Tense Interpretation in Korean[*]

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This paper reexamines the categorical status of the controversial Korean verbal inflectional suffix *-te-*. I show that an analysis treating it as speaker-addressee-oriented tense marker makes it possible to account for its unusual constraints and its interaction with other tense markers. At the same time, I account for the Korean tense system in the context of crosslinguistic tense typology, deictic tense and anaphoric tense, as suggested in Chung (1999). Finally, I provide a syntactic structure for tense that provides a more systematic tense interpretation not only for Korean but also for other languages. Further, I show that this approach confirms that tense and nominals are closely related.

1   Introduction

The goal of this paper is to provide some cross-linguistic perspective on the Korean tense system rather than to suggest language peculiar properties of the Korean tense system. First, I will investigate the unique characteristics of some controversial tense markers, especially TE tense, in Korean and then I will show how these can fit into the universal tense categories, and how they are interpreted. Following Chung (1999), I will argue that the dichotomy in tense—deictic tense versus anaphoric tense—is necessary to account for the temporal interpretations in Korean. I will show that the analysis based on this two-tiered tense structure can give an explicit tense interpretation not only to Korean but also to other languages.

This paper is organized, as follows: in section 2, I introduce two types of tenses, situation-oriented tense and speaker-addressee-oriented tense, in Korean and I investigate the constraints and the detail semantics of the speaker-addressee-oriented tense, in comparison with Imperfect in Romance languages. I argue that the definition of *-te-* as speaker-addressee-oriented tense allows Korean tense markers to fit into the deictic and non-deictic tense typology. In section 3, based on the categorial distinction of tense suggested in the previous section, I will turn to tense interpretations in Korean. Adopting the predicative theory of tense (Zagona 1990, 1995; Stowell 1995, 1996), I will show how tense is realized in syntactic structures and how tense morphemes are interpreted. Further, I will show how languages differ in how they encode the deictic tense and anaphoric tense, especially in subordinate clauses. Section 3 presents the conclusions.

2   Two types of tenses in Korean

Korean is a typical agglutinative language, in which various suffixes representing grammatical categories, such as honorific, tense, and mood, suffix to the verb stem in the form of verbal inflection. Sohn (1994:300) gives a good illustration of those suffixes in (1).

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(1)   Ku   pwun-i   cap   -hi -si -ess-ess -kess -sup -ti -kka?
       the   person.HON-NOM   catch   -1 -2 -3   -3   -4   -5   -6 -7
       'Did you feel that he had been caught ?'

According to him, (1) is a case of a finite predicate with all the possible suffixes, which are passive (1), subject honorific (2), past past or past perfect (3), conjectural modal (4), addressee honorific (5), retrospective mood (6), and interrogative sentence type (7).

     As for the ordering of inflectional morphemes, Bybee (1985:196) suggests that cross-linguistically, aspect occurs closest to the verb stem, followed by tense, and then followed by mood. Considering the fact that aspect relates more closely to the characteristics of the verb itself—the situation type that the verb represents, while mood is more related to the speaker's attitude than the situation of the verb, I suggest, in Chung (1999), that the closer to the verb stem the marker is, the more situation-oriented it is, while the farther from the verb stem it is, the more speaker-oriented it is. Further, I propose that the Korean predicate system consists of two levels: a situation-oriented level and a speaker-addressee-oriented level. The former includes an honorific suffix *-(u)si-* and the tense marker *-ess(-ess)*, while the latter includes another honorific suffix *-(su)p-,* the so-called retrospective marker *-te-*, and sentence type suffixes. Thus, Korean verbal inflection has the following structure (Chung 1999:32):

Table 1: Korean Verbal Inflection

	situation-oriented suffixes	speaker-addressee-oriented suffixes
honorific	1) *-(u)si-*	4) *-(su)p-*
tense	2) *∅/-(nu)n-,-ess-, -ess-ess-*	5) *-te-*
mood	3) *-keyss-* (epistemic)	6) *-ta, -nya (-kka),* *-(e)la (-sio), -ca (-sita)*

I claim that Korean has a two-leveled inflectional structure and each level has the same three slots for honorific, tense, and mood, even though the nature of two suffixes under the same category is not the same. As for honorific, there are two different suffixes: situation-oriented (or subject-oriented) and speaker-addressee-oriented. In the same fashion, there are two different types of tense, situation-oriented tense and speaker-addressee-oriented tense. I assume that *-keyss-* lies on the border line between these two levels. It is both a situation-oriented with future time reference and an epistemic mood marker, since it usually indicates the speaker's intention or inference.

     In the following section, I will focus on the two different types of tense morphemes, especially on the *-te-* morpheme, which I define as a speaker-addressee-oriented tense marker, and the role it plays in the tense system of Korean.

2.1   TE tense and Imperfect in Romance languages

     Imperfect in Romance languages, such as Italian, French, and Spanish, is said to denote only a past continuous or a past habitual interpretation (Bybee et al. 1994, Giorgi and Pianesi 1997). The predicate with *-te-* also indicates a past continuous event or a past habitual event. Consider the following examples:

Italian:
(2)   Ieri Gianni non sapeva se andare al cinena o no.
       'Yesterday Gianni did not know (IMPF) whether or nor to go to the movie.'
       (Giorgi and Pianesi 1997:174)

Korean:

(2)' ecey   John-i   [yenghwa-lul po-le   ka-eya hal-ci]   molu-*te*-la.
     yesterday John-NOM movie-ACC   see-to go-should-whether not know-TE-DEC
     'Yesterday John did not know whether or not to go to the movie.'

