The Interaction of *-ess* in Korean Possibility Modal *–ul-swu-iss*: An Experimental Study

JEONGHWA CHO
University of Michigan

1   Introduction

In many cases, modals are ambiguous between epistemic and root interpretation. For example, the English auxiliary *must* can be interpreted as both epistemic and root.

(1) I guess it must be up to me.
(2) You must leave now.

<div align="right">(Butler, 2006, p.172)</div>

The sentence in (1) has an epistemic interpretation in that it expresses the speaker's attitude toward the possibility of a certain event. On the other hand, (2) has a root meaning, where the speaker is describing a requirement imposed on the subject rather than his own attitude. Such ambiguity also exists

in other languages, including French, German, Tamil, Finnish, Greek, Yoruba, and Catalan (Butler, 2006).

Likewise, Korean possibility modal *–ul-swu-iss* has both epistemic and root readings:

(3) Chelswu-nun   kicha-lul   ta-Ø-l   swu
    Chelswu-TOP   train-ACC   take-NONP-COMP   BN
    iss-e.
    AUX-DEC
    a. "It is possible that Chelswu takes the train." (epistemic)
    b. "Chelswu has the ability to take the train." (ability(root))

(3) can either refer to the speaker's belief that the event of Chelswu taking the train is possible (3a) or Chelswu's ability to take the train (3b).

This issue becomes even more complicated when the modal *-ul-swu-iss* interacts with the verbal suffix *–ess*, which denotes past tense or perfect aspect. Interestingly, this verbal suffix can be placed at different positions, resulting in different scope relations.

(4) Chelswu-nun   kicha-lul   ta-**ss**-l   swu
    Chelswu-TOP   train-ACC   take-**ess**[1]-COMP   BN
    iss-e.
    AUX-DEC

(5) Chelswu-nun   kicha-lul   ta-Ø-l   swu
    Chelswu-TOP   train-ACC   take-NONP-COMP   BN
    iss-**ess**-e.
    AUX-**ess**-DEC

In (4), *-ess* is attached to the root of the lexical verb *ta-* and has a narrower scope than the modal. On the other hand, in (5), *-ess* is attached to the root of the auxiliary verb *iss-*, having a wider scope than the modal. In this paper, the construction in (4) will be referred to as *–ess-ul-swu-iss* and the construction in (5) as *–ul-swu-iss-ess*.

Meanwhile, existing studies are inconsistent in regards to how sentences like (4) and (5) are interpreted. There are mainly two issues regarding the

---

[1] There is a controversy over the meaning of *–ess*. While some studies (Lee, 1987; Lee, 2007) argue that it is mainly a past tense morpheme from which perfect meaning is derived, others claim that its function as a past tense marker is derived from aspectual marker (Yang, 2008) or that the morpheme has two separate meanings at the same time (Yeom, 2010). This paper does not take a particular position, and hence will simply mark it as "*ess*".

interpretation. The first issue concerns whether (4) and (5) have different meanings and if they do, how they are different. According to Mun (2016), (4) and (5) are clearly distinct from each other. (4) has an epistemic interpretation, that the speaker thinks that "It is possible that Chelswu took the train." In this case, the speaker does not know whether Chleswu actually took the train or not. In contrast, (5) conveys root modal interpretation with actuality implicature, meaning that "Chelwsu had the ability to take the train and indeed he did." Unlike in (4), the speaker in (5) not only describes the speaker's ability but also has the knowledge about how the event (i.e. Chelwsu taking the train) turned out. The paper adds that when the actuality implicature is cancelled, (5) can indicate counterfactual meaning, that "Chelswu had the ability to take the train but he didn't take the train."

On the other hand, in Myung (2018), the distinction becomes less clear-cut. She claims that (5) has a root modal interpretation, which is in line with Mun (2016). Nevertheless, she reports that in some cases, both (4) and (5) can convey epistemic and counterfactual interpretations. In summary, while both Mun (2016) and Myung (2018) mention epistemic, root and counterfactual readings as possible candidates for (4) and (5), they differ in which of the readings each sentence can convey, with Myung (2018) arguing for more overlap between the two sentences.

