Subcomparative puzzle

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1 Introduction

Although crosslinguistic variation in comparatives has been drawing much attention among researchers, the puzzling fact that languages like Japanese and Korean in general impose a ban on subcomparatives remains without satisfactory explanation (see Shimoyama 2012: 103–105). In this paper, I provide a preliminary version of such explanation by capitalizing on the assumption that scalar predicates in Korean rely on the domain restriction of measure functions via the interface between functional degree structures and measure nominals such as *length*, *width*, and *height*.

2 Variation in gradable predicates

The degree analysis of gradable predicates assumes that degree-related functional projections can manipulate degrees in a gradable predicate like (1), where **tall** is a measure function that maps entities to degrees.

(1) $[\![\text{tall}]\!] = \lambda x_e.\ \textbf{tall}(x)$

Such analysis makes reference to at least the following four components, as in (2), in the semantics of functional degree words.

(2) a. Dimension & Scale, e.g. *height*
   b. Measure functions, e.g. **tall**(x)
   c. Functions that appertain to fixing the standard, e.g. **s**(**tall**)
   d. Comparison class, e.g. Finn is strong *for a twelve-year-old*.

Bochnak (2013a, 2013b) suggest that languages could lack degree arguments, and this is a parametric variation with respect to whether or not a language has lexicalized scalar predicates as context-sensitive vague predicates, thus without any reference to degrees. For example, according to Bochnak, Washo is an example of such degree-less language with the vague scalar predicate as in (3).

(3) $[\![\text{tall}]\!]^c = \lambda x_e.\ \text{tall}(x)$ in c

We could characterize the extent to which gradable predicates are lexicalized, as in (4), using the components described in (2).

(4)

	Washo	English
Dimension & Scale	✓	✓
Measure Functions	✓	✓
Standard Function	✓	–
Comparison Class	✓	–

In English, the standard-fixing function is incorporated in a null functional degree morpheme *pos*, as in (5), within the extended adjectival projection (Kennedy 2007).

(5) $[\![pos]\!] = \lambda g_{\langle e,d\rangle}\lambda x_e.\ g(x) \geq \mathbf{s}(g)$

The *pos* morpheme shown in (5) makes implicit reference to the comparison class via the standard function in positive constructions, as in (6a). In comparison, the use of the *for*-PP seems to explicitly introduce comparison classes as in (6b).

(6) a. Joe is tall. $\gg$ Joe is tall with respect to men in general

b. Joe is tall for a jockey. $\gg$ Joe is tall with respect to jockeys

There is more than one way to characterize the semantic contribution of *for*-PPs in English. One line of argument as suggested by Bale (2011) is that they indeed provide comparison classes. However, Kennedy (2007) suggests another line of argument in which *for*-PPs do not add comparison classes for the *pos* morpheme but they rather restrict the domain of the measure function in the denotation of gradable predicates. This way, the domain of the measure function will only include the members of the set introduced by the nominal complement of *for*.

3 Gradable predicates and measure words

3.1 Data

Gradable predicates in Korean may take nominative marked nominals that seem to modify the meaning of the measure function. Some of such nominals are MEASURE WORDS, as in *khi* 'height' in (7a) and *mommwukey* 'weight' in (8), in a sense that words seem to encode the units of measurement such as centimeters and kilograms. Others are ordinary nominals, as in *cheylyek* 'physical strength' and *cengsinlyek* 'willpower' in (9), that do not seem to encode specific units of measurement.

(7) a. co-nun **khi**-ka khu-ta.
Joe-TOP height-NOM big-DECL

'Joe is tall. = (lit.) Joe's height is big.'

b. co-nun khu-ta.
Joe-TOP big-DECL

'(In general:) Joe is tall/well-built.'

    c. co-nun **elkwul**-i khu-ta.
       Joe-TOP face-NOM big-DECL
       'Joe's face is big.'

    d. co-nun **elkwul**-i **khuki**-ka khu-ta.
       Joe-TOP face-NOM size-NOM big-DECL
       'The size of Joe's face is big.'

    e. co-nun **yamang**-i   khu-ta.
       Joe-TOP ambition-NOM big-DECL
       'Joe is ambitious. = Joe's ambition is big.'

(8)   a. co-nun **mommwukey**-ka mwukep-ta.
       Joe-TOP weight-NOM   heavy-DECL
       'Joe is heavy.'

    b. co-nun **mommwukey**-ka manhi naka-n-ta.
       Joe-TOP weight-NOM   many weigh-IMPRF-DECL
       'Joe weighs a lot. = Joe is heavy.'

