Non-culmination Readings and Agency

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1. Introduction: topic & issue (1/2)

- **Topic**: Non-culmination readings of caused change-of-state predicates in various languages (Korean, Chinese, Japanese, Salish languages, Hindi, etc.)

- **Question**: What gives rise to the non-culmination readings in the languages?

- **Proposals**: Agenthood properties, Intentionality

1. Introduction: terminology (2/2)

- **Event structural sense** (e.g. Dowty 1979, Rappaport Hovav & Levin 1998)

  (i) **Accomplishment**: a caused change-of-state
  (e.g. *John broke the vase*)

  (ii) **Achievement**: a change-of-state that does not necessarily involve causation (e.g. *The vase broke*)

- **Temporal use** (Vendler 1957)

  (i) **Accomplishment**: a durative change-of-state
  (e.g. *John built the house*)

  (ii) **Achievement**: a punctual change-of-state
  (e.g. *John broke the vase*)

2. Non-culmination: English (1/9)

- In English, the inherent result of a caused change-of-state predicate must occur in the actual world:

(1) a. He **opened** the door, #but it was not opened.
b. He **burned** the door, #but it was not burned.
c. He **broke** the door, #but it was not broken.

- The English verbs *open*, *burn* and *break* entail actual occurrences of the inherent results.

2. Non-culmination: Korean (2/9)

- In Korean, an actual occurrence of an inherent result is not necessary (see e.g. Lee, 2004; Park, 1993; Lee, 2015):

(2) *ku-ka* *mwun-ul* *(himkkes)* ***yel****-ess-ciman*,
he-Nom door-Acc with all the strength **open**-Pst-but
mwun-i *cenhye* *yel-li-ci* ***anh****-ass-ta.*
door-Nom at all open-Pass-Comp **Neg**-Pst-Dec
(lit.) 'He opened the door with all his strength, but it was not opened at all' = (roughly) 'He tried to open the door with all his strength, but it was not opened at all.'

- In (2) the subject did some kind of action (e.g. pushing the door) to open the door, but failed.

2. Non-culmination: Korean (3/9)

- Such examples are also found naturally occurring:

(3) ...*Seyjeong-un Yoo Jaesuk-uy meli-ey pak-ul*
Seyjeong-Top Yoo Jaesuk-Gen head-on gourd-Acc
***kkay**-ss-ciman*, *pak-un kkay-ci-ci* ***anh**-ass-ta*.
break-Pst-but gourd-Top break-Pass-Comp **Neg**-Pst-Dec
(lit.) '…Seyjeong broke the gourd on Jaesuk Yoo's head, but the gourd was not broken.'

(http://m.xtorque.xportsnews.com/?ac=article_view&entry_id=758641)

2. Non-culmination: Korean (4/9)

- We note that there is **speaker-to-speaker variation** in which verbs allow non-culmination and how easy it is to get it.

- For example, some speakers who accept *yel-* 'open' on a non-culmination reading may not as easily accept *kkay-* 'break'.

- Several potential reasons:

(i) some types of non-culmination readings are generally ruled out for certain aspectual subtypes of change-of-state predicates

(ii) speakers may differ in how much they tolerate aspectual coercion.

(iii) differences in lexicalization of individual lexical items

2. Non-culmination: Japanese (5/9)

- Some zero result data in Japanese (Ikegami, 1985; Tsujimura, 2003):

(4) ***wakashita*** *keredo, wakanakatta.*

boiled though didn't boil

'*I boiled the water, but it didn't boil.' (Ikegami, 1985: 274)

(5) *sono otoko no sune-o* ***ketta*** *keredo,*

that man's shin-obj. **kicked** though

ataranakatta.

didn't hit.

'*I kicked the man's shin, but missed it.' (Ikegami, 1985: 276)

2. Non-culmination: Japanese (6/9)

- Some verbs do not allow zero result in Japanese (Ikegami, 1985: 273):

(6) **John-wa* *Mary-o* ***koroshita*** *keredomo,*
John-topic Mary-obj. **killed** though
Mary-wa *shinanakatta.*
Mary-topic didn't die
‘*John killed Mary, but Mary didn't die.’

