Two types of subjunctive in Korean: Interaction between inquisitiveness and nonveridicality

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1   Introduction

The goal of current study is to investigate a novel paradigm of subjunctive mood in Korean. Subjunctive mood selection refers to the linguistic phenomenon when the complement of certain propositional attitude verbs appears in a subjunctive form. Recently, an extended spectrum of subjunctive mood has been suggested: First, unlike the traditional view, subjunctive can be also marked on subordinate complementizers in modern Greek and Balkan languages (Giannakidou & Mari 2017):

(1) Thelo   **na/*oti**   kerdisi   o   Janis.   [Greek]
    want-1sg   that.SBJV/that.IND   win.NONPAST-3SG   the   John
    'I want John to win.'

Second, contrary to general conception, mood is shown to be variable. In Italian, in (2), the doxastic verb *crede* 'believe' allows flexibility in mood selection between the indicative with stronger belief and the subjunctive with weaker belief (Mari 2016; Mari & Portner 2018).

(2) Gianni   crede   che   Maria   **é/sia**   incinta.   [Italian]
    G.   believes   that   M.   be.3sg.IND/be.3sg.SUBJ   pregnant
    'Gianni believes that Mary is pregnant.'

Compared to the extensive research conducted in Indo-European languages, the precise nature of Korean subjunctive has yet to be systematically explained, except for some preliminary works (Yoon 2011, 2013; Kang & Yoon 2019a,b, 2020). Just like Indo-European languages, Korean subjunctive exhibits the above two aspects of extended spectrum: First, Korean subjunctive mood can be marked on the subordinator C appearing in the "inquisitive" subordinate C position. Second, Korean subjunctive exhibits mood flexibility, along with Italian. In this work, our main data is two different types of interrogative complementizers which correspond to 'whether' in English. The criteria of interrogative complementizers in Korean are subdivided into two parts, i.e. the ordinary interrogative complementizer *nci* and the modalized interrogative complementizer *nka* and *lkka.* They are inquisitive in that they co-occur with rogative verbs *kwungkumha* 'wonder':

(3) Mina-nun Inho-ka   pathi-ey   o-nu.**nci**/o-nu.**nka**/o-**lkka**   **kwungkumha**-ta.
    M.-Top   I.-Nom   party-Loc come-**whether** /NKA/LKKA   wonder-Decl
    'Mina wonders whether Inho would come to the party.'   [Korean]

Among them, the function of *lkka* and *nka* involves modal exponents and they bring about subjunctive effect in that they yield *subjectively weaker commitment interpretation*. For example, when *lkka* and *nka* combine with the polysemous verb *siph* that has four potential interpretations 'want/believe/hope/intend,' a doxastic meaning is chosen; a conjectural reading (i.e. 'believe but not know') arises with *nka* in (4b) while a dubitative reading arises with *lkka* in (4c). Here the dubitative meaning is achieved by the addition of presupposition of unlikelihood on the conjectural interpretation. In so doing, the speaker expresses her non-commitment to the truth of propositional content, which is the main function of subjunctive:

(4) *Context: Kim asks Mina if Inho is coming to the party. With uncertainty, Mina says:*
    a. *Inho-ka   pathi-ey   o-nu.**nci**   siph-e.   [Korean]
       I.-Nom   party-Loc   come-whether   believe-Decl
       '(intended) I am uncertain whether Inho will come to the party.'
    b. Inho-ka   pathi-ey   o-nu.**nka**   siph-e.
       I.-Nom   party-Loc   come-NKA   believe-Decl
       'I am **uncertain** that Inho will come to the party.'
    c. Inho-ka   pathi-ey   o-**lkka**   siph-e.
       I.-Nom   party-Loc   come- LKKA   believe-Decl
       'I **doubt** that Inho will come to the party.'
       ≈ 'I am **uncertain** that Inho will come to the party (although it is **unlikely** to happen).'

Moreover, the emotive *fear* reading is only available for *lkka*. In (5), *lkka* manifests an unfortunate possibility which will be realized. It has a presupposition of undesirability:

(5) Inho-ka   pathi-ey   *o-nu.**nci**/*o-nu.**nka**/o-**lkka**   twulyewo-e.   [Korean]
    I.-Nom   party-Loc   come-whether/NKA/LKKA   fear-Decl
    'I **fear** that Inho will come to the party (although it is **undesirable** to happen).'