Both Imperfect sentence in (2) and the sentence with *-te-* in (2)' represent the same past continuous event. In the following adnominal clauses, *-te-* denotes the two different readings clearly.

(3) a. John-i   [ip-te-n   os-ul]   pes-ess-ta.
       John -NOM   wear-TE-ADN   clothes-ACC   take off-ESS-DEC
       'John took off the clothes that he was putting on.

    b. John-i   [ip-te-n   os-ul]   chinkwu-eykey   cu-ess-ta.
       John -NOM   wear-TE-ADN   clothes-ACC   friend-DAT   give-ESS-DEC
       'John gave his friend the clothes that he used to wear.'

While the adnominal clause of (3a) represents a past ongoing event (John's putting on his clothes), that of (3b) represents a past habitual event. According to Bybee et al. (1994), Imperfect is different from Imperfective in languages like Russian, since while the latter is applicable to either past, present, or future time, the former applies only to past situation. In this regard, it is unlikely that *-te-* is an imperfective marker because it always implies a past situation, as we shall see later.

Besides, Imperfect differs from Progressive in that usually Progressive does not occur with stative verbs, whereas Imperfect has no such restriction. As seen in (2) and (2)', both Imperfect and *-te-* have no cooccurrence restriction with situation types, since they both occur with a stative verb 'know'.[1] Another difference between Imperfect and Progressive is shown in the following Italian examples from Giorgi and Pianesi (1997:178):

(4) a. #Ieri Gianni raggiungeva la vetta, quando un violent temporale gli impedi di
       arrivarci.
       'Yesterday Gianni was reaching (**IMPF**) the top, but then a violent storm
       prevented him from getting there.'

    b. Ieri Gianni stava raggiungedo la vetta, quando un violent temporale gli impedi di
       arrivarci.
       'Yesterday Gianni was reaching (**PROG**) the top, but then a violent storm
       prevented him from getting there.'

According to them, the progressive marked sentence in (4b) is fine because Progressive does not entail that the culmination has been reached, but the imperfect marked one in (4a) is odd. That is, Progressive implies that an event is not completed in the actual world but Imperfect has no such implication. Thus, they suggest that Imperfect is aspectually unmarked, and only marked aspectual value in Italian is perfectivity. Let's look at the Korean counterparts of (4):

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[1] The progressive form is compatible with verbs like '*know*' in Korean. Thus in Chung (1999) I classify those verbs as nonstatic. In fact, I classify the adjectival predicates as static, since these verbs neither occur with the progressive form nor with the present imperfective form *-nun-*. However, *-te-* has no such restriction.

(5) a. #ecey John-i cengsang-ey tochakha-**te**-la, kulente kuttay keseyn pokpwung-ulo
    (ku-ka censang-ey) tochakha-ci mos-ha-ess-ta.
    'Yesterday John was reaching (**TE**) the top, but then a violent storm
    prevented him from getting there.'

   b. ecey John-i cengsang-ey tochakha-**ko iss-ess**-ta, kulente kuttay keseyn
    pokpwung-ulo (ku-ka censang-ey) tochakha-ci mos-ha-ess-ta.
    'Yesterday John was reaching (**PROG-PAST**) the top, but then a violent storm
    prevented him from getting there.'

The sentence with *-te-* in (5a) sounds odd, while (5b) is perfectly acceptable because the
same account for (4) holds in (5). Therefore, I claim that Imperfect is a past counterpart of
present tense (that is, a deictic past tense) when the present tense includes continuous
readings as in French, Italian, and Spanish, as Bybee et al. (1994) say. In the same way,
Korean present covers continuous events as well as habitual events, so *-te-* is a past
counterpart (a deictic past tense) of the present tense in that sense, like Imperfect.
However, as will be shown in the following section, *-te-* is more than a deictic past tense.

2.2   Te tense as a speaker-addressee-oriented tense

There has been a great deal of controversy concerning the grammatical and semantic
status of the so-called retrospective marker *-te-*. It has been considered to be various
categories, such as tense, aspect, mood, tense-aspect, or manner. At the same time, many
authors have used various terms to define its special contextual properties, as in the
following:

(6) a. Retrospection, reporting, and irresponsibility (Gim 1980)
   b. Objective conveyance (Yu 1981)
   c. Discontinuity of consciousness (Yim 1982)
   d. Experience (Huh 1987)
   e. Shift of a reference point (D.-J. Choi 1994)
   f. Pastness, report, and perception (S.-O. Sohn 1995)
   g. Anteriority of cognition time (Han 1996)
   h. Reportive (Suh 1996)

In general, it seems that these definitions all agree in the nature of the morpheme *-te-*, in
that it has something to do with pastness.
    The reason why this morpheme is controversial is two-fold. First, Korean has a
past-like tense marker, *-ess-*, which denotes a temporal relation, anteriority, with different
implications, and cooccurs with *-te-*, as we shall see. Second, *-te-* has been said to have
several restrictions, such as 'Equi-Subject Constraint', 'Non-Equi-Subject Constraint', or
'New Information Constraint' (Gim 1980, Han 1996), which other tenses are unlikely to
have. The non-equi-subject constraint states that the subject of a sentence with *-te-* cannot
be identical with the speaker, as follows:

(7) a. *Na-ka   hakkyo-ey   ka-te-la.
      I -NOM   school-LOC   go-TE-DEC
      'I saw (perceived) myself going to school.'

   b. Ku-ka   hakkyo-ey   ka-te-la.
      He-NOM   school-LOC   go-TE-DEC
      'I saw him going to school.'

c. *Na-ka   yeyppu-te-la.
   I -NOM   is pretty-TE-DEC
   'I noticed (perceived) I was pretty.'

d. Kunye-ka   yeyppu-te-la.
   She-NOM   is pretty-TE-DEC
   'I noticed she was pretty.'