- Social factors?

2. Non-culmination: Salish Languages (7/9)

- Some non-culmination data in Salish languages (Bar-el et al., 2005):

(7) ***máys-en****-lhkan ti q'láxan-a, t'u7 cw7ay t'u7 kw-s*
fix-TR-1SG.SU DET fence-DET but NEG just DET-NOM
tsúkw-s-an
finish-CAU-1SG.ERG
'I fixed a fence, but I didn't finish.' (St'át'imcets)

(8) *kw John na* ***kw'el****-nt-as ta skawts*
DET John RL **cook-TR**-3ERG DET potato
welh haw k-as 7i huy-nexw-as
CONJ NEG IRR-3CNJ PART finish-LC-3ERG
'John cooked a potato but never finished.' (Skwxwu7mesh)

2. Non-culmination: Karachay-Balkar (8/9)

- Non-culmination in Karachay-Balkar (Turkic; spoken in the Caucasus) (Tatevosov 2008: 396, (9))

(9) *Kerim eˇsik-ni* ***ac-xan-d1***, *alaj boˇsa-ma-Kan-d1*.
Kerim door-ACC **open-PFCT-3SG** but finish-NEG-PFCT-3SG
(lit.) ‘Kerim opened the door, but did not finish.’

2. Non-culmination: Other Languages (9/9)

- **Hindi**: Singh (1998), Arunachalam and Kothari (2011)
- **Tamil**: Pederson (2008)
- **Thai**: Koenig and Muansuwan (2000)
- **Chinese**: Koenig and Chief (2008)
- **Tagalog**: Dell (1983)
- **Russian**: Tatevosov & Ivanov (2009)

3. Agent Control Hypothesis (1/3)

- Demirdache & Martin (2015) argue for the **Agent Control Hypothesis** (ACH)

  "[zero result] construals only require the predicate's external argument to be associated with 'agenthood' properties."

- Jacobs (2011) argues that **agent control** ("controlled situations are those in which the agent functions with **usual average capacities** in keeping things under control" from Thompson & Thompson, 1992: 52, cited in Jacobs, 2011: 9) is required for non-culmination readings in Sḵwx̱wu7mesh.

3. Agent Control Hypothesis (2/3)

- In (10), Wiley intended to burn the book, but he was in a difficult situation (Lee, 2015).

(10) [Context: The book was so wet. Wiley was uncertain about whether he could burn the book, but he put it into fire to burn it.]

Wiley-ka ku chayk-ul ***thaywe****-ss-ciman*,
Wiley-Nom that book-Acc **burn**-Pst-but
cenhye tha-ci ***anh****-ass-ta*.
at.all burn-Comp **Neg**-Pst-Dec
(lit.) 'Wiley burned the book, but it did not burn at all.'
= (roughly) 'Wiley tried to burn the book, but it did not burn at al.'

3. Agent Control Hypothesis (3/3)

- The key constraint in Korean is that **the agent intends**; not that the agent is necessarily sure of success.

- If "control" in ACH more broadly means having "**agenthood**" **properties** (as in the definition itself rather than the name of the ACH), Korean does seem to instantiate the ACH.

- **Intentionality** is strongly correlated with **agentivity** (e.g. Dowty 1991: 572, (27) lists the closely related volitionality in his proto-agent properties) and is required for **zero result in Korean**.

4. Intentionality in Zero Result: Adverbs (1/8)

- **Intentional Adverbs**: the zero result (i.e. failed attempt) interpretations entail intentionality on the part of the subject (Lee, 2015; Beavers & Lee, under review):

(11) *ku-ka mwun-ul* ***silswulo*** ***yel****-ess-ciman,*
he-Nom door-Acc **accidentally** **open**-Pst-but
#mwun-i yel-li-ci ***anh****-ass-ta.*
door-Nom open-Pass-Comp **Neg**-Pst-Dec
(lit.) 'He accidentally opened the door, but it was not opened.'

