Direct Evidentials in Korean: From the Perspective of the Multi-Store Memory Model

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Abstract

This study clarifies the meaning of direct evidential markers in Korean and examines their semantic characteristics using a multi-store memory model. Korean direct evidential markers are categorized into those indicating either "present perception-based knowledge" or "past acquisition-based knowledge." The former are subdivided into "unaccepted present perception-based knowledge" (-네 *-ney*) and "accepted present perception-based knowledge" (-네 *-ney*) and "accepted present perception" (-더라 *-tela*) and "knowledge integrated into personal or general understanding" (-지 *-ci*). Within the multi-store memory model, -네 *-ney* aligns with the indicator of the maintenance rehearsal process, while -군 *-kwun* serves as an indicator of elaborative rehearsal, and -더라 *-tela* and *-*지 *-ci* correspond to retrieval indicators from long-term memory.

Keywords: Korean, evidential markers, perception, acquisition, multi-store memory model

Povzetek

Študija razjasni pomen neposrednih evidenčnih označevalcev v korejščini in preuči njihove semantične značilnosti z uporabo modela večplastne shrambe spomina. Te razdelimo na tiste, ki nakazujejo "na sedanjosti temelječe znanje" in tiste, ki nakazujejo "na pretekli pridobitvi temelječe znanje." Prve nadalje razdelimo na "nepriznano na sedanjosti temelječe znanje" (-네 *-ney*) in "priznano na sedanjosti temelječe znanje" (-군 *-kwun*). Slednje razdelimo na "znanje pridobljeno iz preteklega zaznavanja" (-더라 *-tela*) in "znanje, integrirano v osebno ali splošno razumevanje" (-지 *-ci*). V okviru modela večplastne shrambe spomina -네 *-ney* ustreza kazalcu procesa vzdrževalnega ponavljanja. Nasprotno pa -군 *-kwun* služi kot kazalec elaborativnega ponavljanja. Medtem -더라 *-tela* in -지 *-ci* ustrezata kazalcema priklica iz dolgoročnega spomina.

Ključne besede: korejščina, evidenčni označevalci, dojemanje, izkustvenost, model večplastne shrambe spomina

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1 Introduction

The theoretical concept of "evidentials" or "evidentiality" has been described as the linguistic encoding of the source of information (see Aikhenvald, 2003, 2006; Aikhenvald & Dixon, 1998, 2003, 2016; Chafe & Nichols, 1986; Comrie, 2000; Lazard, 1999; Palmer, 1998; Plungian, 2001; Willett, 1988). While all languages provide ways to signal the source of information, not all include grammatical evidentiality; indeed, the existence of lexical resources that indicate the source of information is common. For example, English demonstrates this with phrases like 'I think,' 'I feel,' 'I see,' 'I hear,' 'they say,' and 'reportedly' (see Chafe, 1986).

- (1) a. I think it's a spider. (Chafe, 1986)
 - b. I feel something crawling up my leg. (Chafe, 1986)
 - c. I see her coming down the hall. (Chafe, 1986)
 - d. I hear her taking a shower. (Chafe, 1986)
 - e. They say James is a fool. (Boye, 2018)
 - f. She was reportedly suffering from depression.

The grammatical method for indicating the source of information is indicated by closed systems, which may be demonstrated through bound morphemes, affixes, and clitics. As described by Aikhenvald (2006), in Tariana, an Arawak language spoken in the multilingual area of the Vaupés in northwest Amazonia, conveying the message "José plays football" involves the indication of how the information was obtained through grammatical forms, as follows (here and elsewhere evidential morphemes in bold type).

- (2) a. Jusé irida di -manika -ka
 José football 3sgnf play REC.P.VIS
 'José has played football (we saw it).'
 - b. Jusé irida di -manika -mahka
 José football 3sgnf play REC.P.NONVIS
 'José has played football (we heard it).'
 - c. Jusé irida di -manika -**nihka** José football 3sgnf play REC.P.INFR 'José has played football (we infer it from visual evidence).'

d. Jusé irida di -manika -**sika**José football 3sgnf play REC.P.ASSUM
'José has played football (we assume this on the basis of what we already know).' (Aikhenvald, 2006)

The main emphasis of this study will be solely on the grammatical representation of evidentiality in Korean, akin to that in Tariana. Recently, several studies have commenced investigating evidentiality phenomena within the Korean language (see Chung, 2011; Chung, 2007, 2010; Kim, 2000; Kim, 2005, 2007; Kwon, 2011, 2013; Lee, 2011, 2012; Lee, 1991, 1993; Lim & Lee, 2015; Papafragou et al., 2007; Sohn, 2018; Strauss, 2005). It is generally agreed that the Korean evidential system comprises three grammatical subclasses within inflectional suffixes: direct (-네 *-ney*¹, -군*-kwun*, -더라 *-tela*, etc.), inferential (-겠- *-keyss*-, -을 것이- *-ul kes-i*-, etc.), and quotative/reported (-대 *-tay*, -다면서 *-tamyense*, etc.).