Thus (7a) and (7c) are out because the subject 'I' is the same person as the speaker of the sentences. On the other hand, the equi-subject constraint states that the subject of a sentence with -te- must be identical with the speaker if the verb expresses the speaker's sensory experience, as in (8).

(8) a. Na-nun   ne-ka   coh-te-la.
        I-TOP   you-NOM   be good-TE-DEC
        'I felt (perceived) I liked you.'

b. *Ku-nun   ne-ka   coh-te-la.
   He-TOP   you-NOM   be good-TE-DEC
   'I felt (perceived) he liked you.'

The new information constraint states that -te- must be used in a sentence that gives new information. Thus, -te- cannot be used in the sentences describing such common knowledge as in (9):

(9)   #Yi Swun-Sin   changkun-i   yengung-i-te-la.
       Yi Swun-Sin   general-NOM   hero-be-TE-DEC
       'I noticed (perceived) General Swun-Sin Yi was a hero.'

The sentences in (7) describe the action or appearance of the speaker, and the occurrence of -te- is unacceptable. Only the speaker's feelings or emotions are compatible with -te-, as in (8).[2] Sentence (9) is unacceptable because both the speaker and addressee would already know the information of the sentence.

Chung (1999) argues that not only all the concepts given in (6) but also these constraints about -te- can be accounted for by the speaker-addressee-oriented property of TE tense. Due to this speaker-addressee-oriented property, TE tense presupposes the presence of the speaker and the addressee, and involves the speaker as a perceiver-describer of a situation. All the semantic characteristics of TE tense are derived from the identity of the speaker and the perceiver-describer of a given situation.

As for the role of a speaker and a perceiver-describer of a situation, McGilvray (1991) suggests a significant distinction in his semantic analysis of tense that is a further elaboration of Reichenbach's (1947) schema. According to him (1991:20), the speaker appears twice in the temporal and semantic structure of a sentence, and thus the speaker has a dual function, as a speaker (or a storyteller) and as a perceiver-describer. The former is located at the time of speech and makes judgments on evidence available at the speech time concerning the content of a sentence. On the other hand, the latter is the one who refers to a sentential content, representing the speaker's referential abilities, and is free to wander to refer to anything in any world (even in a fictional world). Thus, I argue that while the perceiver-describer of tense other than TE tense is free in terms of the range of reference,

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[2] I assume that the two constraints, the Equi-Subject Constraint and the Non-Equi-Subject Constraint, are two sides of one coin, and only one of two applies, depending on whether or not the verb expresses the speaker's subjective feeling (or emotion).

that of TE tense is tied to the speaker's world and refers to things in his world only, and cannot refer to things in the other's world or in a fictional world. In other words, the speaker-describer's referential abilities are confined within the speaker's world, which is characteristic of TE tense.

In addition, the new information constraint is also accounted for easily by the nature of speaker-addressee-oriented TE tense, since the requirement of the presence of a speaker and an addressee bears on the rules of conversation. I assume that this new information constraint is closely related to one of Grice's (1975:45-46) four maxims of conversation, which requires the speaker to make his or her contribution as informative as is required in the current conversation. Therefore, this definition of -te- as a speaker-addressee-oriented tense marker explains why it is subject to those constraints unlike other tenses including Imperfect.

With respect to its relation to other tense, aspect, or mood markers, TE tense has a significance because of its speaker-addressee-oriented property. As mentioned before, -te- can cooccur with other tense morphemes such as -ess- or -keyss-.

(10) a. Ku-ttay-nun   John-i   pelsse   ttena-ss-te-la.
         that-time-TOP   John-NOM   already   leave-ESS-TE-DEC
         'At that time John had already left.'

    b. (Ecey-nun)   John-i   kot   ttena-keyss-te-la.
         (Yesterday-TOP)   John-NOM   soon   leave-KEYESS-TE-DEC
         '(Yesterday) I inferred that John was leaving soon.'

In (10), -te- refers to some time point in the past (yesterday) when the speaker perceived a situation, which is different from the situation time. On the other hand, the situation time of John's leaving is, respectively, some time in the past to which -ess- refers in (10a), and some time in the future to which -keyss- refers in (10b). In the strict sense, the time -ess- refers to is anterior and the time -keyss- refers to is posterior to the time -te- refers to, not to the deictic center (that is, the speech time). Therefore, I argue that TE tense moves the speaker's view point to some point in the past, with respect to which other tenses can have another relative temporal relation. TE tense provides a past-shifted reference point (in the sense of Reichenbach's (1947) reference point) so that another temporal relation can be established on the basis of it.

Another implication of the speaker-addressee-orientation of TE tense comes from its position in the verbal inflectional suffixes of Korean. According to Cinque (1999:106), morphemes encoding different types of functional notions such as mood, tense, aspect, and voice, have a rigidly fixed order, which reflects the Universal Hierarchy of Clausal Functional Projections with a matching adverb in each specifier position, as given in (11).

(11)   [*frankly* Mood$_{speech\ act}$ [*fortunately* Mood$_{evaluative}$ [*allegedly* Mood$_{evidential}$
          [*probably* Modal$_{epistemic}$ [*once* Tense (Past) [*then* Tense (Future)
          [*perhaps* Mood$_{irrealis}$ ...... [*already* Tense (Anterior) ...... [verb root]....]....]]]]]]]]

