Reassessing the Typology of States.
Evidence from Korean (Degree) Inchoative states
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0. THE ISSUE

Growing body of literature converging on the existence of subclass of eventuality descriptions that do not fit in the classic classifications of situation types — e.g. Vendler’s (1967) classification into states, activities, achievements and accomplishments:

‘Inchoative’, ‘Inceptive’ states (INS)
Squamish Salish (Bar-el 2005),
Sənčəəən Salish (Saanich dialect of Straits Salish) & Japanese (Kiyota 2008),
Spanish Reflexive Psychological Verbs (Marín & McNally, 2005, 2011 (M&M))

In a nutshell: unlike states, which have no intrinsic initial or final bounds, INS refer to the onset of the state they are associated with.

i. We provide further evidence from Korean for the existence of INS:
   We identify 2 properties holding of INS across the languages discussed.
   a. INS yield inceptive readings with punctual clauses/adverbials (diagnostic for initial bounds).
   b. INS are compatible with the progressive, yielding continuous/stative readings, but not a “preliminary circumstance” reading.

ii. We distinguish two subclasses of INS:
   a. INS describing an inception that starts a continuous/non dynamic state
   b. Degree INS describing an inception that starts an ongoing/dynamic state.

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2 M&M distinguish two classes of SRPV: the nonpunctual (aburrirse class) denoting inchoative non dynamic states and the enfadarse class denoting truly punctual states.
The discussion here bears only on the former class which includes:
aburrirse ‘to be/become bored’, agobiarse ‘to get/feel overwhelmed,’ angustiarse ‘to get/be distressed,’
avergonzarse ‘to get/feel ashamed,’ confundirse ‘to get/be confused,’ distraerse ‘to get/be distracted,’
entretenere ‘to get/be entertained,’ interesarse ‘to get/be interested in,’ molestarse ‘to get/be bothered,’
obsesionarse ‘to get/be obsessed,’ preocuparse ‘to get/be worried’.
3 as well as in Chinese (see Huang et al. 2000, Chang 2003) not discussed here.
We argue that degree INS are not degree achievements (degree ACH), although just like degree ACHs, they show variable telicity allowing both modification by *in X time & for X time* adverbials.

**Telic Degree ACH:** property denoted by ADJ has a **maximal** possible value (degree). Once the maximal degree is reached, Change of State culminates/cannot progress further. In *x*-time adverbial measures the interval during which the culmination of the CoS takes place *⇒* scale lexicalized by the adjective is an **upper bound closed** scale.

**'Degree INS:** the property denoted by ADJ instantiated to at least a **minimal** value, *⇒* scale lexicalized by the adjective is a **lower bound closed** scale. Once the minimal degree is reached, Change of State starts. In *x*-time adverbial measures the interval during which the onset of the CoS takes place.

We provide evidence for adopting an analysis of INS in Korean à la Bar-el (2005), where onsets are represented as initial BECOME subevents in the denotation of a given predicate and where BECOME models change from ¬α to α. We extend this analysis to Degree INS by assuming that the BECOME subevent in the denotation of the (adjectival) predicate does not characterize a change from ¬α to α, but a change in values on a scale and, as such, meets the condition (temporal adjacency) for an operation of S-summing, which forms singular events in the set of events denoted by P out of sums of temporally adjacent events in P (adapting Rothstein 2008).

**Roadmap**

1. Two classes of states in Korean
2. INS refer to the **onset** of the state they are associated with
3. INS are not achievements
4. 2 subclasses of INS:
   a. INS
   b. Degree INS
5. Degree INS vs. degree achievements.
6. Evidence for an initial BECOME subevent
7. Deriving degree INS from INS
I. Two classes of states in Korean
(see Chung 2005, Lee 2006, Choi 2010 for related discussion)

Adjectival states:

<table>
<thead>
<tr>
<th>Pure states (PS)</th>
<th>Inchoative states (INS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. celmta ‘young’</td>
<td>nulkta ‘old’</td>
</tr>
<tr>
<td>b. pisushata ‘similar’</td>
<td>talmta ‘alike’</td>
</tr>
<tr>
<td>c. pikonhata ‘tired’</td>
<td>cichita ‘tired’</td>
</tr>
<tr>
<td>d. twungtwunghata ‘fat’</td>
<td>salijita ‘fat’</td>
</tr>
<tr>
<td>e. nalssinhata ‘thin’</td>
<td>maluta ‘thin’</td>
</tr>
<tr>
<td>f. chwukchwukhata ‘wet’</td>
<td>cecta ‘wet’</td>
</tr>
</tbody>
</table>


⇒INS, just like pure states, refer to properties or states of objects/individuals — e.g. age (old vs. young),
or physical properties (fat_{INS} vs fat_{HS}, thin_{INS} vs thin_{HS}).

Verbal states:

<table>
<thead>
<tr>
<th>Pure states (PS)</th>
<th>Inchoative states (INS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. miwohata ‘hate’</td>
<td>salanghata ‘love’</td>
</tr>
<tr>
<td>b. choahata ‘like’</td>
<td>alta ‘know’,</td>
</tr>
<tr>
<td>g. mwusepta ‘fear’</td>
<td>wonhata ‘desire’</td>
</tr>
</tbody>
</table>

Combined with present marker -nun, INS just like PS yield a typical stative reading:

    J-TOP M-ACC love-PRES-DEC
    “John loves Mary.” [INS]

    J-TOP M-ACC hate-PRES-DEC
    “John hates Mary.” [PS]

(2) a. John-un pwule-lul a-n-ta.
    J-TOP French-ACC know-PRES-DEC
    “John knows French.” [INS]

    J-TOP French-ACC like-PRES-DEC
    “John likes French.” [PS]
Combined with the perfect marker -ess, PS and INS crucially yield different readings:

(3)    a. Sue-ka  *cikum  nalssinha-ss-ta.
S-NOM  now  thin-PFCT-DEC
   “Sue was thin.” / “Sue is thin now.”
   ⇒ past reading

   b. Sue-ka  cikum  malu-ess-ta.
S-NOM  now  thin-PFCT-DEC
   “Sue is thin now.” / “Sue was thin.”
   ⇒ present result state reading

Morphological diagnostic for distinguishing INS vs. PS:

J-NOM  cup-ACC  break-PFCT-DEC
   “John broke the cup.”
   [causative verb]

cup-NOM  break-INCHO-PFCT-DEC
   “The cup broke.”
   [inchoative verb]

The inchoative morpheme -eci can take PS as its argument, but cannot take INS (Lim 2010):

that  stick-NOM  long-PFCT-DEC
   “That stick was long.”
   [PS]

that  stick-NOM  long-INCHO-PFCT-DEC
   “That stick became long.”

(6)    a. Sue-ka  hwana-ss-ta.
S-NOM  angry-PFCT-DEC
   “Sue got angry.”
   [INS]

   b. Sue-ka  hwana-*eci-ss-ta.
S-NOM  angry-INCHO-PFCT-DEC
The ungrammaticality of adding -eci to the INS in (6b) suggests that INS are inherently inchoative – have an initial zero-marked BECOME operator in their lexical meaning, blocking the addition of another, overt BECOME operator to the event structure.

II. INS refer to the onset of the state that they are associated with

Diagnostic for initial bounds
The addition of a punctual adverbial clause can induce 3 readings according to the aspectual class of the predicate in the main clause:

(i) an inceptive reading - the described eventuality in the main clause begins at the same time as the event described by the punctual adverbial clause.

(ii) a medial (overlapping) reading - the described eventuality takes place simultaneously with the event described by the punctual adverbial clause.

(iii) a culminating reading - the described eventuality ends simultaneously with the event described by the punctual adverbial clause.

This diagnostic adduces evidence for an intrinsic initial boundary in the representations of INS across all the languages discussed.

(7) **INS in Squamish Salish** (Bar-el 2005)

Chen ts’ulh-um kwi s-es kən’p ta senḵwem
1S.SG cold-INTR DET NOM-3POSS set DET sun
“I felt cold when the sun went down.”
*“When the sun went down, I was (already) cold.”

