Semantics of exceptives *oyey* and *pakkey* in Korean

Jae-Il Yeom* †
Hongik University

Jae-Il Yeom. 2015. Semantics of exceptives *oyey* and *pakkey* in Korean. *Language and Information 19.2, 55-80.* In this paper, I show how *oyey* 'except' and *pakkey* 'but' in Korean are semantically different from *but/except* in English. The exceptive *oyey* is attached only to a definite NP and shows no restriction on the NP that it is associated with. The referent of the NP is removed from either the restrictor, or nuclear scope, of the associated NP, also giving rise to two different inferences about the exception phrase. The inferences are based on the condition that an expression should make a non-trivial meaning contribution in a sentence. The complement of *oyey* is really taken to be an exception in one interpretation, but not in the other. The exceptive *pakkey* is assumed to be a NPI. It does not require a phrase that a *pakkey*-phrase is associated with. It can be attached to any type of phrases, including a NP. Attached to a full phrase, it is interpreted as a scalar item. Its core meaning contribution is to remove weaker alternatives from the scalar set locally. For a general interpretation, the other meanings are captured globally. A *pakkey*-phrase with a demonstrative has a conjunctive meaning, and it can be analyzed like *oyey* in one of the two interpretations. (**Hongik University**)

Key words: *oyey*, *pakkey*, exceptive, NPI, contributiveness, scalar interpretation

1. Introduction

In Korean there are morphemes that express the meaning of excluding something from consideration in interpreting a related expression: *oyey*, *pakkey*, *ceyoyhako*, *ppayko*,

* I thank three anonymous reviewers for helping me improve the readability of the paper. All remaining errors are mine.
† Department of English Language & Literature, Hongik University. 94, Wausan-ro, Mapo-gu, Seoul 04066, KOREA. Email: jiyeom@hongik.ac.kr

malko, etc. This paper focuses on *oyey* and *pakkey*, because they are more extensively used and show contrasts with each other. I will gloss *oyey* with 'except' and *pakkey* with 'but'.

I will call a phrase with an exceptive an **Exception Phrase** (= EP), following Moltmann (1995), and the complement that it occurs with an **EP-complement**. An EP is generally used in a quantifier or in association with one. The quantifier is called an **EP-associate**. There are cases where the two exceptives *oyey* and *pakkey* are used in a similar structure:[1]

(1) a. inho-wa minho-oyey amwu-to an-o-ass-ta.
Inho-and Minho-except anyone-also not-come-pst-dec
'No one except Inho and Minho came.'
b. inho-wa minho-pakkey amwu-to an-o-ass-ta.
Inho-and Minho-but anyone-also not-come-pst-dec
'No one but Inho and Minho came.'

Here, *inho wa minho-{oyey, -pakkey}* are EPs and *amwu-to* is an EP-associate.

The NP *amwu-to* quantifies over people except Inho and Minho. The primary meaning of an exceptive expression is to exclude the denotation of the EP-complement from the domain of quantification for the EP-associate. In the examples at hand, the quantification domain is a set of people considered in the context, and the sentences are about the set of people excluding Inho and Minho. And it is plausible to assume that the affirmative counterpart of the negative main predicate applies to Inho and Minho. One thing to mention is that amwu-to is generally regarded as a negative polarity item (NPI), though it can be deleted in both of them.[2] The two sentences are negative sentences and this is the only case where the two exceptives show the same structural and semantic patterns.

In (1), both the EPs are associated with a negative polarity item. But only *oyey* allows other quantifiers as its EP-associate:

---

1 In this paper I use the following abbreviations: acc(usative case), adn(ominal ending), c(o)mp(lementizer), dec(larative mood), hor(tative mood), imp(erative mood), imp(e)r(fective aspect), int(errogative mood), nom(inative case), p(a)st(tense), pl(ural marker), top(ic marker), etc.

2 With *oyey*, the use of *amwuto* is more natural than with *pakkey*.

(2) a. inho-{oyey, ??pakkey} {mina-wa yuna, manhun salam}-i/ka o-ass-ta.
Inho-{except, but} {Mina-and Yuna, many people}-nom come-pst-dec
'{Mina and Yuna, Many people} except/but Inho came.'
b. inho-{oyey, pakkey} (*an) o-ass-ta.
Inho-{except, but} not come-pst-dec
'(No) one except Inho came.'

When *pakkey* is used, it does not allow any other quantifier, except a case in which it is associated with a NPI, as in (1). With negation, a *pakkey*-phrase -- and a *oyey*-phrase -- does not require its associate, as shown in (2b). In that case, no associate is required. For this reason, it is generally believed that *pakkey* itself is a NPI, and *amwu-to* in (1b) is redundant. (1b) seems better without the NPI.

Restrictions on EP-associates are observed in English too. (Horn 1989: 346)

(3) a. {Everyone, Nobody, Anyone, *Somebody} but Mary
b. {All, *Most, *Many, *Three, *Some, None} of my friends but Chris

As Hoeksema (1987) pointed out, this observation cannot be explained simply by assuming that *but* excludes things denoted by the EP-complements from the domain of quantification. Similarly, the restrictions on uses of *pakkey* cannot be explained simply by assuming that an EP-complement shrinks the quantification domain. On the other hand, *oyey* does not show such restrictions, and it opens the possibility that it may be dealt with simply by subtracting entities denoted by the EP-complement.

Another difference is that *pakkey* can occur with various phrases, while *oyey* can occur only with NPs, as pointed out by Bak (1997), Si (1997:177) and Kim (2009). We saw in (1) that both can occur with a NP. Here are examples of other phrases:[3]

(4) a. inho-nun ip-ulo-{pakkey, ??oyey} swumswuy-ci.anh-nun-ta. (PP)

3 In English, both *but* and *except* can occur with various phrases:

i. You can take your holiday any time except in May. (PP)
He did everything except wash the car. (VP)
The movie was great except that it was too long. (CP)
ii. She did nothing but weep (VP)
There is no hope but by prayer. (PP)
Nothing would do but that I should come in. (CP)

Inho-top mouth-with-{but, except} breathe-not-impr-dec
'Inho does not breathe except/but by mouth.'

b. inho-nun chenchenhi-{pakkey, ??oyey} talli-ci.mos-hay-ss-ta. (AdvP)
Inho-top slowly-{but, except} run-not-do-pst-dec
'Inho could not run except/but slowly.'

c. na-nun inho-ka ppalu-ta-ko-{pakkey, ??oyey} sayngkakha-l.swu eps-ta. (CP)
I-top Inho-nom fast-dec-cmp-{but, except} think-can not.exist-dec
'I cannot think but that Inho are fast.'

