* cannot precede *ssik* (Lee, 2007). So it seems reasonable to say that NPs with gradable expressions can host *ssik*. Nevertheless, when *ssik* appears with *ina*, common nouns can precede *ssik*.

following the numeral-classifier sequence (*sey-kay* ‘three-CL’) and the sentence gets two different interpretations as shown in (4), (4a) being the most salient reading and (4b) being less salient reading.

- (3) *namca twu-myeng-i kapang sey-kay-ssik-ul*
 man two-CL-NOM bag three-CL-SSIK-ACC
wunpanha-ess-ta.
 carry-PST-DECL

- (4) a. $\exists y. |y|=2 \wedge *man(y) \wedge \forall z. z \in y \wedge AT(z) \rightarrow$
 $\exists e. \exists x. |x|=3 \wedge *bag(x) \wedge *carry(e) \wedge *Thm(e)=x \wedge *Ag(e)=z$
 There is a pair of men y, and every atomic member of y
 carried three (possibly different) bags.³
 b. $\exists e. \forall e'. e' \in e \wedge AT(e) \rightarrow$
 $\exists y. |y|=2 \wedge *man(y) \wedge \exists x. |x|=3 \wedge *bag(x)$
 $\wedge *carry(e') \wedge *Thm(e')=x \wedge *Ag(e')=y$
 There is an event e, and every atomic subevent e' of e is an
 event of two men (collectively/cumulatively) carrying three
 bags.⁴

The interpretation (4a) is derived if the direct object NP distributes over the subject NP (participant distributive reading). For the reading given in (4b), the direct object NP distributes over the verb (event distributive reading).

The *ssik* can be analyzed a distance-distributivity marker like English binominal *each*, given that it occurs at a distance to its NP-restriction it quantifies over, but unlike *each*, the distribution can be over individuals or events, with *ssik*.

However, there are examples where distributive relation does not seem to be found when *ssik* appears.

2.2 McKercher & Y Kim (2000): *ssik* as a group forming device

- (5) a. *John-i sakwa-lul sey-kay-ssik nanu-ess-ta.*
 John-NOM apple-ACC three-CL-SSIK divide-PST-DECL

³Two men carried three suitcases each; the number of suitcases carried is six.

⁴Two men carried the suitcases three at a time (individually or collectively); the number of suitcases carried is 3n, where n is the number of events as determined by the context.

‘John divided apples into groups of three.’

- b. *ai-tul-i sey-myeng-ssik hutheci-ess-ta.*
 child-PL-NOM three-CL-SSIK disperse-PST-DECL
 ‘Children dispersed in groups of three.’

McKercher and Kim (2000) argue that (5a) and (5b) cannot be analyzed as distributivity over events or over another NP argument because (5a) does not get the reading in which there are three apples per dividing event, and the same applies to (5b) as the reading does not necessarily presupposes three children per dispersing event.

- (6) *na-nun chayk-ul sey-kwen-ssik ney-mwukkum*
 I-TOP book-ACC three-CL-SSIK four-CL
sa-ss-ta.
 buy-PST-DECL
 ‘I bought four sets of three books.’

The sentence in (6) shows an enumeration of groups. McKercher and Kim argue that this example demonstrates the fact that once groups are formed, they can be counted by use of *ssik*, and posit this as a prediction of an analysis of *ssik* as a group former, that *ssik* is not a marker of distributivity.⁵

2.3 Faller (2001): Distributivity involves multiple groups

Faller (2001) argues that all kinds of distributivity involve multiple groups but they need not be part of the semantic representation. Consider (7):

- (7) Two men carry three suitcases.

If we assume that plural common nouns can shift their interpretation from sums to groups⁶ (Landman, 1996), then in (7), *three suitcases* denotes a

⁵An interesting discussion with respect to group readings of sentences with distributive markers can be found in Faller (2001). Gil (1990) states that languages such as Korean, Japanese, Rumanian, Georgian, Ga and Maricopa possess distributive markers that allows group readings.

⁶I’m using the notion of a group in Landman’s (1989: 589) sense: “Groups [...] are individuals collected together under a certain aspect [...]. Through this aspect [...], the group is individuated as an entity that is more than the sum of its parts, that is in certain aspects independent of its parts: in the group, [...], the part-structure is wiped out.”

group of three suitcases, and each man carries a different group. Hence, there should be at least two sets of three suitcases although the semantic representation of (7) does not contain a set of groups of three suitcases. It can be said that the suitcases in each set are collected together under a certain aspect. That is, the suitcases in each set formed a group following whom they are carried by. In this case, each group of three suitcases is carried by each man. Hence, *two men* provides the defining aspect of the groups and can be called as the sorting key. In light of Faller, I will assume:

- The group reading comes from a distributive relation between NP-*ssik* and a sorting key.
- The groups are defined by the aspect provided by the sorting key.
- The groups associated with group readings need not be part of the semantic representation, but they need to be in the model to meet the truth conditions.

