The ‘Imperfective’ in Attributive Clauses in Korean
As a Window into the Evidential Past and the Metaphysical Future

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Abstract
This article discusses the temporal interpretation of two attributive clause markers in Korean -te-un and -nu-un, which are standardly analyzed as carrying past imperfective and present imperfective meanings, respectively. I show that -te-un and -nu-un carry not only temporal but also modal/evidential meanings and they do so in ways hitherto unnoticed. I claim that -te-un presents an eventuality from a retrospective point of view, providing a window into what I call ‘an evidential past’, whereas -nu-un does so from a projective point of view, providing a window into what I call ‘a metaphysical future’. The findings of this paper suggest that the line between Tense, Aspect, Mood, and Evidentiality can be blurrier in some languages than in others and when interpreting attributive clauses, what is construed as the viewpoint holder and in which direction the viewpoint is headed relative to some temporal anchor may matter greatly.

Key words: Relative Clauses, Imperfective, Tense, Aspect, Mood, Evidentiality, Retrospective, Projective, Korean

1. Introduction
The interaction between Tense, Aspect, Mood, and Evidentiality (TAME) has been at the forefront of recent linguistic inquiry both within a language and crosslinguistically (e.g., Dahl 1985; Bybee et al. 1994; Portner 1998; De Haan 1999; Condoravdi 2002; Aikhenvald 2004; Matthewson et al. 2007; Matthewson 2011). Yet our current understanding of how the four categories interact in adnominal or attributive (ATT) clauses including relative clauses (RCs) is far less advanced than how they interact in non-ATT domains. The present paper seeks to fill this gap by examining the behavior of two realis ATT clausal markers in Korean -nu-un and -te-un, which are standardly analyzed as carrying present imperfective and past imperfective meanings, respectively, due to Lee’s (1993) seminal work.

When we look at languages like English, the way temporal marking is done in ATT clauses appears to be similar to the way it is done in non-embedded clauses, as can be seen from comparing (1) and (2).

1 This article has benefited greatly from the constructive feedback from the two anonymous reviewers and the editor of Studies in Language Dr. Ekkehard König. I wish to express special thanks to Professor Östen Dahl for reading an earlier draft of this article and commenting on it and Professor Seungho Nam for inviting me to the Tense and Aspect Workshop held at Seoul National University in June, 2012, which got me started on this project to begin with. I am also indebted to the audience at the Tense and Aspect Workshop for their comments, in particular to Professors Chungmin Lee, Youngkeun Ko, and Östen Dahl. Needless to say, any remaining errors are my own responsibility.
(1) Temporal marking in English non-embedded clauses (i.e., non-ATT):
   a. A child is riding a bike.
   b. A child was riding a bike.
   c. A child rides a bike every single day.
   d. A child rode a bike.

(2) Temporal marking in English RCs (i.e., ATT):
   a. A child who is riding a bike
   b. A child who was riding a bike
   c. A child who rides a bike every single day
   d. A child who rode a bike

The situation is far more complex and interesting in Korean, for Korean utilizes a different temporal system in the ATT domain than in the non-ATT domain (Lee 1993), and ATT clause markers have been claimed to encode more than one type of temporal meaning (e.g., ‘past imperfective’, ‘retrospective modal’, ‘present imperfective’, ‘present indicative’) (see, a.o., Choi 1983; Huh 1987; HS Lee 1993; KD Lee 1993; Sohn 1999).

Possibly for this reason, ATT temporal markers in Korean have been significantly under-studied compared to non-ATT temporal markers. On top of that, there are only two detailed studies of Korean ATT temporal markers available in the literature, namely, Lee (1993) and Kim (2013). Yet these two works approach the topic from rather different angles (one takes a linguistic approach and the other takes a more psychological approach). Furthermore, the empirical data they cover are more or less in complementary distribution. Hence, there is the need to re-examine ATT clausal markers in Korean in consideration of both Lee’s and Kim’s analyses, with a view to identifying exactly how they encode more than one type of temporal meaning.

In this paper, I point out several interrelated properties of -te-un and -nu-un that the existing analyses cannot capture and propose a new analysis that accounts for them. A chief new finding will be that -te-un and -nu-un carry not only temporal but also modal/evidential meanings and they do so in ways hitherto unnoticed. I claim that -te-un and -nu-un behave the way they do because they differ in the way they present eventualities: -te-un presents an eventuality from what I call ‘a retrospective point of view’ and -nu-un does so from what I call ‘a projective point of view’. Consequently, they respectively provide a window into what I call ‘the evidential past’ and ‘the metaphysical future’ and relatedly, the eventualities they present obtain at different worlds and times as well. The data and analysis presented here will show that the line between Tense, Aspect, Mood, and Evidentiality can be blurrier in some languages than in others. They will also suggest that in interpreting ATT clauses, what is construed as the viewpoint holder and in which direction the viewpoint is headed relative to some temporal anchor may matter greatly.

This article is organized as follows. In section 2, I offer preliminary information on Korean, focusing on the morpho-syntactic properties of RCs and some of the major differences between the temporal system of ATT clauses and that of non-embedded clauses. In this context, I also introduce some of the characteristic properties of -nu-un and -te-un in comparison with their non-embedded clausal counterparts. Section 3
introduces outstanding issues surrounding realis ATT temporal markers in Korean in the context of reviewing Lee’s (1993) and Kim’s (2013) analyses in some detail. Section 4 presents a new analysis of -nu-un and -te-un and demonstrates how the new analysis accounts for their interpretive and distributional properties in ways that improve on the existing analyses. Section 5 discusses additional welcome results of the proposed analysis. Finally, section 6 summarizes and concludes the paper.

2. Preliminaries
Korean is a largely agglutinative language with a Subject Object Verb (SOV) constituent order (Sohn 1999). Scrambling is common but head-finality is respected under all circumstances. Therefore, while verbs and TAME markers occur clause-finally, noun (N) modifiers including ATT clauses occur pre-nominally.

Korean has demonstrative determiners but no articles, and depending on contexts, bare NPs may receive definite/indefinite and/or specific/non-specific interpretations, as illustrated below (e.g., (3a)).

All Ns in Korean are free morphemes but all verbs and adjectives are bound morphemes, and even adjectives can bear TAME markers.

Most TAME markers are bound morphemes but some are fused with other markers. For example, in the case of RCs, the realis vs. irrealis mood marking is fused with the RC marker (REL for short), and depending on whether the embedded clause has realis or irrealis mood, the REL is realized as -un or -ul (Lee 1993: 77).

Grammatical relations are marked by case particles but in neutral contexts, sentential subjects often occur with the topic marker or without any overt case particle, and this is because the nominative case particle on a noun phrase (NP) actually indicates that it is focus-marked as well as serving as the subject of the sentence. To see this, consider (3).\footnote{The ‘u’ sound constituting the REL -un or -ul is actually not realized when it is preceded by a vowel. But I will ignore this fact to ensure textual consistency in representing the REL in the text.}

(3) a. Minswu cikum ca-n-∅-ta. (no case particle on the subject)
   M. now sleep-IMPFV-PRS-DECL
   ‘Minswu is sleeping now.’
   b. Minswu-nun cikum ca-n-∅-ta. (topic marker on the subject)
   M.-TOP now sleep-IMPFV-PRS-DECL
   ‘As for Minswu, he is sleeping now.’
   c. Minswu-ka cikum ca-n-∅-ta. (focus marker on the subject)
   M.-NOM now sleep-IMPFV-PRS-DECL
   ‘It is Minswu who is sleeping now, not someone or anyone else.’

\footnote{See Lee (2006) for constraints on eliding case particles in Korean.}

\footnote{In presenting the Korean data, in this paper, I adopt Yale Romanization (Martin 1992) for transcription purposes and the Leipzig Glossing Rules for glossing purposes, with the following abbreviations added to the list: ANT: anterior; CONN: connective; EVI: evidential; FRML: formal discourse style; HON: honorific; INFML: informal discourse style; INT: interrogative sentence ending; OBS: sensory-observation; RLS: realis mood; QUOT: quotative.
When forming RCs, Korean employs so-called ‘gapping’ strategy, as expected of pre-nominal languages (see Keenan 1985). It is also a pro-drop language and as such lacks relative pronouns as well.

Another notable property of Korean is that it does not formally differentiate between restrictive/integrated RCs and non-restrictive/appositive/parenthetical/supplementary RCs: for all types of RC, it uses the same relative marker (REL) (and its morpho-phonemic variant), and unlike English, there is no special intonation associated with non-restrictive or supplementary RCs such as a pause, as illustrated by (4) and (5). (Here and below, $e_i$ stands for the gap or empty category that is co-indexed with the head N of a RC and subscripts indicate the co-indexation relation that holds between them.)

(4) Restrictive RCs in Korean:

a. [$e_i$ yueyn-eyse kunmwuha-nu-]-un sarami
   [__ U.N.-LOC work-PST.IMPFV]-REL person
   ‘a/the person who works at the U.N.’

b. [Minswu-ka $e_i$ sata-cwu-∅]-un chayki
   [M.-NOM __ buy-give-PFV]-REL book
   ‘the book that Minswu bought and brought for me’

(5) Non-restrictive RCs in Korean:

a. [$e_i$ yueyn-eyse kunmwuha-nu-]-un Minswi
   [__ U.N.-LOC work-PRS.IMPFV]-REL M.
   ‘Minswu, who works at the U.N.’

b. [Minswu-ka $e_i$ sata-cwu-∅]-un ce chayki
   [M.-NOM __ buy-give-PFV]-REL that book
   ‘that book, which Minswu bought and brought for me’

Given this, below, I will be presenting Korean data by mixing restrictive RCs with non-restrictive ones in some places and whatever I say about the behavior of ATT temporal markers can be safely assumed to apply to both types of RCs unless explicitly stated otherwise.

Before proceeding to section 3, a few additional remarks are in order. Firstly, this paper will be concerned only with realis RCs because the two “imperfective” ATT markers that I aim to examine, namely, -nu and -te, do not occur in irrealis RCs, as can be seen by comparing (6) and (7). For this reason, I will also omit realis vs. irrealis mood marking distinctions in the glosses unless it is deemed necessary.