(9)   a. co-nun **cheylyek**-i   kangha-ta.
       Joe-TOP physical.strength-NOM strong-DECL
       'Joe is physically strong.'

    b. co-nun **cengsinlyek**-i   kangha-ta.
       Joe-TOP mental.power-NOM strong-DECL
       'Joe is mentally strong. = Joe has strong willpower.'

3.2 The category of gradable predicates

The syntactic category of gradable predicates in Korean is still in debate with respect to whether Korean lacks adjectives as a lexical category (M.-J. Kim 2002). The types of adverbs that are compatible with gradable predicates with different tense/aspect markings suggest that the root of gradable predicates is a verb and gradable predicates behave like stative verbs. The gradable predicate without tense/aspect markings, as in (10), does not allow the VP adverb *ppalli* 'quickly', which suggests that the predicate is stative. In comparison, when the predicate takes the aspectual marker "*-n*", as in (11), *ppalli* readily becomes available as a modifier of the predicate, which indicates the eventive status of the predicate. However, the past tense-marked predicate, as in (12), allows both eventive and stative readings.

(10)   a. tongswu-nun khi-ka   khu-ta.
       T.-TOP   height-NOM big-DECL
       'Tongswu is tall.'

    b. tongswu-nun khi-ka   **mwuchek/maywu** khu-ta.
       T.-TOP   height-NOM much/very   big-DECL
       'Tongswu is very tall.'

    c. *tongswu-nun khi-ka   **ppalli** khu-ta.
         T.-TOP   height-NOM quickly big-DECL
         'Tongswu is tall quickly.'

(11) a. ?tongswu-nun khi-ka   khu-n-ta.
         T.-TOP   height-NOM big-IMPRF-DECL
         'Tongswu grows taller.'

    b. *tongswu-nun khi-ka   **mwuchek/maywu** khu-n-ta.
         T.-TOP   height-NOM much/very   big-IMPRF-DECL
         'Tongswu grows very taller.'

    c. tongswu-nun khi-ka   **ppalli** khu-n-ta.
         T.-TOP   height-NOM quickly big-IMPRF-DECL
         'Tongswu grows taller quickly.'

(12) a. tongswu-nun khi-ka   kh-ess-ta.
         T.-TOP   height-NOM big-PST-DECL
         i. 'Tongswu grew taller.'
         ii. 'Tongswu was tall.'

    b. tongswu-nun khi-ka   **mwuchek/maywu** kh-ess-ta.
         T.-TOP   height-NOM much/very   big-PST-DECL
         *i. 'Tongswu grew very taller.'
         ii. 'Tongswu was very tall.'

    c. tongswu-nun khi-ka   **ppalli** kh-ess-ta.
         T.-TOP   height-NOM quickly big-PST-DECL
         i. 'Tongswu grew taller quickly.'
         *ii. 'Tongswu was quickly tall.'

Although I stay neutral in the debate concerning the parallelism between stative verbs and adjectives, I follow conventions of relating degrees to adjectival projections, and represent gradable predicates in Korean as adjectives throughout this paper.
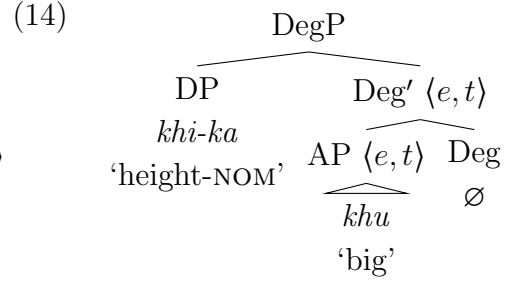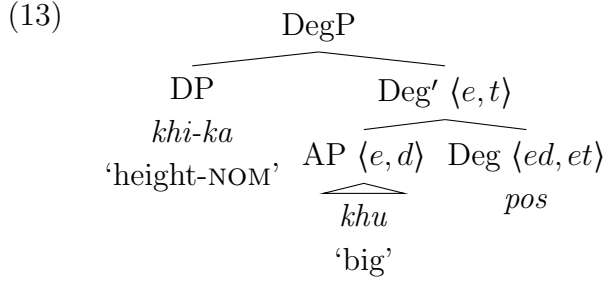
3.3 Difficulties

That extra nominals can appear between the gradable predicate and the subject of the predicate poses problems to the analysis of positive constructions in Korean. Adopting either English-style (1) or Washo-style (3) analysis of gradable predicates for Korean is undesirable for sentences like (7a).

(7a) co-nun khi-ka   khu-ta.
      Joe-TOP height-NOM big-DECL
      'Joe is tall. = (lit.) Joe's height is big.'