The exceptive *pakkey* can be attached to various phrases, but *oyey* cannot.[4] From this distributional difference of the two exceptives, Bak (1997) concludes that *oyey* is a postposition, while *pakkey* is a delimiter. I am only concerned with the distributions.

I will add some properties of *pakkey*. In some uses, there is no quantification involved:

(5) inho-nun 2-tung-{pakkey, ??oyey} toy-ci.mos-hay-ss-ta.
Inho-top 2-place-{but, except} become-not-do-pst-dec
'Inho has not become anything but second place.'

The verb *toy* 'become' is like a copula in that it combines with a kind-denoting NP and makes a predicate. In this case, *2-tung* 'second place' is understood as a member in a scalar set, and it is just the upper limit that Inho has became. The verb *toy* does not take a quantifier as its complement. In this context, *oyey* cannot be used.

Moreover, *pakkey* can even take a quantifier itself:

(6) inho-nun (kyewu) sey salam-pakkey mos manna-ss-ta.
Inho-top (merely) three person-but not meet-pst-dec

4 *Pakkey* also occurs with a phrase headed by an adnominalizer with the meaning of modality:

i. inho-nun wus-ul {pakkey, ??oyey} talun swu-ka eps-ta.
Inho-top laugh-adn {but, except} other way-nom not.exist-dec
'Inho has no other way but to laugh.'

But in this construction a defective noun *swu* can be inserted before the exceptive morpheme. Thus there is a possibility that it is a construction in which deletion is involved.

'Inho met no more than three people.'

With the help of *kyewu* 'merely', *sey salam* 'three people' is only interpreted as an indefinite NP and it cannot subtract people from the quantification domain because it does not pick out a particular set of people. This can be compared with *oyey* 'except':

(7) inho-nun (??kyewu) sey salam-oyey mos manna-ss-ta.
Inho-top (merely) three person-except not meet-pst-dec
'Inho met no more than three people.'

Here, *sey salam* 'three people' is interpreted as a definite NP, which refers to specific people. If it is forced to be indefinite by the use of *kyewu*, the sentence becomes odd. A proportional quantifier cannot be definite or specific and only *pakkey* can occur with one:

(8) inho-nun haksayng-tul cwung-ey celpan-{pakkey, ??oyey} mos manna-ss-ta.
Inho-top student-pl among-in half-{but, except} not meet-pst-dec
'Inho met no more than half of the student.'

Though EP-complements of *pakkey* can be any type of quantifiers, there is one restriction on them. Moltmann (1995) pointed out that in English, EP-complements must denote something that expresses an upper limit:

(9) Every student except/but {at most, ??at least} two solved the problem.

At most expresses an upper limit, while *at least* expresses a lower limit. Only the former is allowed as an EP-complement. The exceptive *pakkey* also shows the same restriction:

(10) {kikkeshayya, ??ceketo} twu salam-pakkey an-o-ass-ta.
{at.most, at.least} two person-but not-come-pst-dec
'No one but {at most, ??at least} two people came.'

Furthermore, *pakkey* is not used in imperatives, while *oyey* or English exceptives can:

(11) a. sey salam-oyey manna-ci ma-la.
three person-except meet-nml not.do-imp
'Do not meet anyone except the three people.'

b. ??sey salam-pakkey manna-ci ma-la.
three person-but meet-nml not.do-imp
'Do not meet anyone but the three people.'

c. Do everything but this.

The comparisons I have made can be summarized as follows:

[Table 1] Comparisons of *oyey*, *but*, and *pakkey*

	oyey	but	pakkey
EP-associate	required	required	not required
	no restriction	positive/negative universal quantifier	(optional NP)
EP-complement	definite NP	quantified NP (with upper limit)	quantified NP (with upper limit)
	no other phrases	(various other phrases)	various other phrases
negation	not required	not required	required
scalar meaning	not allowed	not required	required
imperative	allowed	allowed	not allowed

Oyey takes only a definite NP complement and requires an EP-associate NP of any type. But *pakkey* can be attached to various phrases, and it requires negation, whether or not it occurs with a NPI associate. And a *pakkey*-phrase always gets a scalar meaning and it is not allowed in an imperative. Neither of the two has the same properties of *but/except*.[5]

In this paper, I explain how these differences come about. In Section 2, I will review previous analyses of exceptive expressions in English. And I also discuss how *pakkey* behaves like a NPI. In Section 3, first I discuss the semantics of *oyey*. Next I discuss the interpretation of a *pakkey*-phrase with a NP. Then I generalize the semantics of *pakkey* with respect to *pakkey*-phrases with other than NPs. Finally I discuss the interpretation of a *pakkey*-phrase with a demonstrative. In Section 4, I conclude the paper with the summary of the discussions and some implications of my analysis.

5 Von Fintel (1993) shows that *except-for* can be used with a definite EP-associate, and more than one *except-for* phrase can be used. These properties are shared with -*oyey*.

2. Reviews on previous analyses of exceptive constructions

2.1 Previous analyses of exceptive constructions in English

Horn (1989, 346) pointed out that *but* allows only a limited set of quantifiers, as in (3). And von Fintel (1993) accepted Hoeksema's (1987) idea that a *but*-phrase subtracts the denotation of the EP-complement from the quantification domain for the EP-associate:

(12) [D A [but C]] P = True $\Rightarrow$ P $\in$ D(A\C) ("\" stands for set-subtraction.)
e.g. ⟦Every boy but John came⟧ = 1 $\Rightarrow$ ⟦came⟧ $\in$ ⟦every⟧(⟦boy⟧\{john})

But in order to capture Horn's observation, he has to modify the interpretation of an exceptive construction. The set of exceptions to a quantified sentence "D (A) P" is the smallest set C such that "D (A\C) P" is true:

(13) $P \in D(A \setminus C)\ \&\ \forall S(P \in D(A \setminus S) \rightarrow C \subseteq S)$
$\Leftrightarrow$ (i) $P \in D(A \setminus C)$ & (ii) $\cap\{S \mid P \in D(A \setminus S)\} = C$
((i): domain subtraction; (ii): least exception condition)

The reason is that the exceptive not only is necessary to make the quantificational sentence true, but it is the most economical way to mention the least number that verifies the sentence. Universal determiners like *every* and *no* are leftward monotone-decreasing. The smaller the set of exceptions, the bigger the quantification domain becomes, making the sentence stronger. If the set of exceptions gets bigger than the minimal set, it would be as if normal things are treated as exceptions. This accounts for why only universal quantifiers are allowed in a construction with an EP and why they need the smallest set as exceptions.