(6) Examples of realis RCs in Korean:

a. [$e_i$ ttena-]-un sarami

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$^4$ By relative clauses, I mean externally-headed RCs in this paper: Korean also internally-headed RCs, which are gap-less, but we will not be concerned with them here because they are better analyzed as nominalized clauses rather than ATT clauses (see, a.o., Jhang 1994; Jo 2003; Kim 2004).
Examples of irrealis RCs in Korean:

1. a. [e_i tena-\text{nunu}\text{-un}] \ saram_i
   \hspace{1cm} \resource{leave-PRES.IMPFV-REL.RLS} \saram_i \person \hspace{1cm} a/the person who \textit{is leaving}'

2. b. [e_i tena-\text{te}\text{-un}] \ saram_i
   \hspace{1cm} \resource{leave-PST.IMPFV-REL.RLS} \saram_i \person \hspace{1cm} a/the person who \textit{was leaving}'

Secondly, in dealing with RCs ending with a verb or an adjective stem plus the realis \texttt{REL -un}, following common practice in Korean linguistics, I will postulate a null morpheme between the verb/adjective stem and the REL, but I will assign a perfective/perfect meaning to RCs containing a verb stem but an imperfective meaning to RCs containing an adjective stem. This differentiation is due to the fact that while ‘verb stem + -un’ sequences receive completive interpretations, ‘adjective stem + -un’ sequences receive relative present or atemporal interpretations, as noted by Sohn (1999: 310) as illustrated by (8) and (9) (cf. Lee 1993, who gives them an identical treatment).

(8) RCs with a verbal stem + -un sequence:

a. [\text{e_{i}} \ \text{ecey} \ \text{tena-\text{-∅}} \text{-un}] \ saram_i
   \hspace{1cm} \resource{yesterday leave-PFV-REL} \saram_i \person \hspace{1cm} ‘a/the person who \textit{left} yesterday’ (perfective interpretation)

b. [\text{e_{i}} \ \text{pang-kum} \ \text{tola-\text{-∅}} \text{-un}] \ saram_i
   \hspace{1cm} \resource{just-now return-CONN-PFV-REL} \saram_i \person \hspace{1cm} ‘a/the person who just \textit{got back}’ (perfective interpretation)

(9) RCs with an adjectival stem + -un sequence:

a. [\text{e_{i}} \ \text{khi-ka} \ \text{kuh-∅-un}] \ saram_i
   \hspace{1cm} \resource{height-NOM big-IMPFV-REL} \saram_i \person \hspace{1cm} ‘a/the person who is \textit{tall}’ (present or atemporal interpretation)

b. [\text{e_{i}} \ \text{sulphu-∅-un}] \ saram_i
   \hspace{1cm} \resource{sad-IMPFV-REL} \saram_i \person \hspace{1cm} ‘a/the person who is \textit{sad}’ (present or atemporal interpretation)
Finally, I will treat -nu-un and -te-un as complex ATT clausal markers which cannot be further decomposed. The reason for doing so comes from the fact that depending on whether they occur on an ATT clause ending or on a non-ATT clause ending, the morphemes -nu and -te exhibit different behaviors, so it is difficult to tease apart -nu or -te from the REL. To illustrate, consider first (10-11) and (12-13). Data set (10-11) shows that -nu-un (i.e., -nu + REL) is compatible with the periphrastic progressive marker -ko iss- but its non-embedded clause counterpart is not and data set (12-13) shows that -nu-un can co-occur with any type of verb (including existential predicates and de-adjectival verbs) but its non-embedded counterpart cannot.\(^5\)

(10) -Nu-un-ending ATT clauses with the progressive marker:

a. \([e_i \ cikum \ ca-nu\-\-un \ ay-tul_i] \)

\([\_ \ now \ sleep\-PRS\-IMPFV\-REL \ child\-PL]\)

‘the children who are sleeping now’

b. \([e_i \ cikum \ ca-ko \ iss-nu\-\-un \ ay-tul_i] \)

\([\_ \ now \ sleep\-CONN \ exist\-PRS\-IMPFV\-REL \ child\-PL]\)

‘the children who are sleeping now’

(11) Simple present imperfective sentences with the progressive marker:

a. Ay-tul-un cikum ca-n-∅-ta.

Child\-PL\-TOP now sleep\-IMPFV\-PRS\-DECL

\(^5\) The incompatibility between existential predicates and the present imperfective in non-embedded sentences have led some traditional grammarians to conclude that they are adjectives because adjectives display apparently the same property, as shown in (i) below (see, e.g., Sohn 1999; Suh 1996). But such a conclusion is questionable since when occurring in ATT clauses, existential predicates pattern with verbs, not with adjectives, as can be seen by comparing (12) with (ii) below.

(i) a. Minswu-nun khi-ka khu-(\-n\-∅)-ta. (Adjective)

M\-TOP height\-NOM big-(PRS\-IMPFV\-DECL)

Intended: ‘Minswu is tall.’

b. Minswu-nun sulphu-(\-n\-∅)-ta. (Adjective)

M\-TOP sad-(PRS\-IMPFV\-DECL)

Intended: ‘Minswu is sad.’

(ii) a. \([e_i \ khi-ka \ khu\-(\-n\-∅)-(\-un) \ saram/Minswu_i] \)

\([\_ \ height\-NOM \ big-(PRS\-IMPFV\-REL) \ person/M.\)

‘the person who is tall’/‘Minswu, who is tall’

b. \([e_i \ sulphu\-(\-n\-∅)-(\-un) \ saram/Minswu_i] \)

\([\_ \ sad-(PRS\-IMPFV\-REL) \ person/M.\)

‘the person who is sad’/‘Minswu, who is sad’

c. \([e_i \ Mina-lul \ cal \ al-nu\-\-un \ saram/Minswu_i] \)

\([\_ \ M\-ACC \ well \ know\-PRS\-IMPFV\-REL \ person/M.\)

‘a/the person who knows Mina well’/‘Minswu, who knows Mina well’

d. \([Mina-ka \ ei \ cohaha-nu\-\-un \ saram/Minswu_i] \)

\([M\-NOM \ like\-PRS\-IMPFV\-REL \ person/M.\)

‘the person that Mina likes’/‘Minswu, who Mina likes’
‘(The) children are sleeping now.’

b. Ay-tul-un cikum ca-ko iss-∅-ta.
   Child-PL-TOP now sleep-CONN exist-PRS-DECL
   ‘(The) children are sleeping now.’

c. *Ay-tul-un cikum ca-ko iss-n-/nu-∅-ta.
   Child-PL-TOP now sleep-CONN exist-IMPFV-PRS-DECL
   Intended: ‘(The) children are sleeping now.’

(12) -Nu-un-ending ATT clauses with existential/de-adjectival verbs:

a. [e₁ entek wi-ey iss-nu]-un [hayan cip],
   [___ hill top-LOC exist-PRS.IMPFV]-REL [white house]
   ‘a/the white house that is located on a/the hill top’

b. [e₁ chinkwu-ka eps-nu]-un [ku so-nye],
   [___ friend-NOM not.exist-PRS.IMPFV]-REL [that little-girl]
   ‘that little girl, who has no friends’

c. [e₁ sulphu-e ha-nu]-un saram,
   [___ sad-CONN do-PRS.IMPFV]-REL person
   ‘the person who shows signs of sadness’

(13) Simple present imperfective sentences with existential/de-adjectival verbs:

a. Entek wi-ey hayan cip-i iss-(*-n-)∅-ta.
   Hill top-LOC white house-NOM exist-(-IMPFV-)PRS-DECL
   Intended: ‘There is a white house on the hill top.’

b. Ku so-nye-nun chinkwu-ka eps-(*-n-)∅-ta.
   That little-girl-TOP friend-NOM not.exist-(-IMPFV-)PRS-DECL
   Intended: ‘That little girl has no friends.’

c. *Ku saram-un sulphu-e ha-n∅-ta.
   That person-TOP sad-CONN do-IMPFV-PRS-DECL
   Intended: ‘That person is showing signs of sadness.’

c’. Ku saram-un sulphu-e ha-ko iss-∅-ta.
   That person-TOP sad-CONN do-CONN exist-∅-ta
   ‘That person is showing signs of sadness.’

Consider now (14) and (15). (Here and below, ‘#’ indicates pragmatic oddity.) These data sets exemplify that clauses containing -te have different felicity conditions depending on whether they occur as ATT clauses or as non-embedded ones. More specifically, (14) can be uttered felicitously even if the speaker did not directly witness the eventuality of Abraham Lincoln living in some discourse salient house at some time in the past but (15) can be uttered only if the speaker directly observed it. And this

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6 For this reason, in the literature, the -te that occurs in a non-embedded clause has been analyzed as a retrospective mood or tense marker (Suh 1977; Sohn 1975, 1994, 1999; Choi 1983; Kwon 2012), as a spatial deictic tense marker (Chung 2005/2012, 2007, 2010), and as an evidential marker (e.g., Song 2002; Lim 2010; Lee 2011/2012; Lee 2011, 2013).
shows that -te may encode what Song (2002) calls a ‘sensory observation’ meaning only when it occurs on the verb stem of a non-embedded clause. Therefore, we conclude that the -te that occurs attached to the REL merits a separate treatment from the -te that occurs on a non-embedded clausal ending (for relevant discussion, see, a.o., Chung 2005/2012, 2007; Lee 2011/2012).

(14) Non-sensory-observation meaning of -te- in ATT clauses:

Ce-kes-i [yec-nal-ey rinkhen-i e_i sal-te]-un
cip-i-∅-ta.
‘That is the house that Abraham Lincoln used to live in.’

(15) Sensory-observation meaning of -te- in non-embedded sentences:

#Rinkhen-i yec-nal-ey ce cip-ey sal-te-la.
Lincoln-NOM old-day-LOC that house-LOC live-OBS-DECL.INFML
‘Lincoln used to live in that house and I saw it.’

(adapted from Chung 2005: 121)

Lastly, consider (16) and (17), which show that ATT clauses and non-embedded clauses behave differently in terms of licensing sensory/psych-predicates such as aphu-‘be.sick’ and sulphu-‘be.sad’ and the contrast between these data sets gives us yet another reason to think that when occurring as part of an ATT-clause marker, -nu and -te form complex morpho-syntactic units with the REL. Notice that in non-embedded clauses, sensory/psych-predicates cannot occur as the main predicate when the subject is in the 2nd person (because their semantics is such that an individual cannot ascribe it to another individual in ordinary contexts) but with appropriate contextualization, they can freely occur in ATT clauses (more on this in section 4.1).

