

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

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6

7 **Abstract**

8 This article discusses the temporal interpretation of two attributive clause markers in Korean *-te-un*
9 and *-nu-un*, which are respectively analyzed as carrying past imperfective and present
10 imperfective meanings in the standard analysis (Lee 1993). I show that *-te-un* and *-nu-un* carry
11 not only temporal but also modal/evidential meanings and they do so in ways that have been
12 unnoted. I claim that *-te-un* presents an eventuality from a retrospective point of view, providing
13 a window into what I call ‘an evidential past’, whereas *-nu-un* does so from a projective point of
14 view, providing a window into what I call ‘a metaphysical future’. The findings of this paper
15 suggest that the line between Tense, Aspect, Mood, and Evidentiality can be blurrier in some
16 languages than in others and when interpreting attributive clauses, what is construed as the
17 viewpoint holder and in which direction the viewpoint is headed relative to some temporal anchor
18 may matter greatly.
19

20 **Key words:** Attributive Clauses, Imperfective, Tense, Aspect, Modality, Evidentiality,
21 Retrospective, Projective, Korean
22

23
24 **1. Introduction**

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

35 When we look at languages like English, the way temporal marking is done in ATT
36 clauses appears to be similar to the way it is done in non-embedded clauses, as can be
37 seen from comparing (1) and (2).
38

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- 1 (1) Temporal marking in English non-embedded clauses (i.e., non-ATT):
2 a. A child is riding a bike.
3 b. A child was riding a bike.
4 c. A child rides a bike every single day.
5 d. A child rode a bike.
6
7 (2) Temporal marking in English RCs (i.e., ATT):
8 a. A child who is riding a bike
9 b. A child who was riding a bike
10 c. A child who rides a bike every single day
11 d. A child who rode a bike
12

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

18 Possibly for this reason, ATT temporal markers in Korean have been significantly
19 under-studied compared to non-ATT temporal markers. On top of that, there are only two
20 detailed studies of Korean ATT temporal markers available in the literature, namely, Lee
21 (1993) and Kim (2013). Yet these two works approach the topic from rather different
22 angles (one takes a linguistic approach and the other takes a more psychological
23 approach). Furthermore, the empirical data they cover are more or less in complementary
24 distribution. Hence, there is the need to re-examine ATT clausal markers in Korean in
25 consideration of both Lee’s and Kim’s analyses, with a view to identifying exactly how
26 they encode more than one type of temporal meaning.

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

40 This article is organized as follows. In section 2, I offer preliminary information on
41 Korean, focusing on the morpho-syntactic properties of RCs and some of the major
42 differences between the temporal system of ATT clauses and that of non-embedded
43 clauses. In this context, I also introduce some of the characteristic properties of *-nu-un*
44 and *-te-un* in comparison with their non-embedded clausal counterparts. Section 3

1 introduces outstanding issues surrounding realis ATT temporal markers in Korean in the
 2 context of reviewing Lee's (1993) and Kim's (2013) analyses in some detail. Section 4
 3 presents a new analysis of *-nu-un* and *-te-un* and demonstrates how the new analysis
 4 accounts for their interpretive and distributional properties in ways that improve on the
 5 existing analyses. Section 5 discusses additional welcome results of the proposed analysis.
 6 Finally, section 6 summarizes and concludes the paper.

9 2. Preliminaries

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

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

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

19 Most TAME markers are bound morphemes but some are fused with other markers
 20 For example, in the case of RCs, the realis vs. irrealis mood marking is fused with the RC
 21 marker (REL for short), and depending on whether the embedded clause has realis or
 22 irrealis mood, the REL is realized as *-un* or *-ul*¹ (Lee 1993: 77).

23 Grammatical relations are marked by case particles but in neutral contexts, sentential
 24 subjects often occur with the topic marker or without any overt case particle,² and this is
 25 because the nominative case particle on a noun phrase (NP) actually indicates that it is
 26 focus-marked as well as serving as the subject of the sentence. To see this, consider (3).³

- 27
- 28 (3) a. Minswu cikum ca-n-Ø-ta. (no case particle on the subject)
 29 M. now sleep-IMPFV-PRS-DECL
 30 'Minswu is sleeping now.'
- 31 b. Minswu-**nun** cikum ca-n-Ø-ta. (topic marker on the subject)
 32 M.-TOP now sleep-IMPFV-PRS-DECL
 33 'As for Minswu, he is sleeping now.'
- 34 c. Minswu-**ka** cikum ca-n-Ø-ta. (focus marker on the subject)
 35 M.-NOM now sleep-IMPFV-PRS-DECL
 36 'It is Minswu who is sleeping now, not someone or anyone else.'

¹ 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.

² See Lee (2006) for constraints on eliding case particles in Korean.

³ 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; EVT: evidential; FRML: formal discourse style; HON: honorific; INFML: informal discourse style; INT: interrogative sentence ending; OBS: sensory-observation; RLS: realis mood; QUOT; quotative.

1
2 When forming RCs,⁴ Korean employs so-called ‘gapping’ strategy, as expected of
3 pre-nominal languages (see Keenan 1985). It is also a pro-drop language and as such
4 lacks relative pronouns as well.

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

12
13 (4) Restrictive RCs in Korean:

- 14 a. [e_i yueyn-eyse kunmwuha-nu-]-un saram_i
15 [___ U.N.-LOC work-PST.IMPFV-]-REL person
16 ‘a/the person who works at the U.N.’
17 b. [Minswu-ka e_i sata-cwu-∅]-un chayk_i
18 [M.-NOM ___ buy-give-PFV]-REL book
19 ‘the book that Minswu bought and brought for me’
20

21 (5) Non-restrictive RCs in Korean:

- 22 a. [e_i yueyn-eyse kunmwuha-nu-]-un Minswu_i
23 [___ U.N.-LOC work-PRS.IMPFV-]-REL M.
24 ‘Minswu, who works at the U.N.’
25 b. [Minswu-ka e_i sata-cwu-∅]-un ce chayk_i
26 [M.-NOM ___ buy-give-PFV]-REL that book
27 ‘that book, which Minswu bought and brought for me’
28

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

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

38
39 (6) Examples of realis RCs in Korean:

- 40 a. [e_i ttena-]-**un** saram_i

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).

- 1 [__ leave-]-REL.RLS person
 2 Intended: ‘a/the person who (has) left’
 3 b. [*e_i* ttena-**nu**]-**un** saram_{*i*}
 4 [__ leave-PRS.IMPV-]-REL.RLS person
 5 ‘a/the person who is leaving’
 6 c. [*e_i* ttena-**te**]-**un** saram_{*i*}
 7 [__ leave-PST.IMPV-]-REL.RLS person
 8 ‘a/the person who was leaving’
 9

10 (7) Examples of irrealis RCs in Korean:

- 11 a. [*e_i* ttena-]-**ul** saram_{*i*}
 12 [__ leave-]-REL.IRR person
 13 Intended: ‘a/the person who will leave’
 14 b. * [*e_i* ttena-**nu**]-**ul** saram_{*i*}
 15 [__ leave-PRS.IMPV-]-REL.IRR person
 16 Intended: ‘a/the person who will be leaving’
 17 c. * [*e_i* ttena-**te**]-**ul** saram_{*i*}
 18 [__ leave-PST.IMPV-]-REL.IRR person
 19 Intended: ‘a/the person who would be leaving’
 20

21 Secondly, in dealing with RCs ending with a verb or an adjective stem plus the realis
 22 REL *-un*, following common practice in Korean linguistics, I will postulate a null
 23 morpheme between the verb/adjective stem and the REL, but I will assign a
 24 perfective/perfect meaning to RCs containing a verb stem but an imperfective meaning to
 25 RCs containing an adjective stem. This differentiation is due to the fact that while ‘verb
 26 stem + *-un*’ sequences receive completive interpretations, ‘adjective stem + *-un*’
 27 sequences receive relative present or atemporal interpretations, as noted by Sohn (1999:
 28 310) as illustrated by (8) and (9) (cf. Lee 1993, who gives them an identical treatment).
 29

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

- 31 a. [*e_i* ecey **ttena-∅**]-un saram_{*i*}
 32 [__ yesterday leave-PFV]-REL person
 33 ‘a/the person who left yesterday’ (perfective interpretation)
 34 b. [*e_i* pang-kum **tola-o-∅**]-un saram_{*i*}
 35 [__ just-now return-CONN-PFV]-REL person
 36 ‘a/the person who just got back’ (perfective interpretation)
 37

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

- 39 a. [*e_i* khi-ka **khu-∅**]-un saram_{*i*}
 40 [__ height-NOM big-IMPV]-REL person
 41 ‘a/the person who is tall’ (present or atemporal interpretation)
 42 b. [*e_i* **sulphu-∅**]-un saram_{*i*}
 43 [__ sad-IMPV]-REL person
 44 ‘a/the person who is sad’ (present or atemporal interpretation)

