

# Degree Achievement in Across-Individuals

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## 1. Degree Achievement with overt standard of comparison in Korean

The semantics of Degree Achievement (DA) have been discussed in relation with directed motion verbs and incremental theme verbs due to their common property in implying “changes along a scale of a certain dimension described by a predicate” (e.g. Dowty 1979, Abusch 1986, Kearns 2007, Kennedy and Levin 2008, Zubizarreta and Oh 2007, Lim and Zubizarreta 2012, Koontz-Garboden, 2010, Deo, Francez and Koontz-Garboden, 2013). For example, the sentence in (1) seems to have a meaning that the width of *the road* has increased with time. In other words, there seems to be an incremental change in the degree of the scalar dimension of the subject entity’s width.

(1) The road widened.

Kennedy and Levin (2008) elaborate on the semantics of DAs by proposing the “measure of change” function as in (2). The measure of change function returns a value which indicates the difference between the degree to which the entity  $x$  measures the gradable property at the beginning of an event and the degree to which the entity  $x$  measures that same gradable property at the end of the event. Thus, the output of the function is *degree*, not the predicate of event. For a measure of change function to have a property of events, it is assumed that the measure of change function must combine with a degree morphology as shown in (3). As a result, the semantics of DAs look the same as the semantics of comparatives (Kennedy and McNally 2005). To summarize, Kennedy and Levin argue that “a DA is true of an object  $x$  and an event  $e$  just in the degree to which  $x$  changes as a result of participating in  $e$  exceeds the standard of comparison for the measure function,  $m_\Delta$ ” (Kennedy and Levin 2008, 19).

(2) Measure of change

For any measure function  $m$ ,  $m_\Delta = \lambda x \lambda e. m \uparrow_{m(x)(\text{init}(e))}(x)(\text{fin}(e))$

(3)  $\text{pos}_v(m_\Delta) = \lambda x \lambda e. m_\Delta(x)(e) \geq \text{std}(m_\Delta)$

The semantics of DAs proposed by Deo, Francez and Koontz-Garboden (2013) is a difference-based approach, rather than a change-based approach. They argue that DAs encode a difference in the value of a function over a contextually given ordered domain, which could be temporal, spatial or other domains. To formalize this intuition, the authors propose a function, from an ordered domain to individuals, which all degree achievements have as their subject argument. We will not discuss the details of previous accounts for reasons of space, but what we want to point out here is that both Kennedy and Levin’s proposal and Deo et al.’s proposal assume that there is a single comparison between the initial (temporal/spatial) interval and the end interval of a subject entity with respect to the degree of gradable predicate. Such a difference in value between two stages (initial vs. end interval) of a single entity (i.e. subject DP) induces the “change within-individual” reading in DAs.

In this paper, we present new data on Korean DAs that show that this construction is compatible with yet another reading, namely one that involves a relative change across two individuals. Korean has a DA morpheme *-eci*, which we claim corresponds to English *-en*, so when the morpheme is attached to a gradable predicate as in (4), its meaning can be translated as *the width of road A has increased with time*. Thus, the sentence in (4) means that there is a change (or difference) over time within the individual *road A* with respect to the width dimension as a participant of an implicit event.

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- (4) A kil-i                    nelp-eci-ess-ta.  
 A road-nom                wide-eci-past-decl.                = Road A widened.