However, Gajewski (2008) points out that *but* can occur with a NPI *any*:

(14) a. Mary didn't see anyone but Bill.
b. No man saw any woman but Mary.

A quantifier with *any* is a NPI, which has existential force but must be licensed by a negative expression. An existential quantifier is monotone-increasing leftward (and rightward). Thus the least exception condition cannot be related to the condition that the EP-associate must be a universal quantifier, as von Fintel (1993) claims. Still we need the least exception condition. The problem is that the condition must apply only after the negative expression that licenses the NPI is interpreted. More concretely, in (14b), *any woman but Mary* is an existential quantifier, in which the EP-complement *Mary* does not have to be the smallest exception, because an existential quantifier is monotone-increasing. The least exception condition must be imposed after *no man* is interpreted. But then the condition cannot be based on the meaning of *any woman but Mary*.

To solve the problem that the least exception condition applies globally, Gajewski (2008) assumes that the EP-complement is focused:

(15) No man saw any woman but $[\text{Mary}]_F$. (= (14b))

```
           S
          / \
LEAST      S < λX.{x: {z: saw(x,z)}∈some({y: wom(y)}\X)}∈ ⟦ no ⟧ ({x: man(x)}), {Mary}>
            /   \
          DP      VP
         /  \    /  \
     D      N  V      DP < λX. λP[P ∈ some({y: woman(y)}\X)], {Mary}>
     |      |  |       /    \
     no  man saw  D       NP
                  |    /      \
                 any  N        PP
                      |      /    \
                 woman  P       NP_F < λX.X, {Mary}>
                        |          |
                       but       Mary
```

To deal with focus, Gajewski assumes the structured meaning approach, following Jacobs (1983), Krifka (1991), etc. In that approach, the meaning of a sentence is structured as a background-focus pair <B, F>. To get this, the meaning of a focused phrase goes to F, a function that takes the variable for its alternatives goes to B, and the variable participates in compositional interpretation, until it comes across the operator he calls **LEAST**. Then F goes into the position of the variable. The Domain

Subtraction is enforced locally when *any woman but Mary* is interpreted, but the condition that the EP-complement be the least quantity is imposed when the operator LEAST is interpreted:

(16) a. ⟦ no student but Mary$_F$ left ⟧
$= <\lambda X.\ \{y: y \text{ left}\} \in ⟦\text{no}⟧(\{x: x \text{ is a student}\} \setminus X), \{\text{Mary}\}>$
b. $\text{LEAST}(<F,X>) = 1$ iff $F(X)=1\ \&\ \forall S[F(S)=1 \rightarrow X \subseteq S]$
c. ⟦ LEAST [no student but Mary F left] ⟧
$= \{y: y \text{ left}\} \in ⟦\text{no}⟧(\{x: x \text{ is a student}\} \setminus \{\text{Mary}\})\ \&$
$\forall S[\{y: y \text{ left}\} \in ⟦\text{no}⟧(\{x: x \text{ is a student}\} \setminus S) \rightarrow \{\text{Mary}\} \subseteq S]$

Since the operator LEAST applies to the structured meaning in which the EP-complement *Mary* moves up over the subject quantifier, as in (16a), {Mary} is the least set of people X such that no student but X left.

Gajewski's (2008) analysis can solve the problems with previous analyses, including von Fintel's (1993). But it is still problematic in some respects. First, there is not much motivation for the operator of LEAST. He says that "LEAST" is like Chierchia's (2004, 2006) O and σ, and Fox's (2006) EXH. But Chierchia's or Fox's operator is introduced to capture scalar implicatures, which can be canceled, as shown in (17). But the condition of least exception behaves differently, as shown in (18).

(17) John ate some of the apples, and he may even have eaten all of them.
(18) ??Every boy except one solved the problem, and it is also possible that every boy except two solved the problem.

If an exceptive simply means a set subtraction, and if every boy except one solved the problem and it is a scalar implicature that one is the least number, then it would be possible to cancel the implicature, as in (18). But the discourse becomes odd and it seems that there is a contradiction in the discourse. The quantifier *every boy except two* means that two boys did not solve the problem and *every boy except one* means that only one boy did not solve the problem. This implies that the least exception condition is not a scalar implicature and the two operators are different.

Second, his analysis only deals with cases where the EP-complement denotes a fixed set of entities. But we have seen that an EP-complement can be a quantified NP, as shown in (9). An expression *at most three law students* does not refer to a fixed set of students. It denotes a set of sets. Thus the set subtraction in (19) is not defined:

(19) ⟦ student ⟧ − {at most three law students} = ?

To deal with an example like (9), Moltmann (1995) applies set subtraction pointwise:

(20) A quantifier Q lives on a set A iff (for every set X, $X \in Q$ iff $X \cap A \in Q$).
A set w is a witness set for a quantifier Q iff
for the smallest live-on set A of Q, $w \subseteq A$ and $w \in Q$.
W(Q) = {w: w is a witness set for Q}
$⟦\text{every boy except one}⟧ = \bigcup_{V' \in W(⟦ one(boy) ⟧)} \{V \backslash V' : V \in ⟦\text{every boy}⟧\}$

Here the smallest live-on set A is the domain of quantification, and a witness set is the intersection of A and a set determined by a predicate which can truthfully apply to the quantifier. Since the EP-complement *one* cannot determine who is subtracted from the quantification domain for *every boy*, subtraction V\V' applies between each boy V' and each member V in the set of sets determined by *every boy*. Since one boy is not fixed, for each member V in ⟦ every boy ⟧, V\V' are merged, which yields ⟦ every boy except one ⟧ for an arbitrary boy.