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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. [_i cikum **ca-nu-**]-un ay-tul_i
 [___ now sleep-PRS.IMPFV-]-REL child-PL
 ‘the children who are sleeping now’
- b. [_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-Ø-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-Ø-ta**. (Adjective)
 M.-TOP height-NOM big-(-IMPFV-)-PRS-DECL
 Intended: ‘Minswu is tall.’
- b. Minswu-nun **sulphu-(*-n-Ø-ta**. (Adjective)
 M.-TOP sad-(-IMPFV-)-PRS-DECL
 Intended: ‘Minswu is sad.’
- (ii) a. [_i khi-ka **khu-(*-nu-)**]-un saram_i/Minswu_i (Adjective)
 [___ height-NOM big-(-PRS.IMPFV-)-REL person/M.
 ‘the person who is tall’/‘Minswu, who is tall’
- b. [_i **sulphu-(*-nu-)**]-un saram_i/Minswu_i (Adjective)
 [___ sad-(-PRS.IMPFV-)-REL person/M.
 ‘the person who is sad’/‘Minswu, who is sad’
- c. [_i Mina-lul cal **al-nu-**]-un saram_i/Minswu_i (Verb)
 [___ M.-ACC well know-PRS.IMPFV-]-REL person/M.
 ‘a/the person who knows Mina well’/‘Minswu, who knows Mina well’
- d. [Mina-ka e_i **cohaha-nu-**]-un saram_i/Minswu_i (Verb)
 [M.-NOM ___ like-PRS.IMPFV-]-REL person/M.
 ‘the person that Mina likes’/‘Minswu, who Mina likes’

- 1 ‘(The) children are sleeping now.’
 2 b. Ay-tul-un cikum **ca-ko** **iss-Ø-ta.**
 3 Child-PL-TOP now sleep-CONN exist-PRS-DECL
 4 ‘(The) children are sleeping now.’
 5 c. *Ay-tul-un cikum **ca-ko** **iss-n-/-nu-Ø-ta.**
 6 Child-PL-TOP now sleep-CONN exist-IMPV-PRS-DECL
 7 Intended: ‘(The) children are sleeping now.’
 8

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

- 10 a. [*e_i* entek wi-ey **iss-nu-**]-un [hayan cip]_{*i*}
 11 [___ hill top-LOC exist-PRS.IMPV-]-REL [white house]
 12 ‘a/the white house that is located on a/the hill top’
 13 b. [*e_i* chinkwu-ka **eps-nu-**]-un [ku so-nye]_{*i*}
 14 [___ friend-NOM not.exist-PRS.IMPV-]-REL [that little-girl]
 15 ‘that little girl, who has no friends’
 16 c. [*e_i* **sulphu-e** **ha-nu-**]-un saram_{*i*}
 17 [___ sad-CONN do-PRS.IMPV-]-REL person
 18 ‘the person who shows signs of sadness’
 19

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

- 21 a. Entek wi-ey hayan cip-i **iss-(*-n)-Ø-ta.**
 22 Hill top-LOC white house-NOM exist-(-IMPV-)PRS-DECL
 23 Intended: ‘There is a white house on the hill top.’
 24 b. Ku so-nye-nun chinkwu-ka **eps-(*-n)-Ø-ta.**
 25 That little-girl-TOP friend-NOM not.exist-(-IMPV-)PRS-DECL
 26 Intended: ‘That little girl has no friends.’
 27 c. *Ku saram-un **sulphu-e** **ha-n-Ø-ta.**
 28 That person-TOP sad-CONN do-IMPV-PRS-DECL
 29 Intended: ‘That person is showing signs of sadness.’
 30 c’. Ku saram-un **sulphu-e** **ha-ko** **iss-Ø-ta.**
 31 That person-TOP sad-CONN do-CONN exist-PRS-DECL
 32 ‘That person is showing signs of sadness.’
 33

34 Consider now (14) and (15). (Here and below, ‘#’ indicates pragmatic oddity.) These
 35 data sets exemplify that clauses containing *-te* have different felicity conditions
 36 depending on whether they occur as ATT clauses or as non-embedded ones. More
 37 specifically, (14) can be uttered felicitously even if the speaker did not directly witness
 38 the eventuality of Abraham Lincoln living in some discourse salient house at some time
 39 in the past but (15) can be uttered only if the speaker directly observed it.⁶ And this

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).

1 shows that *-te* may encode what Song (2002) calls a ‘sensory observation’ meaning only
 2 when it occurs on the verb stem of a non-embedded clause. Therefore, we conclude that
 3 the *-te* that occurs attached to the REL merits a separate treatment from the *-te* that occurs
 4 on a non-embedded clausal ending (for relevant discussion, see, a.o., Chung 2005/2012,
 5 2007; Lee 2011/2012).

6
 7 (14) Non-sensory-observation meaning of *-te-* in ATT clauses:

8 Ce-kes-i [yec-nal-ey rinkhen-i *e_i* sal-**te-**]-un
 9 That-thing-NOM [old-day-LOC Lincoln-NOM ___ live-PST.IMPFV-]-REL
 10 *cip_i-i-∅-ta.*
 11 house-COP-PRS-DECL
 12 ‘That is the house that Abraham Lincoln used to live in.’

13
 14 (15) Sensory-observation meaning of *-te-* in non-embedded sentences:

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

18 (adapted from Chung 2005: 121)

19
 20 Lastly, consider (16) and (17), which show that ATT clauses and non-embedded
 21 clauses behave differently in terms of licensing sensory/psych-predicates such as *aphu-*
 22 ‘be.sick’ and *sulphu-* ‘be.sad’ and the contrast between these data sets gives us yet
 23 another reason to think that when occurring as part of an ATT-clause marker, *-nu* and *-te*
 24 form complex morpho-syntactic units with the REL. Notice that in non-embedded
 25 clauses, sensory/psych-predicates cannot occur as the main predicate when the subject is
 26 in the 2nd person (because their semantics is such that an individual cannot ascribe it to
 27 another individual in ordinary contexts) but with appropriate contextualization, they can
 28 freely occur in ATT clauses (more on this in section 4.1).

29
 30 (16) Non-embedded clauses containing sensory/psych-predicates:

- 31 a. #**Ne**-nun **aphu**-∅-ta.
 32 you-TOP sick-PRS-DECL
 33 Intended: ‘You are sick.’
 34 b. #**Ne**-nun **sulphu**-∅-ta.
 35 you-TOP sad-PRS-DECL
 36 Intended: ‘You are sad.’
 37 c. #**Ne**-nun ku-nal **maywu** **sulphu**-ess-ta.
 38 you-TOP that-day very sad-PST-DECL
 39 Intended: ‘You were very sad that day.’

40
 41 (17) ATT clauses containing sensory/psych-predicates:

42 a. Na-nun [[*e_i* **aphu-**]-un **ne_i-ul** twu-ko chwulkunha-ul
 43 I-TOP [[___ sick-]-REL you-ACC leave-CONN go.to.work-REL
 44 swu ep-∅-ta.

- 1 possibility not.exist-PRS-DECL
 2 Intended: ‘I cannot go to work, leaving you alone when you are sick.’
- 3 b. [_i sulphu-]-un ne_i-ul pro ettehkey wiloha-l-kka?
 4 [___ sad-]-REL you-ACC ___ how comfort-IRR-INT
 5 Intended: ‘How can I comfort you when you are in such a sad state?’
- 6 c. [_i ku-nal maywu sulphu-te-]-un ne_i-nun
 7 [___ that-day very sad-PST.IMPFV-]-REL you-TOP
 8 swul-ul manhi masi-ess-ta.
 9 alcohol-ACC a.lot drink-PST-DECL
 10 Intended: ‘Feeling very sad, you drank a lot that day.’

13 3. Outstanding issues surrounding *-te-un* and *-nu-un* ATT clauses

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

- 22
- 23 (18) a. [_i ceki-se cacenke-lul tha-nu-]-un saram_i
 24 [___ there-LOC bicycle-ACC ride-PRS.IMPFV-]-REL person
 25 ‘the person who is riding a bike over there’
- 26 b. [_i ceki-se cacenke-lul tha-te-]-un saram_i
 27 [___ there-LOC bicycle-ACC ride-PST.IMPFV-]-REL person
 28 ‘the person who was riding a bike over there’

29

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

40 To be sure, not every Korean speaker may find (14) to be acceptable if they hear it in
 41 an out-of-the-blue context; the Korean speakers I consulted showed strong preference for
 42 the sentence to be uttered by someone who has the authority to say that the house at hand
 43 is where Abraham Lincoln used to live in by virtue of having the evidence with which to

1 say so. They also added that they would prefer (14) to have a hearsay ending, as shown in
 2 (19).

