On a Scalar Operator
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0. Introduction

It is well-known that many linguistic expressions are inherently scalar and directional in nature. Such expressions not only include quantifiers (all, some, none, etc), and time-denoting adverbs (always, frequently, sometimes, etc) but also includes predicates (adore, love, like; must, should, can, etc) and non-temporal adverbs (almost, even, only, etc).

In this paper I discuss one such Korean word *khenyeng*, which has been traditionally analyzed as a delimiter[2] with two 'distinct' senses, each of which triggers a different syntactic environment. I provide a unified syntactic and semantic analysis[3] of these two allegedly distinct senses, arguing that *khenyeng* is a scalar conjunction. In other words, *khenyeng* is a conjunction and a negative polarity trigger (hence, negative conjunction). I also argue that *khenyeng* is a scalar operator, and that a uniform treatment of the semantics of the *khenyeng* construction can be formulated in terms of scalar semantics developed in Fillmore et al. (1988), Kay (1990), and Kay (1992).

The organization of the paper is as follows. Section 1 reviews Choy's (1929/1961) descriptive work, the only serious work on *khenyeng* to date. Section 2 introduces more *khenyeng* examples, showing that Choy's description is not correct. Section 3 and 4 give a unified analysis of the form and meaning of *khenyeng*, respectively. The conclusions and directions for further study are provided in section 5.

I. Previous studies

The *khenyeng* sentence begins with a fragment, followed by *khenyeng*, followed by a full clause, as in (1) and (2).

(1) | fragment | khenyeng | full clause
| sippwul | khenyeng | ilpwul-to mos patassta[4]
| ten dollars | let alone | one dollar-even not received
'I did not receive one dollar, let alone ten dollars.'

(2) | sang | khenyeng | pel-ul patasseyo
| prize | instead of | punishment-Acc got
'Instead of being rewarded, I got a punishment.'

In his seminal descriptive grammar of Korean, Choy (1929/1961) characterizes *khenyeng as* an 'auxiliary particle'[5] whose semantic function in a sentence is to add certain auxiliary meanings, such as focus, emphasis, etc. to a word or a phrase to which it is attached. In the subsequent works in the transformational generative tradition, however, the term 'auxiliary particle' has been replaced by 'delimiter' since its semantic function is reinterpreted as delimiting or specifying the meaning of the element it follows.[6]

According to Choy (1929/1961), *khenyeng* is used, loosely speaking, when the result of one event compared to that of another event in the sentence, is so

obvious that the speaker does not need to mention it. Choy draws a distinction between the two senses of *khenyeng*.

As illustrated in (1) above, the first sense of *khenyeng* (K1, henceforth) concerns the case in which the speaker is explicit about the implausibility of the more likely state of affairs expressed in the post-*khenyeng* negative full clause, implicating the impossibility of the less likely state of affairs expressed in the pre-*khenyeng* fragment. As represented in (2) above, the second apparent sense (K2, henceforth) concerns the case in which the expected state of affairs in the fragment is denied and the unexpected contrary state of affairs is affirmed in the positive full clause.[7]

Choy (1929/1961) goes on to say that NPs flanked by K1 are of the 'same' kind, and a predicate in the K1 sentences has a predicative scope over NPs in the pre-*khenyeng* as well as in the post-*khenyeng*. On the other hand, the NPs conjoined by K2 are of a 'different' kind and the predicate in the K2 sentence has a predicative scope only over the NP in the post-*khenyeng* part of the sentence.

Choy's (1929/1961) description of *khenyeng* is summarized as follows:

(3) analysis of *khenyeng* by Choy (1929/1961)
    khenyeng is a lexical item with two different meanings and syntactic environments such that
    a in the K1 case, the impossibility of the less likely state of affairs is followed by the implausibility of the more likely state of affairs, while in the K2 case, denial of the expected state of affairs is followed by affirmation of the unexpected contrary state of affairs,
    b words conjoined by K1 are of the same kind, while words conjoined by K2 are of two different kinds,
    c the verb of the K1 sentence is predicative of the word preceding *khenyeng* as well as the one following *khenyeng*, while the verb of the K2 sentence is only predicative of the word following khenyeng.

In the next sections, I will show that the distinction of two forms and meanings associated with *khenyeng* expressions is unnecessary and may be replaced by a unitary account.

II. More examples
    To arrive at a fuller understanding of the formal and semantic properties of *khenyeng*, we need to consider more examples that contain *khenyeng* expressions. Although Choy (1929/1961) only provides the *khenyeng* examples that conjoin NPs, as shown in (1) and (2) above, the range of syntactic categories connected by *khenyeng* is not so limited. In addition to NPs, as illustrated by another examples in (4), *khenyeng* can usually conjoin any two like categories including adverbial phrases (5), postpositional phrases (6), and verb phrases (7).

