Expressing prediction and epistemicity with Korean -(u)l kes-i and Mandarin Chinese hui

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Abstract

Due to the non-factual nature of futurity, there is an ongoing ambiguity between modality and futurity. The same ambiguity persists in Korean -(u)l kes-i and Mandarin Chinese hui that both express an estimation of the likelihood that the state of affairs will be realized in the world, involving the speaker’s conjecture. A conjecture can be a statement expressing a prediction about what might happen or an epistemic assumption that draws a conclusion about the past and current course of events. This paper aims to show that -(u)l kes-i can express both prediction and epistemicity whereas the use of hui is limited to prediction. The present paper argues that -(u)l kes-i encodes the reasoning process which can be reversible from cause to consequence and consequence to cause, whereas hui encodes linkage between events in a forward direction whereby cause precedes consequence.

Keywords: -(u)l kes-i, hui, conjecture, prediction, epistemicity, cause, consequence

1 Introduction

Commonly, -(u)l kes-i and hui both encode prediction based on the speaker’s observation. In Korean, -(u)l kes-i, which is based on a periphrastic construction, is explained by Kim (1987) as expressing the speaker’s volition or supposition and is used for both a definite future and a probable present or past. In addition, the adnominal ending -(u)l adds uncertainty as it indicates that an event has not yet occurred.

(1) kkamakwi-ka wul-ko   iss-ta
crow-Nom cry-Con exist-Dec
mwen-ka pwulkiha-n il-i
something-Nom be:ominous-Adn thing-Nom
ilena-1 kes-i-ta
happen-Adn thing-Cop-Dec
‘A crow is crying. Something bad will happen’. (Kim 2012:39)

Abbreviations used in this paper: Acc (accusative), Adn (adnominal), Cl (classifier), Cop (copula), Comp (complementizer), Con (Connective), Dec (declarative), Ind (indicative morpheme), Nom (nominative), Nmlz (nominalization), Prs (present), Pst (past), Part (particle), Sfp (sentence-final particle), Top (topic)

1 -(u)l kes-i is a combination of an adnominal form -(u)l and the pronominal kes ‘thing’ and the copula i ‘be’.
2 A reviewer made a comment that instead of -(u)l kes-i as a modal auxiliary, the meanings of prediction and epistemicity can better be attributed to the adnominal ending -(u)l as opposed to -(nu)n. There has been an approach to dividing -(u)l and -(nu)n as irreals and reals markers, which involves the concept of modality and defines them as modal markers. However, there is an ongoing debate over the usage of -(u)l. Pak (2009) argues that -(u)l still requires a periphrastic construction such as -(u)l kath to fully express the speaker’s conjecture. Lim (2008) defines -(u)l kes-i as an epistemic modal that draws a conclusion based on common knowledge. Given this, this paper defines -(u)l kes-i as a modal marker instead of a modal auxiliary.
3 Abbreviations used in this paper: Acc (accusative), Adn (adnominal), Cl (classifier), Cop (copula), Comp (complementizer), Con (Connective), Dec (declarative), Ind (indicative morpheme), Nom (nominative), Nmlz (nominalization), Prs (present), Pst (past), Part (particle), Sfp (sentence-final particle), Top (topic)
In Mandarin Chinese, without morphological tenses, it is commonly believed that other factors such as tense and aspect particles contribute to expressing futurity. The modal auxiliary verb *hui* ‘may, will’ presents the speaker’s judgment of the possibility of a situation.⁴ Fei Ren (2008) argues that when using *hui*, the speaker makes a predication based on what is observed and evaluates the possibility of a situation at the moment of speaking, based on information not explicitly stated in the sentence.

(2) Kan yangzi,  *hui* xiayu
Look-appearance, Mod-rain
‘It looks like it will rain.’ (Zhu 1982: 63)

As seen above, -(u) kes-i and *hui* express a prediction which is derived from the construction that q is contingent upon p. Lim (2008: 222, 237-238) claims that -(u) kes-i is an epistemic modal marker that draws a conclusion based on common knowledge and denotes a conjecture based on internally-processed information. As a result, -(u) kes-i expresses the speaker’s conjecture based on the knowledge or beliefs of the speaker or others, as opposed to -keys that expresses the speaker’s conjecture based on the speaker’s perception on the spot or his/her perceptivity, as illustrated below by Lim:

(3) a. ya, masiss-keyss-ta
   oh, be:delicious-Mod-Dec
   ‘Oh, it must be delicious.’

b. ne-to masiss-ul ke-ya
   you-too be:delicious-Adn-Sfp
   ‘you will like it too.’