3
 4 (19) Ce-kes-i [yec-nal-ey rinkhen-i *e_i* sal-**te-**]-un
 5 that-thing-NOM [old-day-LOC Lincoln-NOM ___ live-PST.IMPV-]-REL
 6 *kos_i-i-Ø-lay*.
 7 place-COP-PRS-QUAT.IND.INFML
 8 ‘I’m told that the house over there is where Abraham Lincoln used to live.’
 9 (Taken from Kim 2013: ex. (35))

10
 11 Nevertheless, such felicity judgments I have obtained from my informants do not weaken
 12 my claim, since both (14) and (19) can be true even if the speaker is not recalling or
 13 reporting anyone’s experience of observing Lincoln’s residing in some contextually
 14 salient house, regardless of the discourse context in which they are uttered.

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

17
 18 (20) [[Sip-nyen-ey *e_i* kum-ul chas-a ttena-**ess-te-**]-un
 19 [[Ten-year-LOC ___ gold-ACC look.for-CONN leave-ANT-TE-]-REL
 20 saram-tul_i]-i ecey-seya tolao-ess-ta.
 21 person-PL]-NOM yesterday-only return-PST-DECL
 22 ‘The people who (had) left for gold ten years ago came back only yesterday.’
 23

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

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

40
 41 (21) a. [*e_i* kwukswu-lul cohaha-nu-]-un saram_i
 42 [___ noodle-ACC like-NU-]-REL person
 43 ‘a/the person who likes noodles’

- 1 b. [*e_i* **yueyn-eyse** **kunmwuha-nu-**]-un Minswu_{*i*}
2 [___ U.N.-LOC work-NU-]-REL M.
3 ‘Minswu, who works at the U.N.’
4 c. [*e_i* **chayso-man** **mek-nu-**]-un tongmwul_{*i*}
5 [___ vegetable-only eat-NU-]-REL animal
6 ‘an animal that only eats vegetables’
7 d. [*e_i* **yelum-ey-man** **phi-nu-**]-un kkoch_{*i*}
8 [___ summer-LOC-only bloom-NU-]-REL flower
9 ‘a flower that blooms only in summer’

10

11 Another problem *-nu-un* clauses present to Lee’s analysis is that they can have
12 futate semantics, as observed by Kim (2013)—that is, they can describe planned
13 eventualities—and in such cases also, concurrently experiencing the situation presented is
14 not the most accurate characterization of the interpretive process involved. By way of
15 illustration, consider (22): each of the embedded clauses here describes an eventuality
16 that has not occurred at the speech time, so it is not possible for the speaker to
17 concurrently experience the situation described by the embedded clause at the time of
18 utterance.

19

- 20 (22) a. [*e_i* **nayil** **yehayng-ka-nu-**]-un saram_{*i*}
21 [___ tomorrow trip-go-NU-]-REL person
22 ‘a/the person who is going on a trip tomorrow’
23 b. [*e_i* **taum** **cwu-ey** **kyelhonha-nu-**]-un Minswu_{*i*}
24 [___ next week-LOC get.married-NU-]-REL M.
25 ‘Minswu, who is getting married next week’
26 c. [*e_i* **kot** **chwulpalha-nu-**]-un kicha_{*i*}
27 [___ soon start-NU-]-REL train
28 ‘a/the train that is leaving soon’
29 d. [*e_i* **onul** **ohwu** **sey-si-ey** **sangyeng-toy-nu-**]-un
30 [___ today afternoon three-o’clock-LOC show-PASS-NU-]-REL
31 yenghwa_{*i*}
32 movie
33 ‘a/the movie that is showing at three o’clock this afternoon’

34

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

41

- 42 (23) Context: The manager of a factory is talking to his workers.
43 Yelepwn, [[*pro* *e_i* **ha-te-/??-nu-**]-un il_{*i*}]-ul

1 Everyone.HON, [[you ___ do-TE-/-NU]-REL work]-ACC
 2 memchwu-ko yeki-lul po-∅-seyyo.
 3 stop-CONN here-ACC look-PRS-IMP.HON
 4 Intended: ‘Everyone, please stop what you are working on and look here.’
 5

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

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

19 In addition, the fact that *-nu-un* ATT clauses can be construed as describing events
 20 that are in progress at some reference time as in (18a) is left unexplained in her analysis:
 21 She analyzes *-nu-un* clauses as encoding ‘semantic memory’ in the sense of Tulving, i.e.,
 22 a person’s ‘abstract, timeless, encyclopedic knowledge’ of the world that he/she shares
 23 with others (Tulving 1972).⁷ Hence, while her analysis provides a way to capture the
 24 generic and futurate semantics that some *-nu-un* clauses can carry since such cases
 25 arguably encode more or less encyclopedic knowledge that is shared by members of a
 26 speech community, as is, it does not tell us why apparently string-identical *-nu-un* clauses
 27 may receive relative present progressive interpretations as well as relative present generic
 28 and/or futurate interpretations.

29 In sum, then, there is little doubt that the primary function of *-te-un* is to describe
 30 past eventualities recalled by the speaker and the primary function of *-nu-un* is to encode
 31 present imperfective meanings as authors like Lee (1993) and Kim (2013) have argued,
 32 but the two ATT clause markers have several additional properties that defy the existing
 33 analyses and therefore there is a need for a new analysis.
 34
 35

36 **4. A new analysis of *-te-un* and *-nu-un***

37 **4.1 The semantics of *-te-un***

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

⁷ Kim (2013: 105) further claims that ‘when encoding a semantic memory that is derived from observing recurring eventualities (e.g., properties of some particular species or habits of individuals)’, *-nu-un* is employed for utterances with verbal predicates and *∅-un* is employed for utterances with adjectival predicates and ‘when encoding a semantic memory that is based on historical facts’, *∅-un* is employed regardless of the predicate type of the ATT clause.

1 propositional contents are true of some relative past time; that is, in order for utterances
 2 containing them to be judged good, their contents must be true in worlds that are
 3 evidentially accessible to some VH at some anchoring time, regardless of whether that
 4 individual has obtained the evidence directly or indirectly, or the evidence that he/she has
 5 is of good quality or not. For referential convenience, I abbreviate the set of such worlds
 6 as ‘ W_{EA} ’.

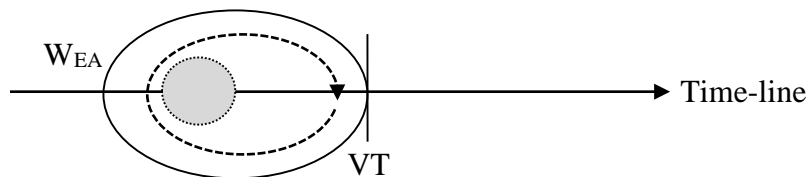
7 I further claim that interpreting *-te-un* clauses always involves mentally traveling to
 8 some past time but coming back to VH’s time (VT), which is always later than the
 9 embedded clause’s event time (ET). And for this reason, *-te-un* ATT clauses are always
 10 past-oriented though they are not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

11 For lack of better term, I characterize such semantic properties of *-te-un* clauses as
 12 having ‘a retrospective viewpoint’, but what I mean by ‘retrospective’ differs from how
 13 the term has been used in the literature: while the existing analyses use it to indicate that
 14 some linguistic expression or construction lexically encodes an individual’s recalling or
 15 reporting of an eventuality that he/she personally experienced or witnessed (e.g., Suh
 16 1977; Sohn 1975; Choi 1983; Kwon 2012), I use it to indicate the direction of a
 17 viewpoint in presenting an eventuality.

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

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

34 **Figure 1. Retrospective semantics of the *-te-un* ATT construction:**



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).

1
2 Support for the present analysis of *-te-un* comes from several sources. First of all,
3 utterances containing a *-te-un* clause are judged good only when it is contextually
4 obvious that the VH at hand believes in the truthfulness of the *-te-un* clause's content on
5 the basis of some evidence that he/she has at her disposal. To see this, compare (24) and
6 (25). The two sentences are identical except for the absence vs. presence of the degree
7 adverb *kutholok* 'so much'. Yet (25) is judged markedly better than (24) and this is
8 because the presence of the degree expression in (25) allows for the embedded clause to
9 be interpreted in such a way that the event described was even visible to non-event
10 participants; that is, the fact that Mina was in love with someone was obvious to people
11 around her including the speaker.

12
13 Context for (24) and (25): The speaker is friends with Mina and she is telling
14 about Mina's recent tragedy to a mutual friend in an out-of-the-blue context.

15 (24)??[Mina-ka e_i sarangha-te-]-un saram_i-i cwuk-ess-e.
16 [M.-NOM ___ love-TE-]-REL person-NOM die-PST-DECL.INFML
17 Intended: 'The person who Mina loved has died.'

18
19 (25) [Mina-ka e_i **kutholok** sarangha-te-]-un saram_i-i
20 [M.-NOM ___ so.much love-TE-]-REL person-NOM
21 cwuk-ess-e.
22 die-PST-DECL.INFML
23 'The person who Mina loved so much has died.'