(8) **INS in Sánc̓áʔx̣w Salish** (Kiyota 2008)

t’ečaq’ tə Jack kʷs kʷl tal-naxʷ-s tə sqʷəl’qʷəl’
mad D Jack SUB PERF hear-NCTR-3.sg D news
“Jack was not mad before, but he became mad because of the news.”
*“Jack was already mad when he heard the news.”

(9) **INS in Japanese** (Kiyota 2008)

Sora-ga sanji-ni kumot-ta.
Sky-NOM 3 o’clock-at cloudy-PAST
“The sky got cloudy at 3 o’clock.”
*“The sky was already cloudy at 3 o’clock.”
(10)  **INS in Korean** (Choi 2010, Lee 2006)

   that news-ACC hear-PFCT-when J-NOM angry-PFCT-DEC
   “Juno was not angry, but he became angry because of the news.”
   *“Juno was already angry when he heard the news.”

   Inho-DAT call-PFCT-when M-NOM leave-REL-thing-ACC know-PFCT-DEC
   “Juno came to know that Mina had left when I called Inho.”
   *“Juno was already aware of the fact that Mina had left when I called Inho.”

(11)  **Spanish Reflexive Psychological Verb** (Marín & McNally 2005, 2011)

a. Siempre que Ana tiene un examen, se preocupa mucho.
   whenever Ana has an exam, SE worries very much
   “Whenever Ana has an exam, she gets very worried.”

b. Los estudiantes se aburrian en clase hace unos dias.
   the students SE bored in class ago some days
   “The students got (*were) bored in class a few days ago.”

Moreover, as shown in (11b), when combined with reference time adverbials such as ‘a few days ago’ or ‘tomorrow’, the psychological state is inferred to begin within the time described by the adverbial.

⇒ Across all these languages, the inceptive reading is the only available reading when INS co-occur with punctual adverbial clauses: INS entail the **inception** of the described state.

**III. INS are not achievements**

If INS in Korean entail a BECOME operator in their lexical semantics and, as such, describe a transition from one state to another (from ¬α to α) —just like achievements.
Then couldn’t we analyze them as achievements?

> Achievements yield instantaneous readings with punctual adverbials:

(12)  The bomb exploded at 9 o’clock/when Mary walked in.

But INS can be distinguished from achievements with respect to the following set of diagnostics.
III.1. The readings of the progressive

As is well known:

a. The ordinary progressive turns an event description to a state description, describing an on-going process.
   (13) John is building a house.

b. It occurs with activities without inducing the imperfective paradox
   (14) John is running [entails John ran]

c. It is typically infelicitous with stative predicates
   (15) ??John is loving Mary
       ??John is knowing French

d. It is felicitous with achievements but only on preliminary circumstance reading
   (16) The train is leaving the station.

⇒ refers to a preparatory phase leading up to the culmination point of an achievement.
(d) does not entail that the train left

Both INS and achievements in Korean can appear in the progressive. However, they do not yield the same reading. The progressive -ko iss with achievements yields only a preliminary circumstance unavailable with INS.

    train-NOM station-ACC leave-PROG-DEC
    “The train is leaving the station.” [ACH]
    ⇒ preliminary circumstance reading [does not entail that the train left]

b. Minsu-ka nulk-ko iss-ta.
    M-NOM old-PRGO-DEC
    “Minsu is becoming old.” [old-type INS]
    ⇒ entails Minsu is old

c. Minsu-ka ku sasil-ul al-ko iss-ta.
    M-NOM that fact-ACC know-PROG-DEC
    “Minsu is (already) aware of the fact.” [know-type INS]
    ⇒ entails that Minsu is in the described state

⇒ INS do not pattern like achievements.
Same pattern holds across the other languages under discussion:

(18) a. Japanese (Kiyota 2008)
    Jiroo-wa tukare-tei-ru
    J-NOMtired-TEI-PRES
    “Jiroo is tired.”

b. SRPV (*aburrirse class: M&M 2011)
    Juan se est aburriendo.
    Juan SE is boring
    “Juan is (already) bored.”

c. Squamish Salish (Bar-el 2005)
    chen lhe-lhchiw
    1S.SG REDUP-tired
    “I’m tired.”