The hierarchy in (11) indicates that Past Tense is lower than Epistemic Modal, which is lower than Speech Act Mood. However, the position of TE tense seems to challenge this hierarchy, since although it is lower than the speech act mood markers, it is higher than the epistemic mood marker -keyss-, which is higher than a situation-oriented tense morpheme -ess-. Thus, the problem is that -te- should be lower than the epistemic modal marker, if it is a tense marker, according to Cinque's Hierarchy in (11).

One possible account for this is, as Cinque (1999) analyzes, to treat -te- as an evidential mood marker and -ess- as a past tense marker. I provide several reasons why it is unlikely that -te- is an evidential mood marker in Chung (1999). First, usually direct

evidentials are the unmarked default and other indirect evidentials are marked. So the meaning of *-te-* would suggest that it is a direct evidential, one with no corresponding indirect form. Second, the usual meaning of direct evidentials, 'I see/witness', does not necessarily hold in TE tense. Third, the sentence without *-te-* expresses equally (sometimes more) evident situations, as can be inferred from the implicational meanings of *-te-* given in (6). In addition, it is difficult to explain why the situation-oriented tense marker *-ess-* shows the systematic relative temporal relation, if we assume that it is a simple deictic past tense[3].

Another interesting point to be noted is that *-te-* does not have speaker-addressee-oriented properties, but functions as a simple deictic past tense when appearing in adnominal clauses, since in the adnominal clause *-te-* does not have those constraints mentioned above. According to D.-J. Choi (1998, 1989) and H.-S. Lee (1991), the late 15th century tense system is retained in the adnominal tense of modern Korean. In this respect, it can be said that a situation-oriented deictic tense marker has developed into a speaker-oriented deictic tense marker[4]. Thus, the point is that *-te-* is still playing a role as a tense marker in general, and, especially in non-adnominal contexts, is doing so as a pure deictic tense, due to its speaker-addressee-orientation. I propose that it is not the tense/mood distinction that drives the inflectional order. Rather, the higher the position of a morpheme is in the hierarchy, the more speaker-addressee-oriented it is, and the more likely it will refer to semantic features outside of the scope of the clause.

In this respect, TE tense should go in a position higher than the position of Epistemic Modal. It also should be higher than simple past tenses, including Imperfect, in the hierarchy and be treated as a different tense that has this distinctive property, although it is the same as a simple past tense in that both are deictic tense. So the distinctive characteristic of *-te-* is that it does not refer to situation time, but it only provides the past-shifted reference point, which is the secondary orientation time.

According to Giorgi and Pianesi (1997:178), the Italian Imperfect can be used as a quasi-epistemic modal, as in (12).

(12)   Domani   cantava   Pavarotti.
        Tomorrow Pavarotti sang (IMPF)
        'Pavarotti is supposed to sing tomorrow.'

They say that in this circumstance, the Imperfect is compatible with future-time denoting adverbs. Although they did not clarify what quasi-epistemic modal is, these kinds of sentences are perfectly possible with TE tense.

(13)   Nayil   Pavarotti-ka   nolayha-*te*-la.
        tomorrow   Pavarotti- NOM   sing-TE-DEC
        '(I noticed that) Pavarotti is to sing tomorrow.'

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[3] According to Bybee et al.'s (1994:54) definition, Past indicates a situation which occurred before the moment of speech. However, *-ess-* can be used in the future context, as in (I).

(i)   ku ttay-ccum i-myen John-i   Mary-ka   ttenata-ko   malha-ul kesi-ta.
        the time-about is-if   John-NOM   Mary- NOM leave- ESS- DEC- COMP say- FUT- DEC.
        'By that time, John will say that Mary has left.'

Here, the time of Mary's leaving is not necessarily in the past, but is anterior to the time of John's reporting the event.
[4] Bybee et al. (1994) mentions that cross-linguistically, agent-oriented modality develops into speaker-oriented modality.

In the examples like (13), I assume that TE tense denotes the past-shifted reference point when the speaker perceived that an event was scheduled in the future, and that the time of this event is denoted by a phonetically null-form present tense, considering the futurate use of present tense.[5] That is, the temporal interpretation of (13) is a combination of the denotation of TE tense and that of present tense. Presumably this account can apply to the Imperfect sentence in (12). In this regard, it seems that Imperfect and past tense also can provide the past-shifted reference point, and this becomes more clear when they cooccur with other tenses such as perfect.[6] Harder (1994:67) also points out that the past tense indicates that it is the context being talked about that is past, rather than the event as such.

Despite those subtle differences, TE tense, Imperfect, and simple past share a certain property in that they all are deictic tense. On the other hand, there are tenses that are not deictic by nature. I categorize those non-deictic tense as anaphoric tenses in Chung (1999). They are dependent on a deictic tense in terms of temporal relations. Anaphoric tense includes the Korean ESS tense, perfect or anterior, and so on.

In sum, I argue that, roughly, tense can be classified into two types: deictic and anaphoric tense. Using Reichenbach's (1947) notation, I represent the semantics of tense as in (14):[7]

(14) a. Deictic Tense— TE, Imperfect, Past: (R_S)
      b. Anaphoric Tense— ESS, Perfect: (R_E)

Deictic tenses are tenses that take as an orientation time the point of speech (S), whereas anaphoric tenses are those that take as an orientation time the point of reference, which may or may not coincide with the point of speech. Having established this categorial distinction of tense, I will turn to another aspect of tense—that is, how tense morphemes are interpreted in a sentence.