Our main research questions are as follows: First, what are the semantic functions of two types of modalized complementizers in Korean? Second, what does it tell us about the universality and variation of the subjunctive phenomena across Korean and other languages? In exploring the empirical dimension, we aim to suggest a crosslinguistically extended paradigm of subjunctive mood. Assuming that inquisitive subjunctive complementizers combine with nonveridical predicates to mark a speaker/subject's attitude in partitioned modal base, we show how the semantic role of inquisitive subjunctive in Korean can be captured under the general theory of *nonveridical subjectivity* i.e. consideration of doxastic, epistemic, bouletic and emotive spaces (Giannakidou & Mari, forthcoming).

2   Empirical observation

2.1. Distributional restriction on attitude predicates

Before jumping into the main discussion, we briefly discuss the types of attitude predicates that subjunctive complementizers take. Building on Lahiri (2002), we assume the following classification of question embedding predicates into rogative (e.g. *wonder, ask*), and responsive predicates. The rogative verb takes only an interrogative complement, whereas the responsive verb takes both declarative and interrogative complements. The responsive predicates are further subcategorized into veridical responsive (e.g. *know, remember, forget, be surprised*) and nonveridical responsive (e.g. *be certain, agree on, conjecture about*). Responsive predicates are characterized by the fact that they express a relation between an attitude holder and a proposition which is an answer to the embedded question, as follows (Égré & Spector 2007):

(6) a.   Veridical-responsive: "Mina knows whether Inho will come to the party" is true
         Iff Mina knows *p*, where *p* is the *true answer* to "will Inho come to the party?"
    b.   Nonveridical-responsive: "Mina is certain whether Inho will come to the party" is
         true iff Mina is certain that *p*, where *p* is a *possible answer* to "will Inho come to the party?"

(6a) entails that Mina's knowledge corresponds to actuality as to whether Inho comes to the party, whereas (6b) is true even if Mina believes that Inho comes to the party while in fact it isn't.

    Now let us examine Korean data. Table 1 below summarizes the co-occurrence pattern of various types of attitude predicates and inquisitive complementizers we observed above. Inquisitive

subjunctive complementizers in Korean show the following crucial characteristics. First, *nka* and *lkka* cannot cooccur with veridical responsive predicates. They should appear in the complement of nonveridical attitude predicates that express a relation to the potential answers. Second, *nka* and *lkka* cannot combine with the nonveridical responsive predicates with high certainty *hwaksinha* 'be certain'. They are sensitive to subjective nonveridicality.

Attitude predicates \ Complementizers		*nka*	*lkka*
Anti-rogative	*mit* 'believe'	*	*
Rogative	*kwungkumha* 'wonder'	√ 'wonder'	√ 'wonder'
Veridical responsive	*al* 'know'	*	*
Nonveridical responsive	*hwaksinha* 'be certain'	*	*
	siph 'want/believe/hope/intend'	√ 'conjecture'	√ 'doubt'
	po 'see/fear/seem'	√ 'conjecture'	√ 'fear'
	molu 'not.know/conjecture'	√ 'conjecture'	√ 'doubt'
	twulyewoha 'fear'	*	√ 'fear'

Table 1. the co-occurrence pattern of various types of attitude predicates and subjunctive C

As shown above, when combining with nonveridical responsive, *nka* yields a conjecture reading whereas *lkka* gives rise to a doubt/fear reading. Based on the types of attitude predicates, we suggest an inquisitive subjunctive system in Korean with the following dichotomy:

(7) Subtypes of subjunctive in Korean
 a. Inquisitive belief: *nka*
 b. Inquisitive doubt/fear: *lkka*

2.2. Difference between *nka* and *lkka*
Importantly, in unembedded clauses, the main role of *lkka* and *nka* is as a marker of modalized questions (MQs, henceforth) (Kang & Yoon 2020). Unlike the ordinary information-seeking questions whose purpose is to receive a true answer from the hearer (Hamblin 1973; Karttunen 1977; Groenendijk & Stokhof 1984), a MQ is used to express a speaker's epistemic uncertainty or conjecture on the given propositional content. In the MQ in (8), the speaker *John* assumes that 'today is Friday' has a good possibility of being true, while allowing a possibility of being false at the same time:

Context: John is not sure whether today is Friday or not. With uncertainty, John says (to himself):
 (8) a. onul-i   kumyoil-i-**nka**?   [Korean]
    today-Nom Friday-be-NKA
    'Maybe today is Friday, maybe not?'
   b. onul-i   kumyoil-i-**lkka**?
    today-Nom Friday-be-LKKA
    'Might today be Friday?'