Conclusion. 2 properties hold of INS across all the languages discussed:

a. INS yield inceptive readings with punctual clauses/adverbials (diagnostic for initial bounds)

b. INS are compatible with the progressive, yielding a stative reading, not the “preliminary circumstance reading” characteristic of achievements.4

III.2 Two other diagnostics from Piñón (1997)
Achievements are incompatible with adverbs expressing that the described eventuality is partially completed or realized:

(19) a. *Rebecca partly (partially, half, partway, halfway) reached the summit.
    b. *Anita partly (partially, half, partway, halfway) recognized Peter.

Achievements are also incompatible with manner adverbs:

(20) a. *Rebeca quickly (slowly) reached the summit.
    b. *Anita quickly (slowly) recognized Peter.
    c. *Astrid quickly (slowly) won the race.
    d. *The patient died quickly (slowly).

4 M&M argue that the punctual class of SPRVs (footnote 1) are achievements predicates (denoting boundary happenings). As expected, they yield a preliminary circumstance reading with the progressive:

(1) El perro se est. asustando.
    the dog SE is frightening
    ‘The dog is getting (but is not yet) frightened.’
Achievements in Korean show the same pattern.

J-NOM race-ACC slightly/quickly win-PFCT-DEC
*“Juno slightly/quickly won the race.”

However, the eventualities described by INS in Korean can be partially realized and they also felicitously appear with manner adverbs.

(22) a. Sue-ka cokum malu-ess-ta.
S-NOM slightly thin-PFCT-DEC
“Sue became slightly thin.”

b. Suken-i cencenhi cec-ko iss-ta.
towel-NOM slowly wet-PROG-DEC
“The towel is slowly becoming wet.”

The diagnostics in III.1 and III.2 distinguish INS from achievements.

IV. Two subclasses of INS

As we just saw in (22), adjectival INS allow modification by manner adverbials like slowly
test for dynamicity, showing that adjectival INS, unlike verbal INS ((23)), can denote eventualities in progress, developing over time.

(23) *Mina-ka ku sasil-ul chenchenhi al-ss-ta.
Mina-NOM that fact-ACC slowly know-PFCT-DEC
*Mina slowly knew the fact.”
[know-type INS]
Verbal INS inherently non-dynamic, do not progress, develop over time.

We distinguish two subclasses of INS:
1. INS describing an inception that starts a continuous/non dynamic state
2. Degree INS describing an inception that starts an ongoing/dynamic state

Verbal INS are not gradable: only allow an INS reading ((ii))
Adjectival INS are gradable: ambiguous allowing both an INS ((ii)) and a degree INS ((iii)) reading

Adjectival INS felicitously co-occur with degree modifiers ((24a), degree adverbs (24b))
& appear in comparatives ((24c)).

S-TOP self father-ACC very/slightly alike-PFCT-DEC
“Sue looks very/slightly like her father.”
b. Paul-i  
\text{cemcem/teowuk}  
hwana-n-ta.
P-NOM  
gradually/increasingly  
angry-PRES-DEC

“Paul is gradually/increasingly getting angry.”

c. Mina-ka  
Yuna-bota  
(te)  
malu-ess-ta.
M-TOP  
Y-than  
more  
thin-PFCT-DEC

“Mina is thinner than Yuna.”