The second issue concerns the role of desirability on the interpretation of the modal expression, especially on root modal. According to Mun (2016), sentences like (5) has root modal reading with actuality implicature only when the event produces a desirable outcome. This is because she analyzes ability interpretation of *-ul-swu-iss* as having a "choosing" component in it where the subject choosing to take an action to make the event happen is better for the subject than the event not happening. For instance, the interpretation in (3b) that "Chelswu has the ability to take the train" also means that i) the subject Chelswu can choose whether to take the train and ii) taking the train is a better option for Chelswu than not taking it. Given this definition, Mun (2016) argues that when *-ul-swu-iss* combines with −*ess* that has a wide scope (*-ul-swu-iss-ess*), the modal expression gets an extra conversational implicature that the subject indeed chose to make the event happen. Similarly, Kang, Xu and Park (2018) argues that the actualization meaning of −*ul-wsu-iss* (*-ess*) is possible only when the event is desirable. In this case, the meaning of the modal is expanded to evaluative modality, where the speaker expresses his/her subjective attitude toward certain events. When a person says (5), for example, he/she is implying that Chelswu took the train and he/she thinks it is a desirable outcome. If Mun (2016) and Kang et al. (2018)'s claim is true, then there remains a question of how the modal is interpreted when it

is used with undesirable events and how desirability interacts with sentences like (4). Nevertheless, none of the two studies discuss this question.

Overall, although the interaction of *–ess* with *–ul-wsu-iss* has been investigated in several studies, there is a lack of consensus among them. This is in part because there has been no study to this date that systematically compared the two constructions. Most studies include only a few sentences constructed by the author(s) and rely on the author's intuition or judgment of a few native speakers. While Myung (2018) deals with more natural examples excerpted from corpus data, it has some shortcomings that makes it hard to make a meaningful comparison. The examples are from different contexts, which might impose a certain way of interpretation. Also, it does not provide any quantitative data, such as frequencies of each interpretation for the two constructions, so it is hard to tell how common each interpretation is. Moreover, the study includes *-ul-swu-to-iss* constructions in the same category with *–ul-swu-iss*. However, the former construction with an additional particle *–to* (too) attached in fact has a slightly different meaning from the latter. For example, the example in (6) has *–to* attached to *–swu* and the whole construction *-ess-ul-swu-to-iss* is interpreted as counterfactual. If the particle *–to* is removed, however, the counterfactual interpretation becomes awkward.

(6) 2500-ye-myeng Nyucillayntu am-hwanca,   Hocwu-ey
     2500   New Zealand cancer-patient   Austrailia-in
     sal-a-ss-ta-myen   sayngcon-hay-ss-ul   swu-to   iss-ta.
     live-PAST-DEC-if   survive- **(e)ss-**COMP BN-too   AUX-DEC

"If the 2,500 cancer patients in New Zealand had lived in Australia, they might have survived"

(Myung, 2018, p.15)

In this light, this study attempts to add empirical data on the interpretation of *–ul-swu-iss* in interaction with *–ess* by means of a semantic acceptability judgment task. In specific, this study addresses two following questions: 1) how the position of the temporal/aspect marker *–ess* in *-ul-swu-iss* modulates its description of uncertain, actualized and unactualized events and 2) in the case that (5) conveys actualization implicature, whether it is modulated by desirability of an event.

2 Experiment

2.1 Participants
Fifty-four native speakers of Korean (mean age: 25.8, twenty-three male) participated in the study. They were recruited via word of mouth or university community website. All participants were university students living in Seoul, South Korea.

2.2 Test materials
24 test materials were used in the experiment (examples presented in Table 1 and Table 2). They varied in terms of POSITION (–*ess-ul-swu-iss* vs. –*ul-swu-iss-ess*), DESIRABILITY (desirable vs. undesirable) and RESULT (actualized vs. unactualized vs. uncertain), under the assumption that actualized result relates to root interpretation, unactualized to counterfactual, and uncertain to epistemic.