(16) Non-embedded clauses containing sensory/psych-predicates:

   a. #Ne-nun    aphu-∅-ta.
you-TOP       sick-PRS-DECL
   Intended: ‘You are sick.’

   b. #Ne-nun    sulphu-∅-ta.
you-TOP       sad-PRS-DECL
   Intended: ‘You are sad.’

   c. #Ne-nun    ku-nal maywu sulphu-ess-ta.
you-TOP       that-day very sad-PST-DECL
   Intended: ‘You were very sad that day.’

(17) ATT clauses containing sensory/psych-predicates:

   a. Na-nun [[e_i aphu]-un ne-ul twu-ko chwulkunha-ul
   I-TOP       [___ sick]-REL you-ACC leave-CONN go.to.work-REL
   swu       ep-∅-ta.
3. Outstanding issues surrounding -te-un and -nu-un ATT clauses

When examining the temporal interpretation of realis ATT clauses in Korean, it is often customary (if not necessary) to look at ATT clauses ending in -te-un and those ending in -nu-un together because both types of ATT clauses can describe events that are in progress and the only difference between them appears to be tense, as illustrated by the minimal pair in (18a, b). Given this, it is not surprising that the standard analysis of the temporal interpretations of realis ATT clauses in Korean, namely, Lee (1993), treats -te-un and -nu-un as “past imperfective” and “present imperfective” markers, respectively, which is reflected in the English translations of the data in (18).

(18) a. [e] ceki-se cacenke-lul tha-nu]-un saram
   [___ there-LOC bicycle-ACC ride-PRS.IMPFV]-REL person
   ‘the person who is riding a bike over there’

   b. [e] ceki-se cacenke-lul tha-te]-un saram
   [___ there-LOC bicycle-ACC ride-PST.IMPFV]-REL person
   ‘the person who was riding a bike over there’

There are reasons to rethink Lee’s analysis, however: According to Lee, both -nu-un and -te-un present a situation as if the speaker ‘concurrently experiences it’ by taking an ‘internal view’ on it except that the situation presented by an -nu-un clause is simultaneous with some reference point (i.e., it is relative present) whereas the situation described by a -te-un clause temporally precedes it (i.e., it is relative past). Yet such concurrent experiential meanings are not always detected in the usage of -te-un and -nu-un clauses. By way of illustration, let us first reconsider (14): as mentioned above, this sentence asserts that some contextually salient house is where Abraham Lincoln used to live in, and native Korean speakers do not intuit that uttering the sentence involves concurrently experiencing the eventuality described by the embedded clause.

To be sure, not every Korean speaker may find (14) to be acceptable if they hear it in an out-of-the-blue context; the Korean speakers I consulted showed strong preference for the sentence to be uttered by someone who has the authority to say that the house at hand is where Abraham Lincoln used to live in by virtue of having the evidence with which to
say so. They also added that they would prefer (14) to have a hearsay ending, as shown in (19).

(19) Ce-kes-i [yec-nal-ey rinkhen-i e1 sal-te]-un that-thing-NOM [old-day-LOC Lincoln-NOM _ live-PST.IMPFV]-REL kos-i-∅-lay.
place-COP-PRS-QUAT.IND.INFML
‘I’m told that the house over there is where Abraham Lincoln used to live.’

(Taken from Kim 2013: ex. (35))

Nevertheless, such felicity judgments I have obtained from my informants do not weaken my claim, since both (14) and (19) can be true even if the speaker is not recalling or reporting anyone’s experience of observing Lincoln’s residing in some contextually salient house, regardless of the discourse context in which they are uttered.

Utterances containing -te-un clauses present another problem to Lee’s analysis. To see this, let us consider (20).

(20) [[Sip-nyen-ey e1 kum-ul chas-a ttena-ess-te]-un
[[Ten-year-LOC _ gold-ACC look.for-CONN leave-ANT-TE]-REL
saram-tul]-i ecey-seya tolao-ess-ta.
person-PL-NOM yesterday-only return-PST-DECL
‘The people who (had) left for gold ten years ago came back only yesterday.’

In this sentence, -te-un co-occurs with the anterior marker -ess and in so doing it gives rise to what is known as ‘double past’ or ‘past in the past’ interpretation, rather than a past imperfective interpretation. Furthermore, it is not the case that by uttering this sentence, the speaker concurrently experiences the event of some people leaving for gold ten years ago; the sentence can be judged fine even if it is uttered in a context where the speaker did not witness the people leaving for gold at all. Therefore, one cannot claim that when uttering the sentence, the speaker’s viewpoint is located within the event frame in which the situation presented by the ATT clause takes place, unlike what Lee claims about sentences embedding a -te-un ATT clause. And given the difficulty of analyzing the -te in (20) as a past imperfective marker, here and below, I will not gloss it, and to make things parallel, I will not attempt to gloss the morpheme -nu that occurs in ATT clauses either.

Lee’s analysis confronts challenges coming from -nu-un ATT clauses as well. One problem is that -nu-un clauses can be readily construed as describing generic or habitual properties of individuals as shown in (21), and neither uttering nor interpreting such data involves concurrently experiencing the situation presented by the ATT clause.

(21)a. [e1 kwukswu-lul cohaha-nu]-un saram,
[ _ noodle-ACC like-NU]-REL person
‘a/the person who likes noodles’
Another problem -nu-un clauses present to Lee’s analysis is that they can have futurate semantics, as observed by Kim (2013)—that is, they can describe planned eventualities—and in such cases also, concurrently experiencing the situation presented is not the most accurate characterization of the interpretive process involved. By way of illustration, consider (22): each of the embedded clauses here describes an eventuality that has not occurred at the speech time, so it is not possible for the speaker to concurrently experience the situation described by the embedded clause at the time of utterance.

(22) a. \[e_i \text{nayil yehayng-ka-nu-}\]-un saramit \\
    \[\_ \text{tomorrow trip-go-NU-}\]-REL person \\
    ‘a/the person who is going on a trip tomorrow’

b. \[e_i \text{taum cwu-ey kyelhonha-nu-}\]-un Minswul \\
    \[\_ \text{next week-LOC get.married-NU-}\]-REL M. \\
    ‘Minswul, who is getting married next week’

c. \[e_i \text{kot chwulpalha-nu-}\]-un kicha \\
    \[\_ \text{soon start-NU-}\]-REL train \\
    ‘a/the train that is leaving soon’

d. \[e_i \text{onul ohwu sey-si-ey sangyeng-toy-nu-}\]-un \\
    \[\_ \text{today afternoon three-o’clock-LOC show-PASS-NU-}\]-REL yenghwa \\
    movie \\
    ‘a/the movie that is showing at three o’clock this afternoon’

Lastly, under Lee’s analysis, -te-un marks relative past and -nu-un marks relative present but there are non-past contexts in which -te-un occurs instead of -nu-un. To see this, consider (23). This sentence is judged decidedly better if the ATT clause ends with -te-un, despite the fact that its reference time is now. And this shows that calling -te-un “a past imperfective marker” and calling -nu-un “a non-past imperfective marker”, as Lee does, will not be the most desirable line to pursue.

(23) Context: The manager of a factory is talking to his workers.

Yelepewn, \[[\text{pro}e_i\text{ha-te-??-nu-}\]-un il]\}-ul
Kim (2013) takes a rather different approach to -te-un and -nu-un ATT clauses than Lee (1993) does but her analysis is also faced with empirical challenges. First, the fact that sentences like (14) and (19) can be uttered without concurrently experiencing the eventuality described by the embedded clauses is slightly problematic to her analysis for the following reasons: she treats -te-un clauses as encoding ‘episodic memory for the past’ in the sense of Tulving (1972, 1983, 2002, 2005) and this means that they linguistically codify humans’ mental travel into the past and consciously ‘re-living’ or ‘re-experiencing’ past experiences. Hence, even though she does not claim that all -te-un clauses must exhibit such a property, the fact that the -te-un clauses in (14) and (19) do not describe personally experienced eventualties remains as a glitch in her analysis.

Similarly, the occurrence of -te-un in sentences like (23) constitutes a problem for her analysis since uttering such sentences does not require the speaker nor the hearer to recall a past experience and ‘re-live’ or ‘re-experience’ it at the time of utterance.

In addition, the fact that -nu-un ATT clauses can be construed as describing events that are in progress at some reference time as in (18a) is left unexplained in her analysis: She analyzes -nu-un clauses as encoding ‘semantic memory’ in the sense of Tulving, i.e., a person’s ‘abstract, timeless, encyclopedic knowledge’ of the world that he/she shares with others (Tulving 1972). Hence, while her analysis provides a way to capture the generic and futurate semantics that some -nu-un clauses can carry since such cases arguably encode more or less encyclopedic knowledge that is shared by members of a speech community, as is, it does not tell us why apparently string-identical -nu-un clauses may receive relative present progressive interpretations as well as relative present generic and/or futurate interpretations.

In sum, then, there is little doubt that the primary function of -te-un is to describe past eventualties recalled by the speaker and the primary function of -nu-un is to encode present imperfective meanings as authors like Lee (1993) and Kim (2013) have argued, but the two ATT clause markers have several additional properties that defy the existing analyses and therefore there is a need for a new analysis.

### 4. A new analysis of -te-un and -nu-un

#### 4.1 The semantics of -te-un

I claim that -te-un ATT clauses behave the way do because they are interpreted relative to some contextually determined viewpoint holder (VH) who believes that their

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7 Kim (2013: 105) further claims that ‘when encoding a semantic memory that is derived from observing recurring eventualties (e.g., properties of some particular species or habits of individuals), -nu-un is employed for utterances with verbal predicates and Ø-un is employed for utterances with adjectival predicates and ‘when encoding a semantic memory that is based on historical facts’, Ø-un is employed regardless of the predicate type of the ATT clause.
propositional contents are true of some relative past time; that is, in order for utterances containing them to be judged good, their contents must be true in worlds that are evidentially accessible to some VH at some anchoring time, regardless of whether that individual has obtained the evidence directly or indirectly, or the evidence that he/she has is of good quality or not. For referential convenience, I abbreviate the set of such worlds as ‘\(W_{EA}\)’.

I further claim that interpreting -\(te\)-\(un\) clauses always involves mentally traveling to some past time but coming back to VH’s time (VT), which is always later than the embedded clause’s event time (ET). And for this reason, -\(te\)-\(un\) ATT clauses are always past-oriented though they are not necessarily past-tensed.