(1) $[\![\text{tall}]\!] = \lambda x_e.\ \textbf{tall}(x)$ (3) $[\![\text{tall}]\!]^c = \lambda x_e.\ \text{tall}(x)$ in c

(13)

DegP
- DP *khi-ka* 'height-NOM'
- Deg′ $\langle e,t \rangle$
  - AP $\langle e,d \rangle$ — *khu* 'big'
  - Deg $\langle ed,et \rangle$ — *pos*

(14)

DegP
- DP *khi-ka* 'height-NOM'
- Deg′ $\langle e,t \rangle$
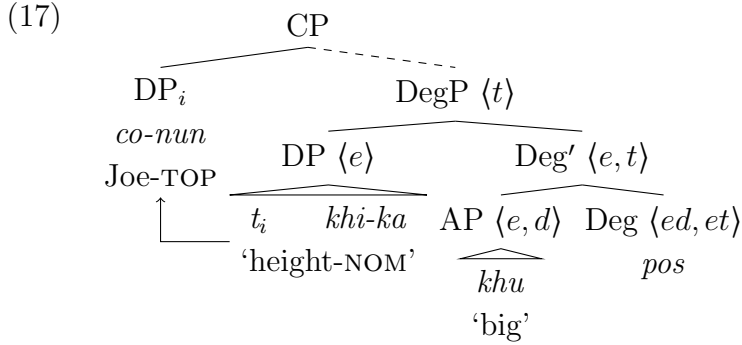 - AP $\langle e,t \rangle$ — *khu* 'big'
  - Deg — $\varnothing$

If the nominative marked nominals, i.e. *khi* 'height', are of type $\langle e,t \rangle$:

(15) a. ?? $[\![(\text{7a}) \text{ w/ h.}]\!] = \lambda x.\ \textbf{big}(x) \geq \textbf{s}(\textbf{big}) \wedge \text{height}(x)$ via Predicate Modification
      b. ?? $[\![(\text{7a}) \text{ with height}]\!]^c = \lambda x.\ \text{big}(x)$ in $c \wedge \text{height}(x)$ via Predicate Modification

And if these are of type e:

(16) a. * $[\![(\text{7a}) \text{ with height}]\!] = 1$ iff $\textbf{big}(\text{height}) \geq \textbf{s}(\textbf{big})$
      b. * $[\![(\text{7a}) \text{ with height}]\!]^c = 1$ iff $\text{big}(\text{height})$ in c

Another line of approach could be assuming that the topicalized DP in (7a) has moved from within the possessive DP, as in (17), since it is possible to get the corresponding minimal pairs via TOP-GEN conversion.

(17)

CP
- DP_i *co-nun* Joe-TOP
- DegP $\langle t \rangle$
  - DP $\langle e \rangle$
    - t_i
    - *khi-ka* 'height-NOM'
  - Deg′ $\langle e,t \rangle$
    - AP $\langle e,d \rangle$ — *khu* 'big'
    - Deg $\langle ed,et \rangle$ — *pos*

In this approach, possessive DPs are entities that encode the possessive relation $\pi(x,y)$ between the possessor x and the possessed y, as in (18).

(18) $[\![\text{Joe-GEN height-NOM}]\!] = \iota y[\pi(\textbf{j},y) \wedge \text{height}(y)]$

This improves both English- and Washo-style analyses of gradable predicates, as in (19a) and (19b), respectively:

(19) a. $[\![(\text{7a})]\!] = 1$ iff $\textbf{big}(\iota y[\pi(\textbf{j},y) \wedge \text{height}(y)]) \geq \textbf{s}(\textbf{big})$
      b. $[\![(\text{7a})]\!] = 1$ iff $\text{big}(\iota y[\pi(\textbf{j},y) \wedge \text{height}(y)])$ in c

However, the position of degree adverbs, as in (20), suggests that the possessive DP approach might not be in the right direction.

(20) a. co-nun **maywu** khi-ka   khu-ta.
             Joe-TOP very   height-NOM big-DECL

        b. co-nun khi-ka   **maywu** khu-ta.
             Joe-TOP height-NOM very   big-DECL

           'Joe is very tall.'

Thus, we might benefit from a different line of analysis that involves restructuring of the null positive degree morpheme and the functional layer that hosts it. In order to do so, it is necessary to form the idea of where measure words stand in the semantic ontology.