Unlike English, Korean DAs are compatible with an overt standard of comparison (SoC), *pota* “than”-phrase as in (5), which can describe either situation in (6). The meaning in (6a) has been recognized in previous accounts (cf. Kennedy and Levin 2008, Deo et al. 2013) (i.e. a change within the subject individual with respect to the gradable property denoted by the Adjective – in this case the *width*). The novel observation is that the sentence in (5) can also have the meaning in (6b), where there is no change in the subject entity *road A* with respect to its width. In the context described in (6b), the *width of road A* has not changed over time. What has changed is the degree of the standard of comparison, namely, the *width of road B*. What is common to the two meanings in (6) is that there is a change in the comparative relation between the degree of the subject entity and the degree of the overt SoC (relative change across individuals). This is the *change across-individuals reading*. This meaning has not been noted previously and remains unaccounted for in previous analyses of Korean DAs. Clearly, the single comparison account (i.e. direct comparison between two stages of the subject) cannot fully account for the Korean data in (5). Furthermore, the comparison between (5) and (7) clearly shows that the morpheme *-eci* contributes the change component meaning. If this morpheme is absent, as in (7), the sentence is a simple/canonical comparative sentence, i.e. the comparison takes place at a single *temporal/spatial* point. Thus, the simple comparative in (7) means *road A was wider than road B* at the single evaluation domain. The meaning of change, observed in (5), is absent in simple comparatives.

- (5) A kil-i                    B kil-pota                    nelp-eci-ess-ta.  
 A road-Nom                B road-than                wide-DA-past-decl.  
 i) At initial interval: width of road A < width of road B  
 ii) At end interval: width of road A > width of road B
- (6) a. The road A was narrower than the road B, but after a reconstruction of the road A, it became wider than the road B.  
 b. The road A was narrower than the road B, but after a reconstruction of the road B, it became narrower than the road A.
- (7) A kil-i                    B kil-pota                    nelp-ess-ta.  
 A road-Nom                B road-than                wide-past-decl.  
 width of road A > width of road B (at the (single) evaluation domain)

One might suspect that the morpheme *-eci* is lexically the same as “become” rather than a DA morpheme since in English, it is also possible to express the same meaning in (5) with *become*, as in (8).

- (8) Road A became wider than road B.

However, we argue that *-eci* does not correspond to *become* based on the selective telic interpretation in gradable predicate + *eci* construction. Like English DAs, gradable predicate + *eci* in Korean also shows distinctive telicity based on the scalar structure of predicate roots, which is not observed in *become* + Adj. DAs constructed with open scale adjectives lack a telic interpretation, while DAs based on closed scale adjectives strongly prefer to be telic although they can (marginally) have an atelic interpretation (in some special cases) (Hay et al. 1999). For example, DAs in (9) are derived from open scale adjectives (e.g. *wide*, *deep*), which do not have a minimal or maximal end point in its scale structure. This type of DAs has atelic interpretation, so the sentence in (9) corresponds to *that river becomes deeper*; it does not correspond to *that river becomes wide*. However, DAs in (10) are derived from closed scale adjectives (e.g. *dark*, *straight*), which have a minimal or maximal end point in its scale structure. This type of DAs has telic interpretation, so the sentence in (10) corresponds to *that room becomes dark*; it does not correspond to *that room become darker*. If the morpheme *-eci* corresponds to *become*, we predict ambiguity in the interpretation of the gradable predicate + *eci* constructions like (9) and (10): it should mean either *become wide/dark* or *become wider/darker*, contrary to facts. Note that, unlike English, Korean comparatives do not necessarily have a

comparative morpheme corresponding to *-er/more*. Thus, bare adjective forms can be used in comparatives as well, as shown in (11).

(9) DA derived from adjectives with open scale

Ku kang-i kip-eci-ess-ta. (Haciman acikto kip-ci anh-ta.)  
 That river-Nom deep-eci-past-decl. (However, still deep-Neg-decl.)  
 That river deepened (but still not deep). (= That river become deeper, ≠ That river become deep)

(10) DA derived from adjectives with closed scale

Ku pang-i etwu-eci-ess-ta. (Haciman acikto etwup-ci anh-ta.)  
 That room-Nom dark-eci-past-decl. (However, still dark-Neg-decl.)  
 That room darkened (but still not dark). (≠That room become darker, = That room become dark)

(11) John-i Bill-pota khu-ta.  
 John-Nom Bill-than tall-decl.  
 John is taller than Bill.