Lim explains that (3a) denotes the speaker’s conjecture about the food that is just ordered on the spot, whereas (3b) implies a conjecture based on past knowledge about the food that the speaker is already acquainted with.

In his analysis of Mandarin Chinese modal verbs, *neng* and *hui*, Min (2007: 77) argues that *neng* and *hui* are often found in complex sentences, in which *hui* establishes the presence of a logical and causal relation between the main and subordinate clauses, in contrast to *neng* that does not imply causation. According to Jiun-Shiung Wu (2010), *hui* involves a statement based on knowledge, whereas *jiang* expresses a pure future in which the speaker simply presents a situation that will occur in the future without providing any information.

Puente, et al. (2009) explain that causation is a useful way of generating knowledge and providing explanations and is a type of relationship between two entities, cause and effect, and at the same time, causality not only concerns causal statements but also conditional sentences. In conditional statements, causality emerges from the relationship between antecedent and consequent.

In addition to this common feature of -(u) kes-i and *hui*, the process of predicting an effect from a cause can also be reversed, and reasoning backward requires the process of inferring a cause from an effect. In terms of two reasoning processes, this paper aims to examine how -(u) kes-i and *hui* are realized: 1) in predictive statements, constructed in the cause to consequence order, including generics and habituals in which general information is used to predict future consequences; 2) in epistemic statements⁵ which provide an account of the state of the conjecture from the known effect; and 3) in the causal and conditional constructions through a corpus investigation. It will be argued that in the cause to consequence (p→q) order, -(u) kes-i and *hui* are both used to denote prediction, while in the consequent to cause (q→p) order, only -(u) kes-i can be applied to express an epistemic assumption.

## 2 Predictions and Generics/Habituals

Prediction entails a causal relationship in which the cause under a certain condition gives rise to the effect. According to Dancygier (1998), in the construction of predictive conditionals, a causal

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⁴ Mandarin Chinese *hui* is a polysemous modal auxiliary. Chang (2000), Hsieh (2002), Liu (1996: 40-51), etc. claim that *hui* expresses a future/prediction meaning, a generic meaning, a habitual meaning and an epistemic meaning. -(u) kes-i is also known to express different meanings. Seo (1978) claims that -(u) kes has five meanings: undefined object, prediction, intention, command, and explanation.

⁵ Sweetser (1984, 1990) has argued for a distinction between content conditionals and epistemic conditionals, which follow the speaker’s reasoning process and set up an epistemic space. Reasoning processes operate either from known cause to likely effect, or from known effect to possible cause. Effect-to-cause reasoning is frequently manifested in epistemic conditionals.
relation between the two events exist and then creates an environment that entails a sequential relation, as illustrated by Dancygier (1998:86) in the following example:

(4) a. If Mary goes to the dentist, she’ll be late.

Like the English will, in Korean and Mandarin Chinese, -(u)l kes-i and hui are used to express prediction.

(4) b. Mali-nun chikwa-ey ka-myen nuc-ul Mary-Top dentist-at go-if be:late-Adn
   thing-Cop-Dec
   c. Mali ruguo qu yake jiu hui chidao Mary-if -go-dentist-then-Mdl-be:late

Not only in a typical conditional which predicts a likely result in the future if the condition is fulfilled, but also in past hypothetical and counterfactual situations whereby a prediction about the occurrence of a hypothetical or counterfactual event is still contingent on the given circumstance, -(u)l kes-i and hui are equally used to denote a hypothetical predictive meaning as illustrated in (5):