24
25 Consider now (26). This sentence shows variable grammaticality/felicity judgments:
26 it will be judged bad if it is uttered by someone who is friends with Mina in an out-of-the-
27 blue context (Context 1) but it will be judged good if the discourse participants know that
28 that the speaker happened to read Mina's journal and thereby has learned why she drank
29 so much on some past day under discussion (Context 2). The sentence can be judged
30 good also if the speaker is telling a story in which a young lady named Mina appears as a
31 main character (Context 3).

32
33 (26) [Ku-ttay e_i ku-il-ttaymwuney maywu sulphu-te-]-un
34 [That-time ___ that-incident-because.of very be.sad-TE-]-REL
35 Mina_i-nun swul-ul manhi masi-ess-ta.
36 M.-TOP alcohol-ACC a.lot drink-PST-DECL
37 'Feeling distressed by that incident, Mina drank a lot at that time.'

38
39 If we assume the felicity condition I have identified for utterances containing *-te-un*
40 clauses above, we can readily see why the grammaticality of (26) exhibits such variable
41 grammaticality/felicity judgments: it is judged infelicitous or even ungrammatical in
42 Context 1 because ordinary human beings do not have direct access to another human
43 being's internal states. On the other hand, it is judged fine in Context 2 because in such
44 cases, it is contextually obvious that the speaker has reliable evidence with which to

1 affirm the embedded clause's content. The sentence can be felicitously uttered in Context
 2 3 because the narrator of a story can be omniscient, so she can present the embedded
 3 clause's content from her own point of view or by taking Mina's point of view.

4 Essentially the same reasoning lets us account for speaker variation on the
 5 grammaticality judgments of (14), (27), and (28), which are all about historical figures,
 6 unlike the case with (26). As I mentioned in section 3, (14) may be judged bad if it is
 7 presented without any contextualization; similarly, if (27) and (28) are uttered out of the
 8 blue, some Korean speakers may judge them to be unacceptable.⁹ Importantly, however,
 9 all three sentences can be judged fine if the hearer presupposes that the speaker has
 10 learned from some reliable source (e.g., a television documentary or an encyclopedia)
 11 that the content of the sentence is true. Under the present analysis, such presupposition or
 12 accommodation can make a difference in judging utterances containing *-te-un* ATT
 13 clauses because taking it as a given that the speaker is informationally well-equipped to
 14 make a veridical claim about some historical figure prevents the hearer from questioning
 15 the truthfulness of what is said.

16
 17 (14) Ce-kes-i [yec-nal-ey **rinkhen-i** *e_i* **sal-te-**]-un
 18 That-thing-NOM [old-day-LOC Lincoln-NOM ___ live-PST.IMPFV-]-REL
 19 *cip_i-i-Ø-ta*.
 20 house-COP-PRS-DECL
 21 'That is the house where Abraham Lincoln used to live in.'
 22

23 (27) Ce-cip-i [**napholeyong-i** ku tangsi *e_i* **sal-te-**]-un
 24 That-house-NOM [Napoleon-NOM that time ___ live-TE-]-REL
 25 *kos_i-i-Ø-ta*.
 26 place-COP-PRS-DECL
 27 Intended: 'That house is where Napoleon lived in at that time.'
 28

29 (28) Ce-kos-i [yec-nal-ey **seycong-tay-wang-i** *e_i* cacwu
 30 that-place-NOM [old-day-LOC Sejong-great-king-NOM ___ often
 31 **sanchayk-ha-te-**]-un *cengwon_i-i-Ø-ta*.
 32 walk-do-TE-]-REL garden-COP-PRS-DECL
 33 Intended: 'That is the garden where King Sejong the Great¹⁰ used to take a walk.'
 34

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

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.

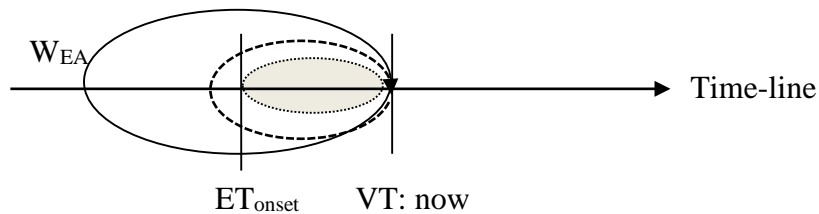
1 is now, so if my analysis is correct, then, in interpreting the embedded clause, the hearer
 2 has to mentally travel to the onset of the event described by the preajcent of *-te-un* by
 3 taking a retrospective viewpoint on it, and since the hearer’s mental travel covers all the
 4 temporal space between some past time and now, the embedded clause ends up receiving
 5 a temporal interpretation that can be best labeled as ‘continuative present perfect’.

7 (23) Yelepwun, [[*pro e_i ha-te-*]-un il_i]-ul memchwu-ko
 8 Everyone.HON, [[*you ___ do-TE-*]-REL work]-ACC stop-CONN
 9 yeki-lul po-∅-seyyo.
 10 here-ACC look-PRS-IMP.HON

11 ‘Everyone, please stop what you are/have been working on and look here.’

12 Felicitous context: The hearers are working on something and the speaker wants
 13 them to stop working on it.

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



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

37 (29) Cinho-nun [[*e_i ku taum-nal ttena-te-*]-un Mina_i]-ekey
 38 C.-Top [[*___ the next-day leave-TE-*]-REL M.]-DAT
 39 cenyek-ul sa-∅ cwu-ess-ta.
 40 dinner-ACC buy-CONN give-PST-DECL

41 ‘Mina was leaving the next day and Cinho took her out for dinner.’

42 (Lit.: ‘Cinho took out Mina for dinner, who was leaving the next day.’)

43 **Felicitous** context for (29): The speaker is recalling some eventuality involving
 44 Mina and Cinho.

1 **Infelicitous** context: The speaker is telling a story about what Cinho is recalling
 2 by taking his (i.e., Cinho’s) point of view.

3
 4 Yet additional support for the present analysis comes from the fact that *-te-un* clauses
 5 can describe any type of eventuality as long as their time is past relative to VT. To see
 6 this, consider (30). In this sentence, the embedded clause’s content is temporally later
 7 than the matrix clause’s content but the sentence is judged perfectly fine because from the
 8 speaker’s viewpoint, the event described by the prejacent of *-te-un* occurred at some past
 9 time, as schematically represented in (31). For referential and expository convenience,
 10 here and below, I will call the time of the clause that directly embeds an ATT clause ‘the
 11 matrix time’ and abbreviate it as ‘MT’. I will also abbreviate the utterance/speech time as
 12 ‘UT’. In addition, I will assume that in cases where an ATT clause occurs in a discourse
 13 without being embedded inside another clause, the MT defaults to the UT because every
 14 utterance must be interpreted relative to the ‘here and now’ unless indicated otherwise.

15
 16 (30) Cinho-nun **cinan-cwu-ey** [[*e_i* **ecey** mikwuk-ulo ttena-te-]-un
 17 C.-Top last-week- ACC [[_ yesterday USA-to leave-TE-]-REL
 18 Mina_i]-ekey cenyek-ul sa-∅ cwu-ess-ta.
 19 M.]-DAT dinner-ACC buy-CONN give-PST-DECL
 20 ‘Mina was leaving for the USA yesterday and Cinho took her out for dinner last
 21 week.’
 22 (Lit.: ‘Cinoh took out Mina for dinner last week, who was leaving for the
 23 USA yesterday.’)

24
 25 (31) Temporal relation between the three relevant times in (30):
 26 MT < ET < UT = VT (MT: last week; ET: yesterday; UT: now)

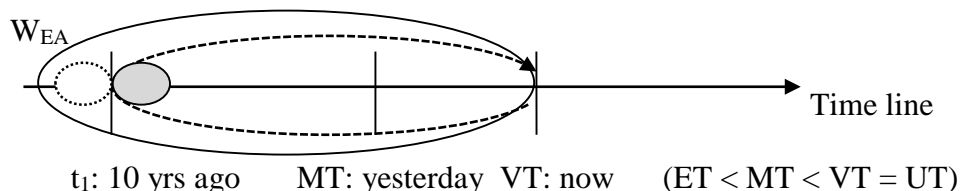
27
 28 Finally, breaking with authors like Lee (1993) and Chung (2005/2012), analyzing *-*
 29 *te-un* as a retrospective viewpoint marker rather than a relative past imperfective marker
 30 enables us to account for cases where *-te-un* co-occurs with the anterior marker *-ess*,
 31 engendering a so-called ‘past in the past’ or ‘pluperfect’ interpretation. To see this,
 32 reconsider (20).

33
 34 (20) [[Sip-nyen-ey *e_i* kum-ul chas-a ttena-ess-te-]-un
 35 [[Ten-year-LOC ___ gold-ACC look.for-CONN leave-ANT-TE-]-REL
 36 saram-tul_i]-i ecey-seya tolao-ess-ta.
 37 person-PL]-NOM yesterday-only return-PST-DECL
 38 ‘The people who (had) left for gold ten years ago came back only yesterday.’