- (3) Direct evidential markers: -네 -*ney*, -군 -*kwun*, -더라 -*tela* a. 밖 -에 비 -가 오 -**네**! Pakk -ey pi -ka o -**ney**! oustside -LOC rain -NOM come -EVI '[I see] it's raining outside!' (Sohn, 2018)
 - b. 너 목소리 참 좋 -구나²! Ne moksoli cham coh -**kuwna**! you voice very good -EVI "[I hear] your voice is very good!" (Park, 2011)
 - c. 철수 목소리 참 좋 **-더라.** Chelswu moksoli cham coh **-tela.** '[I heard] Chelswu's voice is very good.' (Park, 2011)

¹ The Yale transcription system is used for Korean transcription.

² -구나 *-kwuna*, along with "(noun+이)-로구나; (noun+*i*)*-lokwuna*"is a free variant form of -군 *-kwun* (see Han, 2004; Yoon, 2000).

- (4) Inferential evidential markers; -겠- -keyss-, -을 것이- -ul kes-i
 - a. (Seeing the sky full of dark clouds)

곧 Н -가 오 -겠 -다. Kot -ka -keyss pi -ta. 0 -NOM -INFR -DECL soon rain come '[I guess] it is going to rain soon.' (Park, 2011) b. (Based on meteorological observation data) 내일 НI -가 오 -ㄹ 것이 -다. -ka -lkesi Nayil pi -ta. 0 tomorrow rain -NOM come -INFR -DECL '[I guess] it will rain tomorrow.' (Park, 2011)

(5) Quotative/reported evidential markers; -대 -tay, -다면서 -tamyense

a. 교수 -님 -은 파티 -에오 -시 -겠 -대 -요. Kyoswu -nim -un phathi -ey o -si -keyss -**tay** -yo. professor -HON -TOP party -to come -HON -INTEN -QUO -POL 'The professor said he would come to the party.' (Sohn, 2018)

b. 존 -은 아프 -**다면서** -요. John -un aphu -**tamyense** -yo. John -TOP sick -REPO -POL 'I heard that John is sick, is it true?' (Sohn, 2018)

This study examines direct evidential markers in Korean referring to directly acquired information from the perspective of a multi-store model of human memory. While little attention has been paid to analyzing Korean direct evidential markers from the standpoint of a multi-store memory model, this would enable a clearer elucidation of their characteristics.

2 Semantic characteristics of the direct evidential markers in Korean

2.1 The paradigmatic set of forms: -네 -ney, -군 -kwun, -지 -ci, -더라 -tela

This paper focuses on -네 *-ney*, -군 *-kwun*, -지 *-ci*, and -더라 *-tela*, which function as direct evidential markers in Korean. Previous research has analyzed -네 *-ney*, -군 *-kwun*, and -더라 *-tela* as evidential markers, whereas -지 *-ci* has not been considered as such (Sohn, 2018; Strauss, 2005). However, this study analyzes -지 *-ci* as an evidential because -지 *-ci* basically appears alongside -네 -ney, -군 -kwun, and -더라 -tela within one paradigmatic set of forms. The morphemes -네 -ney, -군 -kwun, -지 -ci, and -더라 -tela are mutually exclusive of the other morphemes that occupy the same slot in the predicational structure (Moon, 2015a, 2015b). For example, -네 -ney cannot co-occur with -군 -kwun, -네 -ney with -지 -ci, or -더(라) -te(la) with -네 -ney. However, it is worth noting that -더(라) -te(la) and -군 -kwun can exceptionally combine into forms such as -더군 -te-kwun. Further discussion of this matter will be provided later.

- (6) a. ??비 -가 오 -네 -군. -kwun. Pi -ka 0 -ney rain -NOM come -EVI -EVI 'It is raining!' b. ??비 -가 오 -네 -지. Pi -ka -**ci**. 0 -ney rain -NOM come -EVI -EVI 'It is raining!' c. ??비 -가 오 -네 -더라. Pi -ka -tela. 0 -ney rain -NOM come -EVI -EVI 'It is raining!' d. ??비 -가 오 -군 -지. -ka Pi 0 -kwun -ci. rain -NOM come -EVI -EVI 'It is raining!' e. ??비 -가 오 -더 -네.
 - Pi -ka o -**te** -**ney**. rain -NOM come -EVI -EVI 'It was raining!'
 - f. ??비 -가 오 -더 -지. Pi -ka o -**te -ci**. rain -NOM come -EVI -EVI 'lt was raining!'

(7) 비 -가 오 -**더** -군. Pi -ka o -**te -kwun**. rain -NOM come -EVI -EVI 'It was raining!'

Moreover, considering the semantic interrelations and contrasts observed between -지 -*ci*, -네 -*ney*, -군 -*kwun*, and -더라 -*tela*, it is reasonable to regard -지 -*ci* as an evidential marker.