3.4 The treatment of measure words

In consideration of how to conceptualize the semantics of measure words, take the measure nominal *khi* 'height' as an example. At first blush, in (21) and (22), *khi* behaves like of type e or $\langle e, t \rangle$ depending on its position, where it is of type e as an argument position and it is of type $\langle e, t \rangle$ as a predicate. However, as can be seen in the glosses, *khi* always seems to have an implicit possessor, i.e. *his/her* height. If so, that could be taken as indicative of *khi*'s status as a property of type $\langle e, t \rangle$ in general.

(21) a. khi-nun   khu-ta.
             height-TOP big-DECL

           '(His/her) height is big.'

        b. [*e* khu]-n kes-un   khi-i-ta.
               big-REL KES-TOP height-be-DECL

           'The big thing is (his/her) height.'

(22) a. khi-nun   180seynthi-i-ta.
             height-TOP 180cm-be-DECL

           '(His/her) height is 180cm./(He/she) is 180cm tall.'

        b. ??180seynthi-nun khi-i-ta.
              180cm-TOP   height-be-DECL
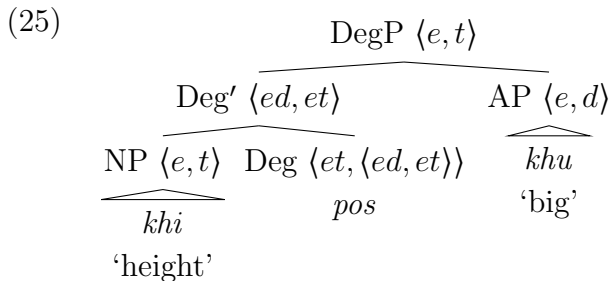
           '(Lit.) 180cm is height.'

Also, the quantification of *khi* without the possessor DP is impossible, as in (23). Such fact is not surprising if *khi* is a relational nominal that demands a possessor. Instead, what this data suggests might have to do with the semantic type of the null degree morpheme, which is assumed for positive constructions.

(23) a. *ku/*motun khi-ka   khu-ta.
             that/all   height-NOM big-DECL

        b. ku/motun salam-uy   khi-ka   khu-ta.
             that/all   person-GEN height-NOM big-DECL

           'That/every person's height is big. = That person is tall./everyone is tall.'

The position of the degree morpheme *te* 'more' in comparatives, as in (24), suggests that it might be Deg (or a related functional projection) rather than AP that projects in Korean, i.e. the measure nominal combines with the null morpheme before the gradable predicate.

(24)   a. nay.sayngkak-pota **te**   khi-ka   khu-ta.
             my.thought-than   more height-NOM big-DECL

          b. nay.sayngkak-pota khi-ka   **te**   khu-ta.
             my.thought-than   height-NOM more big-DECL

             'He is taller than what I thought.'

          c. *nay.sayngkak-pota khi-ka   khu-**te**-ta.
             my.thought-than   height-NOM big-more-DECL

Then, going back to the discussion of the semantic type of the null degree morpheme, the data in (23) suggests that the first argument of the null degree morpheme has to be of type $\langle e, t \rangle$ rather than of type e, since the null morpheme combines with the measure nominal first. Doing so naturally explains the ungrammaticality of (23a): (i) adding demonstratives like *ku* 'that' to *khi* would shift the type from $\langle e, t \rangle$ to e, which would result in a type clash; (ii) *khi* with quantifiers, upon Quantifier Raising, would leave the trace of type e that is incompatible with the null morpheme, resulting in a type clash. Assuming that *khu* 'big' is a function that maps individuals to degrees, the following is the partial structure of (7a), repeated below.

(25)

$$\text{DegP } \langle e, t \rangle$$

    Deg$'$ $\langle ed, et \rangle$ AP $\langle e, d \rangle$

NP $\langle e, t \rangle$ Deg $\langle et, \langle ed, et \rangle \rangle$ *khu*
              pos   'big'
  khi
'height'

(7a)   co-nun   khi-ka   khu-ta.
          Joe-TOP height-NOM big-DECL

          'Joe is tall. = (lit.) Joe's height is big.'

Now, the question is on the contribution that the measure nominal *khi* 'height' makes and how *pos* relates that contribution to the gradable predicate *khu* 'big'. I suggest that the answer lies in the semantics of *for*-PPs in English. A *for*-PP, as in (26b), restricts the domain of the measure function in the denotation of gradable predicates such that the domain only includes the members of the set introduced by the nominal complement of *for*, following the line of analysis suggested by Kennedy (2007) as discussed in §2.

(26)   a. Joe is tall.

        b. Joe is tall for a jockey.

Then, in (26b), **tall** is a function from individuals (with heights) to degrees of height, and **tall for a jockey** is a function from jockeys to degrees of height. This can be represented as in (27).