(5) a. ku-ka sala-iss-ta-myen nay phyen he-Nom be:alive-exist-Dec-if my side
tul-ess-ul kes-i-ta take-Pst-Adn thing-Cop-Dec (from Internet)
   ‘If he were alive, he would have taken my side.’
   b. youqi ruguo xianzai hai huo zhe yiding youqi-if -now-still:alive-Part-certainly hui hen gaoxing ba Mod-very-happy-Part
   ‘If Youqi were alive, he would be very happy’. (Mi(迷): 175)

The cause-consequence order is also argued to be found in generic truths and habitual actions which are often expressed by will in English. Ziegeler (2006) claims that will can indicate generics due to the operation of inductive inferences by generalizing from the truth of p (at all times, including the future) to p as a future event. In the similar manner, in Mandarin Chinese, hui can indicate genericity. With regard to hui, Ilijic (1985) argues that the predictive meaning of hui comes from the generalization of a potential property as in “When the fruit on the tree is ripe, it will naturally fall down” (shushang de guozi shu le ziran hui diao xia).

As seen in the following examples, will and hui are both used to indicate generic truths.

(6) a. Oil will float on water. (Huddleston 1995)
   b. you yudao shui hui piao zai shui mianshang oil-meet-water-Mod-float-in-water-above
   c. kilum-un mwul-ey tuu-ki oil-Top water-at float-Comp
   malyen-i-ta provision-Cop-Dec

Unlike (6a) and (6b), -(u)l kes-i cannot be used to express generality as seen in (6c). In Korean, law-like events are expressed by other modals such as -ki maryeonida or nun pep ita, or a generic truth is realized using an if-statement constructed with a regular declarative sentence in the main clause. Park (2013) claims that in Korean, generic truths are constructed by an if-clause with the Korean conditional marker that encodes a strong belief of the speaker towards the proposition of the apodosis, as illustrated by Park (2013:295):

(7) pi-ka manhi o-myen kang-mwul-i Rain-Nom a lot come-if river-water-Nom
   pwt-nun-ta.
   flood-Ind-Dec
   ‘If it rains a lot, the river will flood’.

Generality that describes generic characteristics exists as repeatable events, and this repetitive propensity of will and hui can also express habituality as in (8a) and (8b), in contrast to (8c) in Korean which describes a habitual behavior as a fact in the unmarked indicative form.

(8) a. They’ll go on for hours without speaking to each other using a specific subject. (Huddleston 1995)

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6 According to Ziegeler (2006:140), the difference between hypothetical and counterfactual concepts is the absence and presence of contextual knowledge.
b. ta meitian dou hui wushui  
he-everyday-also-Mod-take:a:nap  
‘He takes a nap everyday’

c.  ku-nun mayil naccam-ul ca-n-ta  
he-Nom everyday nap-Acc sleep-Ind-Dec

In Korean, not only generality but also habituality is expressed by a specific modal that describes a habitual event or an if-statement accompanied by the indicative form in the main clause as in (9a) and (9b).

(9) a. kutul-un yennyensayng i-la  
they-Top siblings:born:within:a:year be-as  
kotcal tathwu-kon ha-n-ta  
often argue-Comp do-Ind-Dec  
‘Since they are born within a year of each other, they tend to argue often.’ (Internet)
b. kutul-un manna-ki-man ha-myen  
they-Top meet-Nmlz-only do-if  
tathwu-n-ta argue-Ind-Dec  
‘Whenever they meet, they argue.’ (Internet)

In the cause-to-effect reasoning which is a typical process of predicting an event from a piece of knowledge, -(a) kes-i and hui can both be used to express a conjecture in hypothetical and counterfactual situations as well. In the same vein, generics and habituals are constructed on the cause-consequence structure to predict an event which is not yet actualized. Ziegeler (2013) claims that in generics, the English modal will allows for a possible future prediction to be made. In Mandarin Chinese, like the English will, hui is often used to indicate generic and habitual events, whereas Korean denotes generality and habituality through specific modals or an if-statement constructed with the unmarked declarative main clause to indicate a factual statement.  