Table 1. Test materials (desirable events)

Desirable
[Actualized]
Chelswu had to take a train to meet his family. Yenghuy knows that he arrived at the station at the right time for the train. Later, she heard that Chelswu actually got aboard and said:
[Unactualized]
Chelswu had to take a train to meet his family. Yenghuy knows that he arrived at the station at the right time for the train. Later, she heard that Chelswu couldn't' get aboard and said:
[Uncertain]
Chelswu had to take a train to meet his family. Yenghuy knows that he arrived at the station at the right time for the train, but doesn't know whether he actually got aboard. She said:

  a. Chelswu-nun kicha-lul   ta-**ss**-ul   su iss-e.
     Chelswu-TOP train-ACC take-**ess**-COMP BN AUX-DEC
  b. Chelswu-nun kicha-lul   ta-Ø-l   su iss-**ess**-e.
     Chelswu-TOP train-ACC take-NONP-COMP BN AUX-**ess**-DEC

    "Chelswu could take the train"

Table 2. Test materials (undesirable events)

Undesirable
[Actualized] Yenghuy's sister was looking for something to eat and found a piece of bread on a table. Yenghuy knew the bread was rotten and later heard her sister ate the bread. Yenghuy said:
[Unactualized] Yenghuy's sister was looking for something to eat and found a piece of bread on a table. Yenghuy knew the bread was rotten and later heard her sister did not eat the bread. Yenghuy said:
[Uncertain] Yenghuy's sister was looking for something to eat and found a piece of bread on a table. Yenghuy knew the bread was rotten but does not know whether her sister ate the bread. Yenghuy said:

a. Enni-nun sang-han ppang-ul mek-**ess**-ul swu iss-e.
   sister-TOP rotten bread-ACC eat-**ess**-COMP BN AUX-DEC
b. Enni-nun sang-han ppang-ul mek-Ø-ul swu
   sister-TOP rotten bread-ACC eat-NONP-COMP BN
   iss-**ess**-e.
   AUX-**ess**-DEC

"My sister could eat the rotten bread"

In order to control DESIRABILITY and RESULT, a short scenario was constructed for each test item. Each scenario included two characters: a speaker Yenghuy and an acquaintance of Yenghuy (e.g. Chelswu in Table 1), who played a subject role. The events that were described in the scenario was either desirable or undesirable to the subject (12 desirable and 12 undesirable) with one of the three results: actualized, unactualized, and uncertain. The actualized result denotes the situation where the event (e.g. Chelswu taking the train) actually happened and the speaker knows it. The unactualized result denotes the situation where the event did not happen (i.e. Chelswu did not take the train) and the speaker is aware of it. Finally, the uncertain result refers to the situation where the speaker does not know whether the event happened or not.

At the end of the scenario, a sentence was given that includes the modal expression *-ul-swu-iss* but where the position of *–ess* is either before the modal (*–ess-ul-swu-iss*) or after the modal (*–ul-swu-iss-ess*). 24 filler items were included with a similar structure (i.e. a sentence followed by a scenario).

2.3 Procedure

An online semantic acceptability judgment task was conducted. Each participant read a pair of a scenario and a sentence for 24 test materials and 24 filler items, and judged whether it is acceptable for the speaker to say the given sentence on a 7-point Likert scale (1: very awkward, 7: very natural). The items were counterbalanced so that one participant saw the same item only once.

2.4 Data analysis

Acceptability judgment scores were normalized and converted as z-scores. Then a linear regression model was conducted with the z-scores as a dependent variable, RESULT, POSITION, and DESIRABILITY as independent variables, and participant and item as random effects. Finally, main effects and interaction effects of the independent variables were computed using likelihood ratio test.

3 Result

Figure 1 shows the mean z-scores of acceptability for the two sentence types (-*ess-ul-swu-iss* and -*ul-swu-iss-ess*), plotted separately for desirable (on the left panel) and undesirable (on the right panel) events.