(27)　$[\![\text{tall for a jockey}]\!] = \lambda x : \mathbf{jockey}(x).\mathbf{tall}(x)$

The above implementation of functional domain restriction assumes that if f is a function of type $\langle \tau, \sigma \rangle$, then $\lambda v : g(v).f(v)$ is a function like f except that its domain is the subset of things of type τ that satisfy g (Heim & Kratzer 1998). With these ideas in mind, I suggest that the measure nominals in Korean serve to restrict the domain of the measure function, and that the null degree morpheme introduces the standard function that takes the domain-restricted measure function as the argument. In (28) is the implementation of this idea, where **s** is "a context-sensitive function from measure functions to degrees that returns a standard of comparison based both on [the domain-restricted measure function: TK] and on feature of the context of utterance" (Kennedy 2007: 16).

(28)　$[\![pos_K]\!] = \lambda f_{\langle e,t \rangle} \lambda g_{\langle e,d \rangle} \lambda x.\ [\lambda y : f(y).g(y)](x) \geq \mathbf{s}([\lambda y : f(y).g(y)])$

Accordingly, the structure in (25) can now receive the following denotation.

(29)　a.　$[\![pos]\!]([\![_{NP}\ khi]\!]) = \lambda g_{\langle e,d \rangle} \lambda x.\ [\lambda y : \mathbf{height}(y).g(y)](x) \geq \mathbf{s}([\lambda y : \mathbf{height}(y).g(y)])$
　　　b.　$[\![khi\ pos]\!]([\![_{AP}\ khu]\!]) = \lambda x.\ [\lambda y : \mathbf{height}(y).\mathbf{big}(y)](x) \geq \mathbf{s}([\lambda y : \mathbf{height}(y).\mathbf{big}(y)])$

That is, where $\lambda y : \mathbf{height}(y).\mathbf{big}(y)$ is a function from individuals with heights to degrees of bigness, (29b) relates such a degree that is greater than or equal to the standard of comparison to an individual x. This is a desired outcome and it suggests a viable treatment of measure nominals. In what follows, I suggest a similar line of analysis for the comparatives in Korean.

4　Comparatives

As we have seen in (24) in §3.4, repeated below, the position of the degree morpheme *te* 'more', which appears *optionally* in comparatives, suggests that it is not AP but Deg or some other related functional projection that projects.

(24)　a.　nay.sayngkak-pota **te**　　khi-ka　　　khu-ta.
　　　　　my.thought-than　　more height-NOM big-DECL

　　　b.　nay.sayngkak-pota khi-ka　　　**te**　　khu-ta.
　　　　　my.thought-than　　height-NOM more big-DECL
　　　　　'He is taller than what I thought.'

　　　c.　*nay.sayngkak-pota khi-ka　　　khu-**te**-ta.
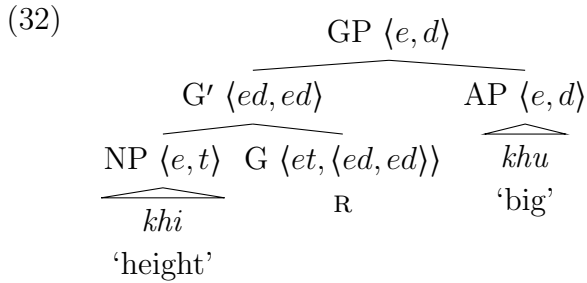　　　　　my.thought-than　　　height-NOM big-more-DECL

Also, *pota* 'than'-phrases, as in (30), cannot appear higher than the position of *te* 'more'. This suggests that there exists a layer of functional projections with strict orderings.

(30) a. *__te__ nay.sayngkak-pota khi-ka   khu-ta.
          more my.thought-than   height-NOM big-DECL

   b. *khi-ka   __te__ nay.sayngkak-pota khu-ta.
          height-NOM more my.thought-than   big-DECL

Essentially, we need two AP-related projections. The first projection would need to relate the measure nominal *khi* 'height' to the gradable predicate *khi* 'big'. Then, the second projection would need to host the *pota* 'than'-phrase. Crucially, we would like to preserve the same underlying structure for the declarative form of a comparative and for the relativized form of a comparative, as in (37a) and (37b), respectively.

(31) a. khi-ka   nay.sayngkak-pota khu-ta.
          height-NOM my.thought-than   big-DECL

       '(He) is taller than what I thought.'

   b. nay.sayngkak-pota khu-n   khi
       my.thought-than   big-REL height

       'Height that is taller than what I thought'

I assume that the functional projection GP hosts a null degree morpheme, call it R, that allows for the restriction of the domain of the measure function in the denotation of the gradable predicate by those objects that the measure nominal denotes. This is illustrated in (32).