- In (11), when *silswulo* 'accidentally' modifies the predicate, the inherent result of the predicate must actually occur.

4. Intentionality in Zero Result: Mistaken Agent (2/8)

- However, *silswulo* 'accidentally' can also describe the agent's **misunderstanding**, as in (12) (Lee 2016a; 2016b; see similar observations in Martin, 2016)

(12) [A balloon and a ball are in the room. John **intended** to kick the ball and not the balloon, but mistook the balloon for the ball and tried to kick the balloon, thinking it was the ball.]

John-i *pwungsen-ul* ***silswulo*** *cha-ss-ciman, pisnaka-ss-ta.*
John-Nom balloon-Acc **accidentally** kick-Pst-but miss-Pst-Dec
(lit.) 'John accidentally kicked the balloon, but missed it.'

- This might suggest that **non-intentional zero result readings** are possible.

4. Intentionality in Zero Result: Mistaken Agent (3/8)

- However, it is crucial in the context that **there be an intention to kick a particular object** that the speaker believes to have certain properties.

(13) [A balloon and a ball are in the room. John has **no desire** to kick either, but out of boredom makes a random kicking motion near what he thinks is the ball. It is actually the balloon.]

John-i ***pwungsen****-ul* ***silswulo*** *cha-ss-ciman, #pisnaka-ss-ta.*
John-Nom **balloon**-Acc **accidentally** kick-Pst-but miss-Pst-Dec
(lit.) 'John accidentally kicked the balloon, but missed it.'

- The evidence suggests that **intention** is important for zero result interpretation.

4. Intentionality in Zero Result: Mistaken Agent (4/8)

- If *silswulo* 'accidentally' describes the subject's **non-intentionality**, zero result reading is not allowed:

(14) [A balloon and a ball are in the room. John has no desire to kick either, but out of boredom makes a random kicking motion near what he thinks is the ball. It is actually the ball.]

John-i ***kong****-ul* ***silswulo*** *cha-ss-ciman, #pisnaka-ss-ta.*
John-Nom **ball**-Acc **accidentally** kick-Pst-but miss-Pst-Dec
(lit.) 'John accidentally kicked the balloon, but missed it.'

- This again suggests that intention is required for zero result interpretation.

4. Intentionality in Zero Result: Explicitly Intentional Construction (5/8)

- Zero result is similar to explicitly intentional constructions.

- ***P uyto-ka iss-*** entails that the agent **desires** that the result state of *P* actually obtain (Lee 2015 building on Searle, 1983: 3 and Sinhababu, 2013: 1-2):

(15) [Context: John did not want Tom to die.]

#ku-nun Tom-ul cwuk-i-l uyto-ka iss-ess-ta.

he-Top Tom-Acc kill-Caus-Rel intention-Nom exist-Pst-Dec

'He had an intention to kill Tom.'

4. Intentionality in Zero Result: Explicitly Intentional Construction (6/8)

- ***P uyto-ka iss-*** entails that the agent **believes** some causing eventuality (e.g. one explicitly given) will produce the result (Lee 2015; see again Searle, 1983: 3 and Sinhababu, 2013: 1-2).

(16) [Context: John did not know the poison could kill Tom.]

#ku-nun Tom-ul tok-ulo cwuk-i-l uyto-ka

he-Top Tom-Acc poison-Inst kill-Caus-Rel intention-Nom

iss-ess-ta.

exist-Pst-Dec

'He had an intention to kill Tom with poison.'

4. Intentionality in Zero Result: Explicitly Intentional Construction (7/8)

- ***P uyto-ka iss-*** constructions entail **an intention to perform some causing eventuality** (building on Searle, 1983: 80 and Sinhababu, 2013: 3; Jackendoff and Culicover, 2003: 537; Lee 2015; Grano, 2016a: 216-217; Grano, 2016b: 31-39, the latter building on the RESP(onsibility)-relation of Farkas, 1988: 35-40).