In Korean, *oyey* takes a definite NP, which refers to a definite object. Thus it can be analyzed in the same way as von Fintel's (1993) analysis of *but/except*. But *pakkey* can take a quantified NP, as in (6). Thus it cannot be analyzed by von Fintel's idea. Moltmann's (1995) analysis does not help, either. *Pakkey* has various other restrictions that *but/except* lacks. First, a *pakkey*-phrase does not need its associate. I suppose that this comes from the property that a *pakkey*-phrase is a NPI. *Oyey* can also be used without its associate if it is used with negation. Thus in (1a), *amwu-to* can be deleted. A crucial difference is that *pakkey* is always a NPI and always requires a negative expression as its licenser. Second, a *pakkey*-phrase is used with respect to a scalar set, as in (5). Suppose that a quantifier *amwukes-to* were hidden as the EP-associate, in order to apply von Fintel's or Moltmann's (1995) analysis. Then a set subtraction would yield a set of {1-tung, 3-tung, 4-tung, ⋯}, and the sentence would mean that Inho did not become first place, or third place, or fourth place. But this is not what is intended by the sentence. The sentence means that second place was the best Inho could become. Moreover, *pakkey* can be attached to other phrases than NPs.[6] And set subtraction is hard to define with respect to other phrases than NPs.

2.2 *Pakkey* as a NPI

As far as I know, there has been no thorough and satisfactory semantic analysis of *pakkey* but some descriptive researches. But even in the descriptive researches, its properties are not correctly described. I will point out this in this subsection.

Zwarts (1993, 1998) characterized NPIs with respect to monotonicity. Following Zwarts, Nam (1994, 1998) classifies Korean NPIs and he says that *pakkey* is an anti-morphic NPI, which is defined as follows:

(21) a. Given that $<A, \leq>$ and $<B, \leq>$ are partial orders, a function f from A to B is anti-additive iff for arbitrary elements, a and b, in A, (i) $f(a \vee b) = f(a) \wedge f(b)$.
b. Given that $<A, \leq>$ and $<B, \leq>$ are partial orders, a function f from A to B is anti-morphic iff for arbitrary elements, a and b, in A, (i) $f(a \vee b) = f(a) \wedge f(b)$ & (ii) $f(a \wedge b) = f(a) \vee f(b)$.

According to this definition, *pakkey* is not an anti-morphic NPI, nor an anti-additive. (22a) and (23a) do not entail (22b) and (23b), respectively:

(22) a. inho-na minho-pakkey an o-l.kes.i-ta.
Inho-or Minho-but not come-mod-dec
'No one but Inho or Minho came.'
b. inho-pakkey an o-l.kes.i-ko minho-pakkey an o-l.ke.i-ta.
Inho-but not come-mod-and Minho-but not come-mod-dec
'No one but Inho will come and no one but Minho will come.'
(23) a. inho-wa minho-pakkey an o-ass-ta.
Inho-and Minho-but not come-pst-dec
'No one but Inho and Minho came.'
b. inho-pakkey an o-kena minho-pakkey an o-ass-ta.
Inho- but not come-or Minho-but not come-pst-dec
'No one but Inho came or no one but Minho came.'

6 In English, *but/except* can be attached to various phrases. Thus the meanings of them should be defined more generally.

Moreover, *pakkey* seems to need a negation operator like *an(h)* 'not', *mos* 'cannot', *molu* 'not.know', *eps* 'not.exist'. It is allowed in a rhetoric question with a negative implication, too. But expressions like *silh* 'hate', *kecelha* 'refuse', *-ki cen-ey* 'before', which are also NPI licensers, do not occur with *pakkey*:

(24) inho-nun amwuto manna-ki silh-ess-ta.
Inho-top anything meet-nml hate-pst-dec
'Inho did not want to meet anybody.'

(25) inho-ka te.isang akhwatoy-ki {elyep-ta, cen-ey}
Inho-nom anymore worsen-nml {difficult-dec, before-at}
'{It is difficult for Inho to become, before Inho becomes} worse anymore'

(26) ??inho-nun sey kay-pakkey mek-ki silh-ess-ta.
Inho-top three unit-but eat-nml hate-pst-dec
'Inho did not want to eat any more than three.'

(27) ??inho-ka sey kay-pakkey mek-ki {elyep-ta, cen-ey}
Inho-nom three unit-but eat-nml {difficult-dec, before-at}
'{It is difficult for Inho to eat, before Inho eats} any more than three'

This shows that *pakkey* actually requires an overt negation. Thus we can say that *pakkey* is licensed by overt negation. I suppose that this comes from some semantic peculiarities of *pakkey*. This is what the paper tries to explicate.[7]

On the other hand, if *pakkey* is used with a demonstrative, it does not require negation:

(28) taythonglyeng, kwukhoyuycang, ku-pakkey manhun insa-ka chamsekhay-ss-ta.
president speaker that-but many person-nom participate-pst-dec
'Besides the President and the Speaker, many people were present.'

In this use, *pakkey* is not a NPI. A *pakkey*-phrase with a demonstrative needs to be associated with a NP. And the demonstrative refers back to something already mentioned. Since the EP-complement is anaphoric morphologically, it is not interpreted as a scalar term. In this respect, *pakkey* in this use is more like *oyey*.

7 *Pakkey* can be used in a rhetoric question that implicates a negative answer.

3. Proposals

3.1 Semantics of *oyey*

We have seen that *oyey* occurs with a NP whose denotation determines a definite set of entities. Since it does not take a quantified NP, it can be assumed that the NP refers to a (possibly, plural) object. In (29), *ku twu salam* 'the two people' refers to a definite plural object. And an EP can be interpreted in two ways:

(29) a. ku twu salam-oyey inho-wa minho-ka o-ass-ta.
the two people-besides Inho-and Minho-nom come-pst-dec
'Besides the two people, Inho and Minho came.'

b. salang-kwa ipyel-oyey manhun kes-ul phyohyenha-ko.sip-ess-ta.
love-and farewell-except many thing-acc express-want-pst-dec
'(I) wanted express many things, besides love and farewell.'

c. ku twu salam-oyey {motwu-ka, amwuto an} o-ass-ta.
the two people-besides {all-nom anyone not} come-pst-dec
'Except the two people, {everyone, no one} came.'

In (29a), the subject is interpreted independently of the EP. And the two people denoted by the EP-complements are simply additional people who came. In (29b), love and farewell are among many things the speaker wanted to express. Here again the predicate applies to love and farewell. In (29c), on the other hand, two people are excluded from the domain of quantification for the EP-associate, and the predicate does not apply to them.

And more than one *oyey*-phrase can be used:

(30) ku twu namca-oyey ku sey yeca-oyey manhun salam-i nuc-ess-ta.
the two man-besides the three woman-beside many person-nom late-pst-dec
'Besides the two men (and) besides the three women, many people were late.'