For lack of better term, I characterize such semantic properties of -\(te\)-\(un\) clauses as having ‘a retrospective viewpoint’, but what I mean by ‘retrospective’ differs from how the term has been used in the literature: while the existing analyses use it to indicate that some linguistic expression or construction lexically encodes an individual’s recalling or reporting of an eventuality that he/she personally experienced or witnessed (e.g., Suh 1977; Sohn 1975; Choi 1983; Kwon 2012), I use it to indicate the direction of a viewpoint in presenting an eventuality.

To reiterate, then, under my analysis, interpreting an utterance containing a -\(te\)-\(un\) ATT clause involves (i) identifying an individual who believes in the existence of the eventuality described by the prejacent of -\(te\)-\(un\) in all worlds that are evidentially accessible to him/her at some relative past time; (ii) mentally traveling the temporal space between ET and VT by taking a retrospective viewpoint on the eventuality at hand; and (iii) deriving a property of individuals from the embedded clause’s content and ascribing it to the head N’s denotation at VT via relevant semantic operations.\(^8\)

The retrospective property of the -\(te\)-\(un\) ATT construction I have outlined above is schematically depicted in Figure 1. Here and below, the vertical line represents VT, i.e., the time relative to which the content of a -\(te\)-\(un\) clause is interpreted; the shaded circle being inside the solid unshaded circle labeled as \(W_{EA}\) indicates that the eventuality described by the prejacent of -\(te\)-\(un\) obtains in all worlds that are evidentially accessible to VH at VT; and the dotted curvy arrow represents the retrospective nature of the viewpoint direction, i.e., how VH accesses the eventuality described by the prejacent of -\(te\)-\(un\) by mentally traveling to some past time from VT.

### Figure 1. Retrospective semantics of the -\(te\)-\(un\) ATT construction:

\[\begin{array}{c}
  W_{EA} \\
  \text{VT} \\
  \text{Time-line}
\end{array}\]

\(^8\) In this paper, I do not discuss exactly how RCs are interpreted and their meanings are combined with their head N’s denotations, but I assume that typical gap-containing externally headed restrictive RCs are interpreted via Predicate Abstraction and Predicate Conjunction in the sense of Heim and Kratzer (1998) whereas gap-less non-restrictive or appositive RCs are interpreted at the sentential level by conjoining to the matrix clause, as suggested by Demirdache (1991).
Support for the present analysis of -te-un comes from several sources. First of all, utterances containing a -te-un clause are judged good only when it is contextually obvious that the VH at hand believes in the truthfulness of the -te-un clause’s content on the basis of some evidence that he/she has at her disposal. To see this, compare (24) and (25). The two sentences are identical except for the absence vs. presence of the degree adverb kutholok ‘so much’. Yet (25) is judged markedly better than (24) and this is because the presence of the degree expression in (25) allows for the embedded clause to be interpreted in such a way that the event described was even visible to non-event participants; that is, the fact that Mina was in love with someone was obvious to people around her including the speaker.

Context for (24) and (25): The speaker is friends with Mina and she is telling about Mina’s recent tragedy to a mutual friend in an out-of-the-blue context.

(24)??[Mina-ka e,i sarangha-te]-un saram,-i cwuk-ess-e.
[M.-NOM ___ love-TE]-REL person-NOM die-PST-DECL.INFML

Intended: ‘The person who Mina loved has died.’

(25)[Mina-ka e,i kutholok sarangha-te]-un saram,-i
cwuk-ess-e.
die-PST-DECL.INFML
‘The person who Mina loved so much has died.’

Consider now (26). This sentence shows variable grammaticality/felicity judgments: it will be judged bad if it is uttered by someone who is friends with Mina in an out-of-the-blue context (Context 1) but it will be judged good if the discourse participants know that that the speaker happened to read Mina’s journal and thereby has learned why she drank so much on some past day under discussion (Context 2). The sentence can be judged good also if the speaker is telling a story in which a young lady named Mina appears as a main character (Context 3).

(26)[Ku-ttay e,i ku-il-ttaymwuney maywu sulphu-te]-un
[That-time ___ that-incident-because.of very be.sad-TE]-REL
Mina,-nun swul-ul manhi masi-ess-ta.
M.-TOP alcohol-ACC a.lot drink-PST-DECL
‘Feeling distressed by that incident, Mina drank a lot at that time.’

If we assume the felicity condition I have identified for utterances containing -te-un clauses above, we can readily see why the grammaticality of (26) exhibits such variable grammaticality/felicity judgments: it is judged infelicitous or even ungrammatical in Context 1 because ordinary human beings do not have direct access to another human being’s internal states. On the other hand, it is judged fine in Context 2 because in such cases, it is contextually obvious that the speaker has reliable evidence with which to
affirm the embedded clause’s content. The sentence can be felicitously uttered in Context 3 because the narrator of a story can be omniscient, so she can present the embedded clause’s content from her own point of view or by taking Mina’s point of view.

Essentially the same reasoning lets us account for speaker variation on the grammaticality judgments of (14), (27), and (28), which are all about historical figures, unlike the case with (26). As I mentioned in section 3, (14) may be judged bad if it is presented without any contextualization; similarly, if (27) and (28) are uttered out of the blue, some Korean speakers may judge them to be unacceptable. Importantly, however, all three sentences can be judged fine if the hearer presupposes that the speaker has learned from some reliable source (e.g., a television documentary or an encyclopedia) that the content of the sentence is true. Under the present analysis, such presupposition or accommodation can make a difference in judging utterances containing -te-un ATT clauses because taking it as a given that the speaker is informationally well-equipped to make a veridical claim about some historical figure prevents the hearer from questioning the truthfulness of what is said.

(14) Ce-kes-i [yec-nal-ey rinkhen-i e_i sal-te-]-un
That-thing-NOM [old-day-LOC Lincoln-NOM __ live-PST.IMPFV-]-REL
cip,-i-∅-ta.
house-COP-PRS-DECL
‘That is the house where Abraham Lincoln used to live in.’

(27) Ce-cip-i [napholeyong-i ku tangsi e_i sal-te-]-un
That-house-NOM [Napoleon-NOM that time __ live-TE-]-REL
kos,-i-∅-ta.
place-COP-PRS-DECL
Intended: ‘That house is where Napoleon lived in at that time.’

(28) Ce-kos-i [yec-nal-ey seycong-tay-wang-i e_i cacwu
that-place-NOM [old-day-LOC Sejong-great-king-NOM __ often
sanchayk-ha-te-]-un cengwon,-i-∅-ta.
walk-do-TE-]-REL garden-COP-PRS-DECL
Intended: ‘That is the garden where King Sejong the Great used to take a walk.’

Positing the proposed retrospective semantics for -te-un also lets us readily handle data like (23), which are problematic for Lee’s (1993) analysis. Under the present analysis, (23) permits the occurrence of -te-un even though it is a non-past sentence because the -te-un marking on the embedded clause gives rise to a continuative present perfect interpretation. More concretely, in this sentence, the VH is the hearer and the VT

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9 I conducted grammaticality judgment tests on these sentences with 20 adult Korean speakers using a written questionnaire format and when the sentences were presented without contextualization, 12 speakers judged (14) to be unacceptable and 13 speakers judged both (27) and (28) to be unacceptable.

10 King Sejong the Great (1397-1450) was the 4th king of Chosun Dynasty.
is now, so if my analysis is correct, then, in interpreting the embedded clause, the hearer has to mentally travel to the onset of the event described by the prejacent of -te-un by taking a retrospective viewpoint on it, and since the hearer’s mental travel covers all the temporal space between some past time and now, the embedded clause ends up receiving a temporal interpretation that can be best labeled as ‘continuative present perfect’.

(23) Yelepwn, [[pro e1 ha-te-]-un il]-ul memchwu-ko
     Everyone.HON, [[you _ do-TE-]-REL work]-ACC stop-CONN
     yeki-lul po-∅-seyyo.
     here-ACC look-PRS-IMP.HON
     ‘Everyone, please stop what you are/have been working on and look here.’
Felicitous context: The hearers are working on something and the speaker wants them to stop working on it.

Figure 2. Retrospective and continuative present perfect meaning of the -te-un clause in (23):

Additional support for the proposed analysis of -te-un clauses comes from the fact that the grammaticality of sentences embedding them may vary depending on which individual is construed as the VH. For instance, (29) is judged good if the speaker is construed as the VH and consequently the speech time (i.e., now) is construed as the VT—that is, if it is uttered in a context where the speaker is recalling some past eventuality that she witnessed, namely, the event of Cinho treating dinner to Mina, but it is judged bad if Cinho is construed as the VH and the time at which he took Mina out for dinner is construed as the VT. Adopting the present analysis, we can correctly predict that the sentence will be ungrammatical on the second construal: if Cinho is construed as the VH and the time he took Mina out for dinner is construed as the VT, then the ET will be later than the VT (i.e., VT < ET), and this will make it impossible for the VH to take a retrospective viewpoint on the event described by the prejacent of -te-un.

(29) Cinho-nun [[e1 ku taum-nal ttena-te-]-un Mina]-ekey
     C.-Top [[_ the next-day leave-TE-]-REL M.-]DAT
cenyek-ul sa-∅ cwu-ess-ta.
     dinner-ACC buy-CONN give-PST-DECL
     ‘Mina was leaving the next day and Cinho took her out for dinner.’
     (Lit.: ‘Cinho took out Mina for dinner, who was leaving the next day.’)
Felicitous context for (29): The speaker is recalling some eventuality involving Mina and Cinho.
**Infelicitous** context: The speaker is telling a story about what Cinho is recalling by taking his (i.e., Cinho’s) point of view.

Yet additional support for the present analysis comes from the fact that -te-un clauses can describe any type of eventuality as long as their time is past relative to VT. To see this, consider (30). In this sentence, the embedded clause’s content is temporally later than the matrix clause’s content but the sentence is judged perfectly fine because from the speaker’s viewpoint, the event described by the prejacent of -te-un occurred at some past time, as schematically represented in (31). For referential and expository convenience, here and below, I will call the time of the clause that directly embeds an ATT clause ‘the matrix time’ and abbreviate it as ‘MT’. I will also abbreviate the utterance/speech time as ‘UT’. In addition, I will assume that in cases where an ATT clause occurs in a discourse without being embedded inside another clause, the MT defaults to the UT because every utterance must be interpreted relative to the ‘here and now’ unless indicated otherwise.

(30) Cinho-nun cinan-cwu-ey [[e[i ecey mikwuk-ulo ttena-te]-un
C.-Top last-week-ACC [[/_ yesterday USA-to leave-TE]-REL
M.-ekey cenyek-ul sa-∅ cwu-ess-ta.
M.-DAT dinner-ACC buy-CONN give-PST-DECL
‘Mina was leaving for the USA yesterday and Cinho took her out for dinner last week.’
(Lit.: ‘Cinho took out Mina for dinner last week, who was leaving for the USA yesterday.’)