(4) a tayhakkyo-nun[8]-khenyeng cwunghakkyo-to colep mos haysseyo
      college-Contr-let alone middle school-even graduation cannot did
      'He could not graduate from middle school, let alone college.'
   b chingchan-un-khenyeng kkwucwung-ul tulesssupnita
      praise-Contr-instead of scolding-Acc got
      'Instead of being praised, I got a scolding.'

(5) a manhi-nun-khenyeng cokum-to epsta
        a lot-Contr-let alone a little-even do not have
        'I do not have a little, let alone a lot.'
     b cacwu-nun-khenyeng acwu ittakumssik nathanakonhaysseyo
        frequently-Contr-instead of very once in a while would show up
        'Instead of frequently, he would show up once in a great while.'
(6) a hayswuyokcang-ey-nun-khenyeng swuyengcang-ey-to an kasseyo
        beach-to-Contr-let alone swimming pool-to-even not went
        'I did not go to a swimming pool, let alone a beach.'
     b tayhaksayng-mankhum-un-khenyeng kotunghaksayng-pota-to yenge-lul
        mos hanta
        college student-as-Contr-let alone high school student-as-even English-Acc
        cannot speak
        'He cannot speak English as well as a high school student, let alone as well
        as a college student.'
(7) a ssu-ki-nun-khenyeng ilk-ci-to mos hayssta⁹
        write-Nml-Contr-let alone read-Nml-even cannot did
        'He could not read, let alone write.'
     b ku-ka ka peli-ese sepsepha-ki-nun-khenyeng siwenhayyo
        he-Nom go away-since sorry-Nml-Contr-instead of glad
        'Instead of feeling sorry, I am glad that he has gone.'
     c ku-nun pap-ul mek-umyense-nun-khenyeng cha-lul masi-myense-to TV-lul
        mos ponta
        he-Top meal-Acc eat-while-Contr-let alone tea-Acc drink-while-even TV-
        Acc cannot watch
        'He cannot watch TV while drinking his tea, let alone while eating his
        meal.'

    In addition, contrary to Choy's (1929/1961) claim that the K1 type verb has
a predicative scope over the NPs preceding as well as following *khenyeng*, there
are also cases of K1 sentences in which the verb does not serve as a predicate of the
pre-*khenyeng* NP. Compare (8) with (9).

(8) a pwule-nun-khenyeng yenge-to mos hanta
        French-Contr-let alone English-even cannot speak
        'He cannot speak English, let alone French.'
     b pwule-lul mos hanta
        French-Acc cannot speak
        'He cannot speak French.'
     c yenge-lul mos hanta
        English-Acc cannot speak
        'He cannot speak English.'
(9) a pi-nun-khenyeng kwulum-to kkici anhassta
        rain-Contr-let alone cloud-even cloud up did not
        'It was not cloudy, let alone rainy.'
     b * pi-ka kkici anhassta
        rain-Nom cloud up did not
        'It was not rainy.'
     c kwulum-i kkici anhassta

cloud-Nom cloud up did not
'It was not cloudy.'
d * pi-to kwulum-to kkici anhassta
rain-also cloud-also cloud up did not
'It was neither rainy nor cloudy.'

For example, unlike the verb in (8a), the verb *kkita* 'cloud up' in (9a) cannot serve as a predicate of the pre-*khenyeng* NP *pi* 'rain'. This is shown by the ungrammaticality of (9b) in which the verb *kkita* 'cloud up' cannot have *pi* 'rain' as a possible argument. The grammaticality of (9a) thus shows that even when the NPs require different verbs, they can be connected in a *khenyeng* sentence by the verb that subcategorizes for the post-*khenyeng* NP. The point may be sharpened by the comparison of the examples (9d) and (9a). The difference in grammaticality between (9d) and (9a) may be attributed to the predication of the verb whose scope is assigned by the construction involved. That is, the verb in (9d) is predicative of the first NP as well as the second NP, while the verb in (9a) is only predicative of the post-*khenyeng* NP. As we will see in section 3.1, this observation is significant since it is directly relevant to one of our arguments that *khenyeng* is a proposition conjunction, not merely a constituent conjunction.

Khenyeng can thus conjoin pairs of maximal phrases of a wide range of syntactic categories, and not merely NPs. And when conjoining NPs, *khenyeng* does not require that the first NP be an argument of the verb which subcategorizes for the second NP.

Having briefly shown, by considering more examples, that Choy's description of *khenyeng* is not correct, I will take up the syntactic and semantic features of *khenyeng* in turn.

III. Grammar of *khenyeng*
3.1 *Khenyeng* is a conjunction

The first argument that I want to make on the syntactic side is that *khenyeng* is a conjunction, not a delimiter as is widely assumed in the literature (cf. Choy (1929/61), Martin (1992)). Even though *khenyeng* may not be a canonical conjunction, there is evidence both for the claim that *khenyeng* is a type of conjunction, and that it is not a delimiter.