Since an *oyey*-phrase can be added iteratively, we can assume the following structure:

(31)
```
                NP
            /        \
        PP             NP
      /    \         /     \
   NP       P     PP        NP
            |    /   \
         oyey  NP     P
                      |
                    oyey
```

To deal with all these cases, I will assume that an EP-complement denotes a definite set of objects and the EP-associate is a quantified NP, the denotation of which ranges over sets of objects. Then the two ways of interpreting an EP are expressed as follows:

(32) (Temporary)

$[\![[_{NP}\ \text{E-oyey}\ [_{NP}\ Q\ R]]]\!] =$ (i) $\lambda P [\![Q]\!]([\![R]\!])(P \setminus [\![E]\!])$; (ii) $\lambda P [\![Q]\!]([\![R]\!] \setminus [\![E]\!])(P)$

(32i) is a case for (29a,b), where the complement of an EP refers to a definite set of objects that the predicate P, which constitutes the nuclear scope, applies to. Thus even if the entities are excluded from the set denoted by the nuclear scope, the quantificational sentence holds true of the shrunk set. In (32ii), which is a case for (29c), the EP subtracts a definite set of objects referred to by the EP-complement from the domain of quantification, and the quantifier Q applies to the rest. Thus the quantificational sentence holds true of the shrunk domain of quantification.

One thing in common in the two interpretations in (32) is that the complement of *oyey* refers to something that is excluded from a set, whether the set is the restrictor or nuclear scope. In (32i), if the exceptions did not have the property P, $P \setminus [\![E]\!]$ would be the same as P, and the set subtraction would have no semantic effect at all. Thus in order for the EP to make a non-trivial meaning contribution in a sentence, the exceptions should (be included in the restrictor R and) have the property P. Concretely, in (29a), if the two people did not come, the EP would not have to be mentioned separately, because the same meaning could be conveyed without the EP. In (32ii), the exceptions are excluded from the restrictor R. Thus they are not considered in P, because of the principle of conservativity. Still the question remains whether they have the property P. If they did, there would be no reason for excluding them as exceptions. Thus if an EP is interpreted by (32ii), the predicate P does not apply to the exceptions. Concretely, in (29c), if the two people came, the same meaning could be conveyed without the EP.

Considering the additional inferences, which I regard as implicatures, the meaning of an EP with *oyey* can be specified as follows:

(33) (Final)

$[\![[_{NP} \text{E-oyey } [_{NP} \text{ Q R}]]]\!]$ =

(i) $\lambda P [\![Q]\!]([\![R]\!])(P \setminus [\![E]\!])$; Implicature: $P([\![E]\!])$

(ii) $\lambda P [\![Q]\!]([\![R]\!] \setminus [\![E]\!])(P)$; Implicature: $\neg P([\![E]\!])$

It is a pragmatic matter whether an EP subtracts entities from the restrictor or nuclear scope. This is closely related to the issue whether the predicate applies to the exceptions or not. And the actual interpretation follows from a general pragmatic principle:

(34) Contributiveness condition:

An expression in a sentence makes a non-trivial meaning contribution to the sentence.

The EP is interpreted in a way that the EP can make a non-trivial meaning contribution. Implicatures from the contributiveness condition are different from presuppositions in that they arise from any expressions. They form a new type of implicatures.

One remaining issue is how the right interpretation obtains compositionally. For (32i), it is not a big issue. The meaning we want can be directly derived locally from $[\![Q \text{ R}]\!]$:

(35) $[\![[Q \text{ R}]]\!] = \lambda P [\![Q]\!]([\![R]\!])(P)$

$[\![\text{E-oyey } [Q \text{ R}]]\!] = \lambda P [\![Q \text{ R}]\!](P \setminus [\![E]\!])$

When *oyey* is interpreted, we do not need to look into [Q R]. The problem is with (32ii). The meaning is not directly derived from $[\![Q \text{ R}]\!]$. This issue is discussed by

von Fintel (1999), in relation to free exceptives like *except for*:
(36) Except for Joan, most cabinet members liked the proposal.

The EP should restrict the quantification domain of *most cabinet members*. Since the domain of quantification is determined contextually, an EP can be assumed to provide a context to determine the quantification domain of a quantifier in its scope. To implement this idea, von Fintel (1999) assumes a variable within the quantifier NP so that the EP can be quantified into the quantifier, following Cooper (1975, 258f), Bach and Cooper (1978) and Janssen (1983):

(37) ⟦ Except for Joan ⟧ λR(⟦ most ⟧(⟦ cabinet members ⟧ ∩ R)
= λR(⟦ most ⟧(⟦ cabinet members ⟧ ∩ R)(⟦ except for Joan ⟧)
= ⟦ most ⟧(⟦ cabinet members ⟧ ∩ ⟦ except for Joan ⟧)

The EP is structurally adjoined to the DP, but it restricts the quantification domain.[8]

3.2 Semantics of *pakkey* with NPs

Compared with *oyey*, uses of *pakkey* are more complicated. We have seen that it must be licensed by an overt negative expression. In English, a NPI is licensed in the scope of a negative expression. According to Sells and Kim (2006), there is much evidence supporting that a NPI in Korean is interpreted as a universal quantifier with wide scope over a negative expression. But there is other evidence too that a NPI is licensed in the scope of a negative expression.[9]

Following the standard theory of NPIs, I will assume the latter claim. Sometimes it is possible to add another NPI, as in (1). But to me it seems better not to use such an expression. And no such expression is allowed when the complement of an EP is a quantified NP:

(38) phathi-ey (kyewu) sey salam-pakkey (??amwuto) o-ci anh-ass-ta.
party-at merely three person-but anyone come-nml not-pst-dec

8 A question remains how the variable R is motivated, but such an analysis is also necessary anyway in dealing with relative clauses like *everyone who came*. In that structure *who came* modifies the DP *everyone* syntactically, but it has to restrict *-one*.

9 A NPI is licensed in the antecedent clause of a conditional or a *before*-clause. A NPI cannot have scope over the clause.

'No more than three people came to the party.'

This shows that there needs to be no additional NPI beside an EP with *pakkey*. This means that the EP itself is a NPI that is licensed by a negative expression.

One thing to mention is that the resulting meaning is similar to that of a sentence with *only*. Consider, for example, (6), which is repeated here:

(6) inho-nun sey salam-pakkey mos manna-ss-ta.
Inho-top three person-but not meet-pst-dec
'Inho met no more than three people.'

It means that Inho met only three people. In this meaning the EP-complement is associated with the negation of the main predicate. And the meaning from that association becomes a presupposition, as in a sentence with *only*:

(39) inho-ka sey salam-pakkey mos manna-n kes-i ani-ta.
Inho-nom three person-but not meet-adn thing-nom not.be-dec
'It is not the case that Inho met no more than three people.'