2.2 "Present perception-based knowledge" versus "past acquisitionbased knowledge"

A contrasting linguistic relationship holds between -네 *-ney*, -군 *-kwun*, -지 *-ci*, and -더라 *-tela*.

- (8) (Seeing that Swumi is sleeping) a. 이제 보 -니 수미 -가 -고있 -네! 자 lcey po -ni Swumi -ka са -ko iss -ney! now see -CONN Swumi -NOM sleep -PROG -EVI 'Now I see, Swumi is sleeping.' b. 이제 보 -니 수미 -가 자 -고있 -**구나**! Icey po -ni Swumi -ka -ko iss -kwuna! са now see -CONN Swumi -NOM sleep -PROG -EVI 'Now I see, Swumi is sleeping.' 수미 c. ??이제 보 -니 -가 자 -고있 -**지**! -ko iss -ci! Icey po -ni Swumi -ka са see -CONN Swumi -NOM sleep -PROG -EVI now 'Now I see, Swumi is sleeping.' d. ??이제 보 -니 수미 -가 -고있 -더라³! 자 -ko iss -tela! Icev po -ni Swumi -ka са now see -CONN Swumi -NOM sleep -PROG -EVI
 - 'Now I see, Swumi is sleeping.'

³ The use of 지금 *cikum*, a synonym for 이제 *icey*, in (8d) and (9d) can also be accepted as natural. While 지금 *cikum* and 이제 *icey* are temporal adverbs that indicate the 'present moment', 이제 *icey*, unlike 지금 *cikum*, implies a 'break from the past', (see Park, 2019; Kwuklipkwukewen). Additionally, since the time we perceive as the 'present'

- (9) (Hearing that Swumi is singing in the next room)
 - a. 이제 들 -으니 수미 목소리 -네! Icey tul -uni Swumi moksoli -**ney**! now listen -CONN Swumi voice -EVI 'Now that I listen, it sounds like Sumi's voice.'
 - b. 이제 들 -으니 수미 목소리 -군! Icey tul -uni Swumi moksoli -**kwun**! now listen -CONN Swumi voice -EVI 'Now that I listen, it sounds like Sumi's voice.'
 - c. ??이제 들 -으니 수미 목소리 -**지**! Icey tul -uni Swumi moksoli -**ci**! now listen -CONN Swumi voice -EVI 'Now that I listen, it sounds like Sumi's voice.'
 - d. ??이제 들 -으니 수미 목소리 -**더라**! Icey tul -uni Swumi moksoli -**tela**! now listen -CONN Swumi voice -EVI 'Now that I listen, it sounds like Sumi's voice.'

In examples (8a, b) and (9a, b), the phrases 이제 보니 *Icey po-ni* 'Now I see' and 이제 들으니 *Icey tul-uni* 'Now that I listen' align smoothly with -네 *-ney* and -군 *-kwun*, respectively, as noted (Chang, 1985; Moon, 2014; Park, 2006; Shin, 2001). However, in examples (8c, d) and (9c, d), this alignment is not natural with -지 *-ci* and -더라 *-tela* (Moon, 2010, 2015b). The grammatically appropriate alignment of -네 *-ney* and -군 *-kwun* with the expression 이제 보니 *Icey po-ni* 'Now I see' and 이제 들으니 *Icey tul-uni* 'Now that I listen', which signify the meaning of knowledge acquired through sensory perception at speech time, suggests that -네 *-ney* and -군 *-kwun* represent the statement of knowledge acquired through present perception (Chang, 1985; Moon, 2013, 2015a, 2015c; Park, 2006). Below, we classify this knowledge as "present perception-based knowledge."

quickly becomes the past, adverbs denoting the 'present' can sometimes co-occur with past tense forms (see Son, 1995). As explained below, -더라 -*tela* in (8d) and (9d) represents 'past acquisition-based knowledge', and it is naturally incompatible with 이제 *icey*, which implies a 'break from the past'. Conversely, 지금 *cikum*, which can convey a sense of 'the past', can naturally co-occur with -더라 -*tela*, representing 'past acquisition-based knowledge'.

- 수미 가 무엇 하 -였 -는지 -아 -요? (10) A: 지난주에 알 mwues ha -yess -nunci al Cinancwuey Swumi -ka -yo? -a last week Swumi -NOM waht do -PAST -NMLZ know -INTER -POL 'Are you aware of what Swumi did last week?'
 - a. B: ??응, 수미 는 지난주에 야구 하 -였 -네. Un, Swumi -nun cinancwuey yakwu ha -yess -**ney.** yes, Swumi -TOP last week baseball do -PAST -EVI 'Yes, (I knew) Swumi played baseball last week.'
 - b. B: ??응, 수미 는 지난주에 야구 하 -였 -**구나**. Un, Swumi -nun cinancwuey yakwu ha -yess -**kwuna.** yes, Swumi -TOP last week baseball do -PAST -EVI 'Yes, (I knew) Swumi played baseball last week.'
 - c. B: 응, 수미 는 지난주에 야구 하 -였 -**지**. Un, Swumi -nun cinancwuey yakwu ha -yess -**ci.** yes, Swumi -TOP last week baseball do -PAST -EVI 'Yes, (I knew) Swumi played baseball last week.'
 - d. B: 응, 수미 는 지난주에 야구 하 -**더라**. Un, Swumi -nun cinancwuey yakwu ha -**tela.** yes, Swumi -TOP last week baseball do -EVI 'Yes, (I knew) Swumi played baseball last week.'