Khenyeng shares some syntactic properties with the focus delimiters such as *nun* 'only concerned', *to* 'also, even', and *ya* 'when it comes to' in that it is neither preceded nor followed by the nominative, accusative or genitive case markers, and in that it can replace them in appropriate syntactic environments. But *khenyeng* shows a remarkable difference from the focus delimiters in several ways.

The first difference can be adduced from a general constraint concerning delimiters, namely, that there is a restricted ordering among them. Yang (1972) classifies delimiters into three sub-categories based on their distributional properties and their mutual co-occurrences: X-lim (*mace* 'even, indeed, including', *mata* 'each', *kkaci* 'up to, even', *pwuthe* 'from')[10], Y-lim (*man* 'only, exactly', *pakk-ey* 'only'), Z-lim (*nun* 'only concerned', *to* 'also, even', *(i)ya* 'when it comes to', *na* 'and, or', *(i)lato* 'even the last choice or recourse'). Yang then argues that when the three kinds of delimiters co-occur, X-lim always precedes Y-lim, which always precedes Z-lim. According to Yang (1972), the focus delimiters including *nun* are Z-lim, coming last in a string of delimiters.[11] No other delimiters are permitted to follow Z-lim, as shown by (10a). If *khenyeng* is a delimiter, it should not be able to

follow *nun*, either. The grammaticality of (10b), therefore, demonstrates that *khenyeng* cannot be considered a delimiter.[12]

(10) a * Mimi-nun-to yeyppu-ci anhta
        Mimi-Top-also pretty-Nml not
        'As for Mimi, she is not pretty, either.'
     b Mimi-nun-khenyeng Swumi-to yeyppu-ci anhta
        Mimi-Contr-let alone Swumi-even pretty-Nml not
        'Swumi is not pretty, let alone Mimi.'

Secondly, *khenyeng* is never immediately preceded by an adverb or an infinitive form of verbs, as is common for the focus delimiters.[13] For example, the adverb *manhi* 'much' and the infinitive of verbs -*e* can be followed by the focus delimiter *to* as in (11a) and (12a) but not by *khenyeng* as in (11b) and (12b), respectively.

(11) a manhi-to cokum-to epseyo
        much-also a little-also not have
        'I have neither a little nor much.'
     b *manhi-khenyeng cokum-to epseyo
        much-let alone a little-even not have
        'I do not have a little, let alone much.'
(12) a ilk-e-to tul-e-to po-ci mos hayssta
        read-Inf-also listen to-Inf-also try-Nml cannot did
        'I had the experience of neither reading nor listening to (it)'
     b *ilk-e-khenyeng tul-e-to po-ci mos hayssta
        read-Inf-let alone listen to-Inf-even try-Nml cannot did
        'I did not have the experience of listening to, let alone reading (it).'

Thirdly, as is the case for the focus delimiters, *khenyeng* cannot be immediately preceded by most postpositional phrases such as locative, instrumental, etc. For example, the delimiter *to* can follow the locative case marker, *eyse* 'in, at' in (13a), but *khenyeng* cannot in (13b).

(13) a i kos-eyse-to ce kos-eyse-to tampay-lul phiwul swu epssupnita
        this place-in-also that place-in-also tobacco-Acc smoke possibility not exist
        'You are not permitted to smoke here or there.'
     b *i kos-eyse-khenyeng ce kos-eyse-to tampay-lul phiwul swu epssupnita
        this place-in-let alone that place-in-even tobacco-Acc smoke possibility not exist
        'You are not permitted to smoke there, let alone here.'

The last reason to reject the delimiter account concerns the fact that focus delimiters can follow a wide variety of verbal connectives, while *khenyeng* cannot. Consider (14), in which one of the verbal connectives, -*ulyeko* 'in order to', can precede the delimiter *to* but not *khenyeng*.[14]

(14) a cenyek-ul mek-ulyeko-to chyeta po-lyeko-to ha-ci anhassta
      dinner-Acc eat-in order to-also look at try-in order to-also do-Nml did not
      'He did not intend to eat or look at the dinner.'
   b *cenyek-ul mek-ulyeko-khenyeng chyeta po-lyeko-to ha-ci anhassta
      dinner-Acc eat-in order to-let alone look at try-in order to-even do-Nml did not
      'He did not intend to look at, let alone eat the dinner.'