Another piece of evidence against analyzing *-eci* as *become* comes from verbal predicate + *eci* constructions. The morpheme *-eci* can be attached to non-gradable verbal predicates, as in (12). We will not discuss the details about the constraint on *-eci* attachment to non-gradable verbal predicates here. However, we want to highlight two points: 1. *-eci* derives meaning of "change" by using not only the lexical category (e.g. the scalar nature of gradable predicates) but also sentence level Aspect and Modality that can encode "point of change". In (12a) modality (possibility reading) and in (12b) the temporal adverbial provides the licensing environment for *-eci*. 2. Unlike *-eci*, *become* cannot combine with a non-gradable verbal predicate (\*This book becomes read easily).

(12) a. I chayk-i swuipkey ilk-eci-ess-ta.  
 This book-Nom easily read-eci-past-decl.  
 This book read easily.  
 b. I wain-i 10 nyen cen-pwuthe masi-eci-ess-ta.  
 This wine-Nom 10 years back-from drink-eci-past-decl.  
 This wine started to be consumed 10 years ago.

Therefore, we argue that Korean *-eci* is not the lexical counterpart to *become*, but a morpheme that creates DAs out of gradable predicates.

To summarize, we have observed that Korean DAs constructed with the suffix *-eci* can express two different types of change depending on the presence of an overt standard of comparison (SoC): i) change within the subject DP when there is no overt SoC and ii) relative change across individuals when there is an overt SoC. Furthermore, as shown in (9)-(10), DAs without an overt SoC show different (a)telicity depending on the scale structure of its adjectival root, contrary to the English "become" construction. In this paper, we explore the syntax and semantics of DAs that have gone unrecognized in previous studies, namely type (ii) above. In section 2, we will propose a resultative-analysis for the syntax and semantics of DAs in Korean that accounts for the optional presence of an overt standard of comparison as well as for its (a)telicity, depending on the choice of adjectival root (This resultative-analysis of *-eci* is grounded in the proposals put forth in Zubizarreta and Oh 2007, Lim and Zubizarreta 2012). In section 3, we will discuss the cross-linguistic difference between Korean and English with respect to the possibility of DAs to appear with an overt standard of comparison. Section 4, we will conclude the paper by pointing out some implications of our proposal.

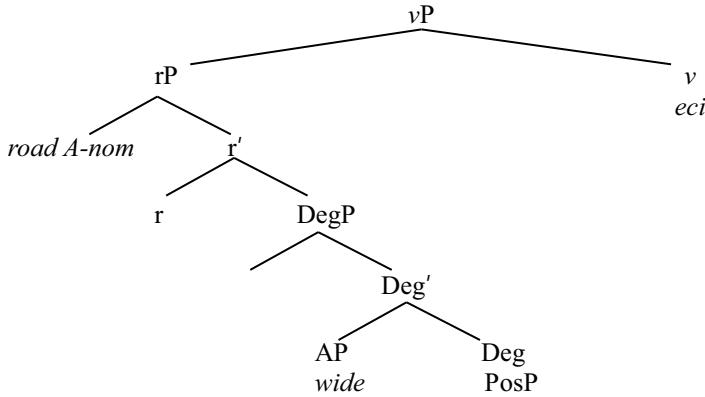
## 2. DAs as resultatives

Unlike previous approaches that assume a special function in the semantics of DAs, we argue that Korean DAs are syntactically resultatives with a *vP* headed by a functional head *-eci* and the meaning of change follows from the meaning of *result*; i.e. results entails a change that brings about the resultant state or event (cf. Levin and Rappaport Hovav 1995, Kratzer 2005).

## 2.1. Change within subject

The syntactic structure we propose for DAs without an overt SoC is shown in (13). The  $v$  head *-eci* takes  $\text{DegP}_{\text{pos}}$  as its complement, which denotes a result. We assume that a  $r(\text{elator})\text{P}$  mediates the relation between the subject and the secondary predicate (in the sense of den Dikken 2006).

(13) DA without an overt SoC (4): Change within the subject DP



We adopt the semantics of gradable predicates developed in Kennedy and McNally (2005). Kennedy and McNally (2005) and Kennedy (2007) propose the semantics of the positive form of a gradable predicate as in (14). According to Kennedy, “ $s$  is a context-sensitive function from measure functions to degrees that returns a standard of comparison based both on properties of the adjective  $g$  (such as its domain) and on features of the context of utterance” (Kennedy 2006, pp16).