(17) [Context: John did not intend to do anything to kill Tom.]

#ku-nun Tom-ul cwuk-i-l uyto-ka iss-ess-ta.

he-Top Tom-Acc kill-Caus-Rel intention-Nom exist-Pst-Dec

'He had an intention to kill Tom.'

4. Intentionality in Zero Result: Explicitly Intentional Construction (8/8)

- Zero result reading also entails all the three components:

(18) [**Context 1**: John did not want the window to be broken.]
[**Context 2**: John did not know that hitting the window could break it.]
[**Context 3**: John bumped into the window by mistake.]
John-i *changmwun-ul* *kkay-ss-ciman,*
John-Nom window-Acc break-Pst-but
#changmwun-i *kkay-ci-ci* *anh-ass-ta.*
window-Nom break-Pass-Comp Neg-Pst-Dec
(lit) 'John broke the window, but it was not broken.'

5. Trying vs. Zero-result: Intentionality (1/3)

- These data suggest that the additional meaning component found in zero result interpretations of caused change-of-state predicates is (or at least overlaps significantly with) the meaning **of *P uytoka iss-*** constructions.

- Thus, **intention** seems to be a component of Korean zero result readings.

- The same pattern is found with ***P nolyekha-*** constructions.

5. Trying vs. Zero-result: Direct Causation (2/3)

(19) [**Context**: Minho was breaking the door to enter the room in order to turn on the light. But he failed to break the door and thus failed to turn on the light.]

#Minho-ka pwul-ul ***khi****-ess-ciman*,
Minho-Nom light-Acc **turn.on**-Pst-but
pwul-ul khi-l swu ***eps****-ess-ta*.
light-Acc turn.on-Rel way **not.exist**-Pst-Dec
(lit.) 'Minho turned on the light, but he could not turn on the light.' (zero-result reading is intended)

- **Zero-result** reading requires some fairly **direct cause** of the result state, but ***try to*** **VP** does not.

5. Trying vs. Zero-result (3/3)

- In short, **zero result** interpretation is more restricted than ***try to* VP** meaning in terms of event occurrence.
- *Try to* VP also entails intention, but vague on result (see Lee, 2015).
- Direct causation is not limited to zero-result — partial result and culmination also require this (see Lee, 2015).

6. Actual result readings: Partial Result & Culmination (1/1)

- The default reading of a Korean caused change-of-state predicate is the reading in which the inherent result of the predicate actually occurs.

- When the result actually occurs **partially** or **completely**, the subject's intention is not required:

(20) *ku-ka* *mwun-ul* ***ilpwule*** / ***silswulo*** *yel-ess-ko,*
he-Nom door-Acc **deliberately** / **accidentally** open-Pst-and
mwun-i ***wancenhi***/ ***cokum*** *yel-li-ess-ta.*
door-Nom **completely** / **little** open-Pass-Past-Dec
'He deliberately/accidentally opened the door, and it was completely / little opened.'

7. Ambiguity: VP-ellipsis (1/4)

- **VP-ellipsis**: the **ambiguity** can be verified by **the identity test** (see Lakoff, 1970; Zwicky & Sadock, 1975):

(21) *Jane-i chayk-ul **taywu**-ess-ko, Max-to **kulay**-ss-ta.*
Jane-Nom book-Acc **burn**-Pst-and Max-also **do.so**-Pst-Dec
(i) 'Jane burned a book and so did Max.'
(actual result readings of the clauses) or
(ii) (roughly) 'Jane tried to burn a book and so did Max.'
(intended result readings of the clauses)

- If *taywu-* 'burn' were **vague** in its meaning, zero result or partial result or culmination should be freely available for either conjunct.