We still think that Inho met three people, which is taken to be a presupposition.

Another property of *pakkey* is that it gets a scalar interpretation, as we saw in (5). Thus it is compatible with the assumption that an EP-complement is focused, as in Gajewski's (2008) analysis. One consequence of scalar interpretation is that the complement of *pakkey* is taken to be low in a scale. This explains why the following sentence is odd:

(40) ??manhun salam-pakkey manna-ci anh-ass-ta.
many people-but meet-nml not-pst-dec
'I met no more than many people.'

Manhun 'many/much' is not compatible with *pakkey*, because it is assumed to be fairly high in the scale of quantity. For this reason, the EP-complement is understood as the upper limit that can be asserted. This explains why *at least* is not compatible with *pakkey*:

(41) {kikkeshayya, ??ceketo} sey salam-pakkey manna-ci anh-ass-ta.

{at.most, at.least} three people-but meet-nml not-pst-dec
'I met no more than {at most, ??at least} three people.'

The expression *at least* indicates that the mentioned expression specifies the lower limit and the actual size can be larger, which does not exclude the possibility that it could be high in the scale relevant. But there is no absolute criterion on the lowness in a scale.

Reflecting the discussions on *pakkey*, we can define the semantics of *pakkey* as follows:

(42) $[\![\alpha\text{-pakkey}]\!] =$
$\lambda Q\{[\![\alpha]\!](\neg Q)\}[\forall X[[X \in ALT(\alpha)\ \&\ \alpha < X] \rightarrow X(Q)]]$ ({ }: presupposition)
Felicity condition: α is low in ALT(α).
(ALT(X) is a set of alternatives of X;
"$\alpha < \beta$" represents "β is stronger than α in a relevant scale".)

Here the formula in { } is a presupposition. And "α<X" means X is higher, or stronger, than α in the scalar set ALT(α). Thus a sentence with "α-*pakkey*" means "α" does not hold true of the main negative predicate and all alternatives higher than $[\![\alpha]\!]$ hold true of the main negative predicate. The condition that α is low in the scalar set is taken to be a felicity condition, because if it is not met, the sentence is not false but odd. The condition can be taken to be a conventional implicature.

Now let's see how a *pakkey*-phrase is interpreted in an actual sentence. In (43a), the use of *sey salam* 'three people' triggers the scalar set in (43b):

(43) a. sey salam-pakkey eps-ta.
three people-but not.exist-dec
'There are no more than three people.'
b. 1 salam < 2 salam < 3 salam < 4 salam < 5 salam < ⋯

Based on the scalar set, the sentence is interpreted as follows:

(44) $[\![\text{sey salam}]\!] = \lambda P \exists X[people(X)\ \&\ \#(X) = 3\ \&\ P(X)]$
| $[\![\text{pakkey}]\!] = \lambda T \lambda Q\{T(\neg Q)\}[\forall X[[X \in ALT(T)\ \&\ T < X] \rightarrow X(Q)]]$
| /

$[\![\text{[sey salam]-pakkey}]\!]$
| $= \lambda Q\{[\![\text{sey salam}]\!](\neg Q)\}[\forall X[[X \in ALT(\text{sey salam}) \ \& \ \text{sey salam} < X \rightarrow X(Q)]]$
| $[\![\text{eps-ta}]\!] = \lambda x[\neg exist(x)]$
| /
$[\![\text{[sey salam]-pakkey eps-ta}]\!]$
$= \{[\![\text{sey salam}]\!](\neg \lambda x[\neg exist(x)])\}$
$\forall X[X \in ALT(\text{sey salam}) \ \& \ \text{sey salam} < X \rightarrow X(\lambda x[\neg exist(x)])]]$

presupposition: $\exists X[people(X) \ \& \ \#(X)=3 \ \& \ exist(X)]$
assertion: $\exists X[people(X) \ \& \ \#(X)=4 \ \& \ \neg exist(X)]$
$\exists X[people(X) \ \& \ \#(X)=5 \ \& \ \neg exist(X)]$
…
conventional implicature: Three people are not many who are present (at the place).

In a sentence with *pakkey*, the combination of the assertion and presupposition forces the complement of an EP to have "exactly" reading, because, for the quantification domain, the main predicate applies to a subset of the domain and its negation applies to the rest. There is no middle. For this reason, the condition of least exceptions in von Fintel's (1999) and Gajewski's (2008) analysis is not correct. The notion of least-ness is more related to the felicity condition that the complement of an EP is low in its scalar set. And the expression *at most* in (9) has modal meaning, given that the numeral itself has "exactly" reading.

And the meaning of 'no middles' prohibits multiple *pakkey*-phrases:

(45) ??twu namca-pakkey sey yeca-pakkey mos o-ass-ta.
two man-but three woman-but not come-pst-dec
'No more than two men (and) no more than three women came.'

The use of the first *pakkey*-phrase means two men came and the rest did not, and the use of the second *pakkey*-phrase means three women came and the rest did not. This leads to a contradiction. Thus the sentence is semantically odd.

One thing that has yet to be explained is why *pakkey* is not used in an imperative. I suppose that this is due to the conventional implicature that the mentioned alternative is low in a scalar set. This can be observed in similar cases like the following:

(46) a. ??kyewu sey salam-ul manna-la.
merely three people-acc meet-imp
'Meet merely three people.'

b. ??sey salam-ul manna-l.ppwun-i-ela.
three people-acc meet-nothing.but-be-imp
'Do nothing but meet three people.'

Expressions like *kyewu* 'merely' and *-l.ppwun* 'nothing but' express that something or doing something is not much. Being not much cannot be part of a command. Similarly to be low in a scalar set cannot be part of a command. This clearly indicates that the meaning of being low in a scalar set is really part of the meaning of the sentence, and that if the sentence is an imperative, it also becomes part of the command.

3.3 *Pakkey* with other than NPs

As we saw in (4), *pakkey* can be used with other than NPs. In such sentences, the semantic type of a *pakkey*-phrase can be different from that of a *pakkey*-phrase with a NP. There are two ways to cope with this problem. One is to define the meaning of *pakkey* in various ways, depending on what type of phrase it is used with. A better solution is to define the semantics of *pakkey* more generally so that it can be used in all cases. I will pursue the latter solution here.