On the contrary, in examples (10a, b), the question 알아요? *al-a-yo*? 'Do you know?' did not align smoothly with -네 *-ney* and -군 *-kwun*, respectively. However, in (10c, d) this alignment occurred naturally with -지 *-ci* and -더라 *-tela*. The grammatically appropriate correspondence of -지 *-ci* and -더라 *-tela* with 알아요? *al-a-yo*? 'Do you know?' depends upon whether one already knew the fact, implying that -지 *-ci* and -더라 *-tela* signify statements of knowledge already acquired in the past. Below, we classify this knowledge as "past acquisition-based knowledge."

The observations above reveal that in Korean, -네 *-ney*, -군 *-kwun*, -지 *-ci*, and -더라 *-tela* function as direct evidential markers, differentiating between whether the source of information is derived from "present perception-based knowledge" or "past acquisition-based knowledge."

2.3 "Unaccepted present perception-based knowledge" versus "accepted present perception-based knowledge"

The observations above reveal that in Korean, -네 -*ney*, -군 -*kwun*, -지 -*ci*, and -더라 -*tela* function as direct evidential markers, differentiating between whether the source of information is derived from "present perception-based knowledge" or "past acquisition-based knowledge." Although both -네 -*ney* and -군 -*kwun* commonly signify "present perception-based knowledge," they demonstrate divergent linguistic phenomena, as outlined below.

(11) (Looking at the watch at work)

- a. 어머 벌써 한시 -가 넘 -었 -네. Eme pelsse hansi -ka nem -ess -**ney.** oh dear already one o'cock -NOM pass -PAST -EVI 'Oh dear! (I see) it's already past one.'
- b. ?어머 벌써 한시 -가 넘 -었 -**구나**⁴. Eme pelsse hansi -ka nem -ess -**kwuna.** oh dear already one o'cock -NOM pass -PAST -EVI 'Oh dear! (I see) it's already past one.'
- (12) a. 앗 벌써 영화 -가 시작되 -었 -네. As pelsse yenghwa -ka sicaktoy -ess -**ney.** wow already movie -NOM start -PAST -EVI 'Wow! (I see) the movie has already started.'
 - b. ?앗 벌써 영화 -가 시작되 -었 -**구나**. As pelsse yenghwa -ka sicaktoy -ess -**kwuna** wow already movie -NOM start -PAST -EVI 'Wow! (I see) the movie has already started.'

In examples (11a) and (12a), the astonishment-expressing discourse markers 어머 *eme* 'oh dear!' and 앗 *as* 'wow!' align smoothly with -네 *-ney*, as

⁴ 어머 *eme* 'Oh dear!' or 앗 *as* 'wow!' could possibly co-occur with -군 *-kwun* in (11b) and (12b), however, the occurrence is most likely when a pause follows 어머 *eme* 'Oh dear!' or 앗 *as* 'wow!' are separated by a pause, and -군 *-kwun* co-occurs with the pause. The pause functions similarly to the understanding-expressing discourse marker 아아 *aa*- 'Ah-'. Thus, the grammaticality judgments for (11b) and (12b) assume no pause following 어머 *eme* 'Oh dear!' or 앗 *as* 'wow!', consistent with the assumptions for (11a) and (12a).

previously observed. However, in (11b) and (12b), this alignment is not natural with -군 -kwun (Moon, 2014). The grammatically appropriate alignment of -네 -ney with the discourse markers 어머 eme 'oh dear!' and 앗 as 'wow!', which indicate that "present perception-based knowledge" is not understood yet, suggests that -네 -ney indicates that the statement is not accepted as reliable knowledge. Below, we classify this knowledge as "unaccepted present perception-based knowledge."

(13) (When someone is approaching without knowing who they are)

a.	??아아	당신	-0	수미	씨	-0	-네	-요.	
	Aa	tangsin	-i	Swumi	-ssi	-i	-ney	-yo.	
	ahaa	you	-NOM	Swumi	-HON	-be	-EVI	-POL	
	'Ahaa, (l realize) You are Swumi!'								
b.	아아	당신	0	수미	씨	-0	-군	-요.	
	Aa	tangsin	-i	Swumi	-ssi	-i	-kwun	-уо	
	ahaa	you	-NOM	Swumi	-HON	-be	-EVI	-POL	
	'Ahaa, (I realize) You are Swumi!'								