3   Tense interpretation in Korean

In this section I will examine how tenses are realized in the syntactic structure, and how they are interpreted interacting with each other, not only in simple sentences but also in complex sentences. I will show that this analysis, based on the concept of the two types of tenses and the predicative theory of tense, will provide a more explicit account of tense interpretation.

3.1   The syntactic structure of deictic tense and anaphoric tense

As I claimed in Chung (1999), tense is a relational category in that basically it is a relation between a deictic center and another time point. In this respect, I adopt the predicative theory of tense (Zagona 1990, 1995; Stowell 1995, 1996), in which tense is like a predicate that takes two time denoting arguments, a subject-like external argument and an object-like internal argument. According to Stowell (1995:280), tense itself is not a

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[5] See Huddleston (1977:732). The futurate, in contrast to the future tense, is used to express a statement rather than a prediction, according to Boyd and Thorne (1969), Shaer (1996:100).

[6] I have defined the English perfect as anterior (that is, an anaphoric tense) in Chung (1999). My account for the '(English) Present Perfect Puzzle' raised by Klein (1992) is that the English perfect tense is not compatible with deictic temporal adverbials because of its non-deictic nature. For a detailed discussion, see Chung (1999).

[7] According to Reichenbach (1947), S, R, and E stand for the point of speech, the point of reference, and the point of event, respectively. The comma ',' and the underscore '_' between two letters indicate the simultaneity and a temporal order, respectively (for example, E_R indicates that E precedes R). Here, I only adopt the past-shifted (or secondary orientation point) notion of the point of reference. For detailed discussion about the problem with Reichenbach's system, see Chung (1999).
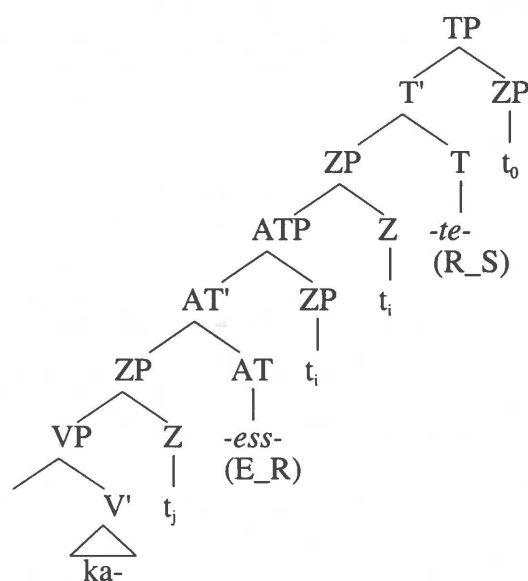
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referential category, but the temporal arguments, which he calls Zeit Phrase (ZP), are a referential category analogous to DP. So ZP bears a structural relationship to VP that is analogous to the relationship that DP bears to NP.

Thus, utilizing the two distinctive concepts, deictic tense and anaphoric tense, and adopting Stowell's (1995, 1996) tense structure, I suggest in Chung (1999) that the tense phrase should further split into the projection of Deictic Tense ((D)TP) and that of Anaphoric Tense (ATP). The temporal structure of the simple sentence in (15a) is given in (15b).

(15) a. John-i   ka-ess-te-la.
        John-NOM   go-ESS-TE-DEC
        '(I noticed that) John had left.'

b.

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                                    TP
                                   /  \
                                 T'    ZP
                                /  \    |
                              ZP    T   t₀
                             /  \   |
                           ATP   Z  -te-
                          /  \   |  (R_S)
                        AT'   ZP  tᵢ
                       /  \   |
                     ZP   AT  tᵢ
                    /  \   |
                  VP    Z  -ess-
                 /  \   |  (E_R)
                V'   tⱼ
               /\
              ka-
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$*$ t_0:   S, the point of speech
$*$ t_i, t_j...: Other time relations than S

The temporal structure in (15b) says that the T has a deictic past relation, which is represented by '(R_S)', and it has as its external argument a ZP denoting the speech point (t_0) and another ZP as its internal argument, and that the AT has an anaphoric past relation '(E_R)', which is indicated by the external argument of the AT that is bound to the internal argument of the higher T.[8] In this respect, I argue that temporal interpretations are structurally determined. That is, tense has hierarchical structure and reads off the syntactic structure of the sentence, as Bouchard argues (1984:108).

As for the numbers of tense projections, I assume that there are maximally three levels of tense phrases. Pointing out that Reichenbach's tense system overgenerates the tense types that are unattested in real languages, Vickner (1985) suggests that tense should be analyzed as three two-place relations and that two reference points are needed, based on the existence of eight types of tenses in natural languages. Cinque (1997), following Vickner, also suggests that Past, Future, and Anterior should be in separate positions in the Universal Hierarchy. Harder (1994) also shares Vickner's view, saying that the choice between past and present is the deictic choice, which comes first, and then the choice +/– future and +/– perfect are non-deictic (in his terms, relational) choice. In this paper, I find

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[8] I assume that the same structure as in (15b) (except for the positions of heads) also applies to pluperfect tenses in Indo-European languages.

the two-leveled tense structure is enough to state my thesis, and hence I ignore the three-leveled tense structure for convenience's sake.

3.2 Tense interpretation in complex sentences

Let's consider tense phenomena in Korean complex sentences. First, compare the following two adjunct clauses:

(16) a. Mary-ka   hakkyo-ey   ka-l ttay   John-ul   manna-ass-ta.
     Mary-NOM   school-DAT   go-time   John-ACC   meet-ESS-DEC
     'When Mary went to school, she met John.'

    b. Mary-ka   hakkyo-ey   ka-ess-ul ttay   John-ul   manna-ass-ta.
     Mary-NOM   school-DAT   go-ESS-time   John-ACC   meet-ESS-DEC
     'When Mary went (got) to school, she met John.'