7. Ambiguity: Non-contradiction (2/4)

- **Non-contradiction**: If these verbal predicates are **vague** then both readings should have the same logical content and thus simultaneously asserting and denying the same surface predicate should result in a **contradiction**. However, the following is **not contradictory**:

(22) [Context: Bill tried to open the door, but failed]

Bill-i *mwun-ul* *yel-ess-ciman*,
Bill-Nom door-Acc open-Pst-but
mwun-ul *ye-n* *kes-un* *ani-ta.*
door-Acc open-Rel thing-Top Neg-Dec
(lit.) 'Bill opened the door, but it is not the case that Bill opened the door.'

7. Ambiguity: Zeugma (3/4)

- **Zeugma**: a distributed reading across a conjoined subject in a context where one agent intended but failed to achieve the result and the other accidentally succeeded has a zeugmatic feel to it:

(23) [Context: Bill tried to open the door but failed, and Jane accidentally opened the door.]

?Bill-kwa Jane-i mwun-ul yel-ess-ta.

Bill-and Jane-Nom door-Acc open-Pst-Dec

(lit.) 'Bill and Jane opened the door.'

7. Ambiguity: Multiple readings (4/4)

- These data suggest an analysis in which caused change-of-state predicates are **formally ambiguous** between the two readings:

  (i) **Intended result reading**: one entailing intentionality but vague on a result

  (ii) **Actual result reading**: one entailing a result but vague on intentionality

- Zero result reading is a specific reading of intended result reading.

- Intentional partial result or intentional culmination can be derived from either intended result or actual result reading.

8. Zero Result: Grammatical Subject (1/2)

- **Inanimate subjects** cannot be the subject of zero result sentence:

(24) a. ***opun***-*i* *ppang-ul* *kwu-wess-ciman*,
oven-Nom bread-Acc bake-Pst-but
#ppang-i *kwu-we-ci-ci* *anh-ass-ta*.
bread-Nom bake-Comp-Pass-Comp Neg-Pst-Dec
(lit.) 'The oven baked the bread, but it was not baked.'

b. *Minji-uy* *kulehan* ***hayngtong***-*i* *changmwun-ul*
Minji-Gen such **action**-Nom window-Acc
kkay-ss-ciman, *#changmwun-i* *kkay-ci-ci* *anh-ass-ta*.
break-Pst-but window-Nom break-Pass-Comp Neg-Pst-Dec
(lit.) 'Minji's action broke the window, but it was not broken.'

8. Zero Result: Grammatical subject (2/2)

(25) ***i*** ***sinyak****-i* *ku-lul* *chilyohay-ss-ciman*,
this **new medicine**-Nom he-Acc treat-Pst-but
#ku-uy *sangtay-lul* *cenhye* *pakwu-ci* *anh-ass-ta.*
he-Gen state-Acc at all change-Comp Neg-Pst-Dec
(lit.) 'This new medicine treated him, but it did not change his state at all.'

- But similar sentences (with **an implicit agent**) in French are fine (Martin and Shaffer, in press).

- It must be the referent of **the grammatical subject** that bears the **intention**, not the agent.

9. Passive Constructions (1/2)

- Something similar occurs in passivization, pointing to a still further grammatical constraint on zero result.

(26) *Minji-eyuyhay pwul-i* *khi-e* ***ci****-ess-ta.* *#haciman,*
Minji-by light-Nom turn on-Comp **Pass**-Pst-Dec but
pwul-i *kutaylo* *kke-ci-e* *iss-ess-ta.*
light-Nom same turn off-Pass-Comp exist-Pst-Dec
(lit.) 'The light was turned on by Minji. But it is still turned off.'

9. Passive Constructions (2/2)

- One might explain the passive by saying that the intentions have to be those of the subject DP, but subjects of passives cannot have intention, presumably since they are patient.
- But patient can also have intention:

(27) *Minho-ka koymwul-eykey* ***uytocekulo*** *mek-**hi**-ess-ciman,*
Minho-Nom monster-to **intentionally** eat-**Pass**-Pst-but
Minho-nun kyelkwuk mek-hi-ci anh-ass-ta.
Minho-Top finally eat-Pass-Comp Neg-Pst-Dec
(lit.) 'Minho was intentionally eaten by the monster, but Minho was not finally eaten.' = 'Minho was eaten by the monster and this was what Minho intended, but Minho was not ultimately eaten.'