(14) (While viewing the artwork of the acclaimed artist at the art gallery)

a. ??작품 -L| 소문 -에 듣던 -대로 -음 보 Cakphwum -ul Po -ni somwun -ey tutten -taylo artwork -ACC See -CONN rumor -INST hear -CONN 0 사람 -은 과연 예술가 -이 -**네**⁵. 훌륭한 hwullyunghan i salam -un kwayen yeyswulka -ney -i this person -TOP indeed good artist -be -EVI 'After seeing his work, I must say, he indeed is as good an artist as they say!'

⁵ It is possible that 과연 *kwayen* 'indeed' and -네 *-ney* co-occur in (14a). If so, it would be due to the accompanying evaluative expression 훌륭하다 *hwulyunghata* 'good'. In certain evaluative predicates, the evaluative meaning seems to neutralize the "unaccepted" meaning of -네 *-ney* and the "accepted" meaning of -군 *-kwun*. For example, 영화가 너무나 감동적이{네/군}. *Yenghwa-ka cengmal kamtongcek-i-{ney/kwun}* The movie is truly touching.' However, as in (14b), the meaning of 과연 *kwayen* 'indeed' makes -군 *-kwun* more natural than -네 *-ney*.

b.	작품		-을	보	-니	소문	-에	듣던	-대로	
	Cakp	bhwum	-ul	ро	-ni	somwun	-ey	tutten	-taylo	
	artw	ork	-ACC	see	-CONN	rumor	-INST	hear	-CONN	1
	0	사람	-은	ュ	ŀ연	훌륭한		예술기	የ	-로 구나 .
	i	salam	-un	k	wayen	hwullyun	ghan	yeys	wulka	-lo kwuna
	this	persor	n -TC)P ir	ndeed	good		artist	t	-EVI
		•				0				

'After seeing his work, I must say, he indeed is as good an artist as they say!' (Kwuklipkwukewen)

On the contrary, examples (13b) and (14b) show that the understandingexpressing discourse markers 아아 aa- 'Ah-' and 과연 kwayen 'indeed' align smoothly with $-\overline{c}$ -kwun. However, in (13a) and (14a), this alignment does not occur naturally with -네 -ney (Moon, 2014). The grammatically-fitting correspondence of $-\overline{c}$ -kwun with the discourse markers 아아 aa- 'Ah-' and 과연 kwayen 'indeed' indicates that what is currently perceived matches with what was previously thought (Choi, 2000; Kwuklipkwukewen), implying that - \overline{c} -kwun denotes a statement that is accepted as reliable knowledge. Below, we categorize this knowledge as "accepted present perception-based knowledge."

The widely used evidential markers -네 *-ney* and -군 *-kwun*, which generally represent present perception-based knowledge, can be divided based on whether the conveyed information is "unaccepted present perception-based knowledge" or "accepted present perception-based knowledge."

2.4 "Knowledge derived from past perception" versus "knowledge integrated into personal or general understanding"

As confirmed in (10c, d), both -지 -*ci* and -더라 -*tela* generally indicate "past acquisition-based knowledge." However, -지 -*ci* and -더라 -*tela* exhibit contrasting linguistic phenomena, as discussed below.

- (15) (Seeing that Swumi was sleeping yesterday)
 - a. ??어제 보 -니 수미 -가 자 -고있 -었 -**지**. Ecey po -ni Swumi -ka ca -ko iss -yess -**ci** yesterday see -CONN Swumi -NOM sleep -PROG -PAST -EVI 'Yesterday I saw that Swumi was sleeping.'
 - b. 어제 보 -니 수미 -가 자 -고있 -더라. Ecey po -ni Swumi -ka ca -ko iss -**tela** yesterday see -CONN Swumi -NOM sleep -PROG -EVI 'Yesterday I saw that Swumi was sleeping.'
- (16) (Hearing that Swumi was singing in the next room yesterday)
 - 수미 노래 부르 -고있 -었 a. ??어제 들 -으니 -가 -지. tul -ui Swumi -ka nolay pwulu -ko iss -yess -ci Ecey yesterday listen -CONN Swumi -NOM song sing -PROG -PAST -EVI 'Yesterday I heard that Swumi was singing a song.'
 - b. 어제 들 -으니 수미 -가 노래 부르 -고 있 -더라. Ecey tul -uni Swumi -ka nolay pwulu -ko iss -**tela** yesterday listen -CONN Swumi -NOM song sing -PROG -EVI 'Yesterday I heard that Swumi was singing a song.'

In examples (15b) and (16b), the phrases 어제 보니 *ecey po-ni* 'Yesterday I saw' and 어제 들으니 *ecey tul-uni* 'Yesterday I heard' align smoothly with -더라 *-tela*, as noted. However, in (15a) and (16a), this alignment is not natural for -지 *-ci*.