By using a MQ, a speaker considers a set of possibilities of the given propositional content. MQ is a question about the possibility of the proposition.

 Despite their overall similarities as MQ markers, *nka* and *lkka* differ from each other since the latter involves a strong irrealis mood with the non-actualizations (i.e. the realm of the unrealized), which makes two crucial differences. First, unlike *nka, lkka* may presuppose a counterfactual possibility in an unembedded clause:

(9) *Context: Although Inho is aware that Santa Clause does not exist in the real world, he wonders how old Santa would be if he exists. Inho asks Mina:*

Santa-ka   issta-myen,   santha-nun   myech-sal-i-****nka**/myech-sal-i-**lkka**?   [Korean]
Santa-Nom   exist-if   Santa-Top   what-age-be-NKA/LKKA
'How old might Santa Clause be if he exists?'

In the counterfactual context in which Santa exists, only *lkka* can be felicitously uttered. This shows that only *lkka* can form a counterfactual inquiry.

Second, in an embedded clause, *lkka* is compatible with expletive negation (EN) while *nka* and *nci* is not (Yoon 2011, 2013). When combined with EN, the meaning of *lkka* in emotive predicates is akin to *lest* in English:

(10) a. Inho-ka   pathi-ey   o-ci-anh-*nu.**nka**/o-ci-anh-u.**lkka**   siph-e.   [Korean]
       I.-Nom   party-Loc   come-Comp-Ex.Neg-NKA/LKKA   believe-Decl
       'I conjecture that Inho might come to the party (although it is unlikely to happen).'
     b. Inho-ka   pathi-ey   o-ci-anh-*nu.**nka**/o-ci-anh-u.**lkka**   twulyewo-e.
       I.-Nom   party-Loc   come-whether/NKA/LKKA   fear-Decl
       'I fear lest Inho might come to the party (although it is undesirable to happen).'

Given the set of empirical data, a distinct characteristic between *nka* and *lkka* can be captured as follows. Unlike in *nka*-complement, we can assume an existence of (covert) negative operator in *lkka*-complement which implicates an unlikely and undesirable attitude (cf. dual interpretation of fear and doubt reading in French EN (Mari & Tahar 2020)). Accordingly, we can get the distinct type of interpretation in inquisitive subjunctive in Korean as follows:

(11) a. Inquisitive belief: Epistemic subject/speaker expresses a conjecture on proposition in a partitioned doxastic modal base
     b. Inquisitive doubt: Epistemic subject/speaker expresses a low-likelihood conjecture on proposition in a partitioned doxastic modal base
     c. Inquisitive fear: Bouletic subject/speaker expresses undesirability on proposition in a partitioned emotive modal base