(14)  $[[ \text{Deg}[\text{pos}] ]] = \lambda g \lambda x. g(x) \geq s(g)$ . (Kennedy 2007: 17)

Based on *Interpretive Economy*, which maximizes the role of conventional meaning in semantic calculation, Kennedy argues that  $s(g)$  returns the minimum or maximum end point of the scale structure for gradable predicates with a closed scale. Because gradable predicates with a closed scale have upper or lower end point in its scale structure, the end point (a conventional meaning of the gradable predicate) is preferred to a contextually salient degree (contextual meaning). By way of contrast,  $s(g)$  returns a contextually salient/prominent degree in some domain for gradable predicates with an open scale since this type of predicate does not have an end point in its scale structure (i.e. there is no conventional meaning). Assuming this semantics of positive form of gradable predicates, the meaning of DAs in (13) is compositionally construed as in (15). When the  $\text{Deg}_{\text{pos}}$  head combines with an AP, *wide* (15a), the meaning is just like a gradable predicate, *x is wide*. Since *wide* is an adjective with open scale, the implicit SoC is set up based on a contextually salient value. When the small clause head,  $r$ , enters into the derivation and merges with  $\text{DegP}$ , it introduces a state argument  $s$  (see (15b)). Thus, the meaning is *the width of x at s is bigger than the implicit SoC*. When the output merges with the subject DP, it saturates the entity argument,  $x$  (15c). The output merges with the  $v$  head, *-eci*, which imposes a resultative interpretation on its output: i.e. its small clause complement is interpreted as a result state. By implication, *-eci* introduces in the semantic representation a process event  $e$  and a causal relation between the (implicit) process event  $e$  and the resultant state  $s^1$ ; see (15d).

<sup>1</sup> We adopt the type-shifting rule, CAUSE, from Kratzer (2005). However, unlike regular resultatives that have lexical main predicate, but lack causer-morpheme in syntax, DAs have overt causer-morpheme (*-en* in English or *-eci* in Korean). Thus, ‘CAUSE( $s$ )( $e$ )’ means either that  $e$  is an event of causing  $s$  (i.e. direct causal relation) or that  $e$  is an event that causes  $s$  (i.e. indirect causal relation). For details, see Kratzer (2005).

This process event can denote a change either along the temporal or spatial dimension. This resultative approach to DAs has the welcome outcome that it can account for the fact that DAs imply an event that involves two stage level arguments of a single entity, as assumed in previous studies (Kennedy and Levin 2008, Deo et al. 2013)

- (15) a.  $[[ [\text{Deg}_{\text{pos}} ] ] ] ([[\text{wide}]]]) = \lambda x. \text{wide}(x) > d_s (\text{contextually salient})$   
 b.  $[[r]]([ [\text{Deg}_{\text{pos}} ] ] ([[\text{wide}]])) = \lambda x. \exists s. [\text{wide}(x)(s) > d_s]$   
 c.  $[[r]]([ [\text{Deg}_{\text{pos}} ] ] ([[\text{wide}]])([[\text{road A}]])) = \exists s. [\text{wide}(\text{road A})(s) > d_s]$   
 d.  $[[\text{eci}]](12c) = \lambda e. \exists s [\text{wide}(\text{road A})(s) > d_s \ \& \ \text{IMPLICIT}(e) \ \& \ \text{CAUSE}(s)(e)]$

The question arises as to how the “change within-subject” meaning is obtained? According to Rothstein (2001), the resultant state, *the road A is wider than the contextually salient degree ( $d_s$ )* is initiated by the culmination point of a process event. Kratzer (2005) formalizes this intuition with the type-shifting rule, CAUSE, which has mapped the property of states that is true of any state that consists in *the road A*’s being wider than  $d_s$  into the property of events that is true of any event that is a widening of *the road A* – an event of causing (or an event that causes) *the road A* to be wider than  $d_s$ . Then, what could be the contextually salient degree of width,  $d_s$ ? We assume that the contextually salient degree is the degree of the width of the states that were matched into the process event before the culmination point. This intuition implies that *the degree to which the road A is wide at the culmination point of process event ( $t_{\text{culm}}$ ) is bigger than the degree to which the road A is wide before  $t_{\text{culm}}$* . This is how the “change within-individual” reading is obtained in DAs without an overt SoC<sup>2</sup>.