39
 40 On the analysis promoted here, the embedded clause of (20) is interpreted as follows:
 41 First, because of the *-ess*-marking in it, the prejacent of *-te-un* describes an event that was
 42 completed at some time *t₁* that was 10 years ago. Second, by virtue of the fact that this
 43 event is inherently telic and it was completed at *t₁*, if we adopt Parsons’ (1990) analysis
 44 of grammatical aspect, we can assume that the resultant state of the event came about at *t₁*

1 and it continued to hold for a while. Third, because of the *-te-un* marking on the
 2 embedded clause, in interpreting the entire sentence, the VH, namely, the speaker,
 3 mentally travels to t_1 , identifies the resultant state of the event described by the preja-
 4 cent of *-te-un*, and then accesses it from now, which is both VT and UT, as depicted in Figure
 5 3. Here, the unshaded circle indicates the event described by the preja-
 6 cent of *-te-un* and the shaded circle indicates the resultant state of that event.

7
 8 **Figure 3. Temporal property of (20):**



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

25 **4.2 The semantics of *-nu-un***

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

28 First of all, while the preja-
 29 cent of *-te-un* may describe a perfective eventuality as we
 30 saw in (20), the preja-
 31 cent of *-nu-un* invariably describes an imperfective eventuality. This
 32 is evidenced by the fact that what the preja-
 33 cent of *-nu-un* can describe is limited to only
 34 three types: (i) an event that is in progress at the time of the embedding clause, as shown
 35 in (16) and further illustrated by (32); (ii) a generic or habitual eventuality, as shown in
 36 (21); and (iii) an event that is planned to occur at a relative future time (i.e., a futurate
 37 event), as shown in (22). Furthermore, in all utterances containing a *-nu-un* clause, the
 38 event described by the preja-
 39 cent of *-nu-un* is not complete at the topic time (TT) in the
 40 sense of Klein (1994) (i.e., the time with respect to which the ET is evaluated). In other
 41 words, their TT is always contained within their ET (i.e., $TT \subseteq ET$ or $ET \supseteq TT$). Hence,
 42 if we adopt a Klein-type definition for the imperfective (e.g., Kratzer 1998), then we are
 43 led to conclude that *-nu-un* clauses always embed imperfective event descriptions.

36
 37 (32) Present progressive event descriptions:

- 38 a. [e_i **cikum** **ttena-nu-**]-un saram_i
 39 [__ now leave-NU-]-REL person
 40 ‘a/the person who is leaving now’
 41 b. [e_i **cikum** **pap-ul** **mek-nu-**]-un saram_i
 42 [__ now meal-ACC eat-NU-]-REL person
 43 ‘a/the person who is eating now’
 44 c. [e_i **tteleci-nu-**]-un pit-pangwul-tul_i

1 [___ fall-NU-]-REL rain-drop-PL
2 ‘rain drops that are falling (now)’

3
4 Second, while *-te-un* clauses can stand in any temporal relation to their embedding
5 clauses as long as their VT precedes the onset of the ET as we have observed in section
6 4.1, *-nu-un* clauses can only describe eventualities that are non-past with respect to their
7 MT. To illustrate, the data in (33)-(36) show that a sentence embedding a *-nu-un* clause is
8 judged good only if the *-nu-un* clause’s ET contains (\supseteq) or follows ($>$) MT; that is, it is
9 judged bad if ET precedes ($<$) MT (compare (36) with (34)).

10
11 (33) [e_i cacenke-lul **tha-nu-**]-un ai $_i$ -lul po- \emptyset -a.
12 [___ bicycle- ACC ride-NU-]-REL kid-ACC look-PRS-IMP.INFML
13 ‘Look at the child who is riding a bike.’ (MT: now; MT = TT \subseteq ET)

14
15 (34) [[**Cikum** ce-ki-se e_i **ca-ko** **iss-nu-**]-un saram $_i$]-un
16 [[Now that-place-LOC ___ sleep-CONN exist-NU-]-REL person]-TOP
17 Minho-i-ta.
18 M.-COP-DECL
19 ‘The person who is sleeping over there now is Minho.’
20 (MT: now; MT = TT \subseteq ET)

21
22 (35) Cinho-nun [[e_i **ku taum-nal** **ttena-nu-**]-un chinkwu $_i$]-ekey
23 C.-Top [[___ the next-day leave-NU-]-REL friend]-DAT
24 chayk-lul senmwul-hay-ess-ta.
25 book-ACC gift-do-PST-DECL
26 ‘Cinho gave a book to a friend who was leaving the next day.’
27 (MT: sometime in the past; MT < TT \subseteq ET)

28
29 (36)*[[**Sip-nyen-cen** ku ttay ku kos-eyse e_i **ca-ko**
30 [[Ten-year-ago that time that place-LOC ___ sleep-CONN
31 **iss-nu-**]-un saram $_i$]-un Minho-i-ta.
32 exist-NU-]-REL person]-TOP M.-COP-DECL
33 Intended: ‘The person who was sleeping in that place 10 years ago at that time
34 is Minho.’ (MT: now; TT \subseteq ET < MT)

35
36 Third, unlike *-te-un*, *-nu-un* implicates that the eventuality described by its prejacent
37 holds at a time later than MT. Moreover, in some cases, this implicature cannot be
38 canceled (more on this in section 5.1). To see this, compare (37) and (38), which contain
39 a *-te-un* ATT clause and a *-nu-un* ATT clause, respectively. In both (37) and (38), the
40 matrix clause is in the past tense but while (37) can be true in a context where the woman
41 stopped running a clothing store at a time later than MT, (38) will be false in such a
42 context (although their English translations cannot capture this).
43

1 (37) Past sentence embedding a *-te-un* ATT clause:
 2 Ku tangsi Cinho-nun [[*e_i* oscip-ul ha-**te**]-un yeca_i]-lang
 3 That period C.-TOP [[__ clothes.shop run-TE]-REL woman]-with
 4 sakwi-ess-ta.
 5 date-PST-DECL
 6 ‘At that time, Cinho was dating a woman who was running a clothing store.’
 7

8 (38) Past sentence embedding a *-nu-un* ATT clause:
 9 Ku tangsi Cinho-nun [[*e_i* oscip-ul ha-**nu**]-un yeca_i]-lang
 10 That period C.-TOP [[__ clothes.shop run-NU]-REL woman]-with
 11 sakwi-ess-ta.
 12 date-PST-DECL
 13 ‘At that time, Cinho was dating a woman who was running a clothing store.’
 14

15 The semantic difference between (37) and (38) is evidenced by the fact that unlike (37),
 16 (38) cannot be continued by an utterance which explicitly states that the woman under
 17 description stopped running a clothing store later. To see this, compare (39) and (40).
 18

19 (39) Discourse containing (37):
 20 Ku-tangsi Cinho-nun [[*e_i* oscip-ul ha-**te**]-un yeca_i]-lang
 21 That-period C.-TOP [[__ clothes.shop run-TE]-REL woman]-with
 22 sakwi-ess-ta.
 23 date-PST-DECL
 24 ‘At that time, Cinho was dating a woman who was running a clothing store.’
 25 √Kurentey, ku-yeca-nun **nacwung-ey** **oscip-ul**
 26 But that-woman-TOP later-LOC clothes.shop-ACC
 27 **kumantwu-ess-ta.**
 28 quit-PST-DECL
 29 ‘But that woman quit running a clothing store later.’
 30

31 (40) Discourse containing (38):
 32 Ku-tangsi Cinho-nun [[*e_i* oscip-ul ha-**nu**]-un yeca_i]-lang
 33 That-period C.-TOP [[__ clothes.shop run-NU]-REL woman]-with
 34 sakwi-ess-ta.
 35 date-PST-DECL
 36 ‘At that time, Cinho was dating a woman who was running a clothing store.’
 37 #Kurentey, ku-yeca-nun **nacwung-ey** **oscip-ul**
 38 But that-woman-TOP later-LOC clothes.shop-ACC
 39 **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

1 quit-PST-DECL

2 ‘But that woman quit running a clothing store later.’

3
4 I take these sets of facts to suggest that in the *-nu-un* ATT construction, the lexical
5 predicate plus *-nu* composite describes an imperfective eventuality which obtains in the
6 world of evaluation (w_0) at TT but this eventuality must also obtain in worlds that are
7 identical to w_0 up to MT at a time that minimally contains TT. For referential
8 convenience, I will call such worlds ‘metaphysically accessible worlds’ and abbreviate
9 the set of metaphysically accessible worlds as ‘ W_{MA} ’. This nomenclature is inspired by
10 Copley (2002: 23), who borrows the term ‘metaphysical’ from Thomason (1970), and
11 given the way she uses the term ‘metaphysical’, what I call ‘a metaphysically accessible
12 world’ can be defined as ‘a world that includes all the propositions that are true in the
13 world of evaluation at the time of evaluation’.^{12, 13}

14 From this definition of ‘a metaphysically accessible world’, two things follow. One
15 is that W_{MA} contains a member that is identical to w_0 itself. The other is that everything
16 holding in w_0 at MT also holds in all members of W_{MA} at MT, but since W_{MA} can have an
17 infinite number of members and things may develop differently in some of them, not all
18 events that are in progress in w_0 at MT (e.g., Cinho riding a bike at a park now, Mina
19 sleeping now) may obtain in all members of W_{MA} after MT.