(32)

$$\text{GP } \langle e, d\rangle$$

$$\text{G}' \langle ed, ed\rangle \qquad \text{AP } \langle e, d\rangle$$

$$\text{NP } \langle e,t\rangle \quad \text{G } \langle et, \langle ed, ed\rangle\rangle \qquad khu$$

$$khi \qquad\qquad \text{R} \qquad\qquad\qquad \text{'big'}$$

$$\text{'height'}$$

The R morpheme, as defined in (33), serves to restrict the domain of the measure function, and GP is the domain-restricted gradable predicate, as in (34c). Importantly, GP serves as the domain of *te*-cliticization: Assuming that *te* 'more' is an optional proclitic, its distribution as shown in (24) and (30) could be explained.

(33) $[\![\text{R}]\!] = \lambda f_{\langle e,t\rangle}\lambda g_{\langle e,d\rangle}\lambda x : f(x).g(x)$

(34) a. $[\![\text{R}]\!]([\![khi]\!]) = \lambda g_{\langle e,d\rangle}\lambda x : \mathbf{height}(x).g(x)$

   b. $[\![khi\ \text{R}]\!]([\![khu]\!]) = \lambda x : \mathbf{height}(x).\mathbf{big}(x)$

   c. $[\![\text{GP}]\!] = \lambda x : \mathbf{height}(x).\mathbf{big}(x)$

9

Then, a familiar DegP hosts the *pota* 'than'-phrase, with *pota* as the head of this projection.

(35)
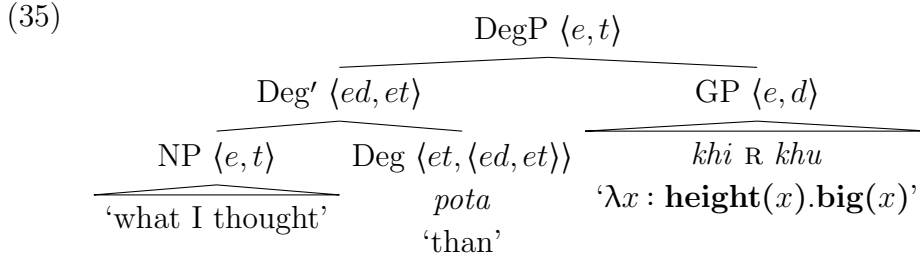
Assuming that *pota* takes a phrasal complement of type $\langle e,t\rangle$, the *pota* morpheme draws a comparison between two degrees—some degree, which the measure function of the domain-restricted GP returns (due to the complement of *pota*), and some other degree that is returned by the measure function of the non-domain-restricted GP—and judges that the latter is greater than the former. This is defined in (36).

(36) $[\![pota]\!] = \lambda f_{\langle e,t\rangle}\lambda g_{\langle e,d\rangle}\lambda x.\ g(x) > [\lambda y : f(y).g(y)](x)$

The semantic type and the function of *pota* is desirable as formulated above, as it shares its type with the *pos* morpheme with the similar function, in which it compares two degrees and judges one or the other to be greater. More welcoming is that both morphemes head the DegP. We can derive the denotation of DegP as in (37c).

(37) a. $[\![pota]\!]([\![\text{NP}]\!]) = \lambda g_{\langle e,d\rangle}\lambda x.\ g(x) > [\lambda y : \textbf{what-I-thought}(y).g(y)](x)$

  b. $[\![\text{NP-}pota]\!]([\![_{GP}\ khi\ \text{R}\ khu]\!]) = \lambda x.\ [\lambda z : \textbf{height}(z).\textbf{big}(z)](x) >$
  $[\lambda y : \textbf{what-I-thought}(y).[\lambda z : \textbf{height}(z).\textbf{big}(z)](y)](x)$

  c. $[\![\text{DegP}]\!] = \lambda x.\ [\lambda z : \textbf{height}(z).\textbf{big}(z)](x) >$
  $[\lambda y : \textbf{what-I-thought}(y).[\lambda z : \textbf{height}(z).\textbf{big}(z)](y)](x)$

If $\lambda z : \textbf{height}(z).\textbf{big}(z)$ is a function from individuals with heights to degrees of bigness, then $\lambda y : \textbf{what-I-thought}(y).[\lambda z : \textbf{height}(z).\textbf{big}(z)](y)$ is a function from objects of which I thought to degrees of bigness. Accordingly, (37c) compares the output of the former measure function to the output of the latter measure function, and judges that the output of the former is greater than the output of the latter. Applying the denotation of an entity *Joe* to the DegP denotation would result in a comparison such that the extent to which Joe's height is big is greater than the extent to which I thought Joe was big.