As will be presented later in epistemicity, not only in a causal conjunction but also in a conditional conjunction, when there is a strong causal relation with an apparent sequentality, Korean uses the indicative form to describe factual knowledge or belief, in contrast to Mandarin Chinese that employs hui. Let us consider (10):

(10) a. ku-key ppalli meku-myen cheyha-n-ta  
That-thing fast eat-if indigest-Ind-Dec  
‘If you eat fast, you will have stomachache.’ (Park 2013: 291)
b. ruguo ni chi de tai kuai, jiu hui shanghai  
if-you-eat-Part-too-fast, then-Mod-damage  
ni de wei you-Gen-stomach  
(吃对了，病就少)

3 Epistemicity and assumptions

A process of prediction can be reversed. With backward reasoning, an inference can be derived in the consequence to cause order. Dancygier (1998:86) claims that causal and predictive sentences can be seen as reversed, expressing inferences, not predictions, and the relation is based on assumptions as in:

(11) “If Mary is late, she went to the dentist”.

According to Dancygier, since epistemic conditionals are non-predictive, they are infelicitous with hypothetical forms, and the epistemic modal ‘must’ can be used, which is then understood as ‘it means that’.

In Mandarin Chinese, hui cannot be used to express an epistemic relation. Instead, it is rephrased with epistemic modals such as yinggai. However, the Korean modal -(u) kes-i can still be applied to denote this reasoning process in the reverse direction, as illustrated in (12):

(12) a. manyak kil-i cec-ess-ta-myen, ecey  
in:case road-Nom wet-Pst-Dec-if, yesterday  
pam-ey pi-ka w-ass-ul kes-i-ta  
night-at rain-Nom com-Pst-Adn-thing-Cop-Dec  
(Yeom 2005:11)
b. ruguo di shi le, zuotian yinggai/*hui  
If-ground-wet-Part, yesterday-Mod  
xia guo yu come-Part-rain
‘If the road is wet, last night, it must have rained’

In fact, in Korean, -(u)l kes-i can also be used with the causal connective -nikka. Park (2013:155) shows that the reading of the causal connective -nikka is determined by the presence of a modal in the main clause. In his analysis about the Korean causal connective -nikka, Park presents that if the proposition of the main clause includes an epistemic modal such as thullimepsta ‘must’ or -(u)l kesita ‘will’, -nikka encodes a reason to justify the outcome of the main clause. On the other hand, if a modal is not realized in the proposition of the main clause, the nikka clause just expresses causality.8

As observed above in generics and habituals, in Korean, generic and habitual statements with a tight causal relation can also be realized by an if- construction with the unmarked indicative form in the main clause, while a predictive statement that indicates a specific outcome contingent upon a specific piece of information is expressed by -(u)l kes-i.

In contrast, in Mandarin Chinese, when expressing a causal conjunction with a causal connective yinwei, hui cannot have an epistemic meaning that expresses the speaker’s epistemic assumption but still encodes a linkage between propositions in which q is contingent on p as in (13):

(13) yinwei you ai, cai hui qidai because-exist-love, only-then-Mod-expect ‘We expect because there is love.’ (a novel title)

Then, the question remains why in epistemic relations, -(u)l kes-i remains applicable. The reason can be found in the fact that -kes-i, which can also be realized in combination with -(m)n to indicate present and past situations, actually offers a reason for an inference made from the known facts. Jung (2016) argues that the most essential function of -(m)n kes-i is to explain a cause or reason derived from the background knowledge as in (14):

(14) ku-nun “Eureka”-lako oychi-myew mwul he-Nom ‘Eureka’-as shout-while water pakk-ulo ttwichyenaw-ass-ta. outside-to come:out-Pst-Dec ← haykyel-pangan-ul palkyenha-n kes-i-ta solution-Acc discover-Adn thing-Cop-Dec ‘He jumped out of the bathtub, shouting, Eureka! He found a solution.’ (Jung 2016:250)

Lycan (2002) argues that explanation and epistemology are closely related, since the notion of explanation is itself exactly an epistemic notion. The function of kes-i to provide an account of reason is also supported by Foong et al. (2011:485) who claim that kes-i entails an epistemic meaning of strong probability, since kes-ita as in -(m)n kes-i itself encodes the presence of evidence, which is presupposed by the speaker. In addition to the justification of a reason embedded in kes-i, due to the meaning of -(u)l that indicates non-actuality 9, -(u)l kes-i can provide predictive and epistemic readings at the same time depending on the reasoning process.