While INS do not allow degree modification ((25a)) and cannot appear in comparatives ((25b)):

\begin{align*}
(25) & \quad \text{a. Mina-nun ku sasil-ul} \quad \text{*maywu/*cokum} \quad \text{al-ass-ta.} \\
& \quad \text{Mina-TOP that fact-ACC very/slightly know-PFCT-DEC} \\
& \quad \text{Intended: “Mina slightly knew that fact.” /“Mina is very aware of the fact.”}
\end{align*}

\begin{align*}
& \quad \text{b. *Mina-ka Yuna-bota ku sasil-ul} \quad (te) \quad \text{al-ess-ta.} \\
& \quad \text{M-TOP Y-than that fact-ACC more know-PFCT-DEC} \\
& \quad \text{Intended: “Mina knew the fact more than Yuna did”}
\end{align*}

\Rightarrow \text{Adjectival INS allow both an INS (Become S) and degree INS (Become S-er):}

\begin{align*}
(26) \quad \text{Context: Sue weighed 50 kilos for 10 years.} \\
& \quad \Rightarrow \text{Inchoative result state reading (Become S)} \\
& \quad \text{Sue-nun sip-nyeon-tongan mala-ssess-ta.} \\
& \quad \text{S-TOP ten-year-for thin-PAST-DEC} \\
& \quad \text{“Sue became thin and she was thin for ten years.”}
\end{align*}

\begin{align*}
(27) \quad \text{Context: Sue weighed 50 kilos 10 years ago, now she weighs 47 kilos} \\
& \quad \Rightarrow \text{Degree INS reading reading (Become S-er)} \\
& \quad \text{Sue-nun sip-nyeon-tongan mala-ss-ta.} \\
& \quad \text{S-TOP ten-year-for thin-PFCT-DEC} \\
& \quad \text{“Sue became thinner for ten years.”}
\end{align*}

\textbf{V. Degree INS are not degree achievements}

We have just seen that INS can occur with atelic modifiers ((26)).
But they also occur with telic modifiers:

\begin{align*}
(28) \quad \text{Juno-ka han-tal-\textbf{maney} mala-ss-ta.} \\
& \quad \text{J-NOM one-month-in thin-PFCT-DEC} \\
& \quad \text{“Juno became thin in one month.”}
\end{align*}
Although INS in Korean pattern with degree achievements like *cool* in English, in that they show variable telicity, allowing both modification by *in X time* & *for X time* adverbials. They are not degree ACHievements.

Degree ACH

e.g. *widen, darken, cool, lengthen, straighten*

Change-of-state verbs derived from a gradable ADJective

(Dowty 1979, Abusch 1986, Hay et al. 1999, Kennedy & Levin 2008 ao.)

Gradable ADJ associated with different types of scales:


(i) **open** scale: the property has neither a maximal nor minimal value of a property. Such scales are not compatible with degree modifiers that pick out a bounded degree (*completely/totally* for the maximal value and *slightly/partially* for the minimal value).

  e.g. *cool, deep, long, wide, warm, tall*...etc

(ii) **lower-bound** scale: the property is instantiated to at least a smallest value which follows the zero degree at the lower bound of the scale. Such scales can be modified by *slightly/partially*.

  e.g. *wet, bent, inclined, scratched*...etc

(iii) **upper-bound** scale: the property has a maximal possible degree, which constitutes the upper bound of the scale. Such scales can be modified by *completely/totally*.

  e.g. *clean, dry, flat, straight*...etc

Some DAs display both atelic and telic properties with respect to standard diagnostics of telicity:⁵

(29)

The soup cooled in an hour  \(\rightarrow\) Telic (endstate ‘coolness’ has been reached)
The soup cooled for an hour  \(\rightarrow\) Atelic (does not imply that endstate ‘coolness’ has been reached)

---

⁵ But many DAs have default telic interpretations. Such verbs can be construed as atelic, but are interpreted as telic in the absence of explicit or contextual information forcing such interpretations:

(2)  
a. The sky darkened (but it didn’t become dark).
b. The shirt dried (but it didn’t become dry).  \((\text{Kennedy & Levin 2001})\)

Other DAs which are interpreted only as atelic.

(3)  The recession deepened *for? in a few minutes.  \((\text{Kennedy & Levin 2001})\)
Kennedy & Levin (2008):
Telicity of a DA varies only depending on whether the scale of the adjectival core has a maximal value (maximal telos) of the described property or not. Thus, a telic DA denotes the meaning of “become maximally A”. If the maximal value is not identified, then the DA is interpreted as atelic.

