

# Modal Semantics of Korean Bouletic Verbs

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## Introduction: modality of desire

Previous studies have found that 'hope' further delivers the subject's epistemic uncertainty of the embedded proposition, in contrast with 'want', while both express preference.

- Although 'hope' can embed epistemic modals, 'want' cannot (Anand and Hacquard 2013).
- In situations where the desire attitude holder believes that their desire will come true (or not), 'want' seems felicitous, whereas 'hope' would be out of place in such a context (Scheffler 2008; Silk 2018).

## Introduction: modality of desire

**New evidence** that the two verbs have critical differences in terms of their complement clauses and their modality, based on the behavior of the two desire verbs in Korean, *pala-* 'hope' and *wenha-* 'want'.

# Survey

We designed an experiment including the following different sentence conditions

- past-oriented and non-past-oriented complements
- doxastic and non-doxastic complementizers
- adjectives of different modal meanings in the main-clause

Only some of them are assumed to contribute to an epistemic reading of the attitude predicate in the sentence.

Table: Item construction

Variable1	Variable2
<b>VERB</b> <i>pala</i> 'hope', <i>wenha</i> 'want'	<b>1. TEMPORAL ORIENTATION</b> $\emptyset$ (non-PAST)*, <i>ess</i> (PAST), <i>-ess-ess</i> (double PAST)
	<b>2. COMPLEMENTIZER</b> <i>-ki</i> (non-DOX)*, <i>-ul-kka</i> (DOX)
	<b>3. ADJECTIVE</b> $\emptyset^*$ , <i>elyep/hitul</i> 'hard', <i>manha</i> 'probable', <i>swip</i> 'easy'
*: reference conditions	

# Survey

- (1) a. *ku-nun Mina-ka phathi-ey o-ki-lul VERB-ta.*  
he-NOM M.-NOM party-LOC come-KI-ACC VERB-DECL.

'He hopes/wants Mina to come to the party.'

- b. *ku-nun Mina-ka phathi-ey o-ci anh-ul-kka VERB-n cek-i*  
he-NOM M.-NOM party-LOC come-CI NEG-KKA VERB-ADN time-NOM  
*iss-ta.*  
be-DECL

'He once hoped/wanted (that) Mina might come to the party.'

- c. *ku-nun Mina-ka phathi-ey o-ess-(ess)-ki-lul VERB-ta.*  
he-NOM M.-NOM party-LOC come-PAST-(PAST)-KI-ACC VERB-DECL

'He hopes/wants Mina to have come to the party.'

# Survey

- (2) a. *Mina-ka phathi-ey o-ki-lul* VERB-ki ***elyep/himtul-ta***.  
M.-NOM party-LOC come-KI-ACC VERB-KI hard-DECL

'It's hard to hope/want Mina to come to the party.'

- b. *ku-ka Mina-ka phathi-ey o-ki-lul* VERB-l ***manha-ta***.  
he-NOM M.-NOM party-LOC come-KI-ACC VERB-ADN probable-DECL

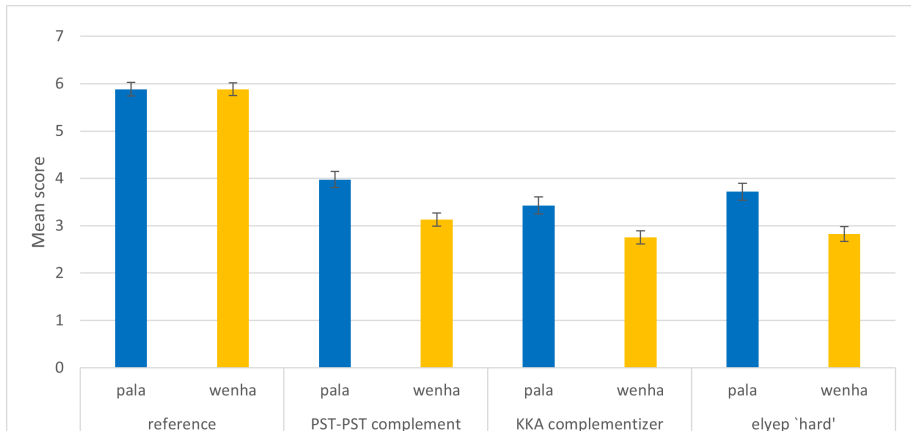
'It's probable that he hopes/wants Mina to come to the party.'

- c. *ku-ka Mina-ka phathi-ey o-ki-lul* VERB-ki ***swip-ta***.  
he-NOM M.-NOM party-LOC come-KI-ACC VERB-KI easy-DECL

'It's easy that he hopes/wants Mina to come to the party.'