(31) Temporal relation between the three relevant times in (30):
MT < ET < UT = VT (MT: last week; ET: yesterday; UT: now)

Finally, breaking with authors like Lee (1993) and Chung (2005/2012), analyzing -te-un as a retrospective viewpoint marker rather than a relative past imperfective marker enables us to account for cases where -te-un co-occurs with the anterior marker -ess, engendering a so-called ‘past in the past’ or ‘pluperfect’ interpretation. To see this, reconsider (20).

(20) [[Sip-nyen-ey e[i kum-ul chas-a ttena-ess-te]-un
[[Ten-year-LOC _ gold-ACC look.for-CONN leave-ANT-TE]-REL
saram-tul]-i ecey-seya tolao-ess-ta.
person-PL-NOM yesterday-only return-PST-DECL
‘The people who (had) left for gold ten years ago came back only yesterday.’

On the analysis promoted here, the embedded clause of (20) is interpreted as follows: First, because of the -ess-marking in it, the prejacent of -te-un describes an event that was completed at some time t1 that was 10 years ago. Second, by virtue of the fact that this event is inherently telic and it was completed at t1, if we adopt Parsons’ (1990) analysis of grammatical aspect, we can assume that the resultant state of the event came about at t1.
and it continued to hold for a while. Third, because of the -te-un marking on the embedded clause, in interpreting the entire sentence, the VH, namely, the speaker, mentally travels to \( t_i \), identifies the resultant state of the event described by the prejacent of -te-un, and then accesses it from now, which is both VT and UT, as depicted in Figure 3. Here, the unshaded circle indicates the event described by the prejacent of -te-un and the shaded circle indicates the resultant state of that event.

**Figure 3. Temporal property of (20):**

![Time line diagram](Image)

\[ t_1: \text{10 yrs ago} \quad \text{MT: yesterday} \quad \text{VT: now} \quad (\text{ET} < \text{MT} < \text{VT} = \text{UT}) \]

In sum, then, there are several reasons to think that -te-un clauses are interpreted relative to some individual who can attest their propositional contents based on his/her belief of the world and who access their contents from his/her temporal location by taking what I call ‘a retrospective viewpoint’ on them.

### 4.2 The semantics of -nu-un

In proposing a new analysis of the semantics of -nu-un, I would like to first establish that -nu-un ATT clauses differ from -te-un ATT clauses in three crucial respects.

First of all, while the prejacent of -te-un may describe a perfective eventuality as we saw in (20), the prejacent of -nu-un invariably describes an imperfective eventuality. This is evidenced by the fact that what the prejacent of -nu-un can describe is limited to only three types: (i) an event that is in progress at the time of the embedding clause, as shown in (16) and further illustrated by (32); (ii) a generic or habitual eventuality, as shown in (21); and (iii) an event that is planned to occur at a relative future time (i.e., a futurate event), as shown in (22). Furthermore, in all utterances containing a -nu-un clause, the event described by the prejacent of -nu-un is not complete at the topic time (TT) in the sense of Klein (1994) (i.e., the time with respect to which the ET is evaluated). Hence, if we adopt a Klein-type definition for the imperfective (e.g., Kratzer 1998), then we are led to conclude that -nu-un clauses always embed imperfective event descriptions.

(32) Present progressive event descriptions:

a. \([e_i \text{ cikum } \text{ ttena-nu-} ] \text{-un saram}_i\)
\[\text{[\_ now leave-NU-]REL person}\]
‘a/the person who is leaving now’

b. \([e_i \text{ cikum } \text{ pap-ul } \text{ mek-nu-} ] \text{-un saram}_i\)
\[\text{[\_ now meal-ACC eat-NU-]REL person}\]
‘a/the person who is eating now’

c. \([e_i \text{ tteleci-nu-} ] \text{-un pit-pangwul-tul}_i\)
Second, while -te-un clauses can stand in any temporal relation to their embedding clauses as long as their VT precedes the onset of the ET as we have observed in section 4.1, -nu-un clauses can only describe eventualities that are non-past with respect to their MT. To illustrate, the data in (33)-(36) show that a sentence embedding a -nu-un clause is judged good only if the -nu-un clause’s ET contains (⊇) or follows (>) MT; that is, it is judged bad if ET precedes (<) MT (compare (36) with (34)).

(33) [e₁ cacenke-lul tha-nu]-un ai-lul po-∅-a.
    [__ bicycle-ACC ride-NU]-REL kid-ACC look-PRS-IMP.INFML
    ‘Look at the child who is riding a bike.’ (MT: now; MT = TT ⊆ ET)

(34) [[Cikum ce-ki-se e₁ ca-ko iss-nu]-un saram]-un
    [[Now that-place-LOC __ sleep-CONN exist-NU]-REL person]-TOP
    Minho-i-ta.
    M.-COP-DECL
    ‘The person who is sleeping over there now is Minho.’
    (MT: now; MT = TT ⊆ ET)

(35) Cinho-nun [[e₁ ku taum-nal ttena-nu]-un chinkwu]-ekey
    C.-Top [[__ the next-day leave-NU]-REL friend]-DAT
    chayk-lul senmwul-hay-ess-ta.
    book-ACC gift-do-PST-DECL
    ‘Cinho gave a book to a friend who was leaving the next day.’
    (MT: sometime in the past; MT < TT ⊆ ET)

(36)*[[Sip-nyen cen] ku ttay ku kos-eyse e₁ ca-ko
    [[Ten-year-ago that time that place-LOC __ sleep-CONN
    iss-nu]-un saram]-un Minho-i-ta.
    exist-NU]-REL person]-TOP M.-COP-DECL
    Intended: ‘The person who was sleeping in that place 10 years ago at that time
    is Minho.’ (MT: now; TT ⊆ ET < MT)

Third, unlike -te-un, -nu-un implicates that the eventuality described by its prejacent holds at a time later than MT. Moreover, in some cases, this implicature cannot be canceled (more on this in section 5.1). To see this, compare (37) and (38), which contain a -te-un ATT clause and a -nu-un ATT clause, respectively. In both (37) and (38), the matrix clause is in the past tense but while (37) can be true in a context where the woman stopped running a clothing store at a time later than MT, (38) will be false in such a context (although their English translations cannot capture this).
(37) Past sentence embedding a -te-un ATT clause:

Ku tangsi Cinho-nun [[e₁ oscip-ul ha-te]-un yeca]-lang
That period C.-TOP [[_ clothes.shop run-TE]-REL woman]-with
sakwi-ess-ta.
date-PST-DECL
‘At that time, Cinho was dating a woman who was running a clothing store.’

(38) Past sentence embedding a -nu-un ATT clause:

Ku tangsi Cinho-nun [[e₁ oscip-ul ha-nu]-un yeca]-lang
That period C.-TOP [[_ clothes.shop run-NU]-REL woman]-with
sakwi-ess-ta.
date-PST-DECL
‘At that time, Cinho was dating a woman who was running a clothing store.’

The semantic difference between (37) and (38) is evidenced by the fact that unlike (37), (38) cannot be continued by an utterance which explicitly states that the woman under description stopped running a clothing store later. To see this, compare (39) and (40).

(39) Discourse containing (37):

Ku-tangsi Cinho-nun [[e₁ oscip-ul ha-te]-un yeca]-lang
That-period C.-TOP [[_ clothes.shop run-TE]-REL woman]-with
sakwi-ess-ta.
date-PST-DECL
‘At that time, Cinho was dating a woman who was running a clothing store.’
√Kurentey, ku-yeca-nun nacwung-ey oscip-ul

kumantwu-ess-ta.
quit-PST-DECL
‘But that woman quit running a clothing store later.’

(40) Discourse containing (38):

Ku-tangsi Cinho-nun [[ e₁ oscip-ul ha-nu]-un yeca]-lang
That-period C.-TOP [[ _ clothes.shop run-NU]-REL woman]-with
sakwi-ess-ta.
date-PST-DECL
‘At that time, Cinho was dating a woman who was running a clothing store.’
#Kurentey, ku-yeca-nun nacwung-ey oscip-ul

kumantwu-ess-ta.11

11 An anonymous reviewer claims that the discourse in (40) is fine because according to his/her judgment, the time of the woman’s running a clothing store can be “either simultaneous with the matrix clause’s time or with the speech time”. The reviewer also adds that such ambiguity is actually expected given Lee’s (1987) observation about so-called ‘double-access’ phenomenon in Korean, which is later echoed by Ogihara (1995, 1999) for Japanese. However, all the Korean speakers I have consulted agree
‘But that woman quit running a clothing store later.’

I take these sets of facts to suggest that in the -nu-un ATT construction, the lexical predicate plus -nu composite describes an imperfective eventuality which obtains in the world of evaluation (w₀) at TT but this eventuality must also obtain in worlds that are identical to w₀ up to MT at a time that minimally contains TT. For referential convenience, I will call such worlds ‘metaphysically accessible worlds’ and abbreviate the set of metaphysically accessible worlds as ‘W_MA’. This nomenclature is inspired by Copley (2002: 23), who borrows the term ‘metaphysical’ from Thomason (1970), and given the way she uses the term ‘metaphysical’, what I call ‘a metaphysically accessible world’ can be defined as ‘a world that includes all the propositions that are true in the world of evaluation at the time of evaluation’\textsuperscript{12,13}

From this definition of ‘a metaphysically accessible world’, two things follow. One is that W_MA contains a member that is identical to w₀ itself. The other is that everything holding in w₀ at MT also holds in all members of W_MA at MT, but since W_MA can have an infinite number of members and things may develop differently in some of them, not all events that are in progress in w₀ at MT (e.g., Cinho riding a bike at a park now, Mina sleeping now) may obtain in all members of W_MA after MT.