Telic Degree ACH:

‘The soup cooled in hour.’

property denoted by ADJ has a maximal possible value (degree). Once the maximal degree is reached, CoS culminates/cannot progress further. In x-time adverbial measures the interval during which the culmination of the CoS takes place (It took an hour for the soup to become cool).

⇒ scale lexicalized by the adjective is an upper bound closed scale

Diagnostic for a maximal value: The presence of a maximal value of the property described by a predicate on a scale can be shown by the entailment in (30).

(30) ‘X is completely A’ entails that ‘X could not be A-er’

(Kearns 2007)

(31) *The clothes are completely dry now, but they could be drier.

Korean INS do not felicitously co-occur with ‘completely/totally’ adverbials oriented toward a maximal value.

⇒ Telicity of INS cannot be linked to the presence of a maximal value of the property on scale.

    J-NOM completely fat-PFCT-DEC
    ?*“Juno became completely fat.”

⇒ Telicity of INS cannot be linked to the presence of a maximal value of the property on scale.

INS felicitously co-occur with ‘slightly/partially’ adverbials oriented toward a minimal value.

    J-NOM slightly fat-PFCT-DEC
    “Juno became slightly fat.”
Property instantiated to at least a minimal value - that is, to a value following the zero degree at the lower bound of the scale.

c. Swuken-i  **panccum**  cec-ess-ta.
towel-NOM partially     wet-PFCT-DEC

“The towel became partially wet.”

The presence of a maximal value of the property described by a predicate on a scale can also be shown by the inference pattern (*maximal standard*) given in (33).

(33)  
(a) X is emptier than Y.  ⇒  X is empty. / Y is not empty.
(b) X is taller than Y ⇏  X is tall. / Y is not tall.

In (33a), ‘empty’ entails a maximal value, while ‘tall’ in (33b) does not.

(34)  
(a) Minho-nun Juno-bota nulk-ess-ta.
     M-TOP J-than   old-PFCT-DEC

     “Minho is older than Juno.”

(b) I bang-i ce bang-bota kkaykkusha-ta.
     This room-NOM that room-than clean-DEC

     “This room is cleaner than that room.”

(34a) does not entail that Juno is not old. It suggests that the INS nulk ‘old’ in (34a) does not have a maximal value.

(34b) entails that this room is clean, while that room is not clean. It shows that the predicate kkaykkusha ‘clean’ has a maximal value.

⇒ **Scale lexicalized by the adjective is a lower bound closed scale**

There is necessarily a non-zero (minimal) value of measured property.

⇒ **Telic Degree INS do not denote the meaning of “become maximally A”**.

Proposal

*Degree INS*: the property denoted by ADJ instantiated to at least a minimal value,

⇒ scale lexicalized by the adjective is a lower bound closed scale.

Once the minimal degree is reached, Change of State starts.

In x-time adverbial measures the interval during which the onset of the CoS takes place.

Correctly predicts that even on the telic in x-time reading, the described CoS could progress further.
VI. Evidence for an initial BECOME subevent

Bar-el (2005)’s analysis of INS in Squamish Salish

\[ \lambda e. \exists e_1 \exists e_2 [e = (e_1 \cup e_2) \land (\text{BECOME}(P))(e_1) \land P(e_2)] \] (cf. Bar-el 2005, Kiyota 2008)

We adopt the proposal that onsets are represented as initial BECOME subevents in the denotation of a given predicate and where BECOME models change from \( \neg \alpha \) to \( \alpha \).

\[ \Rightarrow \text{‘In x-time’ adverbial measures the interval during which the onset of the state} \]
\[ \neg\text{that is, the initial subevent characterizing the change from } \neg\text{THIN (J) to THIN (J)} \text{ takes place} \]

Telic reading:

(36) Juno-ka han-tal-maney mala-ss-ta.
J-NOM one-month-in thin-PFCT-DEC

“Juno became thin in one month.”

Alternative analysis of INS proposed by M&M for SRPVs (2005, 2011):

SRPV refers only to the onset of a state, but not to any interval prior to the onset of that state.