For this purpose, we have to specify the basic meaning of *pakkey* locally and capture the rest of the required meanings globally. To do this, let's get back to the semantics of a *pakkey*-phrase with a NP. In (47), the underlined parts are dependent on the semantic type of α, $\langle\langle e,t\rangle,t\rangle$. If α is not a quantifier, the underlined parts should be modified.

(47) $[\![\alpha\text{-pakkey}]\!] =$
$\lambda Q\{\underline{[\![\alpha]\!](\neg Q)}\}[\forall X[[X \in ALT(\alpha)\ \&\ \alpha < X] \rightarrow X(Q)]]$

One way to overcome this problem is that α is interpreted as if it were used without *pakkey*. Instead, it simply triggers only a set of stronger alternatives, and the rest of the required meanings are captured when the sentence denotes a proposition, together with a negative expression. At that point of interpretation, we apply negation to a proposition with α as a presupposition, but not to propositions with the stronger alternatives. To implement this idea, I will adopt the structured meaning approach. following Krifka (1991):

(48) ⟦ α-pakkey ⟧
 = ⟨ λX . X, ⟦ α ⟧, {X: X∈ALT(α), ⟦ α ⟧ < X }⟩
 (ALT(α) forms a scalar set.)

This structured meaning participates in the compositional interpretation, by interpreting the rest of the sentence with X and passing up ⟦ α ⟧ and the set of stronger alternatives of α, until the resulting meaning combines with negation. One thing to note is that the scalar set consists of stronger alternatives of α. And when an overt negative expression is interpreted, the structured meaning is converted to an ordinary meaning:

(49) ⟦ not ⟧(⟨ B, F, ALT ⟩) = {¬⟦ not ⟧(B(F))}∀X∈ALT: ⟦ not ⟧(B(X))

The meaning of *pakkey* is completed when the structured meaning combines with the meaning of a negative expression. One question is why a structured meaning becomes an ordinary meaning when it meets a negative expression. The answer can be found from the fact that *pakkey* is a NPI. Somehow it has to be licensed by an overt negative expression. This issue is not limited only to *pakkey*-phrases, but to all NPIs.

I will apply these interpretation rules to (4b):

(50) inho-ka chenchenhi-pakkey talli-ci.mos-hay-ss-ta.
 ⟦ chenchenhi-pakkey ⟧ = ⟨ λX[X], slow, {X: X∈ALT(slow), slow<X}⟩, where
 ALT(slow) = {slow, fast}
 ⟦ chenchenhi-pakkey talli ⟧
 = ⟨ λX[λx∃e[run(e,x) & X(e)], slow, {fast}⟩
 ⟦ inho-ka chenchenhi-pakkey talli ⟧
 = ⟨ λX[∃e[run(e,inho) & X(e)], slow, {fast}⟩
 ⟦ inho-ka chenchenhi-pakkey talli-ci.mos ⟧
 = {¬⟦ ci.mos ⟧(∃e[run(e,inho) & slow(e)])}
 ∀X∈{fast}[⟦ ci.mos ⟧(∃e[run(e,inho) & X(e)])]
 = {∃e[run(e,inho) & slow(e)]}¬∃e[run(e,inho) & fast(e)]

Here *chenchenhi* 'slowly' is interpreted in the same way as when *pakkey* does not occur. Instead, the scalar set shrinks to a set of alternatives that are stronger than *chenchenhi*. And the structured meaning becomes an ordinary meaning when *ci.mos* 'not' is interpreted.

3.4 *Pakkey* with demonstratives

Finally I will deal with cases where *pakkey* occurs with a demonstrative, as shown in (28). In this case, *pakkey* does not have a scalar interpretation. One peculiar property of this construction is that the predicate that holds true of the EP-associate also holds true of the referent of the demonstrative. We saw that when *oyey* is used with a universal quantifier, the main predicate does not apply to the exceptions. But a use of a *pakkey*-phrase means the opposite: (51) means that Inho and Minho also came, regardless of whether the EP-associate is a universal quantifier or not.

(51) inho-wa minho, ku-pakkey {motun, twu} haksaying-i o-ass-ta.
Inho-and Minho, that-but {all, two} student-nom come-pst-dec
'Besides Inho and Minho, {all, two} students came.'

In this respect, *ku-pakkey* plays double roles. It excludes the referent of the demonstrative from the quantification domain, but it has the effect of conjoining it with the shrunk domain of quantifier. Ultimately the effect of excluding the exceptions is cancelled. This might make the antecedent of the demonstrative non-contributive semantically, but it has the pragmatic effect of mentioning them in particular, as in (28).

Now I will show how a *pakkey*-phrase with a demonstrative is interpreted. I assume that the referent of a demonstrative, just like any other pronoun, is determined by an assignment function. An EP with a demonstrative just shrinks the domain of quantification of the EP-associate. Thus the meaning of a *pakkey*-phrase with a demonstrative can be defined as follows:

(52) $[\![\text{[ku}_j\text{/i}_j\text{-pakkey [Q R]]}]\!]^g = \lambda P [\![Q]\!] (R \setminus \{g(j)\})(P)$

The referent of the demonstrative is subtracted from the quantification domain for the EP-associate. The meaning that remains is that the EP-associate is conjoined with the antecedent of the demonstrative so that the main predicate can apply to the conjunction of the EP-complement and EP-associate. But I just assume that an EP with a demonstrative is preceded by a null conjunction operator. This is plausible because we can always use an overt conjunction operator, together with a *pakkey*-phrase with a demonstrative:

(53) inho-wa minho, (kuliko) ku-pakkey manhun haksaying-i o-ass-ta.
Inho-and Minho, and that-but many student-nom come-pst-dec
'Besides Inho and Minho, many students came.'

Thus the effect of conjoining the EP-associate with the referent of the demonstrative is not due to the *pakkey*-phrase itself.