However, for generic or habitual eventualities holding in w₀ at MT (e.g., Cinho’s riding a bike as a hobby, Mina eating pizza every day), we expect a different picture, since they hold for a much longer period of time than just at TT. For example, if the proposition ‘Cinho rides a bike as a hobby’ is true of now, then it is most likely true of yesterday, last week, tomorrow, and next week as well; and if ‘Mina eats pizza every day’

with my judgment: they all think that discourses like (40) are contradictory because the nu-un marking in the first sentence implicates that the woman is still running a clothing store. At the moment, I do not have an account of why such inter-speaker variation may exist in interpreting past sentences embedding -nu-un ATT clauses. But one thing I would like to point out is that double access in Korean has not been dealt with in the realm of ATT clauses, and as far as I can tell, -nu-un ATT clauses behave differently from “present” tensed clauses that occur as the complement of propositional attitude verbs such as verbs of ‘saying’. I should also note that the existing work on the double access phenomenon only deals with cases where a present tense morpheme in a subordinate clause is in the immediate scope of the matrix past tense (see Ogihara 1995 and references there). And since not all ATT clauses may be under the scope of the matrix tense as some of them may be non-restrictive or appositive clauses, it seems difficult to apply what has been said about the double access phenomenon in Korean to the data presented here. That said, in future research, it will be definitely worth investigating to what extent -nu-un ATT clauses in Korean resemble the behavior of “present” tensed complement clauses that are in the immediate scope of the matrix past tense.

\textsuperscript{12} Copley (2002) is only concerned with non-embedded futurate sentences in English (e.g., \textit{The Red Sox are playing the Yankees tomorrow}), however. So the way she applies the notion of ‘metaphysically accessible world’ is not exactly identical to the way I do it here. For example, the notion of ‘matrix time’ is not relevant for her. Moreover, in her work, there is no mention of ‘viewpoint direction’, which figures prominently in the present analysis.

\textsuperscript{13} Given this definition, what I call ‘a metaphysically accessible world’ is conceptually similar to what Dowty (1979) calls ‘an inertia world’. But while the notion of ‘an inertia world’ is mostly relevant for discussing progressive events, the notion of ‘a metaphysically accessible world’ can encompass cases that deal with generic and futurate eventualities as well as progressive ones. Therefore, they are not exactly alike.
is true of now, then she is likely to eat pizza every day for the rest of her life as she has done so up to now. Given this, I submit that generic/habitual eventualities obtain in a maximally large subset of $W_{MA}$ that includes $w_0$ during a maximally large interval that contains both TT and UT.

Regarding futurate events or plans that hold in $w_0$ at MT, which are described by English sentences like *The Red Sox are playing the Yankees tomorrow.* and *The plane is leaving at 5 PM this evening.*, respectively, I assume that they hold in all members of $W_{MA}$ including $w_0$ at MT. This is a reasonable assumption to make because metaphysically accessible worlds are by definition identical to the world of evaluation up to the time of evaluation, so everything that is planned in that world as of MT must be planned in all its metaphysically accessible worlds as well.

Against this theoretical backdrop, I claim that interpreting a -nu-un ATT clause involves (i) identifying both MT and TT; (ii) projecting the eventuality described by the prejacent of -nu-un not only in $w_0$ at TT but also in some or all of its metaphysically accessible worlds at a time that minimally contains TT; and (iii) ascribing the property derived from the propositional content of the -nu-un clause to the head N’s denotation at MT. And to make things parallel to cases involving -te-un clauses, I will call the computational process I have just outlined as ‘taking a projective viewpoint on the event at hand’.

The projective semantic property of the -nu-un ATT construction is schematically represented in Figure 4 for cases where MT is co-temporaneous with TT. In this figure and what follows, ‘$W_{MA-SUB}$’ refers to a non-empty proper subset of $W_{MA}$; the thin vertical line represents MT; the small dotted shaded circle being inside the bigger solid unshaded circle indicates that the eventuality described by the prejacent of -nu-un obtains in some or all members of $W_{MA}$, depending on whether the bigger circle is labeled as $W_{MA}$ or $W_{MA-SUB}$; the width of the shaded circle represents the temporal duration of ET (i.e., for how long it holds); and the curvy arrow is meant to capture the idea that projecting the eventuality at hand in some or all members of $W_{MA}$ is done at MT.

**Figure 4. Projective semantics of the -nu-un ATT construction:**
Cases where MT is co-temporaneous with TT:

To demonstrate how the present analysis of -nu-un ATT clauses captures the relevant data, first reconsider (33).

(33) $[e_t$ cacenke-lul the-nu-]-un ai-lul po-$\varnothing$-a.

`Look at the child who is riding a bike’ (MT: now; $MT = TT \subseteq ET$)
This sentence can be true if it is uttered in a context where the speaker is asking the hearer to look at some discourse salient child who is riding a bike. Given this, one may think that the -nu-un clause of this sentence denotes the property of riding a bike at the present moment at some discourse salient location in w₀ that is presumably visible to both the speaker and the hearer. But under my analysis, it actually requires slightly different truth-conditions: it can be true if (i) the eventuality described by the prejacent of -nu-un obtains in w₀ between its onset time and TT (i.e., now); (ii) there exists at least one metaphysically accessible world of w₀ (which could be w₀ itself) in which this eventuality obtains at a time t that immediately follows TT (henceforth TT' for short); (iii) and the property that is derived from positing the existence of such a world holds true of the head N’s denotation at MT.

These truth-conditions are schematically depicted in Figure 5. Here, labeling the bigger unshaded solid circle as W_{MA-SUB} is meant to indicate that the eventuality described by the prejacent of -nu-un may obtain only in some members of W_{MA}, and the small portion of the shaded dotted circle located to the left of the vertical line represents the existence of the eventuality described by the prejacent of -nu-un in w₀ between its onset time and TT.

**Figure 5. Projective and progressive semantics of the -nu-un ATT clause in (33):**

The truth-conditions I have spelled out for (33) correctly capture Korean speakers’ intuition that the embedded clause of the sentence describes an eventuality that started before MT but is ongoing at MT and it is even expected to continue after it. Furthermore, essentially the same truth-conditions can be posited for all utterances containing -nu-un clauses where the eventuality described by the prejacent of -nu-un is construed as ongoing at the time of evaluation. By way of illustration, consider (41): in this discourse, the first sentence asserts that the embedding subject tried to stop the event described by the prejacent of -nu-un, namely, Mina’s sleeping at some past time, and the second sentence asserts that her sleeping continued even after that. The discourse is still felicitous, however, and this shows that even when embedded in a past sentence, a progressive -nu-un clause describes an eventuality that started before MT but was ongoing at MT and had the potential to continue after it, just like the way it would behave when embedded in a non-past sentence, as we saw in (33).

(41) Cinho-nun [e, camca-nu]-un Mina-lul kKay-wu-ess-ta.

\[ C.\text{-NOM} \quad [\text{sleep-NU}]\text{-REL} \quad M.\text{-ACC} \quad \text{wake.up-CAU-PST-DECL} \]

‘Cinho tried to wake up Mina, who was sleeping.’ (MT < now; MT = TT ⊆ ET)
Turning now to cases where a -nu-un clause is construed as describing a
generic/habitual property: under the present analysis, sentence (42) below (which is
repeated from (21) above) has similar truth-conditions to (33) except that in this case, for
the sentence to be true, the eventuality described by the prejacent of -nu-un must obtain
in a maximally large subset of W_Ma which includes w_0 during a maximally large interval
that contains both TT and UT (henceforth TT+ for short). Positing this truth-condition for
(42) will automatically ensure that some indefinite child habitually rides a bike in w_0 both
before and after MT, not to mention at MT, because when a -nu-un clause is construed as
describing a generic/habitual property, MT is always identical to TT, so it is included in
the interval during which the eventuality described by the prejacent of -nu-un holds.

(42) Context: Discourse participants are talking about what type of children they like
and the speaker says that she likes children who know how to ride a bike and
who actually ride a bike on a regular basis.

Na-nun [e_i cacenke-lul tha-nu]-un aï-ka coh-∅-ta.
I-TOP [__ bicycle-ACC ride-NU]-REL kid-NOM like-PRS-DECL

‘I like children who ride a bike.’ (MT: now; MT = TT ⊆ ET)

The meaning of (42) that I have just articulated is schematically depicted in Figure 6.
Here, the unusually big size of the dotted circle compared to the solid circle labeled as
‘W_Ma’ indicates that the eventuality described by the prejacent of -nu-un obtains in most
members of W_Ma and its relatively big width indicates that TT+ covers a long span of
time including both TT and UT, not only into the past but also into the future from MT.

Figure 6. Projective and generic semantics of the -nu-un clause in (42):

Finally, to demonstrate how the present analysis gives us a handle on data like (22)
and (43), in which -nu-un clauses are construed as describing futurate eventualities,
notice first that in such cases, the eventualities described by the embedded clauses do not
exist in w_0 at MT; rather, plans about actualizing them in w_0 at TT do. Importantly,
however, the same plans also exist in all other members of W_Ma at MT. Therefore, under
the present analysis, sentence (43) will be true if as of MT, the eventuality described by
the prejacent of -nu-un is planned to occur at TT not only in w_0 but also in all its
metaphysically accessible worlds, and this accords with Korean speakers’ intuition about the meaning of the sentence, as desired.

(43) **Context:** Discourse participants are talking about who is scheduled to do what at tomorrow’s talent-show at school.

[Nayil hayngsa-eyse e_i cacenke-lul tha-nu-]-un ai-nun
[tomorrow event-LOC __ bicycle-ACC ride-NU]-REL child-NOM
Minho-i-∅-ta.

look-PRS-DECL

‘The child who is scheduled to ride a bike at tomorrow’s event is Minho.’

(MT: now; TT: sometime tomorrow during which some discourse salient event occurs; MT < TT ⊆ ET)

The futurate semantics of the -nu-un clause in (43) is sketched in Figure 7. In this diagram, the shaded circle is much smaller than the unshaded circle, but the unshaded circle is labeled as W_{MA}, and this adequately captures the proposed idea that for the sentence to be true, a copy of the eventuality described by the embedded clause must exist in all members of W_{MA} (including w_0) at TT and the projection of such copies in all those worlds is done in w_0 at MT.