3   Analysis: semantics of inquisitive subjunctive

We propose that the addition of *nka* or *lkka* in embedded clauses produces a weakening, subjective nonveridicality effect. Building on Giannakidou and Mari (forthcoming), we treat (non)veridicality as a property of subjective spaces. The proposed semantics shows how *nka* and *lkka* express the speaker's perspective towards p by achieving a partition in the modal base where the sets of worlds are separated into p and non-p worlds as follows:
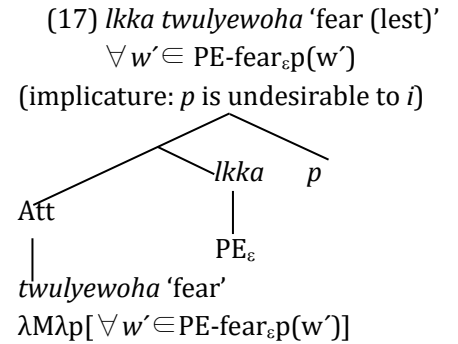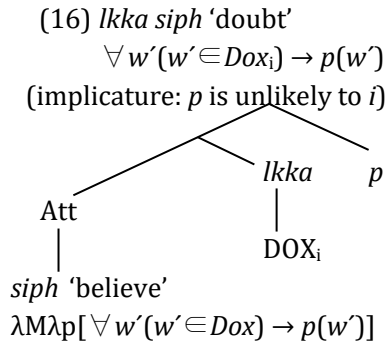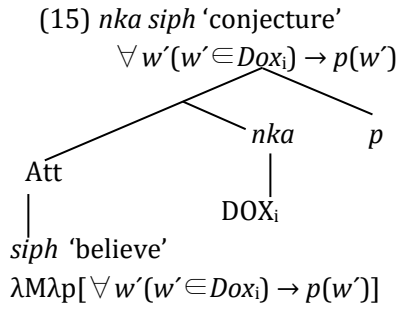
(12) Subjective nonveridicality of subjunctive: A function F that takes a proposition p as its argument is subjectively nonveridical with respect to an individual epistemic or bouletic anchor i in M(i) iff: $\exists w' \in M(i): \neg p(w') \wedge \exists w'' \in M(i): p(w'')$

Given this, and attitude predicates of inquisitive belief and fear in (13) and (14), three different types of inquisitive subjunctive complements are suggested in (15)-(17):

(13) *siph*: $[\![i \text{ believe } p]\!]^{M,Dox(i)}$ is defined iff M(i) is partitioned doxastic modal base. If defined,
     $\forall w'(w' \in Dox) \rightarrow p(w')$

(14) *twulyewoha*: $[\![i \text{ fear } p]\!]^{M,PE\varepsilon}$ is defined iff $\forall w' \in PE\text{-fear}_\varepsilon p(w')$

where PE=$\{w' \in \varepsilon : w'$ where the propositions are true$\}$ and ε is a set of emotive worlds containing p and $\neg p$ (emotive nonveridicality)

(15) *nka siph* 'conjecture'
$$\forall w'(w' \in Dox_i) \rightarrow p(w')$$

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            nka      p
      Att
         DOX_i
siph 'believe'
λMλp[∀w'(w'∈Dox_i) → p(w')]
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(16) *lkka siph* 'doubt'
$$\forall w'(w' \in Dox_i) \rightarrow p(w')$$
(implicature: p is unlikely to i)

```
            lkka     p
      Att
         DOX_i
siph 'believe'
λMλp[∀w'(w'∈Dox) → p(w')]
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(17) *lkka twulyewoha* 'fear (lest)'
$$\forall w' \in \text{PE-fear}_\varepsilon p(w')$$
(implicature: p is undesirable to i)

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            lkka     p
      Att
         PE_ε
twulyewoha 'fear'
λMλp[∀w'∈PE-fear_ε p(w')]
```

4   Conclusion and implications

In this talk, we show that there are three distinct mechanisms within Korean and European subjunctive marking: First, Korean subjunctive can be formally marked at the level of inquisitive subordinator C. Second, it exhibits rather flexible distributions with respect to the selection by attitude predicates. Third, subjunctive marking has semantic contribution of commitment weakening rather than merely reflecting modal properties. We thus suggest that Korean subjunctive is situated as in Table 2 based on Marques (2004):

	Context where the proposition p occurs				
	Veridical			Non-veridical	
	Reality			Non-reality	
	Non-epistemic	Epistemic		Non-epistemic	Epistemic
	be good that p	*know that p*	*imagine that p*	*want that p* *fear that p*	*conjecture that p* *doubt that p*
Romanian, Hungarian, (Modern) Greek	INDICATIVE			SUBJUNCTIVE	
Portuguese	INDICATIVE		SUBJUNCTIVE		
Italian, Catalan, Spanish, French	SUBJUNCTIVE	INDICATIVE		SUBJUNCTIVE	
Korean	INDICATIVE			SUBJUNCTIVE *lkka*	SUBJUNCTIVE *lkka , nka*

Table 2. modal contexts and selection of indicative or subjunctive in complement clauses

Theoretical implications of the current analysis include the following: First, we identify a novel type of subjunctive mood marker that falls under the realm of inquisitiveness. Our findings imply that the tight connection of inquisitiveness, subjunctive, and polarity can be incorporated within a unified perspective of nonveridicality.

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