20 However, for generic or habitual eventualities holding in w_0 at MT (e.g., Cinho’s
21 riding a bike as a hobby, Mina eating pizza every day), we expect a different picture,
22 since they hold for a much longer period of time than just at TT. For example, if the
23 proposition ‘Cinho rides a bike as a hobby’ is true of now, then it is most likely true of
24 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.

¹² Copley (2002) is only concerned with non-embedded futurate sentences in English (e.g., *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.

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.

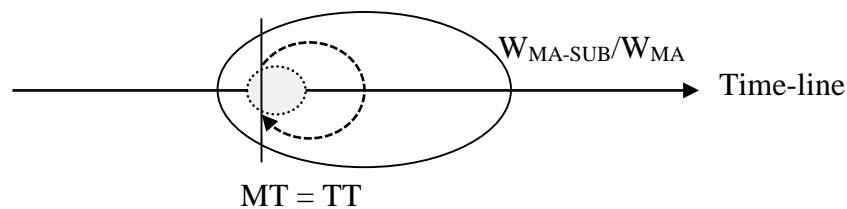
1 is true of now, then she is likely to eat pizza every day for the rest of her life as she has
 2 done so up to now. Given this, I submit that generic/habitual eventualities obtain in a
 3 maximally large subset of W_{MA} that includes w_0 during a maximally large interval that
 4 contains both TT and UT.

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

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

20 The projective semantic property of the *-nu-un* ATT construction is schematically
 21 represented in Figure 4 for cases where MT is co-temporaneous with TT. In this figure
 22 and what follows, ' W_{MA-SUB} ' refers to a non-empty proper subset of W_{MA} ; the thin
 23 vertical line represents MT; the small dotted shaded circle being inside the bigger solid
 24 unshaded circle indicates that the eventuality described by the prejacent of *-nu-un* obtains
 25 in some or all members of W_{MA} , depending on whether the bigger circle is labeled as
 26 W_{MA} or W_{MA-SUB} ; the width of the shaded circle represents the temporal duration of ET
 27 (i.e., for how long it holds); and the curvy arrow is meant to capture the idea that
 28 projecting the eventuality at hand in some or all members of W_{MA} is done at MT.
 29

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



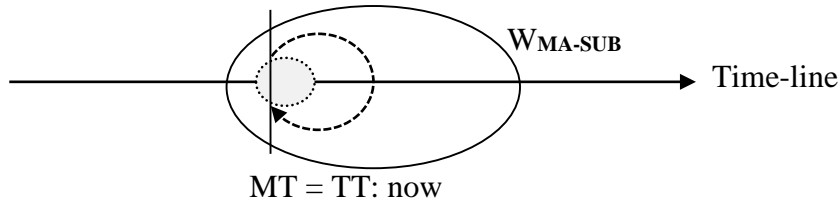
32
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 38
 39 To demonstrate how the present analysis of *-nu-un* ATT clauses captures the relevant
 40 data, first reconsider (33).

- 41
 42 (33) [e_i cacenke-lul **tha-nu-**]-un ai_i-lul po-Ø-a.
 43 [__ bicycle- ACC ride-NU-]-REL kid-ACC look-PRS-IMP-INFML
 44 'Look at the child who is riding a bike.' (MT: now; MT = TT \subseteq ET)

1
 2 This sentence can be true if it is uttered in a context where the speaker is asking the
 3 hearer to look at some discourse salient child who is riding a bike. Given this, one may
 4 think that the *-nu-un* clause of this sentence denotes the property of riding a bike at the
 5 present moment at some discourse salient location in w_0 that is presumably visible to both
 6 the speaker and the hearer. But under my analysis, it actually requires slightly different
 7 truth-conditions: it can be true if (i) the eventuality described by the prejacent of *-nu-un*
 8 obtains in w_0 between its onset time and TT (i.e., now); (ii) there exists at least one
 9 metaphysically accessible world of w_0 (which could be w_0 itself) in which this eventuality
 10 obtains at a time t that immediately follows TT (henceforth TT' for short); (iii) and the
 11 property that is derived from positing the existence of such a world holds true of the head
 12 N's denotation at MT.

13 These truth-conditions are schematically depicted in Figure 5. Here, labeling the
 14 bigger unshaded solid circle as W_{MA-SUB} is meant to indicate that the eventuality
 15 described by the prejacent of *-nu-un* may obtain only in some members of W_{MA} , and the
 16 small portion of the shaded dotted circle located to the left of the vertical line represents
 17 the existence of the eventuality described by the prejacent of *-nu-un* in w_0 between its
 18 onset time and TT.

19
 20 **Figure 5. Projective and progressive semantics of the *-nu-un* ATT clause in (33):**



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

- 41
 42 (41) Cinho-nun [e_i camca-nu-]un Mina_i-lul kkay-wu-ess-ta.
 43 C.-NOM [___ sleep-NU-]-REL M.-ACC wake.up-CAU-PST-DECL
 44 'Cinho tried to wake up Mina, who was sleeping.' (MT < now; MT = TT \subseteq ET)

1 √Haciman, Mina-nun **kyesokhayse** **cam-ul** **ca-ess-ta.**
 2 However, M.-TOP continuously sleep-ACC sleep-PST-DECL
 3 ‘However, she continued to sleep (rather than waking up).’
 4

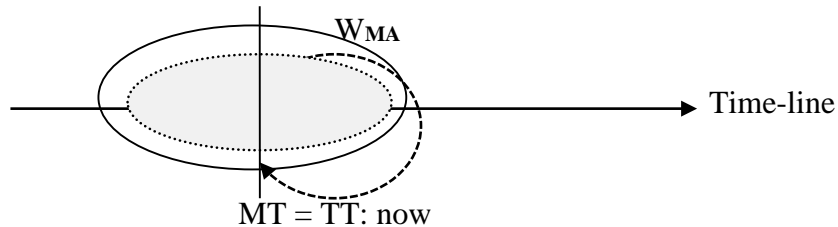
5 Turning now to cases where a *-nu-un* clause is construed as describing a
 6 generic/habitual property: under the present analysis, sentence (42) below (which is
 7 repeated from (21) above) has similar truth-conditions to (33) except that in this case, for
 8 the sentence to be true, the eventuality described by the prejacent of *-nu-un* must obtain
 9 in a maximally large subset of W_{MA} which includes w_0 during a maximally large interval
 10 that contains both TT and UT (henceforth TT^+ for short). Positioning this truth-condition for
 11 (42) will automatically ensure that some indefinite child habitually rides a bike in w_0 both
 12 before and after MT, not to mention at MT, because when a *-nu-un* clause is construed as
 13 describing a generic/habitual property, MT is always identical to TT, so it is included in
 14 the interval during which the eventuality described by the prejacent of *-nu-un* holds.
 15

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

19 Na-nun [e_i cacenke-lul **tha-nu-**]-un ai_i -ka coh- \emptyset -ta.
 20 I-TOP [$_$ bicycle- ACC ride-NU-]-REL kid-NOM like-PRS-DECL
 21 ‘I like children who ride a bike.’ (MT: now; $MT = TT \subseteq ET$)
 22

23 The meaning of (42) that I have just articulated is schematically depicted in Figure 6.
 24 Here, the unusually big size of the dotted circle compared to the solid circle labeled as
 25 ‘ W_{MA} ’ indicates that the eventuality described by the prejacent of *-nu-un* obtains in most
 26 members of W_{MA} and its relatively big width indicates that TT^+ covers a long span of
 27 time including both TT and UT, not only into the past but also into the future from MT.
 28

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



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 38 Finally, to demonstrate how the present analysis gives us a handle on data like (22)
 39 and (43), in which *-nu-un* clauses are construed as describing futurate eventualities,
 40 notice first that in such cases, the eventualities described by the embedded clauses do not
 41 exist in w_0 at MT; rather, plans about actualizing them in w_0 at TT do. Importantly,
 42 however, the same plans also exist in all other members of W_{MA} at MT. Therefore, under
 43 the present analysis, sentence (43) will be true if as of MT, the eventuality described by
 44 the prejacent of *-nu-un* is planned to occur at TT not only in w_0 but also in all its

1 metaphysically accessible worlds, and this accords with Korean speakers' intuition about
 2 the meaning of the sentence, as desired.