**Figure 7. Projective and futurate semantics of the -nu-un clause in (43):**

\[ W_{MA} \rightarrow \text{Time-line} \]

The foregoing shows that the analysis I have put forward is able to capture the full range of interpretations that utterances containing -nu-un clauses can receive, improving both Lee’s (1993) and Kim’s (2013) analyses: recall that Lee’s analysis has trouble accounting for generic and futurate cases and Kim’s analysis has difficulty dealing with progressive cases. What is particularly desirable about the proposed analysis is that it postulates an essentially identical semantics for all types of utterances containing a -nu-un clause since interpreting them will always involve (i) identifying both MT and TT; (ii) projecting the eventuality described by the prejacent of -nu-un in w_0 at TT as well as in some or all members of W_{MA} at a time that minimally contains TT (be it TT, TT', or TT'');¹⁴ and (iii) ascribing the property that is derived from doing so to the head N’s denotation at MT. I should also point out that the semantics of a -nu-un clause is context-dependent but a careful re-examination of the truth-conditions I have suggested for some

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¹⁴ Notably, the idea that in all cases, what is described by the prejacent of -nu-un must obtain in the world of evaluation at a time minimally containing TT also helps explain why -nu-un ATT clauses are considered as carrying realis mood in the literature (e.g., Lee 1993).
of the data presented above leads us to identify which meaning may be assigned when: a -

*nu-un* clause receives a generic interpretation if its head N occurs un-embedded as in (21)
or its head N instantiates a certain type of individual as in (38) and (42). It receives a
progressive interpretation if its ET overlaps its MT (which is often made clear by the
presence of temporal adverbs like *cikum* ‘right now’ and *ku-ttay* ‘that time’) as in (32),
(33), (34), and (41). It receives a futurate interpretation if it contains a temporal adverbial
like *nayil* ‘tomorrow’, which unmistakably indicates that its ET follows MT and therefore
they do not overlap, as is the case in (22), (35), and (43). Given this, we can conclude that
what is presented here successfully captures not only the core semantics shared by all
occurrences of *nu-un* as an ATT marker but also its context dependency.

4.3. Summary

In this section, I have proposed a new semantic analysis of the *-te-un* and the *-nu-un* ATT
cstructions with a view to accounting for the outstanding issues introduced in section 3.
In view of the new analysis, the two constructions differ in several respects, which cannot
be adequately captured by calling one ‘a relative past marker’ and the other ‘a relative
non-past marker’.

First of all, while the *-te-un* construction presents an eventuality by taking what I call
‘a retrospective viewpoint’, the *-nu-un* construction does so by taking what I call ‘a
projective viewpoint’.

Secondly, while *-te-un* clauses are interpreted relative to some contextually
determined individual and his/her temporal location, namely, what I call ‘the viewpoint
holder (VH)’ and ‘the viewpoint time (VT)’, respectively, *-nu-un* clauses are interpreted
relative to the same time and world as their embedding clauses, namely, what I call ‘the
world of evaluation (w₀)’ and ‘the matrix time (MT)’, respectively.

Thirdly, while the content of a *-te-un* clause must hold true of all worlds that are
evidentially accessible to VH at some time that precedes VT, the content of a *-nu-un*
clause must hold true of w₀ at MT as well as in some or all worlds that are metaphysically
accessible to it at a time that minimally contains the TT.¹⁵

Relatedly, while interpreting a *-te-un* clause involves mentally traveling into a time
that precedes the VT, interpreting a *-nu-un* clause requires postulating a time that follows
the MT, and for this reason, *-te-un* ATT clauses are past-oriented whereas *-nu-un* clauses
are more future-oriented although *-nu-un* clauses are also firmly anchored at the time of
evaluation, namely, t₀.

Finally, it can be said that *nu-un* clauses describe more objective properties than *-te-
un* clauses do because their contents are presented from the vantage point of a non-
sentient individual (namely, MT) rather than through the lens of a sentient individual
(namely, the VH).

These differences are summarized in Table 1.

¹⁵Given this, one can state that while the *-te-un* ATT construction always involves universal
quantification over the relevant set of worlds, the *-nu-un* ATT construction may or may not involve
universal quantification depending on what type of eventuality the *-nu-un* clause at hand is construed as
describing; if the *-nu-un* clause describes a futurate eventuality, universal quantification occurs, but if it
describes a generic or a progressive eventuality, then existential quantification occurs.
Table 1. Comparison between -te-un clauses and -nu-un clauses

<table>
<thead>
<tr>
<th></th>
<th>-Te-un clauses</th>
<th>-Nu-un clauses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewpoint direction</td>
<td>Retrospective</td>
<td>Projective</td>
</tr>
<tr>
<td>( w_0 ) when embedded under another clause</td>
<td>May differ from the embedding clause’s</td>
<td>Same as the embedding clause’s</td>
</tr>
<tr>
<td>( t_0 ) or temporal anchor</td>
<td>VT</td>
<td>MT</td>
</tr>
<tr>
<td>Worlds where their meanings obtain</td>
<td>All worlds that are evidentially accessible to VH</td>
<td>( w_0 ) and some or all of its metaphysically accessible worlds</td>
</tr>
<tr>
<td>Times when their meanings obtain</td>
<td>Any interval that contains some time before VT</td>
<td>At MT and an interval that minimally contains TT, which can be TT itself, TT’, or TT⁺, depending on context</td>
</tr>
<tr>
<td>Temporal orientation</td>
<td>Past oriented</td>
<td>Present and future oriented</td>
</tr>
</tbody>
</table>

5. Additional welcome results of the proposed analysis

In this section, I show how the proposed analysis captures other recalcitrant properties of the -te-un and the -nu-un ATT constructions in addition to what we have already seen.

5.1. Capturing the factivity of -nu-un clauses in past contexts

By comparing (37) and (38), I have shown that past sentences embedding a -nu-un clause where it is construed as describing a generic property entail that the property described by the -nu-un clause holds at a time later than MT. But the entailments of such sentences are actually much stronger than that: the property denoted by the -nu-un clause must obtain even now, as can be seen by the oddness of discourse (44).

(44) Ku tangsi Cinho-nun [\( e_j \) oscip-ul ha-nu-]-un yeca]-lang
That period C.-TOP [[clothes.shop run-NU-]-REL woman]-with
sakwi-ess-ta.
date-PST-DECL
‘At that time, Cinho was dating a woman who was running a clothing store.’

#Kurentey ku yeca-nun cikum-un oscip-ul an
But that woman-TOP now-TOP clothes.shop-ACC NEG
ha-n-ta.
do-PRS-DECL
‘But that woman no longer runs a clothing store now.’
In conjunction with (40), the pragmatic infelicity of (44) shows that the property described by the -nu-un clause must hold of the individual in the denotation of its head N not only at TT/MT but also at UT, not to mention all the intervals between them. That is, it must be a fact in the world of evaluation at UT.

Importantly, a similar property is exhibited by any -nu-un clauses that are embedded inside a past sentence which are construed as characterizing the individual in the denotation of the head N or which are construed as describing future eventualities, as respectively illustrated by (45) and (46): the first sentence of (45) entails that some discourse salient house is located on some discourse salient hilltop in the world of evaluation at UT and the first sentence of (46) entails that Cinho’s friend actually left on the day after some discourse salient day in the past. And this is evidenced by the fact that adding the second sentences to the first sentences in (45)-(46) creates pragmatic anomaly.

(45) Ku tangsi Cinho-nun [[e_i entek wi-ey iss-nu-]-un
That period C.-TOP [[___ hill top-LOC exist-NU-]-REL
cip_j-eysye sal-ess-ta.
house]-LOC live-PST-DECL
‘At that time, Cinho was living in a house that was located on a hill top.’
#Kurentey ku cip-un cikum-un ku kos-ey
But that house-TOP now-TOP that place-LOC
ep-∅-ta.
be.absent-PRS-DECL
‘But that house is no longer there.’

(46) Cinho-nun [[e_i ku taum-na∫ tena-nu-]-un
C.-TOP [[___ the next-day leave-NU-]-REL
chinkwu_j-ekey chayk-lul senmwul-hay-ess-ta.
friend]-DAT book-ACC gift-do-PST-DECL
‘Cinho gave a book to a friend who was leaving the next day.’
#Kulentey ku chinkwu-nun ku taum-na∫ tena-ci
But that friend-TOP that next-day leave-CONN
an/mos-hay-ess-ta.
not/cannot-do-PST-DECL
‘But that friend did not leave or ended up not leaving the next day.’

Under the analysis advanced here, the entailments of the first sentences of (40), (44) and (45) are engendered because due to the presence of the ATT marker -nu-un, they assert that in most members of W_{MA}, the content of the embedded clause obtains in a maximally large subset of W_{MA} including w_0 during a maximally large interval that contains both TT and UT, as depicted in Figure 8; the second sentences deny its existence in w_0 at UT and hence the pragmatic oddity of the entire discourses. For referential convenience, I call the semantic property of -nu-un clauses occurring in data like (40), (44), and (45) ‘temporal persistency’.
Figure 8. Temporal persistence of the -nu-un clauses in (40), (44), and (45):

In the case of (46), the presence of -nu-un in the first sentence makes it assert that a copy of the eventuality in the denotation of the embedded clause exists in all members of $W_{MA}$ at TT, as depicted in Figure 9, and yet the second sentence denies its existence in $w_0$ at TT. Hence the entire discourse sounds contradictory. Since in cases like (46), the eventualities described by the prejacent of -nu-un are guaranteed to obtain in the world of evaluation, I call such a property of -nu-un clauses ‘factive’ in order to differentiate it from the temporal persistent property displayed by data like (40), (44), and (45).

Figure 9. Factivity of the -nu-un clause in (46):

5.2. Capturing the non-factivity of some -te-un clauses

Unlike -nu-un clauses, -te-un clauses do not exhibit factivity. For example, as noted by Kim (2013), (47) can be felicitously uttered even if in the actual world, Mina used to run a shoe store and yet the speaker incorrectly remembers that she used to run a clothing shop and ascribes that property to her.

(47) Context: The speaker is suffering from dementia and she wrongly believes that Mina used to run a clothing shop.

Mina used to run a clothing shop.

We can in fact come up with an infinite number of cases similar to (47). By way of illustration, in (48), which is a conversation between A and B, B refutes what A says by taking issue with the content of the -te-un clause that A utters. But this nevertheless does not make A utterance infelicitous, and this shows that -te-un clauses can occur in actual discourses even if their contents may not be true in the world of evaluation (namely, the
world relative to which the embedding clauses are evaluated), provided that they are true in the set of worlds that are evidentially accessible to some contextually determined viewpoint holder (which is the speaker in the case of (48A)).

(48) **Context:** A and B are having a conversation and from what B knows, A’s memory about the past is not entirely accurate.

A: 
[[Ku tangsi cwung-hakkyo-ey tani-te]-un Mina-nun
[[That time middle-school-LOC attend-TE]-REL M.]-TOP
yenge-lul cham cal hay-ess-ci.

English-ACC very well do-PST-RTR.DECL.INFML
‘Mina, who was attending middle school at that time, spoke really good English.’