Observing that there exists evidence to doubt *khenyeng*'s status as a delimiter, we turn our attention to some positive observations available, suggesting treatment of *khenyeng* as a type of conjunction. First, as shown by the wide variety of examples given in (4)-(7), *khenyeng* usually serves to connect two grammatically equal phrases such as NPs, ADVPs, VPs, etc. Secondly, the *khenyeng* construction shows properties that are typically associated with coordination constructions. For the *khenyeng* construction, for example, topicalization as in (15a), relative clause formation as in (15b), and clefting as in (15c) are possible.[15] The examples in (16) show comparable sentences containing a canonical coordinate conjunctive marker.

(15) a i chayk-khenyeng ku sinmwun-to Mimi-nun han sikan-ey mos ilkeyo
      that book-let alone this paper-even Mimi-Top one hour-in cannot read
      'Mimi cannot read a paper in an hour, let alone a book.'
   b Mimi-ka ttayli-ki-khenyeng yokha-ci-to anhun namca
      Mimi-Nom hit-Nml-let alone yell at-Nml-even not man
      'The man who Mimi did not yell at, let alone hit.'
   c cikum Mimi-ka mekko issnun kes-un soykoki-khenyeng twaycikoki-to anita
      now Mimi-Nom eating thing-Top beef-let alone pork-even not
      'What Mimi is eating now is not pork, let alone beef.'
(16) a i chayk-kwa ku sinmwun-ul Mimi-nun han sikan-ey mos ilkeyo
      book-and-paper-Acc Mimi-Top one hour-in cannot read
      'As for this book and that paper, Mimi cannot read them in an hour.'
   b Mimi-ka ttayli-kena yokha-ci-to anhun namca
      Mimi-Nom hit-or yell at-Nml-also not man
      'the man who Mimi neither hit nor yelled at.'
   c cikum Mimi-ka mekko issnun kes-un soykoki-ttonun twaycikoki-ita
      now Mimi-Nom eating thing-Top beef-or pork-be
      'What Mimi is eating now is pork, or beef.'

Yet there are other cases which resist a strict coordinate conjunction account, forcing us to admit that *khenyeng* is a more tolerant type of conjunction. First, recall the case seen in (9), which is repeated as (17):

(17) a pi-nun-khenyeng kwulum-to kkici anhassta
      rain-Contr-let alone cloud-even cloud up did not
      'It was not cloudy, let alone rainy.'
   b * pi-ka kkici anhassta
      rain-Nom cloud up did not
      'It was not rainy.'

c kwulum-i kkici anhassta
   cloud-Nom cloud up did not
   'It was not cloudy.'
d * pi-to kwulum-to kkici anhassta
   rain-also cloud-also cloud up did not
   'It was neither rainy nor cloudy.'

Since they do not share the same verb, as shown in (17b) and (17c), the two NPs in (17a) cannot be literally said to be connected by *khenyeng*. Moreover, *khenyeng* sentences sometimes comprise two independent verb phrases with their own verbs. An example of such a case can be seen in (18) in which the pre-*khenyeng* part is composed of its separate verb and object:

(18)   ton-ul pel-ki-nun-khenyeng sonhay-lul pwassta
        money-Acc earn-Nml-Contr-instead of damage-Acc suffer
        'Instead of making money, I suffered damage.'

This perplexing counterexample to the constituent conjunction account points to the possibility that *khenyeng* is better viewed as combining two propositions with the first proposition syntactically realized as a clause fragment. There is evidence that *khenyeng* sentences are composed of two independent propositions in the sense that the pre-*khenyeng* part of a sentence is not part of the clause headed by the verb which occurs after *khenyeng*. The first piece of evidence comes from the clause-bound subject-honorification agreement phenomenon. Our assumption predicts that the honorification of the verb, for example, must agree with a post-*khenyeng* NP, not with a pre-*khenyeng* NP. The following sentences bear out our prediction.

(19) a halapenim-kkeyse-nun-khenyeng tongsayng-to theynis-lul an chiko isseyo
        grandfather-Nom[hon]-Contr-let alone younger brother-even tennis-Acc not
        playing be
        'My younger brother is not playing tennis, let alone my grandfather.'
     b *halapenim-kkeyse-nun-khenyeng tongsayng-to theynis-lul an chiko
        kyeyseyyo
        grandfather-Nom[hon]-Contr-let alone younger brother-even tennis-Acc not
        playing be[hon]
        'My younger brother is not playing tennis, let alone my grandfather.'

(19a) is grammatical since the non-honorific form *isseyo* 'be' agrees in honorification with the non-honorific NP *tongsayng* 'younger brother' in the post-*khenyeng* part, but not with the honorific NP *halapenim* 'grandfather' in the pre-*khenyeng* part, while (19b) is ungrammatical since the honorific from *kyeysita* 'be [hon]' cannot agree in honorification with its non-honorific subject *tongsayng*.

Secondly, the appearance of tense or a passive morpheme in the fragment shows that the pre-*khenyeng* part belongs to a separate clausal fragment from the post-*khenyeng* full clause. Consider (20)-(21).