10. Analysis: Central generalizations (1/8)

- Korean caused change-of-state predicates are ambiguous between **intended result** (entailing intentionality) and **actual result** readings (entailing result).

- Zero result reading is a specific reading of intended result reading.

- **Zero result** reading entails **the intentionality** on the part of **the grammatical subject**.

- **Passive constructions** must have actual result readings whether they be intentional or non-intentional (i.e. no zero result reading).

10. Analysis: Formal framework (2/8)

y = an individual in domain of U_I

s = a state in domain of U_S

d = a degree in domain of U_D

v = a state or an event in domain of U_V

(28) $[[\textit{break}]] = \lambda y \in U_I\, \lambda v \in U_V\, \exists s \in U_S\, \exists d \in U_D$
$[\text{cause}'(v,s) \wedge \text{patient}'(y,s) \wedge \text{broken}'(s,d)]$

"v is the cause of y entering a state s of brokeness to some degree d."

(29) a. [[*the window*]] = **window′**

b. [[*John's action*]] = **john's-action′**

c. [[*John's negligence*]] = **john's-negligence′**

10. Analysis: Formal framework (3/8)

- English caused change-of-state sentences with eventuality subjects:

(30) a. John's action broke the window.

$\exists s \in U_S \exists d \in U_D$[cause′(**john's-action**′,s)
$\wedge$ patient′(**window**′,s) $\wedge$ broken′(s,d)]

b. John's negligence broke the window.

$\exists s \in U_S \exists d \in U_D$[cause′(**john's negligence**′,s)
$\wedge$ patient′(**window**′,s) $\wedge$ broken′(s,d)]

10. Analysis: Formal framework (4/8)

(31) a. [[*John*]] = **john′**

b. [[*John*]] = $\lambda P \exists v \in U_V$ [*effector′*(**john′**,v) $\wedge$ P(v)]

(32) [[*break*]] = $\lambda y \in U_I \lambda v \in U_V \exists s \in U_S \exists d \in U_D$
[*cause′*(v,s) $\wedge$ *patient′*(y,s) $\wedge$ *broken′*(s,d)]

(33) Applying [[break the window]] to (31b):

John broke the window.

$\exists v \in U_V$ [*effector′*(**john′**,v) $\wedge$ $\exists s \in U_S \exists d \in U_D$
[*cause′*(v,s) $\wedge$ *patient′*(**window′**,s) $\wedge$ *broken′*(s,d)]]

10. Analysis: Animate Subject in Korean (5/8)

(34) a. [[*yel*-]] = λyλv ∃ s ∃ d[*cause′*(v,s) ∧ *patient′*(y,s) ∧ *open′*(s,d)]

b. [[*John-i*]] = **john′**

c. [[*John-i*]] = λP ∃ v [*effector′*(**john′**,v) ∧ P(v)]

(35) [[**-Ø$_{active}$**]] = λP[P]

(36) a. [[*yel*-Ø$_{active}$]] =

λyλv ∃ s ∃ d[*cause′*(v,s) ∧ *patient′*(y,s) ∧ *open′*(s,d)]

b. [[*changmwun-ul*]] = **window′**

c. [[*changmwun-ul yel*-Ø$_{active}$-ess-ta]] =

λv ∃ s ∃ d[*cause′*(v,s) ∧ *patient′*(**window′**,s) ∧ *open′*(s,d)]

10 Analysis: Animate Subject in Korean (6/8)

Actual result reading (invovling (34c))**:**

(37) [[*John-i changmwun-ul yel-*$\emptyset_{\text{active}}$*-ess-ta*]] =

$\exists$ v[*effector′*(**john′**,v) $\wedge$ $\exists$ s $\exists$ d[*cause′*(v,s) $\wedge$ *patient′*(**window′**,s) $\wedge$ *open′*(s,d)]]

- An individual *x* intends P iff P is true in all worlds in *x*'s intention set *Ix*, and *x* does not intend P iff there exists some world in *Ix* at which P is false (following Inman (1993)).