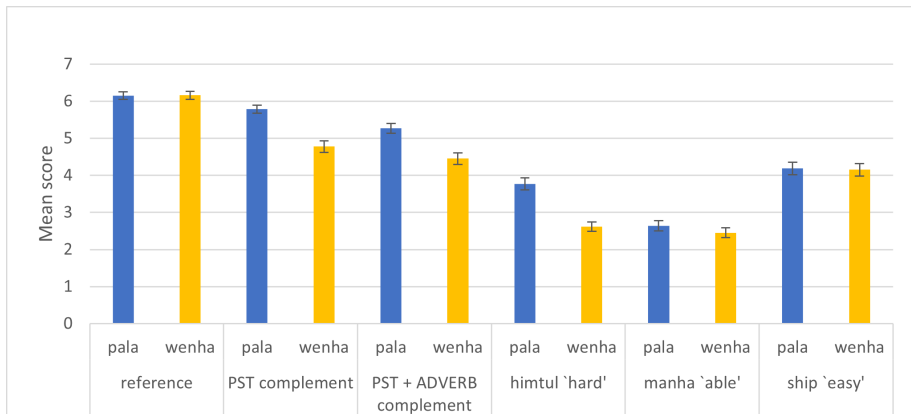


Figure: Experiment 1



# Result

Figure: Experiment 2



# Result

Linear regression analysis enables us to determine which variable contributes to the ratings alone (main effect) and with another variable (interaction effect).

- All types of the non-VERB variables had main effects:
  - ▶ past-orientation, *ul-kka* complementizer, and adjectives decreased the overall ratings (for both *pala-* and *wenha-*) when compared with the reference conditions.

# Result

- The VERB variable interacted with the non-VERB variables.
  - ▶ **Wenha-** was degraded more than **pala-** with past-oriented complements—including single past marker ( $p < 0.001$ ), double past markers ( $p < 0.001$ ), or single past with a past adverbial ‘yesterday’ ( $p < 0.001$ ).
  - ▶ with *ul-kka* complementizer ( $p < 0.01$ ).
  - ▶ with *himtul/eleyp-* ( $p < 0.001/p < 0.001$ ), and not with *manha-* or *swip-*.

## The *ul-kka* complement with epistemic uncertainty

- (3) *ku-nun hok Mina-ka ttena-l-kka [pala-/?wenha-]ko iss-ta.*  
he-TOP maybe M.NOM leave-KKA [hope/?want]CONJ PROG-DECL

'He hopes (that) Mina might leave.'

## The *ul-kka* complement with epistemic uncertainty

- In Kang and Yoon (2018), *ul-kka* is labeled as a ‘subjunctive interrogative complementizer’ (SUBJ.Q-Comp).

(4) a. *Mina-nun ku-ka phathi-ey o-nun-ci mwulepo-ass-ta.*  
M.-TOP he-NOM party-LOC come-ADN-CI ask-PST-DECL

‘Mina asked whether he would come to the party.’ (inquiry verb)

b. ?*Mina-nun ku-ka phathi-ey o-l-kka mwulepo-ass-ta.*  
M.-TOP he-NOM party-LOC come-KKA ask-PST-DECL

Intended: ‘Mina asked if he might come to the party.’

(5) a. *Mina-nun ku-ka phathi-ey o-nun-ci kwungkumha-ess-ta.*  
M.-TOP he-NOM party-LOC come-ADN-CI wonder-PST-DECL

‘Mina wondered whether he would come to the party.’

b. *Mina-nun ku-ka phathi-ey o-l-kka kwungkumha-ess-ta.*  
M.-TOP he-NOM party-LOC come-KKA wonder-PST-DECL

‘Mina wondered if he might come to the party.’

## The *ul-kka* complement with epistemic uncertainty

- The subjective uncertainty reading of *ul-kka* comes from its unique interrogative semantics. Unlike normal interrogatives, the question of *ul-kka* is about the possible answers of the speaker, not the addressee's—at least not overtly.
- It always communicates the doubt or conjecture of the speaker, as reported in the literature (Park 2004; Kim 1979; Seo 1987).

(6) [Situation: The speaker asks oneself looking out the window:]

- a.    *onul-un*     *pi-ka*     *o-{l-kka/#ni/#ci/#wa}?*  
today-TOP rain-NOM come-INT

## The *ul-kka* complement with epistemic uncertainty

- Kang and Yoon further attribute the effect of the epistemic uncertainty reading of *ul-kka* to a subjectively non-veridical state (Giannakidou 1998). It refers to an individual epistemic state which is yet undecided as to  $p$  (7).