Structurally, going back to the discussion related to the examples in (31), repeated below, we could assume that the NP complement of the G head may scramble to a higher position for the declarative form (for focus reasons), or it raises and adjoins to the RelP (or some projection related to relative clauses) for the relativized form.

(31) a. khi-ka$_i$ [nay.sayngkak-pota t$_i$ khu]-ta.
    height-NOM my.thought-than   big-DECL
    '(He) is taller than what I thought.'

b. [nay.sayngkak-pota t_i khu]-n   khi_i
   my.thought-than   big-REL height
   'Height that is taller than what I thought'

5 Subcomparatives

The above analysis can immediately provide an explanation on why Korean lacks subcomparatives: Assuming that the complement of the *pota* 'than' morpheme in subcomparatives is an internally headed relative clause that involves the pronominal *kes* and the relativizer *-(u)n* (M.-J. Kim 2004, 2009), i.e. a *kes*-phrase, which is the DP of type *e*, this results in a type clash with the *pota* morpheme that is of type $\langle et, \langle ed, et \rangle \rangle$.

Due to the ban on subcomparatives, Korean adopts a similar construction that shares some properties with subcomparatives. I make some observations on what I call "pseudo-subcomparatives", which hosts measure nominals in the complement of *pota*-phrases, that involve comparisons across different scales just as genuine subcomparatives do. The semantics of pseudo-subcomparatives follows from the current analysis. The syntactic factor that relates to the licensing of pseudo-subcomparatives is the selectional restriction on the kinds of measure nominals that the gradable predicate can combine with. For instance, the gradable predicate *khu* 'big' arbitrarily selects nominals such as *khi* 'height', *nwun* 'eye', *kkwum* 'goal/dream', etc., as in (38), but not others.

(38)   a. chelswu-uy ancun**khi**-nun   [yenghuy-uy khi]-pota   **khu**-ta.
          C.-GEN   sitting.height-TOP Y.-GEN   height-than big-DECL

       b. [yenghuy-uy khi]-pota   chelswu-uy ancun**khi**-ka   **khu**-ta.
          Y.-GEN   height-than C.-GEN   sitting.height-NOM big-DECL
          'Chelswu's sitting height is taller than Yenghuy's height.'

This restriction becomes apparent when there is a mismatch between the two measure nominals, one in GP (the complement of G^o) and the other in the *pota*-phrase (the complement of Deg^o), as in (39) and (40): The gradable predicate *noph* 'high' selects *nophi* 'height' but does not select *nepi* 'width', whereas the other gradable predicate *khu* 'big' selects *nepi* 'width' but does not select *nophi* 'height'. The only measure nominal that needs to match with the gradable predicate is the one in GP. This is expected given that the AP does not c-command the complement of Deg^o, whereas it does c-command the complement of G^o.

(39)   a. [thakca-uy **nepi**]-pota canglong-uy   **nophi**-ka   **noph**-ta.
          table-GEN width-than wardrobe-GEN height-NOM high-DECL
          'The height of the wardrobe is higher than the width of the table.'

       b. *[thakca-uy **nepi**]-pota canglong-uy   **nophi**-ka   **khu**-ta.
          table-GEN   width-than wardrobe-GEN height-NOM big-DECL

(40)   a. *[canglong-uy **nophi**]-pota thakca-uy **nepi**-ka   **noph**-ta.
          wardrobe-GEN height-than   table-GEN width-NOM high-DECL

b. [canglong-uy **nophi**]-pota thakca-uy **nepi**-ka **khu**-ta.
wardrobe-GEN height-than table-GEN width-NOM big-DECL
'The width of the table is greater than the height of the wardrobe.'

What should become apparent in light of the above examples is that the "orientation" of the scales associated with measure nominals, i.e. horizontal or vertical, causes no difficulties in their interaction, in contrary to the claim that the (sub)comparatives that project two scales that differ in the orientation give rise to processing difficulties (see S.-Y. Park 2008: 224–225). Instead, what seems to give rise to syntactically perfect yet unacceptable pseudo-subcomparatives is the interaction between kinds of scales within the intricate organization of the scales associated with measure nominals, which seems to involve more complexity than the conventional wisdom suggests. Consider an example in (41), which is minimally different from (40b).

(41) *[chelswu-uy **khi**]-pota   thakca-uy **nepi**-ka   **khu**-ta.
      C.-GEN   height-than table-GEN width-NOM big-DECL
      '(Intended:) The width of the table is greater than the tallness of Chelswu.'