With the rules in (52), (28) can be interpreted as follows:

(54) ⟦ taythonglyeng-kwa kwukhoyuycang ⟧ = $\lambda P[P(pr) \& P(sp)]$ (=$pr \oplus sp$)
| ⟦ manhun insa ⟧ = $\lambda P[MANY(people)(P)]$
| ⟦ ku_i-pakkey manhun insa ⟧^{g} = $\lambda P[MANY(⟦insa⟧ \setminus \{g(i)\})(P)$, where $g(i)=pr\oplus$ sp
| = $\lambda P[MANY(people \setminus \{pr\oplus sp\})(P)]$
| /
⟦ taythonglyeng-kwa kwukhoyuycang, $\varnothing_{and}$ ku_i-pakkey manhun insa ⟧
| = $\lambda P[P(pr) \& P(sp) \& MANY(people \setminus \{pr\oplus sp\})(P)]$
| ⟦ chamsekhay-ss-ta ⟧ = $\lambda x[was.present(x)]$
| /
⟦ taythong.-kwa kwukhoyuy., $\varnothing_{and}$ ku_i-pakkey manhun insa-ka chamsekhay-ss-ta ⟧^{g}
present(pr) & present(sp) & $MANY(people \setminus \{pr\oplus sp\})(\lambda x[was.present(x)])$

Here $\lambda P[P(pr) \& P(sp)]$ is assumed to be equivalent to $pr\oplus sp$, via semantic type-shifting proposed by Partee and Rooth (1983) and Partee (1987).[10] The sentence means that the President was present, the Speaker was present, and many people, besides the President and the Speaker, were present. This is the meaning we want.

10 To use the sum operator ⊕, we need to define the semantics of a quantifier with respect to sum individuals. But it will make semantic interpretations more complex. In this paper the notion of sum individual plays a supplementary role.

4. Conclusion

The exceptives *oyey* and *pakkey* are different from *but/except* in English: *oyey* is less restricted in that there is no restriction on EP-associates. This allows *oyey* to have two interpretations. In one interpretation, the complement of *oyey* is taken to be an exception, but in the other interpretation, the complement of *oyey* is actually taken to be an addition to the denotation of its associate. And such different inferences about exceptions arise from the principle that an EP make a non-trivial meaning contribution. On the other hand, *pakkey* is more restricted than *but/except* in that it always gets a scalar meaning and that it is a NPI. And a *pakkey*-phrase is normally used without being associated with a quantifier. For this reason, if an associate of an EP is used, I assume it is redundant. When *pakkey* is used with a demonstrative, it behaves like *oyey* in one of the two interpretations: it shrinks the quantification domain. *Oyey* and a *pakkey*-phrase with a demonstrative share the property that the EP-complement is definite and that it excludes a semantic entity from the quantification domain for the associate. One peculiarity with a *pakkey*-phrase with a demonstrative is that the main predicate always applies to the exceptions.

<References>

Bach, E. and Cooper, R. 1978. The NP-S analysis of relative clauses and compositional semantics, *Linguistics and Philosophy* 2: 145–150.

Bak, Sung-Yun. 1997. *Pakkey*: A case of grammaticalization in Korean. *Korean Journal of Linguistics* 21.1: 57-70.

Barwise, Jon and Cooper, Robin. 1981. Generalized Quantifiers and Natural Language. *Linguistics and Philosophy* 4: 159-219.

Chierchia, G. 2004, Scalar Implicatures, Polarity Phenomena and the Syntax/Pragmatics Interface. In A. Belletti (ed.), *Structures and Beyond*. Oxford University Press.

Chierchia, G. 2006, Broaden Your Views: Implicatures of Domain Widening. *Linguistic Inquiry* 37.4: 535-590.

Cooper, Robin: 1975, *Montague's Semantic Theory and Transformational Syntax*, Ph.D. Dissertation, GLSA, University of Massachusetts at Amherst.

von Fintel, Kai. 1993. Exceptive Constructions. *Natural Language Semantics* 1: 123-148.

von Fintel, Kai. 1999. NPI-licensing, Strawson-entailment, and Context-dependency.

Journal of Semantics 16: 97-148.

Fox, D.: 2006, 'Free Choice and the theory of Scalar Implicatures', ms., MIT.

Gajewski, Jon. 2008. NPI Any and Connected Exceptive Phrases. *Natural Language Semantics* 16: 69-110.

Hoeksema, Jack. 1987. The Logic of Exception. *Proceedings of ESCOL* 4: 100-113.

Hoeksema, Jack. 1990. Exploring Exception Phrases. In Martin Stokhof and Leen Torenvliet eds., *Proceedings of the Seventh Amsterdam Colloquium*. ITLI, University of Amsterdam, 165-190.

Horn, L. 1989. *A Natural History of Negation*. University of Chicago Press.

Jacobs, J. 1983. *Fokus und Skalen, zur Syntax and Semantik von Gradenpartikeln im Deutschen*. Tübingen: Niemeyer.

Janssen, T. 1983. *Foundations and applications of Montague Grammar*, PhD thesis, Mathematisch Centrum, Amsterdam.

Kim, Keon-hee. 2009. The Semantics and morphology of *Bakke*: Focused on the Grammaticalization," *Emwunhak* 104: 103-140.

Krifka, M. 1991, A Compositional Semantics for Multiple Focus Constructions. In S. Moore and A.Z. Wyner, *Proceedings of SALT* I: 127-158.

Moltamann, Fredrick. 1995. Exception Sentences and Polyadic Quantification. *Linguistics and Philosophy* 18: 223-280.

Nam, Seung Ho. 1994. Another Type of Negative Polarity Item. In M. Kanazawa and C. Pinon eds., *Dynamics, Polarity, and Quantifiers*. Stanford Center for the study of Language and Information.

Park, Sungyoon. 1997. Grammaticalization of *–pakkey*. *Eoneo*. 22: 57-70.

Partee, Barbara. 1987. Noun Phrase Interpretation and Type-Shifting Principles. In J. Groenendijk, D. de Jongh, and Martin Stokhof eds., *Studies in Discourse Representation Theory and the Theory of Generalized Quantifiers*, *GRASS* 8: 115-144. Dordrech: Foris.

Partee, Barbara H. and Mats Rooth. 1983. Generalized conjunction and type ambiguity. In Rainer Bäuerle; Christoph Schwarze; and Arnim von Stechow, eds., *Meaning, Use, and Interpretation of Language*, 361–383. Berlin: Walter de Gruyter.

Sells, Peter and Kim, Shin-sook. 2006. Korean NPIs scope over negation. *Language Research* 42.2: 275–297.

Si, Cengkon. 1997. '*Pakkey*'uy hyengthay-thongsalon. (Morpho-syntactic theory of *pakkey*). *Kwukehak* (*Korean linguistics*) 30: 171-200.

Zwarts, F.: 1993. Three types of polarity, Ms. Groningen, to appear in F. Hamm and

E. Hinrichs (eds.): *Semantics*.
Zwarts, Frans. 1998. Three types of polarity. In *Studies in Linguistics and Philosophy* 69: *Plurality and Quantification*: 177-238.

Submitted on: October 29, 2015
Revised on: December 16, 2015
Accepted on: December 21, 2015