“If the predicate entails reference to this initial interval, it will have to be the case that prior to that interval, the state did not hold [...] possible to infer that a change has taken place immediately prior to the onset of the state being referred to. [...] such a predicate would qualify as inchoative in the same sense as BECOME, it would not qualify as a change of state predicate in the same sense”

\[ \Rightarrow \text{Propose a semantics for inchoativity excluding reference to change (to a BECOME operator).} \]

Crucially, SRPVs resist modification by ‘in x time’ adverbials (while allowing modification by durative adverbials):
Se {aburrió/divirtió} durante/*en toda la tarde.
SE bored/amused during/in all the afternoon
“He was bored/amused (continuously) the whole afternoon.”

→ Why? Because SRPVs, unlike Korean INS, do not have a BECOME subevent in their denotation, modeling change.

Two further arguments:

#1. Inherent inchoativity: overt inchoative marker -eci ‘become’
Recall that INS cannot combine with the overt inchoative marker -eci ‘become’:

(38) a. Sue-ka hwana-ss-ta.
    S-NOM angry-PFCT-DEC [INS]
    “Sue got angry.”

    b. Sue-ka hwana-*eci-ss-ta.
    S-NOM angry-INCHO-PFCT-DEC

Ungrammaticality of adding -eci to INS, is evidence for a BECOME subevent in the denotation of INS in Korean [INS have an initial zero-marked BECOME operator in their associated event structure, blocking the addition of another, overt BECOME operator)

#2 Temporal readings of -ess
Perfect marker -ess yields either a past or an on-going result state readings with respect to the reference time (Ref-T=UT-T in simple clauses). The distribution of the temporal readings of -ess is determined by the event structure of predicates with which it occurs (cf. Choi 2010).

With PS, -ess yields a past reading, allowing only modification by past time adverbials:

(39) Sue-ka cinancue aphu-ess-ta.
    S-NOM last.week sick-PFCT-DEC
    “Sue was sick last week.”

With INS, -ess yields an on-going result state reading, allowing only modification by present time adverbials:

(40) a. Sue-ka cikum hwana-ss-ta.
    S-NOM now angry-PFCT-DEC
    “Sue is angry now.”
Adopt Demirdache & Uribe-Etxebarría (2007)'s temporal syntax where Tense/T° & Aspect/Asp° are spatiotemporal ordering predicates projecting their time denoting arguments in the syntax:

T° orders its external argument (UT-T in matrix clauses) relative to its internal argument (the Assertion-time (AST-T), Klein 1994)

ASP° orders its external argument (AST-T) relative to its internal argument (the EV-T).

Complex event structure: each subevent projects the time argument defining its running time.

Present perfect

\[ \Rightarrow \text{Present orders the UT-T within the AST-T. Perfect then orders the AST-T after the EV-T.} \]

Perfect -ess

\[ \Rightarrow \text{Orders the AST-T immediately after the time interval in its immediate scope} \]

i. PS have a simplex event structure (i.e. P(e)),

-ess orders the AST-T immediately after the EV-T, a past reading is generated:

\[ \text{Ev-T is construed as past-shifted relative to UT-T.} \]

\[(41) \quad \text{Sue sick+-ess.} \]

\[ \begin{align*}
\text{Ev-T} & \quad \text{AST-T} \\
\text{-----} & \quad \text{[\[\[\[\|\]
\text{SICK} & \quad \text{UT-T=Ref-T}
\end{align*} \]

ii. INS have complex event structure of consisting of two subevents

-ess orders the AST-T immediately after the interval defining Ev-T1 of a INS, thus focusing the time defining the result state (EV-T2), a result state reading is generated:

\[(42) \quad \text{Sue angry+-ess} \]

\[ \begin{align*}
\text{Ev-T1} & \quad \text{Ev-T2 = AST-T} \\
\text{-----} & \quad \text{[\[\[\[\|\]
\text{~ANGRY ANGRY} & \quad \text{UT-T=Ref-T}
\end{align*} \]

The on-going result state reading of INS suffixed by -ess is further evidence for the presence of a complex event structure in the representation of INS (vs. PS) in Korean.