(20)   i chayk-un cal ssu-ess-ki-nun khenyeng mwusun malinci al swu-ka epsta
       this book-Top well write-Pst-Nml-Contr-let alone what speech know
       possibility-Nom not exist
       'This book is not clear, let alone well-written.'

(21)   chenpwul-i ket-hi-ki-nun-khenyeng paykpwul-to mos kethyesseyo
       thousand dollars-Nom collect-pass-Nlm-Contr-let alone hundred dollars-
       even cannot be collected
       'One hundred dollars were not collected, let alone one thousand dollars.'

       To sum, with the negative and positive evidence presented above, I have
shown in this subsection that there is some doubt as to the status of *khenyeng* as a
delimiter. It is more appropriate to treat *khenyeng* as a conjunction, albeit a non-
canonical one.

3.2. *Khenyeng* is a negative polarity trigger
       In this subsection, I claim that *khenyeng* is a negative polarity trigger with
scope only over its pre-*khenyeng* clausal fragment. Note first, as illustrated by the
(a) examples of (4)-(7) above, sentences containing K1 usually have explicit
negative adverbs *mos* 'cannot', or *an* 'do not' before the verbs. K1 sentences can
also have such intrinsically negative verbs as *eps-* 'not exist' , *molu-* 'not know',
silphayha- 'fail', *tteleci-* 'fail', *pwucok-* 'short of', and *elyep-* 'doubtful', etc.
Consider the examples in (22).

(22) a   ku-nun pwule-nun-khenyeng yenge-to molunta
         he-Top French-Contr-let alone English-even not know
         'He does not know English, let alone French.'
     b   kummeytal-un-khenyeng unmeytal-to ttanun tey-ey silphayhayssta
         gold medal-Contr-let alone silver medal-even win opportunity-in failed
         'He failed in winning a silver medal, let alone a gold medal.'
     c   ponkosa-nun-khenyeng yeypikosa-to ttelecyesseyo
         college entrance exam-Contr-let alone preliminary exam-even failed
         'He failed in a preliminary exam, let alone a college exam.'
     d   kyelsung-un-khenyeng cwunkyelsung-to elyepkeyssta
         final-Contr-let alone semifinal-even doubtful
         'He will not make the semifinals, let alone the finals.'

       Notice also that an inequality of comparison as in (23a), and a rhetorical
question as in (23b), which conveys a negative connotation throughout a sentence,
can be expressed in the K1 sentence.

(23) a   onyen-khenyeng sipnyen-to te cinassta
         five years-to say nothing of ten years-even more passed
         'As many as ten years have passed, to say nothing of five years.'
     b   nwuka ne-eykey chenpwul-un-khenyeng paykpwul-ilato cwukeyss-nunya?
         who you-to one thousand dollars-Contr-let alone hundred dollars-even give-
         Q?

'Who would give you one hundred dollars, let alone one thousand dollars?'

Since all (a) examples in (4-7), (22) and (23) are negative affect sentences, it is tempting to say that K1, hastily extending to K2, is a syntactically negative polarity item which has the entire sentence as its affective domain.[16] The apparent argument that K1 is a negative polarity item seems to be supported, for example, by the fact that *amwuto* 'anyone', a representative negative polarity item in Korean, can occur in a sentence, as illustrated in (24).

(24) Mimi-nun-khenyeng amwu-to an wasseyo
      Mimi-Contr-let alone anyone-even not came
      'No one came, let alone Mimi.'

This claim, however, turns out to be wrong when we consider K2 examples. As illustrated in the (b) examples of (4)-(7), K2 occurs without any accompanying negative form. Or, to be more exact, morphologically explicit negative morphemes must not appear in K2 examples. Compare (25a) and (25b).

(25) a chingchan-un-khenyeng kkwucwung-ul tulesssupnita
        praise-Contr-instead of scolding-Acc got
        'Instead of being praised, I got a scolding.'
     b * chingchan-un-khenyeng kkwucwung-ul an tulesssupnita
        praise-Contr-instead of scolding-Acc not got
        'Instead of being praised, I did not get a scolding.'

If K2 is also a negative polarity item, it must appear within the scope of an appropriate trigger. But there is no negative polarity trigger in (25a). Rather K2 is a negative polarity trigger with scope over the preceding clausal fragment. The evidence is as follows.

If, as we assume, K is a proposition conjunction, then the K2 sentence, such as (26a), is semantically combined from the two sentences (26b) and (26c).

(26) a sang-un khenyeng pel-ul patasseyo
        prize-Contr-instead of punishment-Acc received
        'Instead of being rewarded, I got a punishment.'
     b sang-ul mos patasseyo
        prize-Acc not received
        'I was not rewarded.'
     c pel-ul patasseyo
        punishment-Acc received
        'I got a punishment.'