However, if DAs are derived from a closed scale adjective as in (16), due to the Interpretive Economy (Kennedy and McNally 2005), the SoC is chosen based on the maximum/minimum point of the scale that is generated by the function  $s(\mathbf{g})$ , as mentioned above. Thus, in (16) we can obtain the telic interpretation that *the darkness of the room is above the maximum point of darkness of the room at  $t_{\text{culm}}$* . This implies that *the darkness of the room is NOT above the maximum point of darkness of the room before the culmination point of the hidden event*.

- (16) *Ku pang-i etwu-eci-ess-ta.* (=10) The room darkened.  
 a.  $[[ [\text{Deg}_{\text{pos}} ] ] ] ([[\text{dark}]]]) = \lambda x. \text{dark}(x) > d_s (\text{maximum degree of darkness})$   
 b.  $[[r]]([ [\text{Deg}_{\text{pos}} ] ] ([[\text{dark}]])) = \lambda x. \exists s. [\text{dark}(x)(s) > d_s]$   
 c.  $[[r]]([ [\text{Deg}_{\text{pos}} ] ] ([[\text{dark}]])([[\text{the room}]])) = \exists s. [\text{dark}(\text{the room})(s) > d_s]$   
 d.  $[[\text{eci}]](12c) = \lambda e. \exists s [\text{dark}(\text{the room})(s) > d_s \ \& \ \text{IMPLICIT}(e) \ \& \ \text{CAUSE}(s)(e)]$

Since there is a difference in degree of darkness between the state of *the room* that matches with the events before the culmination point and the state of *the room* that matches with the events after the culmination point, we could think that there is also the “change within-individual” reading available. This reading is also obtained in the English counterpart, *the room darkened*. This “change within-individual” reading follows from the telic interpretation “*the room become dark*”: *darkness of the room*

<sup>2</sup> The standard of comparison can vary depending on the main predicate in regular resultatives. In (ia), the entire house is newly built, so there was no previous state of the master bedroom. This means that there is no degree-related state before the culmination point of building event to set the SoC. In such a case the “change within-individual” reading is not available. Instead, a possible meaning is that *the master room in the newly built house is wider than other bedrooms or master bedrooms in other houses*. By way of contrast, in (ib), the main predicate *remodel* allows a presence of the previous state of the master room that can be measured in its width before the culmination point of the remodeling event. Thus, (ib) has the “change within-individual” meaning: *The master room becomes wider than before the remodeling*.

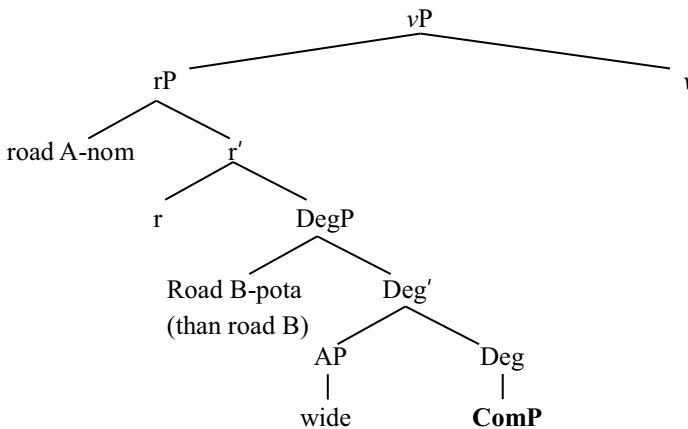
- (i) a. John-un    anpang-i                    nelp-key    (cip-ul)    ci-ess-ta.  
 John-top    master bedroom-Nom    wide-key    (house-acc) buil-past-decl.  
 John build a house to make the master bedroom wide.  
 b. John-un    anpang-i                    nelp-key    (cip-ul)    kochi-ess-ta.  
 John-top    master bedroom-Nom    wide-key    (house-acc) remodel-past-decl.  
 John remodeled a house to make the master bedroom wider.