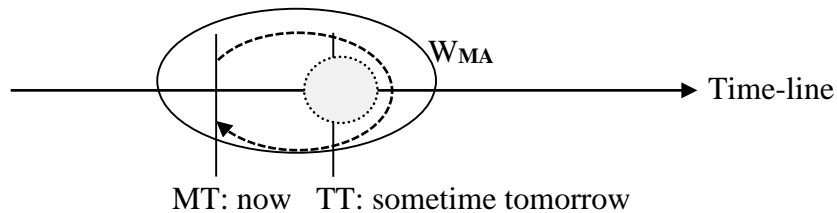
3
 4 (43) Context: Discourse participants are talking about who is scheduled to do what at
 5 tomorrow's talent-show at school.

6 [Nayil hayngsa-eyse e_i cacenke-lul **tha-nu-**]-un ai_i-nun
 7 [tomorrow event-LOC ___ bicycle- ACC ride-NU-]-REL child-NOM
 8 Minhø-i-Ø-ta.
 9 look-PRS-DECL

10 'The child who is scheduled to ride a bike at tomorrow's event is Minhø.'
 11 (MT: now; TT: sometime tomorrow during which some discourse salient event
 12 occurs; $MT < TT \subseteq ET$)
 13

14 The futurate semantics of the *-nu-un* clause in (43) is sketched in Figure 7. In this
 15 diagram, the shaded circle is much smaller than the unshaded circle, but the unshaded
 16 circle is labeled as W_{MA} , and this adequately captures the proposed idea that for the
 17 sentence to be true, a copy of the eventuality described by the embedded clause must
 18 exist in all members of W_{MA} (including w_0) at TT and the projection of such copies in all
 19 those worlds is done in w_0 at MT.
 20

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



22
 23
 24
 25
 26
 27
 28
 29 The foregoing shows that the analysis I have put forward is able to capture the full
 30 range of interpretations that utterances containing *-nu-un* clauses can receive, improving
 31 both Lee's (1993) and Kim's (2013) analyses: recall that Lee's analysis has trouble
 32 accounting for generic and futurate cases and Kim's analysis has difficulty dealing with
 33 progressive cases. What is particularly desirable about the proposed analysis is that it
 34 postulates an essentially identical semantics for all types of utterances containing a *-nu-*
 35 *un* clause since interpreting them will always involve (i) identifying both MT and TT; (ii)
 36 projecting the eventuality described by the prejacent of *-nu-un* in w_0 at TT as well as in
 37 some or all members of W_{MA} at a time that minimally contains TT (be it TT, TT', or
 38 TT⁺);¹⁴ and (iii) ascribing the property that is derived from doing so to the head N's
 39 denotation at MT. I should also point out that the semantics of a *-nu-un* clause is context-
 40 dependent but a careful re-examination of the truth-conditions I have suggested for some

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).

1 of the data presented above leads us to identify which meaning may be assigned when: a -
2 *nu-un* clause receives a generic interpretation if its head N occurs un-embedded as in (21)
3 or its head N instantiates a certain type of individual as in (38) and (42). It receives a
4 progressive interpretation if its ET overlaps its MT (which is often made clear by the
5 presence of temporal adverbs like *cikum* ‘right now’ and *ku-ttay* ‘that time’) as in (32),
6 (33), (34), and (41). It receives a futurate interpretation if it contains a temporal adverbial
7 like *nayil* ‘tomorrow’, which unmistakably indicates that its ET follows MT and therefore
8 they do not overlap, as is the case in (22), (35), and (43). Given this, we can conclude that
9 what is presented here successfully captures not only the core semantics shared by all
10 occurrences of *-nu-un* as an ATT marker but also its context dependency.

11

12 **4.3. Summary**

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

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

21 Secondly, while *-te-un* clauses are interpreted relative to some contextually
22 determined individual and his/her temporal location, namely, what I call ‘the viewpoint
23 holder (VH)’ and ‘the viewpoint time (VT)’, respectively, *-nu-un* clauses are interpreted
24 relative to the same time and world as their embedding clauses, namely, what I call ‘the
25 world of evaluation (w_0)’ and ‘the matrix time (MT)’, respectively.

26 Thirdly, while the content of a *-te-un* clause must hold true of all worlds that are
27 evidentially accessible to VH at some time that precedes VT, the content of a *-nu-un*
28 clause must hold true of w_0 at MT as well as in some or all worlds that are metaphysically
29 accessible to it at a time that minimally contains the TT.¹⁵

30 Relatedly, while interpreting a *-te-un* clause involves mentally traveling into a time
31 that precedes the VT, interpreting a *-nu-un* clause requires postulating a time that follows
32 the MT, and for this reason, *-te-un* ATT clauses are past-oriented whereas *-nu-un* clauses
33 are more future-oriented although *-nu-un* clauses are also firmly anchored at the time of
34 evaluation, namely, t_0 .

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

39 These differences are summarized in Table 1.

¹⁵ Given 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.

1
2

Table 1. Comparison between *-te-un* clauses and *-nu-un* clauses

	<i>-Te-un</i> clauses	<i>-Nu-un</i> clauses
Viewpoint direction	Retrospective	Projective
w₀ when embedded under another clause	May differ from the embedding clause's	Same as the embedding clause's
to or temporal anchor	VT	MT
Worlds where their meanings obtain	All worlds that are evidentially accessible to VH	w ₀ and some or all of its metaphysically accessible worlds
Times when their meanings obtain	Any interval that contains some time before VT	At MT and an interval that minimally contains TT, which can be TT itself, TT', or TT ⁺ , depending on context
Temporal orientation	Past oriented	Present and future oriented

3
4

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.

8

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).

15

(44) **Ku tangsi** Cinho-nun [[*e_i* oscip-ul ha-**nu**]-un yeca]-lang
 That period C.-TOP [[__ clothes.shop run-NU]-REL woman]-with
 sakwi-ess-ta.
 date-PST-DECL

20

‘At that time, Cinho was dating a woman who was running a clothing store.’

21

#Kurentey ku yeca-nun **cikum-un** oscip-ul **an**
 But that woman-TOP now-TOP clothes.shop-ACC NEG

23

ha-n-ta.

24

do-PRS-DECL

25

‘But that woman no longer runs a clothing store now.’

26

1 In conjunction with (40), the pragmatic infelicity of (44) shows that the property
 2 described by the *-nu-un* clause must hold of the individual in the denotation of its head N
 3 not only at TT/MT but also at UT, not to mention all the intervals between them. That is,
 4 it must be a fact in the world of evaluation at UT.

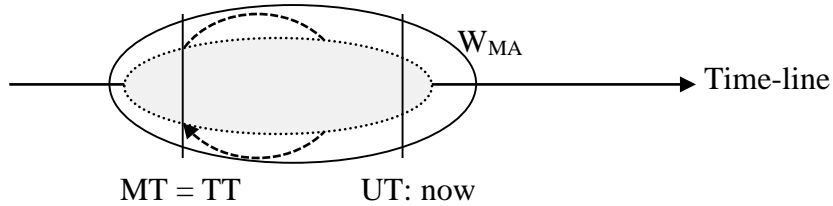
5 Importantly, a similar property is exhibited by any *-nu-un* clauses that are embedded
 6 inside a past sentence which are construed as characterizing the individual in the
 7 denotation of the head N or which are construed as describing future eventualities, as
 8 respectively illustrated by (45)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

13
 14 (45) **Ku tangsi** Cinho-nun $[[e_i$ entek wi-ey iss-**nu-**]-un
 15 That period C.-TOP $[[_$ hill top-LOC exist-NU-]-REL
 16 cip_i]-eyse sal-ess-ta.
 17 house]-LOC live-PST-DECL
 18 'At that time, Cinho was living in a house that was located on a hill top.'
 19 #Kurentey ku cip-un **cikum-un** ku kos-ey
 20 But that house-TOP now-TOP that place-LOC
 21 **ep-Ø-ta.**
 22 be.absent-PRS-DECL
 23 'But that house is no longer there.'

24
 25 (46) Cinho-nun $[[e_i$ **ku taum-nal** ttena-**nu-**]-un
 26 C.-TOP $[[_$ the next-day leave-NU-]-REL
 27 chinkwu_i]-ekey chayk-lul senmwul-hay-ess-ta.
 28 friend]-DAT book-ACC gift-do-PST-DECL
 29 'Cincho gave a book to a friend who was leaving the next day.'
 30 #Kulentey ku chinkwu-nun ku taum-nal **ttena-ci**
 31 But that friend-TOP that next-day leave-CONN
 32 **an/mos-hay-ess-ta.**
 33 not/cannot-do-PST-DECL
 34 'But that friend did not leave or ended up not leaving the next day.'