In examples (15a, b) and (16a, b), only -더라 *-tela*, which aligns grammatically with the past perception and awareness expressed in 어제 보니 *ecey po-ni* 'Yesterday I saw' and 어제 들으니 *ecey tul-uni* 'Yesterday I heard', indicates knowledge acquired through sensory perception before speech time within the domain of "past acquisition-based knowledge." However, in example (10c), where expressions like 어제 보니 *ecey po-ni* 'Yesterday I saw' and 어제 들으니 *ecey tul-uni* 'Yesterday I heard' are absent, -지 *-ci* categorizes the information as past acquisition-based knowledge, regardless of whether it was perceptually acquired in the past, obtained from someone else, or inferred by oneself. Thus, -지 *-ci* does not merely signify knowledge perceived at a specific past moment but encompasses a broad range of knowledge acquired in the past, including personal comprehension and general understanding. Below, we categorize the knowledge indicated by -

더라 -*tela* as "knowledge derived from past perception" and the one indicated by -지 -*ci* as "knowledge integrated into personal or general understanding⁶."

The details discussed above are summarized in Table 1.

Meaning	Present pe based knowle		Past acquisition based knowledge (PABK)		
Affixes	Unaccepted PPBK	Accepted PPBK	Knowledge derived from past perception	Knowledge integrated into personal or general understanding	
-네 <i>-ney</i>	0	-	-	-	
-군 <i>-kwun</i>	-	0	-	-	
-더라 <i>-tela</i>	-	-	0	-	
-지 <i>-ci</i>	-	-	-	0	

Table 1: Semantic characteristics of the direct evidential markers in Korean

3 The multi-store memory model

In this section, we present the theory proposed by Atkinson and Shiffrin (1968) to examine the meaning of evidential markers in Korean within the framework of the multi-store memory model, as discussed in Section 2. We opted for this approach because the theory outlined by Atkinson and Shiffrin (1968), as a representative multi-store memory model, would appear to offer a comprehensive account of the features associated with evidential markers in Korean.

Human memory involves the organized gathering of information and experiences and the intention to retrieve them in the future. The multi-store memory model posited by Atkinson and Shiffrin (1968) elucidates human memory, postulating three distinct memory stores through which

⁶ Due to the characteristics of -지 -*ci* and -더라 -*tela*, -더라 -*tela* clearly conveys a past meaning, while -지 -*ci* tends to obscure the past meaning. Therefore, to explicitly indicate a past meaning, -더라 -*tela* does not require the past tense morpheme -었 -*ess*-, whereas -지 -*ci* needs to be accompanied by -었 -ess-. For this reason, -었 -*ess*- is used in (10c), (15a), (16a), and (18a), but not in (10d), (15b), (16b), and (18b).

information is sequentially transferred in a linear sequence. These three components of human memory are detailed as follows (Alsaeed, 2017; Atkinson & Shiffrin, 1968, 1971; Braisby & Gellatly, 2012; Eysenck & Keane, 2020; Groome, 1999; Hitch, 2005).

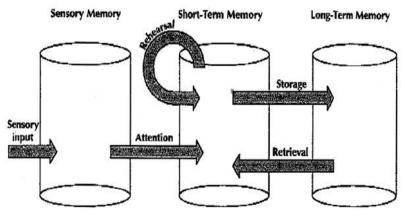


Figure 1: The multi-store memory model (Adopted from Atkinson & Shiffrin, 1968; Alsaeed, 2017)

The three primary stores are sensory memory, short-term memory (STM), and long-term memory (LTM), which differ in terms of information processing (encoding), storage capacity, and the duration for which information can be retained. Information flows sequentially from one store to another in a linear manner, resembling an information processing model consisting of the input, process, and output stages. Initially detected by sensory organs, information enters the sensory memory, where it is temporarily retained as sensory stimuli. Upon selective attention, information progresses to short-term memory (STM); through elaborative rehearsal, if endowed with meaning, it is transferred to long-term memory (LTM).

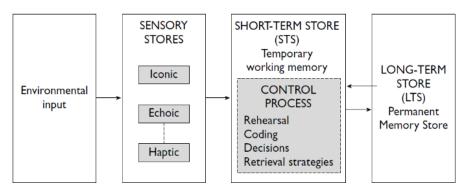
Sensory stores continuously receive a stream of information, yet the majority passes unnoticed and resides briefly in the sensory register. Within the sensory memory store, information is inputted from all five senses: sight (visual information), sound (auditory information), taste (gustatory information), smell (olfactory information), and touch (tactile information). Despite the expansive capacity of sensory memory stores, their durations are remarkably brief. It can encode information from any sensory modality, although much of this information dissipates through decay. Attention marks the initial stage of the remembering process. When an individual's focus is directed toward one of the sensory stores, information is subsequently transferred to short-term memory (STM).

Short-term memory⁷ (STM) refers to the memories held in conscious awareness that are currently receiving attention. In short-term memory (STM), maintenance rehearsal refers to the verbal or mental repetition of information. This type of rehearsal typically involves the repetition of information without considering its meaning or linking it to other information. Through continual rehearsal, the information in the memory trace is "regenerated" or "renewed," its strength enhanced as it is transferred to the long-term memory store. Without maintenance rehearsal, however, information is susceptible to being forgotten and lost from shortterm memory through displacement or decay.