VII. Deriving degree INS from INS

Derive Degree INS from INS by adapting Rothstein’s (2008) analysis of Degree Achievements (themselves derived from regular (non-degree) achievements)

Ingredients of Rothstein’s proposal in a nutshell:

I. Degree achievements may describe an event consisting of a sum of multiple “atomic events”.

\[ \text{SICK UT-T=Ref-T} \]
Sums of atomic events are formed by the application of the $S$-summing (singular-summing) operation, which sums two events to form a new single event.

$S$-summing must meet a condition of temporal adjacency: it can only forms singular events in the set of events denoted by $P$ out of sums of temporally adjacent events in $P$.

II. Regular (non-degree) achievements describe a change from $\neg\alpha$ to $\alpha$.

A become COOL is an event of change from $\neg$COOL to COOL.

An event of change defined in this way will never meet the conditions of $S$-summing since a change from $\neg\alpha$ to $\alpha$ can never be immediately followed by another event of the same type with the same participants (Kamp 1979: 2 events of change from $\neg\alpha$ to $\alpha$ must be separated by a change back from $\alpha$ to $\neg\alpha$).

III. Degree achievements describe a change in values on a scale.

A become COOLER event is an event of change from a situation in which $x$ is assigned $d$ on the COOL scale, to a situation in which $x$ is assigned a value lower than $d$ on the COOL scale.

Crucially, $d$ can be the degree of coolness of $x$ at the end of $e$, as well as being the degree of coolness of $x$ at the beginning of $e'$, where $e$ and $e'$ temporally overlap.

$\Rightarrow$ Conditions for $S$-summing (temporal overlap between $e$ and $e'$) are met.

$S$-summing forms singular events in the set of events denoted by $P$ out of sums of temporally adjacent events in $P$.

$\Rightarrow$ Recall that Adjectival INS allow both an INS (Become S) and degree INS (Become S-er):

(43) Context: Sue weighed 50 kilos for 10 years ((26)).

$\Rightarrow$ Inchoative result state reading (Become S)

Sue-nun sip-nyeon-tongan mala-ss-ta.

S-TOP ten-year-for thin-PERF-DEC

“Sue has been thin for ten years.”

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$^6$ $S$-sum$_V$ (= the $S$-sum operation in the verbal domain)

$\forall e,e': P(e) \wedge P(e') \wedge R(e,e'): S$-sum$_V(e,e') \rightarrow P(\{e \cup e'\})$

“For any two events $e$ and $e'$ in the denotation $P$ which stand in the $R$ relation, $S$-sum$_V$ applied to $e$ and $e'$ yields a singular event formed out of the sum of $e$ and $e'$ and which is also in the denotation $P$.”

$R$ denotes the temporal overlap relation between the two events.

$^7$ A change from $\alpha$ to $\beta$ is an event whose minimal initial part is the last minimal interval at which $\alpha$ holds and whose final minimal interval is the first minimal interval at which $\beta$ holds, where $\alpha$ entails $\neg\beta$. (Rothstein 2004).
Degree INS describes a change from ¬THIN to THIN, which itself defines the onset of the result state THIN. Modifier measures the length of this result state, which must also hold at UT-T. (Result state reading of –ess ((42))

(44) Context: Sue weighed 50 kilos 10 years ago, now she weighs 47 kilos ((27))
⇒ Degree INS reading r (Become S-er)
Sue-nun sip-nyeon-tongan mala-ss-ta.
S-TOP ten-year-for thin-PFCT-DEC

“Sue became thinner for ten years.”

Thinning event is an event of change from a situation in which x is assigned d on the THIN scale, to a situation in which x is assigned a value HIGHER than d on the THIN scale.

S-summing applies to form a new single event by summing multiple atomic events of thinning.

⇒ Extend Rothstein’s analysis of Degree ACH to Degree INS since the initial BECOME subevent in the denotation of the (adjectival) predicate does not characterize a change from ¬α to α but a change in values on a scale and as such meets the condition (temporal adjacency) for an operation of S-summing.

REFERENCES