Unlike -(u)l kes-i, hui is based on the cause-and-effect reasoning that normally entails sequentiality, which then naturally encodes prediction, but it cannot derive an inference to justify the accepting of a conclusion as seen in (12b).

The fact that hui in positive statements especially with a stative verb that describes a state of being cannot have an epistemic reading can be supportive of this claim. It has been observed that the epistemic meaning of hui is more natural in negatives and interrogatives (Tsang 1981).10 The meaning of hui in positive statements is not epistemic, as illustrated by Tsang (1981:155):

(15) a. Ta hui bu hui shi ge jingcha?

‘Because the sun has set, it is dark outside.’

9 Lim and Chang (1995) explain that the relativizer -l denotes an event status that the event has not yet occurred, whereas the relativizer -n expresses a past situation and the relativizer -nun, progressiveness.

10 Palmer (1986) explains that this is possibly because negatives and interrogatives are non-assertive, which reinforces uncertainty.
especially in realis contexts, *hui appears to express an epistemic claim instead of a prediction, as the utterance expresses a realis state at some point in the past. However, it is actually impossible to make an epistemic conjecture about definite things. In fact, in realis contexts, *hui does not encode an epistemic assumption by reasoning backwards but still a prediction by reasoning forward just from the event time set in the past. Let us consider the examples illustrated by Lu (1999:278) as in (16):

(16) a. mei xiang dao hui zhenme shunli
   Not-think-Part-Mod-this-smoothly
   ‘It was not expected that things would go so smoothly.’
   b. ta zenme hui zhidao?
   he-how-Mod-know
   ‘How would he know?’

Lu explains that when expressing probability, *hui can be used in realis situations. As a matter of fact, (16a) and (16b) indicate surprise at an unexpected realization. In other words, they reflect the speaker’s surprise as something goes against what was predicted at some point in the past. The hypothetical sense becomes stronger when the subject in (16b) is replaced by the first person as in the following example (17) which yields a counterfactual conditional reading, ‘If X did not happen, I would not know Y’.

(17) wo zenme hui zhidao ne?
   I-how-Mod-know-Sfp?

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11 In the original text, ‘Ta hui shi yi ge jingcha’ was translated as ‘he will be a policeman’. However, in this paper, it is translated as ‘he will become a policeman’ to make it clear that it has a predictive reading, as opposed to the epistemic will which was proposed by Huddleston as in ‘That will be the postman’ which receives an epistemic reading due to the stativity of the complement verb ‘be’.

12 Papafragou (2006) and Dorr & Hawthorne (2010) claim that epistemics are often taken to express possibilities given what the speaker knows.

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How would I know this?

In fact, in an epistemic statement, the first person subject cannot be allowed, since it does not make sense that the speaker questions his own state of knowledge. As such, in the interrogative form, -(u)l kes-i is not allowed. According to Yeom (2005), in Korean, when the speaker states something in a strong and definite way, -(u)l kes-i is infelicitous in interrogatives. Instead, -(u)l kka, combined with -kka, an interrogative sentence-type suffix, can be used, however its usage is allowed only with the second and third person subjects as in (18).

(18) *nay-ka/ney-ka/chelswu-ka sayngkak ha-ki
   *I-Nom/you-Nom/Chelswu-Nom think-Nmlz
   ey ku mwuncey-ka eyewu-l-kka?
   Top that question-Nom difficult-Adn-Int?
   ‘*As for me/as for you/as for Chelswu, this question would be difficult?’
   (Yeom 2005:16)

In addition to the infelicitous use of *hui in positive statements accompanied by stative verbs, when referred to past events, the use of *hui in positive statements is not allowed either for epistemicity. Nuyts (2001:196) claims that the chances for an epistemic reading increase when there exists a discrepancy between the time of the state of affairs and that of the qualification. Let us consider the example as illustrated by Iljic (1985):

(19) zuotian wanshang ta yinggai (*hui) zai jia li
   yesterday-night- she-Mod -at-home-inside
   ‘Last night, she must have been at home.’