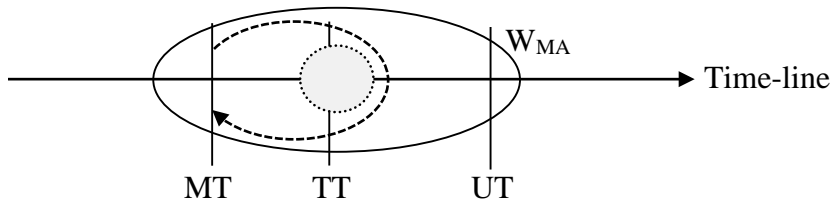
35
 36 Under the analysis advanced here, the entailments of the first sentences of (40), (44)
 37 and (45) are engendered because due to the presence of the ATT marker *-nu-un*, they
 38 assert that in most members of W_{MA} , the content of the embedded clause obtains in a
 39 maximally large subset of W_{MA} including w_0 during a maximally large interval that
 40 contains both TT and UT, as depicted in Figure 8; the second sentences deny its existence
 41 in w_0 at UT and hence the pragmatic oddity of the entire discourses. For referential
 42 convenience, I call the semantic property of *-nu-un* clauses occurring in data like (40),
 43 (44), and (45) 'temporal persistency'.
 44

1 **Figure 8. Temporal persistence of the *-nu-un* clauses in (40), (44), and (45):**



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

16
17 **Figure 9. Factivity of the *-nu-un* clause in (46):**



25 **5.2. Capturing the non-factivity of some *-te-un* clauses**

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

30
31 (47) Context: The speaker is suffering from dementia and she wrongly believes that
32 Mina used to run a clothing shop.

33 Na-nun [[ku tangsi Mina-ka oscip-ul ha-te-]-n
34 I-TOP [[that time M.-MOM clothes.shop-ACC do-TE-]-REL
35 kes]-i sayngsaynghakey sayngkakna-n-ta.
36 thing]-NOM vividly recall-PRS-DECL

37 ‘I vividly recall that Mina was running a clothing shop at that time.’

38 (adapted from Kim 2013, ex. (18))

39
40 We can in fact come up with an infinite number of cases similar to (47). By way of
41 illustration, in (48), which is a conversation between A and B, B refutes what A says by
42 taking issue with the content of the *-te-un* clause that A utters. But this nevertheless does
43 not make A utterance infelicitous, and this shows that *-te-un* clauses can occur in actual
44 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)).

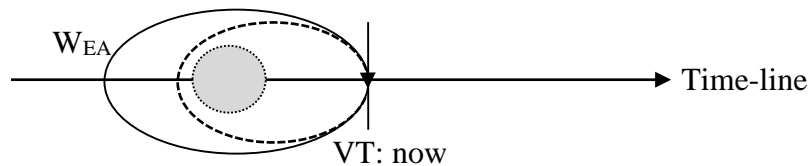
(48) Context: A and B are having a conversation and from what B knows, A's memory about the past is not entirely accurate.

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)



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).

1 **5.3. Choosing between *-nu-un* and *-te-un* and its semantic consequences**

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

13 Under the present analysis, occurrences of both *-nu-un* and *-te-un* ATT clauses in
 14 seemingly identical embedding contexts receive a straightforward explanation not only in
 15 contexts like (37) and (38) but also in other contexts. To illustrate, consider (49) and (50).
 16 Our analysis correctly predicts that both sentences will be judged good but they will have
 17 subtly different meanings (which, again, cannot be captured by directly translating them
 18 into English). More specifically, while (49) presents the embedded clause’s content from
 19 the vantage point of the MT by taking a projective viewpoint on it, (50) presents the
 20 embedded clause’s content through the lens of the speaker by taking a retrospective
 21 viewpoint on it. And this accords well with native Korean speakers’ intuition that while
 22 (49) is merely objectively describing what Cinho did on some day in the past to a friend
 23 named Mina, who he apparently knew was leaving for somewhere the next day, (50) is
 24 conveying the extra sense that the speaker is recalling Mina’s leaving for somewhere
 25 some day in the past while recounting a story about what Cinho did to her one day
 26 before her departure. In short, even though (49) and (50) appear to be very similar, they
 27 actually convey rather different meanings and therefore require rather different discourse
 28 contexts.

29
 30 (49) Cinho-nun [[*e_i* **ku taum-nal ttena-nu-**]-un Mina_{*i*}]-ekey
 31 C.-Top [[__ the next-day leave-NU-]-REL M.]-DAT
 32 cenyek-ul sa-∅ cwu-ess-ta.
 33 dinner-ACC buy-CONN give-PST-DECL
 34 ‘Mina was leaving the next day and Cinho took her out for dinner.’

35
 36 (50) Cinho-nun [[*e_i* **ku taum-nal ttena-te-**]-un Mina_{*i*}]-ekey
 37 C.-Top [[__ the next-day leave-TE-]-REL M.]-DAT
 38 cenyek-ul sa-∅ cwu-ess-ta.
 39 dinner-ACC buy-CONN give-PST-DECL

¹⁶ 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.

1 ‘Mina was leaving the next day and Cinho took her out for dinner.’

2
3 Essentially the same line of reasoning allows us to capture the distribution of *-te-un*
4 and *-nu-un* clauses in non-past contexts as well. Given the retrospective or backward-
5 looking viewpoint direction that *-te-un* encodes, we expect that it will not be employed to
6 describe a property that is expected to obtain at a time later than now, and this is exactly
7 what we find. To illustrate, while (51a) can be uttered in a context where the speaker sees
8 the evidence that the hearer has been engaged in some activity though it is not clear what
9 it is, it cannot be uttered in a context where it is obvious to the speaker that the hearer will
10 continue working on what he has been working on even after now; in such contexts,
11 (51b), which has a *-nu-un* marking on the embedded clause, must be uttered instead. In a
12 similar vein, while (52a) can be uttered in a context where the hearer is temporarily
13 taking some time off from his job and the speaker is advising him to not go back to it, it
14 cannot be uttered in a context where the speaker knows that the hearer has a job and he
15 will definitely stay in that job (at least for a while); in such contexts, *-nu-un* must replace
16 *-te-un*, as shown in (52b). Additionally, (53a) cannot be uttered when the speaker is
17 inquiring about the hearer’s current job; such contexts call for a *-nu-un* marking on the
18 embedded clauses instead, as shown in (53b).

19
20 (51) a. [[Mwusun il-ul **ha-si-te-**]-un cwung]-i-pni-kka?
21 [[what work-ACC do-HON-TE-]-REL middle]-COP-HON-Q.HON
22 ‘What have you been working on?’

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

26
27 (52) a. Icey [[*pro* *e_i* **ha-te-**]-un il_i]-ul kumantwu-ela.
28 Now [[you ___ do-TE-]-REL work]-ACC quit-IMP.INFML
29 ‘Quit the job that you have by not returning to it.’

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

33
34 (53) a. [[*e_i* **ha-si-te-**]-un il_i]-i mwues-i-pni-kka?
35 [[___ do-HON-TE-]-REL work]-NOM what-COP-HON-Q.HON
36 ‘What did you used to do (for a living)?’

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

40
41 Finally, the analysis presented here accounts for why a *-nu-un* clause may not occur
42 in some past sentences whereas its corresponding *-te-un* clause can, as illustrated by (54).
43 (Again, the choice between the *-nu-un* vs. *-te-un* cannot be accurately reflected in the
44 English translation.)

1

2 (54) [[e_i cal a-***nu**-/ \sqrt{te}]-un ai]-ka kapcaki ilena-ess-ta.
 3 [[__ well sleep-NU-/-TE-]-REL child]-NOM suddenly get.up-PST-DECL
 4 ‘A child, who was fast asleep, got up all of a sudden.’

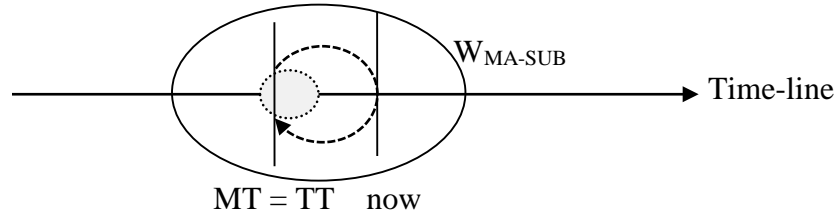
5

6 On the story told here, *-nu-un* cannot be chosen as the ATT clause’s ending in sentences
 7 like (54) because doing so will wrongly predict that the property described by the
 8 embedded clause holds true of the head N’s denotation at MT, contrary to what the
 9 embedding clause asserts: the entire sentence asserts that the event under description
 10 ceased to exist at MT in w_0 but the embedded clause’s semantics requires that it still do,
 11 as depicted below, so there is a clash between the two clauses’ meanings.

12

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

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

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34 **6. Summary and conclusion**

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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, I suggest that the former provides a
 window into ‘an evidential past’, which I define as ‘a past that is reconstructed based on

1 evidence', and the latter provides a window into 'a metaphysical future', which I define
2 as 'a future that is projected based on the state of affairs in the world of evaluation'.

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

12 Needless to say, it remains to be seen to what extent the present analysis of *-nu-un* or
13 *-te-un* may carry over to ATT clausal temporal markers in other languages and what
14 repercussions it may have for analyzing other temporal markers in Korean. It will also be
15 interesting to explore whether the ideas presented here can be translated into a more
16 formal framework. I leave all these tasks to future research.

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