(7) Subjective non-veridicality of *ul-kka* (Kang and Yoon 2018)

With respect to an individual  $i$  and a proposition  $p$ ,

$\exists w \in M(i) : p(w) = 1 \wedge \exists w \in M(i) : \neg p(w) = 1$ ,

where  $M(i)$  is the epistemic state of  $i$ .



## The *ul-kka* complement with epistemic uncertainty

- The epistemic uncertainty of *ul-kka* is also identifiable when it combines with a psych predicate.

(8) a. *ku-nun Mina-ka ttena-l-kka twulyew-ess-ta.*  
he-TOP M.-NOM leave-KKA fear-PST-DECL

'He feared (that) Mina might leave.'

b. *ku-nun Mina-ka ttena-ci anh-ul-kka uysimha-ess-ta.*  
he-TOP M.-NOM leave-CI NEG-KKA doubt-PST-DECL

'He doubted (that) Mina might leave.'

c. *ku-nun hok Mina-ka ttena-l-kka pala-ko iss-ess-ta.*  
he-TOP maybe M.NOM leave-KKA hope-CONJ PROG-PST-DECL

'He hoped (that) Mina might leave.'

## The *ul-kka* complement with epistemic uncertainty

- However, *ki* has a relatively broader distribution than *ul-kka*. *Ki* can naturally combine with psych verbs, directive verbs, modal predicates, etc. that do not require non-veridical readings, not only the ones that require it (9a).
- Instead, since *ki* is not an interrogative complementizer, it cannot combine with inquisitive verbs such as *kwungkumha-* ‘wonder’, or with dubitative verbs such as *uysimha-* ‘doubt’.

# The *ul-kka* complement with epistemic uncertainty

- (9) a. *ku-nun Mina-ka ttena-ki-lul pala-ess-ta.*  
he-TOP M.-NOM leave-KI-ACC hope-PST-DECL  
'He hoped Mina to leave.' (epistemic psych predicate)
- b. *ku-nun Mina-wa ket-ki-ka mwusep-ess-ta.*  
he-TOP M.-CORN walk-KI-NOM afraid.PST-DECL  
'He was afraid to walk with Mina.' (psych predicate)
- c. *ku-nun Mina-wa ket-ki-lul wenha-ess-ta.*  
he-TOP M.-CORN walk-KI-ACC want.PST-DECL  
'He wanted to walk with Mina.' (preference predicate)
- d. *ku-nun Mina-ka ttena-ki-lul yokwuha-ess-ta.*  
he-TOP M.-NOM leave-KI-ACC demand.PST-DECL  
'He demanded Mina to leave.' (directive predicate)
- e. *sewul-un cihachel-ul iyongha-ki-ka swip-ta.*  
seoul-TOP subway-ACC use-KI-NOM easy-DECL  
'Seoul is easy to use the subway.' (evaluative predicate)

## elyep-/himtul- 'hard' in a modal scale

- *Elyep-* expresses a negative attitude of the speaker.

(10) a. *Mina-ka tolao-ki elyep-ta.*  
M.-NOM return-KI hard-DECL

'Mina is unlikely to come back.'

b. *Mina-ka iltung-ul ha-ki elyep-ta.*  
M.-NOM first.place-ACC do-KI hard-DECL

'Mina is unlikely to get first place.'

- In (11), the difficulty denoted by *elyep-* is in terms of the preceding predicate, *mit-* 'believe, or *sangsangha-* 'imagine'.

(11) *Jisu-ka phathi-ey kan-ta-ko mit/sangsangha-ki elyep-ta.*  
J.-NOM party-LOC go-DECL-CONJ believe/imagine-KI hard-DECL

'It is hard to believe/imagine that Jisu would come to the party.'

## elyep-/himtul- 'hard' in a modal scale

- *Elyep-* can hardly follow non-epistemic (or psychological) verbs and modals, such as deontic and ability modals (12a-b), and psych verbs (12c).

(12) a. ?*Mina-ka tolawa-yaha-ki elyep-ta.*  
M.-NOM return-have.to-KI hard-DECL

Intended: 'It is hard for Mina to have to come back.'

b. ?*Mina-ka tolaol-su-iss-ki elyep-ta.*  
M.-NOM return-be.able-KI hard-DECL

Intended: 'It is hard for Mina to be able to come back.'

c. ?*Mina-ka phathi-ey o-nun kes-ul [twulyeweha/kippeha]-ki*  
J.-NOM party-LOC come-IMPRF thing-ACC [afraid/glad]-KI  
*elyep-ta.*  
hard-DECL

Intended: 'It is hard to fear/(be)glad that Mina comes back.'