These two examples show a clear distinction in terms of the temporal interpretation between the main clauses and the adjunct clauses. For present tense, I assume, Korean generally makes use of two markers, *-nun-* for imperfective situations, and a phonetically null-form for the other situations. Example (16a) with a null-tense marked adjunct clause implies that Mary met John on the way to school, which means that two events coincide. On the other hand, (16b) with an adjunct clause that is marked with *-ess-* implies that Mary met John when he had arrived at school: that is, the event of the adjunct clause is anterior to that of main clause. This shows that adjunct clauses are temporally dependent on the main clauses. We can give the tense structures of (16b) as follows:[9]

(17)

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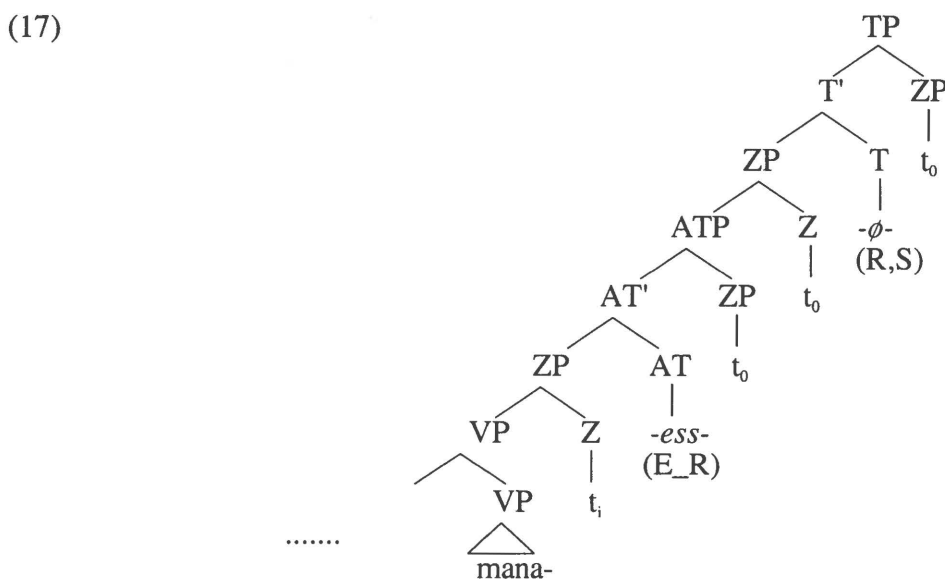
[9] I assume that the adjunct clauses adjoin to VP in normal contexts without any theoretical implications.

```
                        ATP
                      /    \
                   AT'      ZP
                  /   \      |
                ZP    AT     tᵢ
               /  \    |
             VP    Z  -ess-
              |       (E_R)
             tⱼ
```
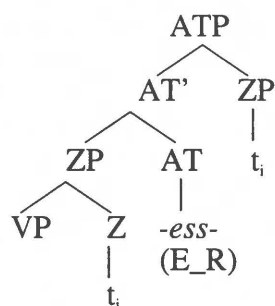
In (17), the adjunct clause has a dependent tense relation, which is indicated by an anaphoric tense projection whose external argument ZP is directly bound to the internal argument of the higher tense, the AT of the matrix clause. The only difference between (16a) and (16b) will be the different anaphoric relations of the adjunct clauses in that the adjunct clause of (16a) has a simultaneous relation and that of (16b) has an anterior relation with respect to the main clause.

Now, let's see how the tense structure of Italian imperfect-marked sentences will be represented if we apply the proposed two-tiered tense structure. Giorgi and Pianesi (1997:174) give the following two sentences whose adjunct clauses have different tense markers, Past and Imperfect:

(18) a. Quando Maria usci (PAST), Gianni guardava (IMPF) la TV.
       'When Maria went out, Gianni was watching TV.'

     b. Mentre Maria disegnava (IMPF), Gianni leggeva (IMPF).
       'While Maria was drawing, Gianni was reading.'

The only difference between two sentences is the tense of the adjunct clauses, past tense in (18b) and imperfect tense in (18b), which indicates an aspectual difference. That is, while the adjunct clause of (18b) has a perfective situation, that of (18b) has an imperfective situation. We can compare the sentences in (18) with the Korean counterparts given in (19).

(19) a. Maria-ka   naka-l ttay   Gianni-ka   TV-lul   po-te-la.
        Maria-NOM   go out-time   Gianni-NOM   TV-ACC   shower-TE-DEC
        'When Maria went out, Gianni was watching TV.'

     b. Maria-ka   kulim-ul   kuli-nun-tongan Gianni-ka   chayk-lul   ilk-te-la.
        Maria-NOM   picture-ACC draw-PRES-while   Gianni-NOM   book-ACC   read-TE-DEC
        'While Maria was drawing, Gianni was reading.'

In the adjunct clauses, we see the systematic difference between two pairs of examples. For perfective situations in the (a) sentences, while Italian uses past tense, Korean uses a null tense form that is supposed to be the unmarked present tense. For imperfective situations in the (b) sentences, Italian uses Imperfect tense, whereas Korean uses the present imperfective marker -nun-. I assume that the adjunct clauses are temporally dependent on the main clauses cross-linguistically. However, these two languages show a morphological variance, which should be accounted for in any case.