Long-term memory (LTM) denotes the memories not presently held in conscious awareness but stored and able to be recalled, specifically encompassing declarative knowledge associated with "knowing that" and procedural knowledge associated with "knowing how." When information is endowed with meaning through elaborative rehearsal, it proceeds to longterm memory (LTM). Elaborative rehearsal involves associating new information with existing knowledge stored in long-term memory in a meaningful manner. Compared to maintenance rehearsal, elaborative rehearsal is more efficacious in the retention of new information by facilitating robust encoding. This process signifies a higher level of information processing. Retrieval failure occurs when information resides in the long-term memory but cannot be accessed. Such information is considered available (i.e., it remains stored) but inaccessible (i.e., it cannot be retrieved). The inability to access this information stems from the absence of retrieval cues.

This is clearly depicted in the scheme in Figure 2 proposed by Atkinson and Shiffrin (1971).

⁷ A concept closely associated with short-term memory is Baddeley's (1986, 2003) working memory model. Although working memory predominantly emphasizes cognitive task performance and control functions in the context of short-term information retention, it would not be unreasonable to regard it primarily as short-term memory, especially in the analysis of evidential markers in Korean.





4 Korean direct evidential markers in the multi-store memory model

In this Section, we analyze the Korean direct evidential markers discussed in Section 2 through the lens of the multi-store memory model explored in Section 3.

As observed in (8a), (9a), (11a), and (12a), -네 -*ney* signifies the unaccepted present perception-based knowledge accompanied by surprise, which is not understood yet.

The presence of the -네 *-ney* suggests surprise because although the sensory organs receive environmental stimuli and attention is allocated, the individual is verbally rehearsing the information for retention without contemplating its meaning or linking it with other information. Therefore, it can be inferred that the information conveyed by -네 *-ney* represents the transition from sensory memory to short-term memory, indicating the initiation of the "maintenance rehearsal" process.

As noted in (8b), (9b), (13b), and (14b), $-\overline{z}$ -*kwun* signifies "accepted present perception-based knowledge" accompanied by understanding, indicating that what is currently perceived matches what was previously thought.

The presence of $-\overline{c}$ -kwun indicates understanding; since the sensory organs receive environmental stimuli, attention is directed and individuals attribute meaning by linking it with existing knowledge. Thus, it can be deduced that the information signified by $-\overline{c}$ -kwun signifies the transfer from short-term to long-term memory, marking the onset of the "elaborative rehearsal" process.

As seen in (10c) and (10d), it was noted that -지 -*ci* and -더라 -*tela* signify "past acquisition based-knowledge." A linguistic phenomenon demonstrates that the information represented by -지 -*ci* and -더라 -*tela* is closely related to the information stored in long-term memory (LTM).

(17) (While searching for Suwmi's glasses, I cannot remember where Suwmi placed them.)

- a. 수미 -가 안경 어디 -에 두 -었 -지? -을 -ul Swumi -ka ankyeng eti -ev twu -yess -ci? Swumi -NOM glasses -ACC where -LOC put -PAST -EVI 'Where did Suwmi put her glasses?'
- -가 안경 b. 수미 -음 어디 -에 두 -었 -더라? Swumi -ka ankyeng -ul eti -ey twu -yess -tela? -LOC put -PAST -EVI Swumi -NOM glasses -ACC where 'Where did Suwmi put her glasses?'
- -가 -었 c. ??수미 안경 -을 어디 -에 두 -네? Swumi -ka ankyeng -ul eti twu -yess -ey -ney? -LOC put -PAST -EVI Swumi -NOM glasses -ACC where 'Where did Suwmi put her glasses?'
- -을 -었 d. ??수미 -가 안경 어디 -에 두 -군? -ul Swumi -ka ankyeng eti twu -yess -kwun? -ey Swumi -NOM glasses -ACC where -LOC put -PAST -EVI 'Where did Suwmi put her glasses?'
- (18) (While searching for Suwmi's glasses, I suddenly remember where she placed them.)
 - a. 그래 맞 -아! 책상 위 -에 두 -었 -지. wi -ey chaksang -yess -ci. kulay mac -a! twu -DECL Yeah! right desk on -LOC put -PAST -EVI 'Yeah! That's right. Suwmi left her glasses on the desk.'
 - 맞 b. 그래 -아! 책상 위 -에 두 -더라. kulay chaksang wi -ey -tela. mac -a! twu -DECL desk on -LOC -EVI Yeah! right put 'Yeah! That's right. Suwmi left her glasses on the desk.'

- c. ??그래 맞 -아! 책상 위 -에 두 -었 -네. kulay mac -a! chaksang wi -ey twu -yess -**ney.** Yeah! right -DECL desk on -LOC put -PAST -EVI 'Yeah! That's right. Suwmi left her glasses on the desk.'
- d. ??그래 맞 -아! 책상 위 -에 두 -었 -군. kulay mac -a! chaksang wi -ey twu -yess -**kwun.** Yeah! right -DECL desk on -LOC put -PAST -EVI 'Yeah! That's right. Suwmi left her glasses on the desk.'