Statistical analysis revealed significant interactions between POSITION and RESULT ($p<.001$) and DESIRABILITY and RESULT ($p<.001$). In post-hoc tests, the main effect of RESULT was significant for both -*ess-ul-swu-iss* ($p<.001$) and -*ul-swu-iss-ess* ($p<.001$). For -*ess-ul-swu-iss*, description of uncertain events was significantly more acceptable than that of unactualized and actualized events ($p<.001$). For -*ul-swu-iss-ess*, the acceptance score for unactualized events was the highest, followed by uncertain and actualized events. The difference among the three results was significant for both desirable ($p=.004$) and undesirable events ($p<.001$).

In regards to the interaction of DESIRABILITY and RESULT, the main effect of DESIRABILITY was significant for actualized and unactualized events. For actualized events, DESIRABILITY had a significant effect for –*ul-swu-iss-ess* ($p<.001$), with desirable events being judged more acceptable than undesirable events. For unactualized events, the effect of DESIRABILITY was significant for both -*ess-ul-swu-iss* ($p=.01$) and –*ul-swu-iss-ess* ($p<.001$), with undesirable events getting higher acceptability scores.
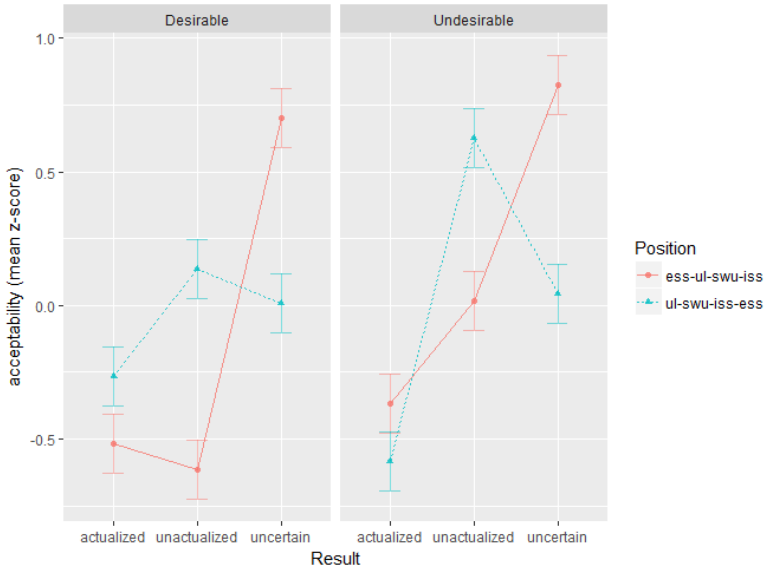
Figure 1. Acceptability judgement scores

4 Discussion

This paper conducted a semantic acceptability judgment task in order to elucidate the interpretation of –*ess-ul-swu-iss* and –*ul-swu-iss-ess*. The results show a clear difference of the two constructions, indicating that the different scope of –*ess* in relation to the possibility modal –*ul-swu-iss* results in different meanings. To be specific, when the modal scopes over -*ess* (–*ess-ul-swu-iss*), it mainly derives epistemic meaning whereas -*ess* scoping over modal (–*ul-swu-iss-ess*) mostly derives counterfactual meaning. Moreover, it was found that desirability of an event certainly modulates the modal's interpretation, not only for root modal but also for counterfactual modal.

The most striking finding comes from the interpretation of –*ul-swu-iss-ess*. In contrast to previous research that have focused on its root modal interpretation and actuality implicature, the judgment task in the current study suggests that people primarily interprets it as counterfactual. In fact, the root modal interpretation was rated as the least acceptable among the three possible readings. One possible explanation for this result can be found in Condoravdi (2002). Condoravdi (2002) captures that English modal *might* can yield counterfactual meaning if it is scoped over by perfect aspect. For example, the sentence *he might have won* can mean that "he might have won the game at one point in the past but he didn't." Condoravdi (2002) argues that

this counterfactual reading is based on metaphysical modality where the speaker refers to a future possibility in the past. In Condoravdi (2002)'s terms, it has a *future* orientation and a *past* perspective. Here, the speaker is saying about a possible world that existed in the past where "he could win," although he is aware that the event was not actualized in the real world. This contrasts to epistemic reading of *he might have won*, which has a *future* orientation and a *present* perspective. In the epistemic reading, the speaker intends to say (according to his knowledge at present) "it is possible that he won." The speaker does not know whether the event was actualized or not.