Comparison between (26a) and (26b-26c) shows that *khenyeng* semantically corresponds to the negative morpheme. It follows that a morphologically explicit negative form cannot normally appear in the pre-*khenyeng* part of a sentence. If a morphologically explicit form occurs in the pre-*khenyeng* part, the propositional

meaning of the pre-*khenyeng* part is in conflict with that of the post-*khenyeng* part. Consider example (27).

(27)　　* chingchan-ul mos tutki-nun-khenyeng kkwucwung-ul tulesseyo
　　　　praise-Acc cannot hear-Nml-Contr let alone scolding-Acc heard
　　　　'I got a scolding, let alone not a praise.'

(27) is ungrammatical since under normal contextual circumstances, for example, 'being praised' implies 'not receiving a punishment.'

Returning now to K1 examples, I find evidence that suggests K1 to also be a negative polarity trigger. First, unless we can find any convincing argument that the forms and meanings of K1 and K2 are unrelated, diachronically or synchronically, it would not make much sense to claim that K1 is a negative polarity item, while K2 is a negative polarity trigger.

Second, if the negative polarity phenomenon in Korean is clause-bound as is generally assumed (cf. Choe (1988)), and the pre-*khenyeng* part is a clause-reduced fragment separated from a full clause of the post-*khenyeng* part, as argued earlier, (24), repeated as (28), should be ruled out, since *khenyeng* occurs outside the scope of its potential negative polarity trigger, *an* 'not'.

(28)　　[Mimi-nun-khenyeng] [amwu-to an wasseyo]
　　　　Mimi-Contr-let alone anyone-even not came
　　　　'No one came, let alone Mimi.'

Thirdly, viewing *khenyeng* as a negative polarity trigger with its preceding clausal fragment in its scope predicts the variation that K1 and K2 cases differ superficially in that the full clause is negative only in the former. Furthermore, the recognition of this difference between K1 and K2 is significant since it, together with the argument that *khenyeng* is a conjunction, simplifies the schema of the syntax of *khenyeng* as in (29):

(29)　　[[X K] [Y]]

In the formula (29) in which K represents *khenyeng*, X is a variable representing a clausal fragment and Y is another variable representing a full clause, and X is always a negative polarity environment while Y is not.

IV. Semantics of *khenyeng*

Now that we have looked at the syntactic properties of *khenyeng*, we turn our attention to the semantics of *khenyeng*. We must first note that the semantic interpretation of the *khenyeng* construction ties in with the syntactic arguments that we made above, namely, *khenyeng* is a conjunction and a negative polarity trigger. Since *khenyeng* serves as a negative conjunction, the syntactic schema of (29) must be interpreted as (30).

(30)　　'not X' and 'Y'

Formally, this interpretation can be represented by the semantic schema (31), which, together with the syntactic schema (29), reads as 'the sentence meaning of [[X K] [Y]] is the sum of the denotation of 'not X' and the denotation of 'Y'.

(31)   ¬‖X‖ & ‖Y‖

It should be emphasized that the notation of ‖X‖ & ‖Y‖ is taken to represent propositions not syntactic forms, like clause or clausal fragments. For example, ‖X‖ is merely syntactically chosen as a fragment in order to highlight the focused element in the contextually present or assumed discourse. The argument that ‖X‖ is a focused element accords with the distributional fact that no other particles except for the subdued focus delimiter *nun* can precede *khenyeng*.

The suitable semantic interpretation therefore requires the interpreter to reconstruct a semantic clause from a fragment, constructing two semantic clauses. For example, the following sentences (32a) and (33a) must be reconstructed as (32b-c) and (33b-c), respectively, since one of the potential preceding contexts of (32a) and (33a) may be, for example, (34a) and (34b), respectively.

(32) a chenpwul-un-khenyeng paykpwul-to mos patasseyo
        one thousand dollars-Contr-let alone one hundred dollars-even not received
        'I did not receive one hundred dollars, let alone one thousand dollars.'
     b chenpwul-ul mos patasseyo
        one thousand dollars-Acc not received
        'I did not receive one thousand dollars.'
     c paykpwul-ul mos patasseyo
        one hundred dollars-Acc not received.
        'I did not receive one hundred dollars.'
(33) a chingchan-un-khenyeng kkwucwung-ul patasssupnita
        praise-Contr-instead of scolding-Acc received
        'In stead of being praised, I got a scolding.'
     b chingchan-ul mos patasssupnita
        praise-Acc not received
        'I was not praised.'
     c kkwucwung-ul patasssupnita
        scolding-Acc received
        'I got a scolding.'
(34) a chenpwul-ul patasssupni-kka?
        one thousand dollars-Acc received-Q
        'Did you receive one thousand dollars?'
     b chingchan-ul patasssupni-kka?
        praise-Acc received-Q
        'Did you get a praise?'