Although the gradable predicate *khu* 'big' agrees with the measure nominal *nepi* 'width' in GP, and the other measure nominal *khi* '(human) height' in (41) is minimally different from *nophi* '(object's) height' in (40b) in that the former denotes the height of a person and the latter denotes the height of an object, the sentence in (41) is ungrammatical. The contrast between (40b) and (41) could be explained if we take the measure nominals like *nophi* 'height', *nepi/phok* 'width', *kili* 'length', *kiphi* 'depth', *twukkey* 'thickness', etc. to form a group of scales that is associated with the actual measurement of objects, i.e. 1cm, 2cm, 3cm, ..., as opposed to the measure nominals like *khi* 'height' and *mommwukey* 'weight' that constitute a group of scales associated with a set of individuals each of whom bears a specific height, weight, etc., i.e. a person who is 5 feet 7 inches tall, a person who is 5 feet 8 inches tall, and so forth. I leave the implementation of such ideas for future research, with one more piece of data in (42) that may support the suggested idea.

(42) a. ?[chelswu-uy **khi**]-pota   canglong-uy   **nophi**-ka   **noph**-ta.
         C.-GEN   height-than wardrobe-GEN height-NOM high-DECL

      b. [chelswu-uy **khi**]-pota   canglong-i   **noph**-ta.
         C.-GEN   height-than wardrobe-NOM high-DECL
         'The height of the wardrobe is higher than the height of Chelswu.'

The example in (42a) is different from (41) in that it has the gradable predicate *noph* 'high' that combines with the measure nominal *nophi* 'height' in GP. The awkwardness of (42a) is predicted under the conjecture made above, where *khi* '(human) height' and *nophi* '(object) height' might be returning different objects due to the difference in scales. However, when the measure nominal is removed from GP, as in (42b), the comparison is flawless. This

is expected as no longer is there an interaction between different types of scales: What restricts the measure function denoted by *noph* 'high' is the non-measure nominal *canglong* 'wardrobe' in (42b), as opposed to the measure nominal *nophi* '(object) height' as in (42a). This is a welcomed result as it makes no dubious assumption like the orientation of scales.

6 Conclusion

In this paper, I suggested the analysis of the subset of comparative constructions in Korean. The novelty of this analysis lies in the way that functional degree morphemes and measure nominals interact to make comparisons between degrees. Two favorable consequences of this line of approach were that it can offer a proper treatment of measure nominals, and it can easily account for the ban on subcomparatives. I remained silent regarding where Korean stands with respect to Degree Abstraction Parameter (Beck et al. 2004), which concerns whether a language has binding of degree variables in the syntax. I conjecture that such a parameter is too strong. However, my analysis provided here lacks the required depth to discuss such issues, as that would require a closer examination of more related constructions.

References

Bale, Alan. 2011. Scales and comparison classes. *Natural Language Semantics 19*, 169–190.

Beck, Sigrid, Toshiko Oda, and Koji Sugisaki. 2004. Parametric variation in the semantics of comparison: Japanese vs. English. *Journal of East Asian Linguistics 13*, 289–344.

Bochnak, Ryan. 2013a. The non-universal status of degrees: Evidence from Washo. In Stefan Keine & Shayne Sloggett, eds., *Proceedings of North-East Linguistics Society 42*, 79–92. Amherst, MA: GLSA.

Bochnak, Ryan. 2013b. Cross-linguistic variation in the semantics of comparatives. Doctoral dissertation, University of Chicago.

Heim, Irene, and Angelika Kratzer. 1998. *Semantics in generative grammar*. Oxford: Blackwell.

Kennedy, Christopher. 2007. Vagueness and grammar: the semantics of relative and absolute gradable adjectives. *Linguistics and Philosophy 30*, 1–45.

Kim, Min-Joo. 2002. Does Korean have Adjectives? In Tonia Ionin et al. eds., *MIT Working Papers in Linguistics 43*, 71–89.

Kim, Min-Joo. 2004. Event-structure and the internally-headed relative clause construction in Korean and Japanese. Doctoral dissertation, University of Massachusetts, Amherst.

Kim, Min-Joo. 2009. E-type Anaphora and Three Types of Kes-Construction in Korean. *Natural Language and Linguistic Theory 27*(2), 345–377.

Park, So-Young. 2008. Functional Categories: The Syntax of DP and DegP. Doctoral dissertation: University of Southern California.

Shimoyama, Junko. 2012. Reassessing crosslinguistic variation in clausal comparatives. *Natural Language Semantics 20*, 83–113.