Yang (2006) claims that when predicting past events, sometimes with a past time adverbial, *hui denotes a law-like event that occurred in the past, however, when the verb itself indicates pastness in combination with particles such as le and guo, *hui
cannot be used. Instead, *keneng* indicates probability as illustrated by Yang (2006) in (20):

(20) yao fuguan keneng jie guo hun
    yao-general-may - marry-Part
    ‘General Yao may have been married.’

The examples in (19) and (20) do not predict what might happen in the future but derive a conclusion from what is already known. As seen in (19) and (20), *hui* is not allowed in the backward process as in \( q \rightarrow p \). However, in Korean, the epistemic readings in (15c), (19), (20) can be expressed by -(*ul*) *kes-i* with no such restriction.

4. Corpus investigation

In order to further investigate how the features of *hui* and -(*ul*) *kes-i* are realized in cause-effect relationships in each language, a corpus-based investigation of causative and conditional constructions has been conducted. 118 phrases of *hui* in the conditional construction *ruguo...*, *hui...* and 127 phrases of *hui* in the causal construction *yinwei...*, *hui...* have been collected from the CCL (Center for Chinese Linguistics) corpus. As for -(*ul*) *kes-i*, 217 phrases in the conditional construction -*myen...*, -(*ul*) *kes-i* and 57 phrases in the causal construction 14 have been collected from the Sejong Corpus.

One of the findings to emerge from this investigation is that *yinwei...*, *hui...* entail general conjectures based on general knowledge, generality, and habituality. Out of the 127 phrases, 24 *hui* refer to conjectures based on general knowledge and 20 phrases denote generality and habituality, marked by adverbs expressing frequency such as wangwang, *jingchang*, *youshihou*, *suishidou*, and *xuduo*. In these cases, in Korean, the main phrases will not be marked by -(*ul*) *kes-i* but will be realized in the unmarked indicative mood. Let us see some examples from the CCL corpus:

(21) laonianren yinwei huodingliang buzhu,
    elderly:people-because-activities-not:enough,
    sheru de nengliang duoyu, ye hui fapang
    abort-Gen-ability-excessive,also-Mod-get:fat
    ‘Because elderly people lack activities,
    increased intake of foods will make them fat.’

(22) yinwei jinchang chi tianpin, guoliang de
    because-often-eat-sweets, excessive-Part-
    tang hui zhengjia yidaosu de fenmi
    sugar-Mod-increase-insulin-Part-secretion
    ‘Because (if you) often eat sweets, excessive
    sugar will increase insulin secretion.’

(23) yinwei yidan huan ganbing, baiyanqi
    Because-once-have-liver:disease, whites
    de bufen jiu hui chuxian huangdan
    Part-area-then-Mod-appear-jaundice
    ‘Because once (you) get liver disease, the
    whites of the eyes will become yellow.’

(24) yinwei wo jingchang jibuzhu ci, youdeshihu
    Because-I-often-forget-lyrics, sometimes
    zai tai shang chang zhe jiu hui wang ci
    on-stage-up-sing-Part-then-Mod-forget-lyrics
    ‘Because I often don’t remember lyrics, sometimes
    on stage, while singing, I will forget lyrics.’

As for -(*ul*) *kes-i* in the causal construction, out of 57 phrases15, 36 phrases are based on the structure of deriving a prediction from a given circumstance as seen in (25):

(25) kulemuluo milay-uy inkansang-un Atlas
    therefore future-of human:image-Top Atlas
    sin-ul talmaka-l kes-i-ta

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14 As for the causal construction in Korean, phrases semantically interpreted as causative including causal markers such as talase, kulayse, kulemuluo, kunikka, taymwun, inhay, -(*un*)i, and etc. have been included due to a relatively small sample pool, compared to the Mandarin Chinese causal connective *yinwei*. In fact, not only for Korean but also for Mandarin Chinese phrases, the frequency of occurrence of *hui* and -(*ul*) *kes-i* is significantly higher in the conditional construction than in the causal construction. Although all the phrases of the CCL corpus have not been sorted manually to verify eligibility, the total number of data matches for

raguo...*, *hui...* is 20,247, as opposed to 6,160 matches for *yinwei...*, *hui...*.