It should, however, be noticed at the same time that the meaning of the whole *khenyeng* sentence is not merely the sum of the meanings of its conjoined propositions. For example, (32a) is more than a sum of (32b) and (32c), even though they are not different truth-conditionally. It seems obvious that the meaning

difference is attributable to the presence of *khenyeng*. Now, in order to interpret the *khenyeng* sentence, it is necessary to elucidate the semantic function of *khenyeng*.

I argue that the semantic function of *khenyeng* is to serve as a scalar operator which has the entire sentence under its scope. In other words, *khenyeng* requires the interpreter to construe two propositions as scalar such that the propositions expressed correspond to distinct points on a scale. In other words, a scale must be evoked in interpreting the semantic structure of *khenyeng* in the sense of Fillmore et al. (1988), Kay (1990), and Kay (1992). In explicating the meaning of English expression of 'let alone', for example, Fillmore et al. (1988) motivates the notion of scale according to whom it is defined as a set of partially ordered propositions based on the degree of intensity for certain given properties. Unlike the multiply coordinated model in the discussion of 'let alone', however, I have in mind a simple one-dimensional scale, since what are put in contrast in the *khenyeng* construction are pair-focused propositions, not multiply paired-focused constituents[17] .

Let us now make clear by way of an example what we conceive as a one-dimensional scale. Suppose that there is a directed contextual scale along which there are two distinct scalar points P_α and P_β, such that P_β outranks P_α in informativeness, and is located farther from the origin of the scale. The horizontal representation of this scale can be made diagrammatically as follows:

(35)

$$\vdash\text{----------------------}\mid\text{------------------------}\mid\text{------------------------}>$$

     0   P_α P_β

less informative   more informative
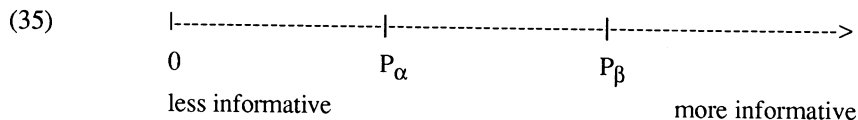
The scale is now interpreted if some quantity has reached the point P_β on the scale, then it has, a fortiori, reached the point P_α. Now returning to the semantic schema (31), two propositions, $\neg\|X\|$ and $\|Y\|$, correspond to P_α and P_β on the contextual scale since the second asserted and stronger proposition unilaterally entails the first entailed and weaker proposition. In order to see how this scale can account for the actual data, I will repeat relevant examples below.

(36) a chenpwul-un-khenyeng paykpwul-to mos patassta
       one thousand dollars-Contr-let alone one hundred dollars-even not received
       'I did not receive one hundred dollars, let alone one thousand dollars.'
   b chingchan-un-khenyeng kkwucwung-lul patasssupnita
       praise-Contr-instead of scolding-Acc got
       'Instead of being praised, I got a scolding.'

For example, in (36a), if I did not receive \$100, I certainly did not receive \$1,000. Likewise, in (36b), if one has reason to believe I got a scolding, he has stronger reason to believe that I was not praised. Hence, the general semantic function of the construction is to suggest that the first proposition expressed as the clausal fragment follows from asserting the second proposition expressed as a full clause.

As Fillmore et al. (1988) indicate, an advantage of the scale is that it can represent the relative entailment of scalar propositions, and provide semantic

constraints on the acceptability of the sentence types with a scalar operator. For example, the difference between (37a) and (37b) can be accounted for by a scale.

(37) a   chenpwul-un-khenyeng paykpwul-to mos patassta
          one thousand dollars-Contr-let alone one hundred dollars-even not received
          'I did not receive one hundred dollars, let alone one thousand dollars.'
     b   * paykpwul-un-khenyeng chenpwul-to mos patassta
          one hundred dollars-Contr-let alone one thousand dollars-even not received
          'I did not receive one thousand dollars, let alone one hundred dollars.'

(37b), in contrast with (37a), is ungrammatical since it meets interpretive problems as a result of an interchange between the pair of compared propositions. In other words, (37b) violates the semantic constraint that the weaker proposition in the *khenyeng* construction must precede an informationally stronger proposition. Even though *khenyeng* itself does not determine the nature of the scale, it requires, as part of its intrinsic semantic properties, that the interpreter sets up some scalar order of the compared propositions, when interpreting the sentence in which it appears.
    Having said this, it seems that what we need in explaining the semantics of the *khenyeng* sentence is a kind of semantic entailment relation since it explains well, for example, the relationship that "I did not receive $1,000; a fortiori, I did not receive $100". However, the *khenyeng* sentence involves more than a simple logical entailment relation. A reader might notice that I have put a qualification 'contextual' in the expression 'contextual scale'. I will defend why the scale must be understood as pragmatic, not semantic.
    As Fillmore et al. (1988) argue, the view that the scale is contextual in nature is found to be justified in the cases in which, while the semantic entailment relation holds between the two conjoined propositions, the entire *khenyeng* sentence is still unacceptable. Consider (38), which is bad regardless of context:

(38)   # ywuksipsa-uy seyceykopkun-un i-nun-khenyeng sosswu-to anita
          sixty-four-of cube root-Top two-Contr-let alone prime-even not
          'The cube root of sixty-four is not prime, let alone two.'