(38) [[**-**$\emptyset_{\textbf{active-modal}}$]] = $\lambda P \lambda y \lambda x \exists$ v[*effector′*(x,v) $\wedge$ $\Box_{Ix} P(y,v)$]

(Condition: *I*x $\neq \emptyset$)

10. Analysis: Animate Subject in Korean (7/8)

(39) a. [[*yel*-Ø$_{\text{active-modal}}$]] = $\lambda y \lambda x \exists v$[*effector′*(x,v) $\wedge$
$\Box_{Ix} \exists s \exists d$[*cause′*(v,s) $\wedge$ *patient′*(y,s) $\wedge$ *open′*(s,d)]

b. [[*changmwun-ul yel*-Ø$_{\text{active-modal}}$-ess-ta]] =
$\lambda x \exists v$[*effector′*(x,v) $\wedge$ $\Box_{Ix} \exists s \exists d$[*cause′*(v,s) $\wedge$
patient′(**window′**,s) $\wedge$ *open′*(s,d)]

- **Intended result reading** (invovling (34b)):

(40) [[*John-i changmwun-ul yel*-Ø$_{\text{active-modal}}$-*ess-ta*]] =
$\exists v$[*effector′*(**john′**,v) $\wedge \Box I_{\textbf{john}'} \exists s \exists d$[*cause′*(v,s) $\wedge$
patient′(**window′**,s) $\wedge$ *open′*(s,d)]]

10. Analysis: Inanimate subjects in Korean (8/8)

(41) a. [[*chentwung-i*]] = λP ∃ v [*effector′*(**thunder′**,v) ∧ P(v)]

b. [[*Julia-uy pwucwuuy-ka*]] = **julia's-negligence′**

c. [[*Minji-uy hayngtong-i*]] = **minji's-action′**

(42) a. [[*chentwung-i changmwun-ul yel-*$\emptyset_{\text{active}}$*-ess-ta*]] =
∃ v[*effector′*(**thunder′**,v) ∧ ∃ s ∃ d[*cause′*(v,s) ∧ *patient′*(**window′**,s) ∧ open′(s,d)]]

b. [[*Julia-uy pwucwuuy-ka changmwun-ul yel-*$\emptyset_{\text{active}}$*-ess-ta*]] =
∃ s ∃ d[*cause′*(**julia's-negligence′**,s) ∧ *patient′*(*window′*,s) ∧ *open′*(s,d)]

c. [[*Minji-uy hayngtong-i changmwun-ul yel-*$\emptyset_{\text{active}}$*-ess-ta*]] =
∃ s ∃ d[*cause′*(**minji's-action′**,s) ∧ *patient′*(**window′**,s) ∧ *open′*(s,d)]

11. The CIA (1/3)

- The ambiguity between the intended result reading and actual result reading → The mutual exclusivity of entailments of intentionality and affectedness

- The Complementarity of Intentionality and Affectedness (**CIA**):

  It is **impossible** that the subject of a minimal accomplishment predicate (the combination of a verb and its complement(s) which is a causative accomplishment) must have an **intention** with the inherent result of the predicate and the patient of the predicate must be **affected** at the same time.

11. The CIA (2/3)

- Three logically possible semantic conditions of the CIA:
- **Intended Result**: The subject of a minimal accomplishment predicate must have an **intention** with the inherent result of the predicate, and it is not that the patient of the predicate must be affected.
- **Actual Result:** The patient of a minimal accomplishment predicate must be **affected,** and it is not that the subject of the predicate must have an intention with the inherent result of the predicate.
- **Unspecified Result:** It is not that the subject of a minimal accomplishment predicate must have an intention with the inherent result of the predicate, and it is not that the patient of the predicate must be affected.