is NOT above the maximum point of darkness of the room before the culmination point of the hidden event while it reaches the maximum point of darkness of the room after the culmination point. In other words, this reading is just a consequence of the meaning in (16d). This type of derived “change within-individual” reading must be distinguished from one obtained in DAs derived from gradable predicates with an open scale. The “change within-individual” reading in DAs derived from gradable predicates with an open scale in (15) corresponds to the meaning, “that room becomes wider”, not from “that room becomes wide”.

## 2.2. Change across-individuals

We turn next to the question of how we can derive across-individuals comparison from DAs with an overt SoC. The structure in (17) is for DAs with an overt SoC that have change across-individuals reading as in (5). In this case, the small clause head *-eci* takes  $\text{DegP}_{\text{COMP}}$  as the secondary predicate.

(17) DA with an overt SoC (5): Change across-individuals



The meaning can be compositionally construed as in (18). When the AdjP combines with a degree head, the meaning is the same as regular comparatives, *x is wider than the road B* (18a). When the small clause head of **rP** enters into the derivation and merges with  $\text{Deg}_{\text{COMP}}$  (18b), it introduces a state argument *s*, so the meaning “*x is wider than the road B at s*” is obtained. Once the subject *road A* enters into the derivation (18c), it saturates the entity argument generating the meaning *road A is wider than road B at s*. Finally, the output is merged with the *v* head, *-eci* which introduces an implicit event argument *e* and the type-shifting function CAUSE that is responsible for a causal relation between the implicit process event, *e* and the resultant state, *s* (18d).

- (18) a.  $[[ [\text{Deg}_{\text{COMP}} ] ] ] ([[\text{wide}]])([[\text{road B}]])=\lambda x.\text{wide}(x) > \text{wide}(\text{road B})$   
 b.  $[[r]]([[\text{Deg}_{\text{COMP}} ] ] ] ([[\text{wide}]])([[\text{road B}]])) = \lambda x.\exists s. [\text{wide}(x)(s) > \text{wide}(\text{road B})(s)]$   
 c.  $[[r]]([[\text{Deg}_{\text{COMP}} ] ] ] ([[\text{wide}]])([[\text{road B}]])([[\text{road A}]])) = \exists s. [\text{wide}(\text{road A})(s) > \text{wide}(\text{road B})(s)]$   
 d.  $[[eci]](15c) = \lambda e.\exists s [\text{wide}(\text{road A})(s) > \text{wide}(\text{road B})(s) \ \& \ \text{IMPLICIT}(e) \ \& \ \text{CAUSE}(s)(e)]$

The semantics in (18d) generates the resultant state meaning, in which *road A is wider than road B* is initiated at the culmination point of an implicit process event. This implies that *before the culmination point of the process event, road A is NOT wider than road B*. This is how the across-individual comparison meaning is obtained in DAs with an overt SoC.

In this section, we discussed the syntax and semantics of different types of DAs. In our proposal, DAs are resultative structures, an analysis that can account not only for the two different readings (change within-individual vs. change across-individuals) but also for the variable (a)telic properties of DAs, depending on their predicate roots. In the next section, we will discuss the question of why there is difference in the availability of an overt SoC in DAs across languages.

### 3. Absence of DAs with an overt SoC in English

In the previous section, we argued that the syntactic difference between DAs without an overt SoC and DAs with an overt SoC is due to the type of complement the functional head *r* takes: When *r* takes Deg<sub>pos</sub>P as its complement, DAs appear without an overt SoC, and when *r* takes Deg<sub>COMP</sub>P, DAs appear with an overt SoC. This indicates that in Korean, the small clause head can take either DegP as its complement, whereas in English, *r* can only take Deg<sub>pos</sub>P as its complement.