Imperfect has been said to be used for 'Present-under-Past' readings. That is, when embedded under a matrix past tense, the imperfect can express a simultaneous event with the matrix event (Giorgi and Pianesi 1997:174), as in (20).

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(20)   Mario mi ha detto che Gianni mangiava (IMPF) una mela.
        'Mario told me that Gianni was eating an apple.'

In (20), the event of the imperfect-marked complement clause (i.e., Gianni's eating an apple) took place at the same time as the matrix event (i.e., Mario's reporting). Consider the Korean counterpart.

(21)   Mario-ka   na-eykey   [Gianni-ka   sakwa-lul   mek-nun-ta-ko]
        Mario-NOM   I-DAT   Gianni-NOM   apple-ACC   eat-PRES-DEC-COMP

        malha-ess-ta.
        say-ESS-DEC
        'Mario told me that Gianni was eating an apple.'

Example (21) also implies that the event of the complement clause coincides with that of the main clause. However, the subordinate verb in (21) is not inflected with past tense but with the present imperfective marker -nun-. On the other hand, the subordinated clause marked with -te- does not necessarily ensure the same simultaneous reading, as follows:

(22)   Mary-ka   na-eykey   [John-i   sakwa-lul   mek-**te**-la-ko]
        Mary-NOM   I-DAT   John -NOM apple-ACC   eat-TE-DEC-COMP
        malha-ess-ta.
        say-ESS-DEC
        'Mary said that (when she saw him) John was eating an apple.'

In (22), John's eating coincides with some past context, which may be a time point when Mary saw John. However, (22) does not imply that John's eating coincides with Mary's reporting. Rather, it is likely that John's eating is anterior to Mary's reporting.
        In order to account for the systemic differences between tense morphemes in Korean and Italian complex sentences, I suggest the Rule of Sequence of Tenses (henceforth SOT) for languages like English and Italian in Chung (1999). The SOT rule copies the deictic tense projection of a main clause, providing the external argument of the subordinate tense with its temporal binder (the internal argument of the higher matrix tense) within the same clause. I argue that the SOT rule is a syntactic mechanism that makes an anaphoric linking possible within a finite clause, in order to make it easy to track down the temporal antecedent.[10]
        Thus although the sentences in (21) and (22) are the same in terms of temporal interpretation, they will show structural differences, as follows:

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[10] Shaer (1998) also claims that the SOT rule is a temporal tracking device that makes temporal relations transparent.

(20'):(20) TP

```
(20'):(20)      TP
              /    \
           ZP       T'
           |      /    \
           t₀    T       ZP
                 |      /    \
               (R_S)  Z       ATP
                      |      /    \
                      tᵢ    ZP      AT'
                            |      /    \
                            tᵢ    AT      ZP
                                  |      /    \
                                (E,R)   Z       VP
                                        |      /   \
                                        tᵢ          V'
                                                  /    \
                                                 V      CP
```

....

```
                        TP
                      /    \
                   ZP       T'
                   |      /    \
                   t₀    T       ZP
                         |      /    \
                       (R_S)   Z       ATP
                               |      /    \
                               tᵢ    ZP      AT'
                                     |      /    \
                                     tᵢ    AT      ZP
                                           |      /    \
                                         (R,E)   Z       VP
                                                 |      / \
                                                 tᵢ
```