11. The CIA (3/3)

- The following sentence does not entail the subject's intention or the result state of the verb:

(43) *ku-ka* ***ilpwule/*** ***silswulo*** *mwun-ul*
he-Nom **deliberately**/ **accidentally** door-Acc
hyanghay *cha-ss-ta.* *haciman* ***pisnaka-ss-ta***
towards kick-Pst-Dec but **miss-Pst-Dec**
/kulayse *mwun-i* ***cha-i-ess-ta.***
so door-Nom **kick-Pass-Pst-Dec**
(lit.) 'He deliberately/accidentally kicked towards the door.
But he missed it./So the door was kicked.'

12. Activity Predicates (1/5)

It seems that Korean **activity verbs** also allow **zero result readings**:

(44) [Context: Lucy's legs were stuck in the mud.]

Lucy-ka *(onhimultahayse)* ***ttwi-ess-ciman***,
Lucy-NOM with all the strength **jump-PST-but**
silcey *ttwi-l* *swu-nun* *eps-ess-ta.*
actually jump-REL way-Top not exist-PST-DEC
(lit.) 'Lucy jumped (with all the strength), but she could not actually jump.'
= (approx.) 'Lucy tried to jump (with all the strength), but she could not actually jump.'

12. Activity Predicates (2/5)

(45) [Context: Lucy's legs were stuck in the mud.]

Lucy-ka *(onhimultahayse)* ***tol-ass-ciman***,

Lucy-NOM with all the strength **spin-PST-but**

silcey *tol-ul* *swu-nun* *eps-ess-ta.*

actually spin-REL way-Top not.exist-PST-DEC

(lit.) 'Lucy spun (with all the strength), but she could not actually spin.'

= (approx.) 'Lucy tried to spin (with all the strength), but she could not actually spin.'

12. Activity Predicates (3/5)

(46) [Context: Lucy's legs were stuck in the mud.]

Lucy-ka *(onhimultahayse)* ***kwul-less-ciman***,

Lucy-NOM with all the strength **roll-PST-but**

silcey *kwu-lul* *swu-nun* *eps-ess-ta.*

actually roll-REL way-Top not.exist-PST-DEC

(lit.) 'Lucy rolled (with all the strength), but she could not actually roll.'

= (approx.) 'Lucy tried to roll (with all the strength), but she could not actually roll.'

12. Activity Predicates (4/5)

- Not all the Korean activity verbs seem to allow zero result readings:

(47) [Context: Lucy's legs were stuck in the mud.]

Lucy-ka *onhimultahayse* ***talli-ess-ciman***,
Lucy-NOM with all the strength **run-PST-but**
?silcey *talli-l* *swu-nun* *eps-ess-ta.*
actually run-REL way-Top not.exist-PST-DEC
(lit.) 'Lucy ran with all the strength, but she could not actually run.'

- The **complexity** of movement somehow causes the difference?

12. Activity Predicates (5/5)

(48) [Context: Lucy was tightly bound.]

Lucy-ka *onhimultahayse* ***chwumchwu-ess-ciman***,
Lucy-Nom with all the strength **dance-Pst-but**
??silcey chwumchwu-l swu-nun eps-ess-ta.
actually dance-Rel way-Top not.exist-Pst-Dec
(lit.) 'Lucy danced with all the strength, but she could not actually dance.'

- If the activity verbs allow zero result readings,
  then they should have a causative event structure unlike English counterparts.

13. Conclusion (1/2)

- Korean (and many other languages) allows **non-culmination readings** (zero result and partial result readings).
- Korean caused change-of-state predicates are ambiguous between **intended result reading** and **actual result reading**.
- **Zero result reading** is a subtype of the intended result reading, which entails intention, but not result.
- **Partial result reading** (and culmination reading) is a subtype of the actual result reading, which entails result, but not intention.

13. Conclusion (2/2)

- The ambiguity between the intended result and actual result readings is derived from **the Complementarity of Intentionality and Affectedness** (**CIA**).

- Some Korean Activity predicates seem to allow zero result readings, suggesting that they actually have a causative event structure.

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