B: Mina-nun **sasil** ku tangsi **kotung-hakkyo-ey** tani-ko
M. -TOP actually that time high-school-LOC attend-CONN
iss-ess-e.

exist-PST-DECL.INFML
‘Mina was actually attending high school at that time.’

Under the analysis I have proposed, such a non-factive property of -te-un clauses is wholly expected because utterances containing them can be admitted to a discourse as long as they are uttered by someone who believes in the truth of their propositional contents on the basis of some informational source they have at their disposal and since not every informational source can be reliable, there is no guarantee that the eventuality described by the prejacent of -te-un will obtain in the world of evaluation at the viewpoint holder’s time, in addition to holding in the set of worlds that are just evidentially accessible to him/her at that time, as depicted in Figure 9.

**Figure 9. Retrospective semantics of the -te-un clauses in (47) and (48A) and their non-factivity:** $w_{0} \notin W_{EA}$ (the world of evaluation is not in the set of worlds that are evidentially accessible to the VH at hand)

![Diagram of Time-line](image)

To summarize, then, we can state that while -nu-un clauses entail the truth of their contents by requiring them to obtain in the world of evaluation at the time of evaluation (as well as in any other relevant members of $W_{MA}$ at whatever relevant times), -te-un clauses merely presuppose it, and since presuppositions can sometimes fail whereas entailments do not, utterances like (47) and (48A) can occur in actual discourses, unlike the cases with (40), (44), (45), and (46).
5.3. Choosing between -nu-un and -te-un and its semantic consequences

As the goodness of both (37) and (38) has already demonstrates, some past sentences can embed either a -nu-un or a -te-un clause, and the fact that either ATT marker can occur in apparently the same linguistic environments poses a challenge to Lee’s (1993) analysis: recall that under his analysis, both -nu-un and -te-un are employed to describe an eventuality as if the speaker concurrently experiences it except that -nu-un occurs in relative present contexts and -te-un occurs in relative past contexts. While such a line of analysis may work for cases like (37), however, it may not work for cases like (38): Korean speakers intuit that the embedded clause of (38) describes an eventuality that is still ongoing at UT, not to mention all the intervals between some past time and now, rather than presenting an eventuality as if the speaker concurrently experiences it. Yet this is clearly not what is expected under Lee’s analysis.\(^ \text{16} \)

Under the present analysis, occurrences of both -nu-un and -te-un ATT clauses in seemingly identical embedding contexts receive a straightforward explanation not only in contexts like (37) and (38) but also in other contexts. To illustrate, consider (49) and (50).

Our analysis correctly predicts that both sentences will be judged good but they will have subtly different meanings (which, again, cannot be captured by directly translating them into English). More specifically, while (49) presents the embedded clause’s content from the vantage point of the MT by taking a projective viewpoint on it, (50) presents the embedded clause’s content through the lens of the speaker by taking a retrospective viewpoint on it. And this accords well with native Korean speakers’ intuition that while (49) is merely objectively describing what Chinho did on some day in the past to a friend named Mina, who he apparently knew was leaving for somewhere the next day, (50) is conveying the extra sense that the speaker is recalling Mina’s leaving for somewhere some day in the past while recounting a story about what Chinho did to her one day before her departure. In short, even though (49) and (50) appear to be very similar, they actually convey rather different meanings and therefore require rather different discourse contexts.

\begin{align*}
(49) & \text{Cinho-nun } [\left[ e_{1} \ku\text{ taum-nal} \tena\text{-nu-]-un } \text{Mina}_{1}\text{-ekey} \\
& \text{C.-Top } [\left[ \_\_ \text{ the next-day } \text{leave-NU-]-REL } \text{M.}_{1}\text{-DAT} \\
& \text{ceneyek-ul } \sa\emptyset \text{ cwu-ess-ta.} \\
& \text{dinner-ACC } \text{buy-CONN } \text{give-PST-DECL} \\
& \text{‘Mina was leaving the next day and Chinho took her out for dinner.’}]
\end{align*}

\begin{align*}
(50) & \text{Cinho-nun } [\left[ e_{1} \ku\text{ taum-nal} \tena\text{-te-]-un } \text{Mina}_{1}\text{-ekey} \\
& \text{C.-Top } [\left[ \_\_ \text{ the next-day } \text{leave-TE-]-REL } \text{M.}_{1}\text{-DAT} \\
& \text{ceneyek-ul } \sa\emptyset \text{ cwu-ess-ta.} \\
& \text{dinner-ACC } \text{buy-CONN } \text{give-PST-DECL}
\end{align*}

\(^{16}\text{They do not create as much affliction for Kim’s (2013) analysis: the -te-un clause in (37) can be analyzed as denoting an individual’s recollection of some past eventuality and the -nu-un clause in (38) can be analyzed as denoting a fact, and these treatments are in agreement with Kim’s idea that -te-un and -nu-un linguistically encode ‘episodic memory’ and ‘semantic memory’ in the sense of Tulving (1972, 1983, 2002, 2005), respectively.}
‘Mina was leaving the next day and Cinho took her out for dinner.’

Essentially the same line of reasoning allows us to capture the distribution of -te-un and -nu-un clauses in non-past contexts as well. Given the retrospective or backward-looking viewpoint direction that -te-un encodes, we expect that it will not be employed to describe a property that is expected to obtain at a time later than now, and this is exactly what we find. To illustrate, while (51a) can be uttered in a context where the speaker sees the evidence that the hearer has been engaged in some activity though it is not clear what it is, it cannot be uttered in a context where it is obvious to the speaker that the hearer will continue working on what he has been working on even after now; in such contexts, (51b), which has a -nu-un marking on the embedded clause, must be uttered instead. In a similar vein, while (52a) can be uttered in a context where the hearer is temporarily taking some time off from his job and the speaker is advising him to not go back to it, it cannot be uttered in a context where the speaker knows that the hearer has a job and he will definitely stay in that job (at least for a while); in such contexts, -nu-un must replace -te-un, as shown in (52b). Additionally, (53a) cannot be uttered when the speaker is inquiring about the hearer’s current job; such contexts call for a -nu-un marking on the embedded clauses instead, as shown in (53b).

(51) a. [[Mwusun il-ul ha-si-te-]-un cwung]-i-pni-kka?
   [[what work-ACC do-HON-TE-]-REL middle]-COP-HON-Q.HON
   ‘What have you been working on?’

   b. [[Mwusun il-ul ha-si-nu-]-un cwung]-i-pni-kka?
   [[what work-ACC do-HON-NU-]-REL middle]-COP-HON-Q.HON
   ‘What are you working on?’

(52) a. Icey [[pro e_i ha-te-]-un il]-ul kumantwu-ela.
   Now [[you __ do-TE-]-REL work]-ACC quit-IMP.INFML
   ‘Quit the job that you have by not returning to it.’

   b. Icey [[pro e_i ha-nu-]-un il]-ul kumantwu-ela.
   Now [[you __ do-NU-]-REL work]-ACC quit-IMP.INFML
   ‘Quit your current job for good.’

(53) a. [[e_i ha-si-te-]-un il]-i mwues-i-pni-kka?
   [[__ do-HON-TE-]-REL work]-NOM what-COP-HON-Q.HON
   ‘What did you used to do (for a living)?’

   b. [[e_i ha-si-nu-]-un il]-i mwues-i-pni-kka?
   [[__ do-HON-NU-]-REL work]-NOM what-COP-HON-Q.HON
   ‘What do you do (for a living)?’

Finally, the analysis presented here accounts for why a -nu-un clause may not occur in some past sentences whereas its corresponding -te-un clause can, as illustrated by (54).
(Again, the choice between the -nu-un vs. -te-un cannot be accurately reflected in the English translation.)
On the story told here, -nu-un cannot be chosen as the ATT clause’s ending in sentences like (54) because doing so will wrongly predict that the property described by the embedded clause holds true of the head N’s denotation at MT, contrary to what the embedding clause asserts: the entire sentence asserts that the event under description ceased to exist at MT in w₀ but the embedded clause’s semantics requires that it still do, as depicted below, so there is a clash between the two clauses’ meanings.

Figure 10. Projective and progressive semantics of the -nu-un clause in (54):

![Diagram showing the semantics of the -nu-un clause](image)

Notably, this line of analysis receives further empirical support from the fact that -nu-un ending is allowed for in similar contexts if the entire sentence’s meaning is such that the embedded clause’s content is not asserted to have ceased at MT, as exemplified by (55).

(55) Wuli-nun [[e₁ ca-nu-]-un ai]-nun kyesokhaye
We [[___ sleep-NU-]-REL child]-TOP continuously
cake-hay-ess-ta.
sleep-CAU-do-PST-DECL
‘We let the sleeping child/children continue to sleep.’

6. Summary and conclusion
The goal of this article has been to investigate the temporal interpretation of utterances containing two ATT clause markers -te-un and -nu-un in Korean. I have shown that -te-un and -nu-un are not run-of-the-mill imperfective markers; rather, they have unique modal, evidential, and temporal meanings built in their semantics. I have also proposed that while -te-un retrospectively presents an eventuality through the lens of an individual who believes in the existence of that eventuality at some relative past time, -nu-un projectively presents an eventuality from the vantage point of the time of evaluation, based on what is already known about the world of evaluation at that time. Since -te-un is past-oriented and -nu-un is more future-oriented, we can state that the former provides a window into ‘an evidential past’, which I define as ‘a past that is reconstructed based on
evidence’, and the latter provides a window into ‘a metaphysical future’, which I define as ‘a future that is projected based on the state of affairs in the world of evaluation’.

The complex semantics of -te-un and -nu-un ATT clauses I have identified here shows that the line between Tense, Aspect, Mood, and Evidentiality (TAME) is indeed blurry and it can be even more blurry if there is a morphological fusion between TAME categories in the language under investigation. What is proposed here also suggests that different TAME markers may present an event description from different viewpoints by taking it into different directions relative to some temporal anchor and what gets to be the temporal anchor may also vary depending on what type of TAME marker is being looked at (e.g., the matrix clause’s time vs. some viewpoint holder’s time depending on whether the TAME marker is -nu-un or -te-un, as we have seen here).

Needless to say, it remains to be seen to what extent what I have suggested about -nu-un or -te-un may carry over to ATT clausal temporal markers in other languages and what repercussions it may have (if any) for analyzing other temporal markers in Korean. It will also be interesting to see whether the ideas presented here can be translated into a more formal framework. I leave all such matters to future research.

References


*Soneohag [Linguistics]* 32. 147-164.