2.4 Emphatic *ssik*

Y-K Kim (1991) discusses that *ssik* can have various meanings including emphasis, repetition, share formation and distribution. Kim argues that *ssik* is a marker of emphasis in (8a).

- (8) a. *chaysokaps-i* *1000-wen-ssik-ina* *han-ta.*
 vegetable.price-NOM 1000-CL-SSIK-as.much.as be-DECL
 'The price of vegetable is 1000 won.'
 (entails: the price is higher than the speaker's expectations)
- b. *chaysokaps-i* *1000-wen-ssik* *han-ta.*
 vegetable.price-NOM 1000-CL-SSIK be-DECL
 'The price of vegetables is 1000 won each.'

However, Lee (2007) refutes this explanation because in (8b), *ssik* does not mark emphasis anymore when *ina* is omitted. Instead, Lee argues that *ssik* can mean 'something's quantity/amount is more than the speaker's judgment,' or 'something is different from the speaker's judgment or expectation.' Yet, Lee fails to account for the fact that (8a) without *ssik* would still have the entailment, only weaker. That is, there still is no good explanations as to why *ssik* strengthens the meaning of *ina* when two are stacked together.

3. Proposal

Distributivity is part of meanings of both the English universal quantifiers *each*, *every*⁷ and the Korean particle *ssik*. Like *ssik*, *every* can also be used for emphasis. According to the New Oxford American Dictionary (2010), *every* can be used to mean: 'all possible,' 'the utmost'; e.g., *you have every reason to be disappointed*. Tunstall (1998) suggests that distributivity and universality are not separate meanings for *every*, but rather two aspects of its meaning. Using *every* non-distributively amounts to more than usually emphasizing the universal part of its meaning. Consider (9):

- (9) a. Philip carried every single bag.
 b. Philip carried ÉVERY bag.

Tunstall observes that (9a) and (9b) can both refer to an event in which all the bags were carried at the same time, and this is possible because the addition of *single* in (9a) and the use of pitch accent in (9b) function to emphasize the universal part of *every*'s meaning while diminishing interest in whether the action was distributive or not. I propose that in Korean, the distributive aspect of *ssik*'s meaning gets blocked in the environment where the particle *ina* appears. Then this naturally leads to use of non-distributive part of *ssik*'s meaning.

-(i)na revisited

-(i)na in Korean exhibits remarkable variations in its current uses, many of which appear to be unrelated to each other, used in a variety of discourse contexts (Lee, 2003). Morphosyntactically, it is used as a noun particle, a conjunctive suffix, a verbal connective suffix, and a sentence/clause-ending modal suffix. Its meaning ranges from expressing surprise at a reality that goes beyond the speaker's expectation, showing indifference, indeterminacy and/or uncertainty about an item or action in question, to marking a disjunctive relation, free choice, or an adversative relation between two

⁷Tunstall (1998) presents that *each* and *every* are distributive in two ways. First, they choose the individual members of their restrictor set and when a quantified phrase headed by *each* or *every* is combined with a predicate, the predicate is understood as applying to *each* individual member in the quantified set rather than to the set as a whole. Second, they require multiple, or distributive, event structures, where the members of their restrictor set are associated with a number of different subevents. The difference between *every* and *each* is whether the event structure must be totally distributive or not.

situations. However, Lee (2003) argues that all of the above uses of *-(i)na* are tied to the cognitively basic conceptual domain of expectation, i.e., the low expectation that the speaker has about a given situation. When a speaker expresses low expectations about a given situation, this means that the speaker is not keen on the selection of the item in question, therefore the speaker is indeterminate. By doing so, the speaker shows his concerns with the addressee's face, not just with his own epistemic status with respect to the information conveyed (Lee, 2003). Being indeterminate is the main feature of a disjunctive relation, which is defined by the availability of an option in selection. Related to indeterminacy is uncertainty, which is another meaning that can be expressed by a disjunctive relation. The meaning of indeterminacy and/or uncertainty can be easily be extended to the used of *-(i)na* in marking free choice. 'Free choice' means that either of the candidates equally applies to the given situation (Lee, 2003).

Back to *ssik*

Oh (2006) defines *ssik* as a distributive polarity item, which must remain within the scope of the D-operator (Link, 1983), similar to a negative polarity item, which has to be within the scope of a negator. The D-operator has the effect of introducing universal quantification over the members of a set denoted by an argument.