The counterfactual reading comes from backtracking by having perfect scope over modal. That is, in the case where perfect scopes over modal, the temporal perspective is back-shifted to the past. Then the speaker becomes able to refer to alternative worlds that in fact did not turn out to be true. In a similar vein, if −*ul-swu-iss* follow's Condoravdi (2002), *-ess* scoping over −*ul-swu-iss* would also result in moving the temporal perspective to the past, whether it be a past tense marker or a perfect aspectual marker. On the other hand, the temporal perspective remains to be present when −*ess* has a narrower scope than −*ul-swu-iss*, yielding epistemic reading. Indeed, the result of the current study exactly shows this pattern, and this indicates that the interpretation of Korean possibility modal is in line with Condorovdi (2002)'s proposal.

In regards to desirability, it was found that whether the event is desirable or not significantly influences the interpretation of −*ul-swu-iss* in terms of counterfactual modal as well as ability modal. This suggests the possibility of −*ul-swu-iss* as an evaluative modal, as suggested in Kang et al. (2018). Not only does the acceptability increases when one describes a desirable event that is actualized, but the acceptability also increases for an undesirable event that is not actualized. In either way, *-ul-swu-iss* can be interpreted as a positive evaluative expression in non-epistemic contexts, by which the speaker expresses relief—that the final outcome is a more favorable one than the counterpart, i.e. unactualization of desirable events or actualization of desirable events.

5   Conclusion

There has been disagreement among previous studies in regards to how the verbal suffix −*ess* interacts with Korean possibility modal expression −*ul-swu-iss* to yield different interpretations. The current study attempted to provide empirical data on how *-ess–ul-swu-iss* and *-ul-swu-iss-ess* constructions

are interpreted via a semantic acceptability judgment task. The results indicate that the two constructions have different meanings; *-ess–ul-swu-iss* is interpreted as epistemic whereas *-ul-swu-iss-ess* is interpreted as counterfactual. Moreover, it was found that desirability of an event modulates acceptability of certain modal interpretations (i.e. root and counterfactual), suggesting that possibility modal may function as evaluative modal in non-epistemic readings. Given that other languages also involve ambiguous modals, future research may include exploring cross-linguistic similarities and differences in the interaction of temporal/aspectual morphemes and desirability with modal expressions.

References

Butler, J. (2006). The Structure of Temporality and Modality:(or, Towards deriving something like a Cinque Hierarchy). *Linguistic Variation Yearbook* 6(1):161-201.

Condoravdi, C. (2001). Temporal interpretation of modals-modals for the present and for the past. *The Construction of Meaning*.

Kang, Y., Xu, C., & Park, J. (2018). On the 'realization' meaning of possibility expressions - '*-ul swu iss-*' and its counterparts in Japanese and Chinese. *Cross-cultural Studies* 50:313-346.

Lee, C. (1987). Temporal expressions in Korean. *The Pragmatic Perspective*, eds. J. Verschueren & M. Bertuccelli-Papi. 435-447. Amsterdam: Benjamin.

Lee, E-H. (2007). Dynamic and stative information in temporal reasoning: Interpretation of Korean past tense markers in narrative discourse. *Journal of East Asian Linguistics* 16:1-25.

Mun, B. (2016). The interaction of modality and tense in Korean (Doctoral dissertation, Georgetown University).

Myung, J. (2018). The interaction of modality and tense of '*-eul su iss-*'. *Korean Linguistics* 82:1-29.

Yang, J. (2008). The morphosyntax of temporal elements in Korean. *Korean Journal of Linguistics* 33:693-722.

Yeom, J. (2010). Semantics and pragmatics of *-ess* in Korean. *Language Research* 462:199-236.