15 15 phrases are found to have the construction of giving an account first and then a reason. In order to indicate an epistemic reason to support the account, -(*ul*) *kes-i* is realized, for which *hui* is infelicitous. However, for simplicity and clarity, the scope of the investigation of this paper is limited to conditional and causal complex phrases, since -(*ul*) *kes-i* is often realized in single phrases as a continuity of causal or conditional statements, as in “Drinking two grams of cyanide causes death”, which is approximately the same as saying “If somebody drinks two grams of cyanide, they will die” (Puente, et al. 2009)
God-Acc resemble-Adn thing-Cop-Dec
‘Therefore, the image of the future men will resemble God Atlas.’

However, unlike yinwei..., hui..., 6 phrases marked by -(ul) kes-i entail an epistemic justification of an inference derived from what is known. In this case, hui is infelicitous as in the example (26):

(26) ku-to nwunchi-ka ppalun salam-i-ni nauy he-too sense-Nom quick person-be-as my komin-ul alachaly-ess-ul kes-i-ta worries-Acc sense-Pst-Adn thing-Cop-Dec
‘Since he is also a sensitive person, he must have sensed my concern.’

As to hui which is realized in the conditional construction, ruguo...,hui..., the process of reasoning is forward, indicating that an effect becomes possible when its premises hold, among which 3 phrases of generality and 5 phrases of habituality marked by hui are found as in (27):

(27) ruguo shi wo xiugai, nuer wangwang hui if be- I-correct, daughter-often-Mod bufuqi, jinchang hui yu wo zhengbian reject, often-Mod-with-me-argue
‘If I corrected her, my daughter would reject it and often argue with me.’

With regards to -(ul) kes-i which is realized in the conditional construction, the forward reasoning process is still applied to most of the phrases, however, without a strong cause-and-effect relationship between the hypothesis and conclusion of a conditional statement, an epistemic judgement about the current or past state of affairs is identified in 7 phrases as in (28).

(28) nay-key khomphulleyksu-ka hana issta-ko I-to complex-Nom one exist-Comp ha-myen Palo khi-i-l kes-i-ta do-if then height-Cop-Adn thing-Cop-Dec
‘If I have one complex about myself, that must be my height.’

From the corpus-based investigation, it is noticed that hui tends to entail a causal relationship, often indicating generality and habituality abundantly in the causal construction but also in the conditional construction, albeit fewer in number. Causality is derived from the accumulated or realized knowledge so that it is easy to derive a more concrete consequence whereby hui appears more in the causal construction than in the conditional construction to mark law-like events. Anscombe (1971) claims that causal relations are instances of exceptionless generalizations and presuppose some kind of law.

As for -(ul) kes-i, in addition to predicting an effect from a cause, the feature of expressing an epistemic assumption and judgement is identified in the corpus, which is more frequently realized in the causal construction whereby an inference about the state of affairs is made based on a circumstance that has been known, as opposed to a conditional statement in which a condition is a cause which has not yet been realized at the time of speaking.

5. Conclusion

This paper has examined the Korean and Mandarin Chinese modals, -(ul) kes-i and hui which are often used to express the speaker’s conjecture and thus are sometimes considered to have future reference. Inspired by two thinking processes, one in which the events are linked in a cause-consequence order and the other in which events are realized in a consequence-cause order, this paper has shown how -(ul) kes-i and hui are used in the two reasoning processes. As for the process of prediction whereby cause leads to consequence, -(ul) kes-i and hui are both used. However, in generics and habituals which are also based on the cause-consequence framework, unlike hui, -(ul) kes-i cannot be applied. In generics and habituals that describe general property, -(ul) kes-i cannot be used, but it is applicable when specific episodes are expressed based on the construction of a specific condition resulting in a specific consequence. It can be explained by the essential function of kes-i that tends to derive a certain explanation from the known facts. In the same vein, in a consequence-cause order, -(ul) kes-i is used as giving an epistemic reason. Through a corpus-based investigation of causative and conditional constructions marked by hui and -(ul) kes-i, it is noted that the feature of hui is strongly relevant to generality, while that of -(ul) kes-i does not indicate law-like generalizations but can indicate epistemic assumptions about specific episodes based on specific accounts.
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