The interpretation of (38) fails, even though 'not being a prime number' entails 'not being the number two'. The reason that (38) is pragmatically anomalous is not that the entailment relation does not hold, but that it does not hold within the same scale. In other words, (38) implies that since we have reason to believe that the cube root of sixty-four does not enter the scale, we have all the more reason to believe that the cube root of sixty-four does not reach some non-lowest point on the scale. But since two is the lowest point, the sentence is odd.
    As Fillmore et al. (1988) show, the importance of the contextual scale is also manifested explicitly by the following examples in (39).

(39) a   Seoul-un-khenyeng Beijing-to mos wassta
          Seoul-Contr-let alone Beijing-even cannot came
          'We did not pass Beijing, let alone Seoul.'
     b   Beijing-un-khenyeng Seoul-to mos wassta
          Beijing-Contr-let alone Seoul-even cannot came

'We did not pass Seoul, let alone Beijing.'

The acceptability judgment of (39a) and (39b) depends on whether the interpreter can understand the speaker's perspective or not. If the trip was being made from the west to the east, only (39b) is correct. On the other hand, if the trip was being made from the east to the west, only (39a) is correct. The conclusion that can be drawn from examples such as (38) and (39) is that what is involved in a semantic interpretation of the scalar operator *khenyeng* is a kind of special pragmatic entailment relation that presupposes a set of contextual conditions shared by the speaker and the addressee.

VI. Conclusion

The traditional explanation considers *khenyeng* as a lexical item with two different meanings, each of which occurs in a different syntactic environment. In this paper, I have demonstrated that the difference is more apparent than real since the speakers may infer the two senses of *khenyeng* on the basis of its inherent scalar properties. This leads to a unified account which treats *khenyeng* as a negative conjunction and a scalar operator. On this account, *khenyeng* is a single lexical item, rather than two semantically unrelated homophonous lexical items.

Interestingly enough, there are also several other expressions similar to *khenyeng* in Korean. These include *mal hal nawiepsi* 'needless to say', *mwullon* 'needless to say', *kosahako* 'apart from, let alone, needless to say', *ppwun man-anila* 'not only-but also', and *hamwulmye ... ilya* 'much more/less, not to mention, let alone', etc.

Time and space preclude a discussion of these operators here. But the study of each of these scalar operators, preferably in comparison with *khenyeng*, will shed light on the issues that might have been neglected in this exclusive study of *khenyeng,* and will give a more encompassing and complete explanation of scalar operators in general.

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[1] I am grateful to Charles Fillmore, David Peterson, and especially Paul Kay for valuable comments on a previous version of this paper. All shortcomings that remain are, of course, my responsibility.

[2] The definition of delimiter will be provided below.

[3] Space does not allow me to investigate the pragmatics of *khenyeng* in this paper.

[4] I mark space between a fragment and *khenyeng* to highlight the structure of the *khenyeng* sentence. In actual orthography, *khenyeng* is attached to the preceding fragment and no space is allowed between them. Abbreviations made in the paper include Contr 'Contrast', Nom 'Nominative', Nml 'Nominalizer', Acc 'Accusative', Pst 'Past', Top 'Topic', Q 'Question ending' and Inf 'Infinitive'.

[5] The somewhat awkward 'auxiliary particle' and its congener 'delimiter' are due to lack of a suitable corresponding term in English.

[6] For example, see Yang (1972). However, the term delimiter does not show any substantial difference from and is no better than the traditional one, auxiliary particle, since the meaning of a noun phrase, for example, is not 'limited' by its immediately following delimiter. Yet in the remainder of the paper I will continue to use the term delimiter since a better term does not at present suggest itself to me.

khenyeng also seems to suggest its compound nature. However, there are independent positive properties of the *khenyeng* construction which are directly indicative of conjunction, as will be discussed momentarily.

[15] However, the other canonical coordination tests - - clause conjunction, gapping, and conjunction reduction - - fail to apply because a *khenyeng* sentence cannot have more than one-paired focus.

[16] In fact, Lee (1992) assumes, without any arguments, that *khenyeng* is a negative polarity item.

[17] For a formal characterization of a more complex scale, see Fillmore et al. (1988).

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