It is well known that derivational morpheme occurs closer to the root than inflectional morphemes. The reason why it should be so is still being debated (See Hay and Plag 2004 for recent processing based proposal). Whatever the explanation, the morphological ordering constraint is real and it accounts for the lack of DAs with an overt SoC in English. In English, the comparative head is an inflectional morpheme, *-er*. Thus, if the small clause head takes Deg<sub>COMP</sub>P as the secondary predicate, the inflectional morpheme *-er* must be attached to the root. However, the morpheme that derives a DA from a gradable predicate (i.e. Adjective) is a derivational morpheme. Thus, the inflectional morpheme *-er* blocks the derivational morpheme *-en* from being subsequently attached. This is why we think that Deg<sub>COMP</sub>P cannot be found in DA constructions in English. By way of contrast, Korean comparative head does not have an overtly realized morpheme corresponding to *-er*, as we mentioned in the introduction (see (11))<sup>3</sup>. Thus, we can predict that the derivational morpheme *-eci* is free to be attached even when Deg<sub>COMP</sub>P is selected as the secondary predicate.

### 4. Conclusion

In this paper, we propose a resultative-analysis for DAs. In this account, the reading of change in DAs is not due to a special semantic function designed for DAs; it follows as a natural consequence of being a resultative construction. Taking the syntax of DAs into consideration, we discussed how two different meanings – change within-individual and change across-individuals- can be compositionally construed. By comparing Korean *-eci* construction with “become”-construction, we showed that Korean *-eci* construction corresponds to DA, not “become”-construction in English. In addition, we briefly discussed the fact that *-eci* can be attached to non-gradable verbal predicates. Even though it is left for future work to provide a unified account for various *-eci* constructions, we showed that non-gradable verbal predicate + *eci* is possible when sentence level Aspect and Modality provides an abstract scale that is required to encode the “point-of-change”. This observation shed some light on a possible unification of verbal and adjectival *-eci* construction based on the notion of “change”.

The variable telicity of DAs can be accounted under this approach as well. Because the resultant state is construed as identical to the regular gradable predicates, the scale-structure of each gradable predicate is projected contributing different (a)telicity of the entire DA construction. Furthermore,

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<sup>3</sup> It is controversial whether Korean comparatives have Deg head morpheme corresponding to *-er* because the lexicon corresponding to English *-er/more* is optional in comparatives with an adjectival predicate (ia), but obligatorily in comparatives with a nominal/verbal predicate (ib). Park (2005) argues that *te* in (i) is the Deg head in comparatives, while Choe (1998) argues that *te* is an adjunction.

- (i) a. John-i      Bill-pota      (te)      khu-ta.  
       John-Nom    Bill-than      (more)    tall-decl.  
       John is taller than Bill.  
       b. John-i      Bill-pota      \*(te)      tali-ess-ta.  
       John-Nom    Bill-than      (more)    run-past-decl.  
       John ran more than Bill did.

Even if *te* is the degree head, it is not spelled-out as a suffix, so it is free from the morphological affix-ordering restriction. We believe that it is different in its morphological nature from English *more*. Even though *more* is not realized as a suffix, but an independent word, it is the allomorph of *-er*, realization of which is determined by phonological constraints (“...-er only attaches to monosyllabic adjectives or those ending in syllabic *l*, *-y* or *-n* ...” (Spencer 1991:399), otherwise *more* is used in comparatives). Thus, in the case of English *more*, we believe that there is a covert suffix *-er* morpheme that is realized by *more* at PF, while in the case of Korean *te*, there is no such suffix in either comparatives with the overt *te* or comparatives without the overt *te*.

since the implicit process event can take place over temporal, spatial, or other functional domains, our approach is compatible with Deo, Francez & Koontz-Garboden (2013)'s observation that DAs are not restricted to the temporal domain.

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