## elyep-/himtul- 'hard' in a modal scale

- Other adjectives exhibit a pattern dissimilar to that of *elyep-*. The positive attitude of the speaker conveyed by *manha-* 'probable' or *swip-* 'easy' isn't limited to epistemic modal claims and attitudes.

(13) a. *Mina-ka tola-yaha-l manha-ta.*  
M.-NOM return-have.to-ADN probable-DECL

'It is probable for Mina to have to come back.'

b. *Mina-ka tolaol-su-iss-ul manha-ta.*  
M.-NOM return-be.able-ADN probable-DECL

'It is probable for Mina to be able to come back.'

c. *Mina-ka phathi-ey o-nun kes-ul [twulyeweha/kippeha]-l*  
J.-NOM party-LOC come-IMPRF thing-ACC [afraid/glad]-ADN  
*manha-ta.*  
probable-DECL

'It is probable to fear/(be)glad that Mina comes back.'

## elyep-/himtul- 'hard' in a modal scale

- (14) a.  $\llbracket [p] \text{ elyep- 'hard' } \rrbracket$   
It is hardly the case  $[p]$
- b. \* $\llbracket \llbracket [p] \text{ -yaha- 'must' } \rrbracket \text{ elyep- 'hard' } \rrbracket$   
It is hardly the case  $[\text{must}_{\text{deontic}}[p]]$
- (15) a.  $\llbracket [p] \text{ swip- 'easy' } \rrbracket$   
It is easily the case  $[p]$
- b.  $\llbracket \llbracket [p] \text{ -yaha- 'must' } \rrbracket \text{ swip- 'easy' } \rrbracket$   
It is easily the case  $[\text{must}_{\text{deontic}}[p]]$

## elyep-/himtul- 'hard' in a modal scale

(16)  $\llbracket \llbracket [p] P \rrbracket \text{elyep- 'hard'} \rrbracket$

It is hardly the case  $[P(a,p)]$  where  $P$  is a predicate of:

- a. \*emotive: *kippeha-* 'glad', *sewunhayha-* 'sad', *twulyepeha-* 'fear' etc.
- b. \*preference: *wenha-* 'want', *cohaha-* 'like', *silheha-* 'hate' etc.
- c. epistemic (knowledge/belief/dubitative): *al-* 'know', *mit-* 'believe', *sangsangha-* 'think (imagine)', *uyshimha-* 'doubt', *pala-* etc.

(17)  $\llbracket \llbracket [p] P \rrbracket \text{swip- 'easy'} \rrbracket$

It is easily the case  $[P(a,p)]$



## elyep-/himtul- 'hard' in a modal scale

- (18) a. *Mina-ka nayil tolao-ki-lul pala-ki elyep-ta.*  
M.-NOM tomorrow return-KI-ACC hope-KI hard-DECL

'It is unlikely that Mina would come back tomorrow.'  
(lit.: 'It's hard to hope Mina to come back tomorrow.')

- b. ?*Mina-ka tolao-ki-lul wenha-ki elyep-ta.*  
M.-NOM return-KI-ACC want-KI hard-DEC.

Intended: 'It is unlikely that Mina would come back tomorrow.'  
(lit.: 'It's hard to want Mina to come back tomorrow.')

- The construction *pala-ki elyep (himtul)-* conveys the speaker's negative attitude regarding the possibility of the event referred to by the embedded proposition.

## elyep-/himtul- 'hard' in a modal scale

- (19)  $[[p] \textit{pala-}] \textit{elyep-}$  'hard to hope  $p$ '
- a. It is hardly the case  $p$  is possible
  - b. ?It is hardly the case  $p$  is preferable over  $\neg p$

## elyep-/himtul- 'hard' in a modal scale

- Although it is unusual, *wenha-ki elyep-* seems to become slightly more acceptable when the speaker turns the attention to the relevant context, as shown in (20). The phrase 'ilen sanghwang-eyse-nun' ('in this case') introduces a specific state of the utterance context.

(20) *ilen sanghwang-eyse-nun* [ *Mina-ka tolao-ki-lul wenha-ki* ] *elyep-ta*.  
this circumstance-LOC-TOP M.-NOM return-KI-ACC want-KI hard-DECL

'In this case, it is unlikely that anyone wants Mina to come back.'

- In this case, (20) might be more acceptable than (18b) since the contextual information of the phrase can serve to interpret *elyep-*.
- The beginning phrase can play a part in the interpretation of *wenha-* as a verb in the embedded proposition ( $p$ ), rather than as an embedding verb ( $P$ ).

# Conclusion

- *Pala-* is an epistemic verb, whereas *wenha-* is a non-epistemic desire verb.