The suffixes -지 -*ci* and -더라 -*tela* in (17a) and (17b), where the syntactically matched *wh*-questions denote a partial lack of information, can suggest the partial forgetting of information. In contrast, -네 -*ney* and -군 -*kwun* in (17c) and (17d) cannot convey the partial forgetting of information as they are not compatible with *wh*-questions. This linguistic phenomenon can be regarded as directly reflecting the manifestation of retrieval failure, where information is retained in the long-term memory but remains inaccessible.

Furthermore, the suffixes -지 -*ci* and -더라 -*tela* in (18a) and (18b), when grammatically aligned with 그래 맞아! *kulay maca*! 'Yeah! That's right', signifying the recollection of something that was not well remembered, can indicate success in locating the information. In contrast, -네 -*ney* and -군 -*kwun* in (18c) and (18d) cannot convey success in locating information as they do not grammatically align with 그래 맞아! *kulay maca*! 'Yeah! That's right'. This linguistic phenomenon directly mirrors the occurrence of successful retrieval, in which the information stored in long-term memory remains accessible. Therefore, it can be inferred that the information conveyed by -더라 -*tela* and -지 -*ci* represents the transition from long-term memory to short-term memory, indicating the initiation of the "retrieval process."

Regarding (15a, b) and (16a, b), it -더라 -tela specifically represents "knowledge derived from past perception," in contrast to -지 -*ci*. Therefore, one might interpret the meaning of -더라 -*tela* as being exclusive to that of -지 -*ci*. However, a more accurate understanding suggests that the relationship between -더라 -*tela* and -지 -*ci* is not exclusive, but inclusive. In other words, while -지 -*ci* signifies comprehensive "past acquisition-based knowledge," including personal comprehension or general understanding, -더라 -*tela* specifically denotes "knowledge derived from past perception." Distinguishing knowledge obtained through past perception among other types of "past acquisition-based knowledge" likely indicates the more reliable information.

Here, we briefly examine the exceptional phenomenon in which, as seen in Example (7) in Section 2.1, -더라 *-tela* and -군 *-kwun* co-occur.

As observed above, -더라 *-tela* denotes "knowledge derived from past perception," representing the transition from long-term memory to short-term memory, thereby indicating the initiation of the retrieval process. Conversely, *-군 -kwun* signifies "accepted present perception-based knowledge," indicating a transfer from short-to long-term memory, thus marking the onset of the elaborative rehearsal process.

Based on this understanding, when considering the co-occurrence phenomenon of -더(라) -te(la) and -군 -kwun, it can be interpreted that after "knowledge derived from past perception" is retrieved from long-term memory, it is brought into short-term memory for elaborative rehearsal. Thus, the co-occurrence of -더라 -tela and -군 -kwun more clearly demonstrates the elaborative rehearsal associated with existing knowledge in short-term memory.

The content provided above can be concisely illustrated in the subsequent diagram.

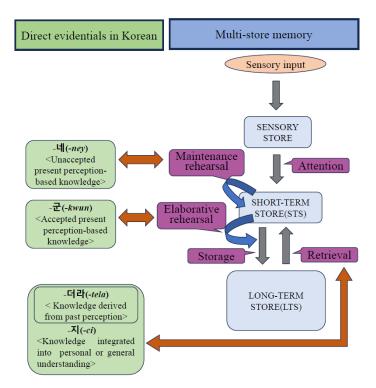


Figure 3: The correspondence between direct evidential markers in Korean and multi-store memory

5 Conclusion

This study examined the semantic characteristics of direct evidential markers in Korean, namely -네 *-ney*, -군 *-kwun*, -더라 *-tela*, and -지 *-ci*, using a multi-store memory model framework.

In summary, -네 *-ney* signifies "unaccepted present perception-based knowledge," aligning with the "maintenance rehearsal" process during the transition from sensory memory to short-term memory; -군 *-kwun* indicates "accepted present perception-based knowledge," corresponding to the "elaborative rehearsal" process during the transfer from short-term memory to long-term memory; -지 *-ci* represents "knowledge integrated into personal or general understanding," reflecting stable settlement in long-term memory for retrieval and recall; and finally, -더라 *-tela* specifically denotes "knowledge derived from past perception" within long-term memory. In this study, we elucidated the characteristics of evidential markers in Korean more clearly by explaining their meaning within the framework of Atkinson and Shiffrin's (1968) multi-store memory model. In the future, we aim to empirically validate these analytical findings through cognitive psychological experiments.

Acknowledgments

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Abbreviations

3 Third person ACC Accusative ASSUM Assumed CONN Connectives DECL Declarative EVI **Evidentials** HON Honorifics INFR Inferential INTER Interrogative LOC Locative nf Non-feminine NMLZ Nominalizer

NONVIS Non-visual Ρ Past PAST Past tense PROG Progressive QUO Quotative REC Reciprocal REPO Reported Singular sg TOP Topic VIS visual

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