(21'):(21)

```
                                              TP
                                            /    \
                                          T'      ZP
                                        /    \     |
                                      ZP      T    t₀
                                    /    \    |
                                 ATP      Z   -ø-
                                /    \    |   (R,S)
                              AT'     ZP  t₀
                            /    \     |
                          ZP     AT    t₀
                        /    \    |
                      VP      Z   -ess-
                     /        |   (E_R)
                   V'         tᵢ

                          · · · · · · · · ·

                              ATP
                            /    \
                          AT'     ZP
                        /    \     |
                      ZP     AT    tᵢ
                    /    \    |
                  VP      Z   -nun-
                 /   \    |   (R,E)
              DP'     V'  tᵢ
```
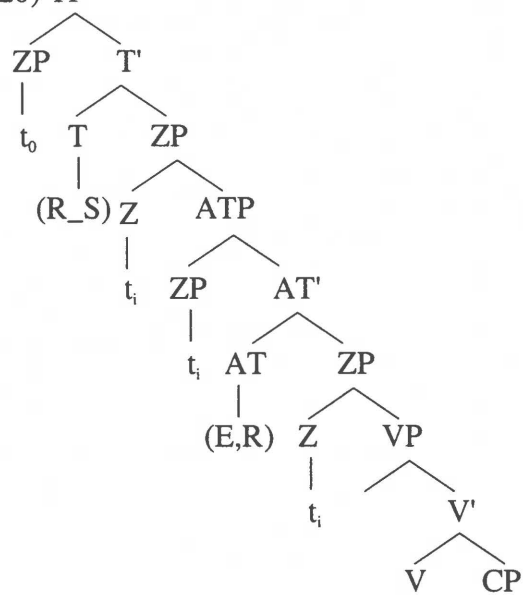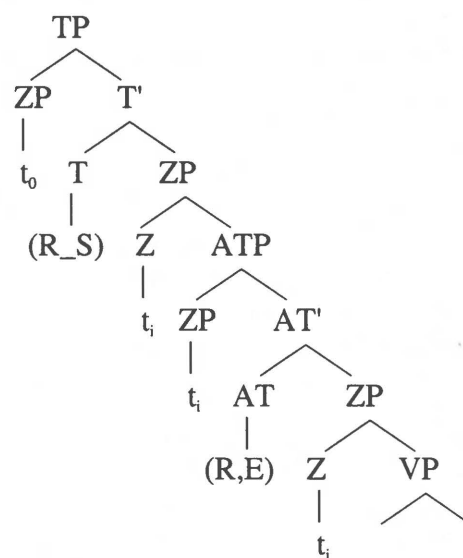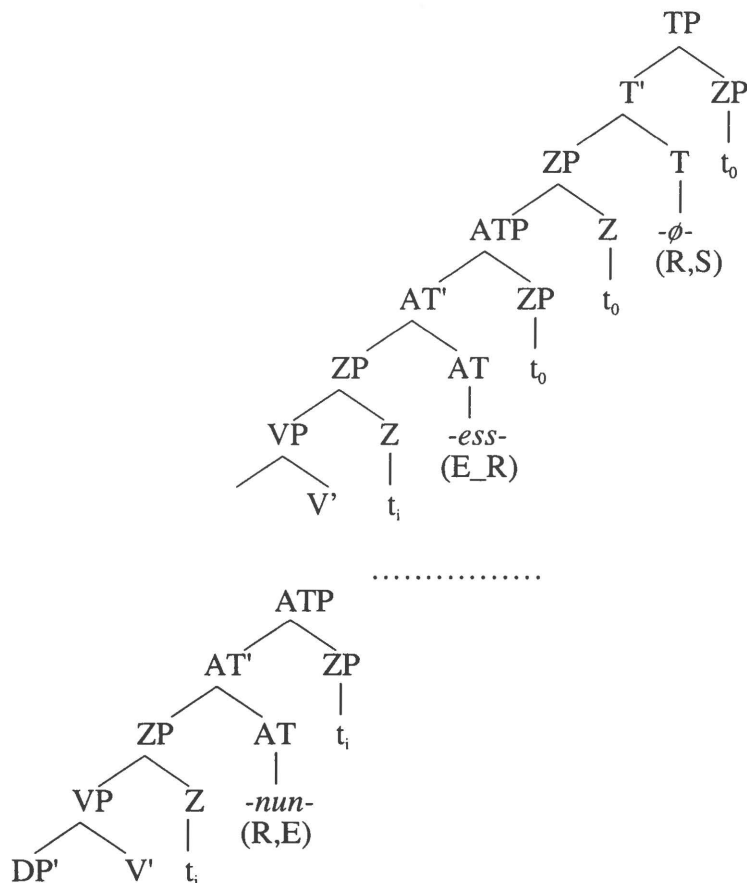
In (20'), the TP of the complement clause is copied from the main clause by the SOT rule. Hence, the external argument ZP of the ATP is directly linked to the internal ZP of the adjoining higher TP in the same clause, and the ATP has a simultaneous relation to this higher T. In other words, the external argument is linked to an antecedent via the copied TP. On the other hand, in (21)' the external argument ZP of the complement clause is bound to the internal argument ZP of the matrix tense itself.

      Therefore, as mentioned before, the syntactic effect of the SOT rule is that anaphoric linking is possible within one finite clause. That is, the external argument of ATP and its antecedent are in the same clause. Thus, when the rule applies, the domain of the anaphoric link is a finite clause, as in (20'). When the rule does not apply, the domain is a whole sentence, as illustrated in the Korean examples in (21'). In this respect, temporal arguments parallel nominal arguments in terms of the anaphoric domain, since while the domain of nominal anaphors of languages like English is a finite clause, that of Korean nominal anaphors can be bound within a sentence rather than a finite clause, as follows:

(23) a. John said that Mary loves herself/*himself.

    b. Cheliᵢ-nun   Yengiⱼ-ka   cakiᵢ,ⱼ-lul   salangha-nun-ta-ko   malha-ess-ta.
       Cheli-TOP   Yengi-NOM   self-ACC   love-PRES-DEC-COMP say-ESS-Dec
       'Cheli said that Yengi loves himself/ herself.'

Here *caki*, which is a reflexive in Korean, can be bound not only to the subject of the complement clause, *Yengi*, but also to the topic (or subject) of the matrix clause, *Cheli*. Moreover, *caki* prefers *Cheli* to *Yengi* as its binder (S.-Y. Kim 1993:495). It is possible to say that the binding domain of a nominal anaphor is determined by that of an anaphoric

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tense. Other evidence comes from the binding of anaphors in an infinitive clause or small clause of languages like English, which is similar to the binding of Korean nominal anaphors as in (23) because the tense of infinite clauses is totally determined by the matrix tense, like the tense of Korean subordinate clauses.

4   Conclusion

In this paper I have analyzed the controversial verbal suffix -te- as a speaker-addressee-oriented tense marker and distinguished it from situation-oriented tenses, based on the two-leveled verbal inflection system of Korean. I have shown that this analysis paves the way for an account of the unusual constraints of -te- , for its interaction with other Korean tense markers, and for its position in the hierarchy of functional categories. At the same time, I have shown that this analysis accounts for the properties it has in common with other tense types like Imperfect in Romance languages. Further, I make use of the concept of deictic tense and anaphoric tense to accommodate these two different types of tenses, which provides a more structural way to account for temporal interpretation not only in Korean but also in other languages.

Therefore, the implication of my analysis of tense is two-fold. First, this approach confirms that the structure of tense and nominals are closely related. Second, this analysis reveals that the SOT rule reflects the dichotomy of tense, deictic versus non-deictic tense, and that languages are different in the way that they encode this dichotomy, especially in subordinate clauses.

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