- (10) a. DPI *ssik*:
 ssik must be within the scope of the D-operator at LF.
 b. QR creates an argument for the D-operator.
 c. $\llbracket D \rrbracket = \lambda Q_{\langle e, t \rangle} \lambda x: |x| > 1 . \forall y[y \in x \rightarrow Q(y)]$
- (Oh, 2006)

Distributive key (sorting key) refers to the argument over which the distribution takes place, and distributive share refers to the argument that is distributed over the distributive key. The D-operator requires the distributive key x to be plural, as can be seen in (12c).

Assuming this, we can explain at least why the distributive part of *ssik*'s meaning cannot arise in the contexts where *ina* appears. That is, the argument that contains *ssik* will not be within the scope of the D-operator in such contexts; hence *ssik* is not licensed as a distributive polarity item.

Also, the group reading cannot exist because there is no distributive relations between NP-*ssik* and a sorting key.

If this actually accounts for the phenomenon, it must be the case that the addition of *ssik* should make no differences at all, e.g., from (1b) to (1c). However, it still does and we need an explanation for this. Although the group reading cannot exist, *ssik* may still be picking up a denotation of its adjacent numeral-classifier chunk and sorting key, which is its preceding NP in (1c). If the non-distributive aspect of *ssik* that is in effect here is repetition, then there may be a way of explaining how the marker of distributivity functions as the emphasis marker.

Reduplication

Reduplication is a repetition of sound strings and there are number of properties expressed by reduplication, including augmentation, diminution, intensification, and attenuation. For example, reduplication can denote emphasis in English, e.g., *salad* ‘salad’ > *salad-salad* ‘specifically green salad’ (Kajitani, 2005). Uspensky (1972) states that augmentation and intensification are universally preferred over diminution and attenuation in reduplicative constructions. I argue that there may exist a similar phenomenon in a meaning structure. That is, an effect that is very much alike reduplication may be found when there is a pattern where the double or multiple occurrence of a meaning within a logical form is in systematic contrast with its single occurrence. For example, when two morphemes, or particles, with the same, or very close, denotations converge, they may trigger an intensifying effect on their denotations.

- (11) a. $\llbracket \text{khi-ka } 188\text{-ina toyn-ta} \rrbracket = \lambda x. \text{height}(x)(188\text{cm}) > s(\text{height})$
 b. $\llbracket \text{khi-ka } 188\text{-ssik-ina toyn-ta} \rrbracket$
 $= ??? \lambda x. \text{height}(x)(188\text{cm}) > s(\text{height})$

It is difficult to try to catch the emphasized meaning of the entailment. It does not seem as easy as putting a bigger ‘greater than’ symbol as a substitution for its counterpart. Is it possible to formalize the difference between *above expectation* v. *way above expectation*?

- (12) a.
- b. $\llbracket \text{ina} \rrbracket = \lambda f_{\langle d, dt \rangle} \lambda \delta \lambda g \lambda x. g(x)(\delta) > s(g) \wedge f(g)(\delta)$
- c. $\llbracket \text{ssik} \rrbracket = \lambda \delta \lambda g. g(\delta)$
- d. $\llbracket \text{ssik-ina} \rrbracket = \lambda f_{\langle d, dt \rangle} \lambda \delta \lambda g \lambda x. \underline{g(x)(\delta)} > s(g) \wedge \underline{g(\delta)}$

Consider the underlined part of the denotation (12d). Perhaps, when there are such obviously redundant meanings within the denotation, rather than deleting or neglecting the part that is redundant, there may be a hidden operation that gives out an intensified denotation. We want to call this operation something like, ‘semantic reduplication.’ When this operation is applied, the final denotation for (12d) would seem as in (13).

- (13) ${}^R\llbracket \text{ssik-ina} \rrbracket = \lambda f_{\langle d, dt \rangle} \lambda \delta \lambda g \lambda x. \underline{g(x)(\delta)} > s(g)$

However, the conditions on how and when this operation can be applied are not clear. We also need a way to clearly mark an impact of reduplication within a model. There could be an operator like the D-operator, and semantic reduplication may only work when two particles with very close denotations converge within the scope of this operator.

4. Conclusion

The upshot:

- Korean *ssik* has interesting properties
- There appears to be a relationship between distributivity, plurality, universality, and intensification (emphasis)

- ‘Semantic reduplication’ may be analyzed as augmentation/intensification
- *ssik* or *ina* may have gone through the process of grammaticalization
- We cannot fathom this puzzle without precise formalization

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