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Tense and aspect in Korean

Shin, Sung-Ock, Ph.D.

University of Hawaii, 1988
TENSE AND ASPECT IN KOREAN

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF
THE UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT
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AUGUST 1988

by

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Finally, I would like to express my deepest gratitude to James Junghan for standing by my side throughout my achievements and trials.
This study proposes a unified account of tense and aspect in Korean in an integrated way. I argue that while tense is obligatory, aspect is optional. This study makes an important distinction between two notions—tense and event times. Tense names a relation between event time and speech time and is a grammatical category, whereas event time is not. There are two tenses in Korean, past and nonpast. Past tense names the relation in which an event precedes speech time. Nonpast tense names the relation in which an event follows or is simultaneous with speech time. I theorize that the actual event time is determined through the interaction of tense and a variety of other lexical items.

There are two forms for expressing tense contrasts in Korean: the overt form -esse and the null form -∅. While -esse always names a past relation, the value of the null form can vary.

I propose two main theses. First, -esse enters into the same interpretive pattern as names or R-expressions since it has inherent reference. Second, -∅ behaves like pro (or pronominals) and enters into the same interpretive pattern as pro. Like all other pronominals, -∅ can receive its interpretation from an antecedent (i.e., a matrix clause tense) or it can refer freely. I term the former an anaphoric tense and the latter a deictic tense. The deictic
interpretation of the null form is nonpast, unless otherwise specified. Furthermore, like an NP, tense can bear an index to indicate coreference or disjoint reference with respect to another tense. Coindexed tenses have the same value for the [±past] feature.

The main thesis that -ess is an R-expression is supported by Binding Principle C, and is borne out in a wide range of data, including conjunctive, relative, complement clauses, etc.

This unifying theory of tense addresses other issues involving temporal expressions in Korean in a principled way. For instance, conjunctive suffixes play a key role in temporal interpretations.

In short, the treatment of tense as a referring expression shows two types of parallels within the Binding Theory. The two phenomena which at first glance look totally unrelated are captured by the same principle.


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List of Abbreviations and Symbols

acc.....Accusative
adn.....Adnominal suffix
AH.......Addressee honorific
Asp.......Aspect
comp.....Complementizer
Dec.......Declarative
hon.......Honorifics
imp.......Imperative
ind.......Indicative
loc.......Locative
mod.......Modifier
nöm.......Nominative
NOM.......Nominalizer
perf.......Perf ective
pl.......Plural
pol.......Polite ender
poss.......Possessive
prog.......Progressive
Q.........Question
quot.......Quotative
rel.......Relativizer
ret.......Retrospective
top.......Topic
tran.......Transferential

*.....Ungrammatical sentence/phrase
(Example Number) ?.....Marginal sentence/phrase
(Example Number) ??.....More marginal sentence/phrase
Chapter 1
Introduction

1.1 The issues

The present study addresses the traditional and current issues involving temporal expressions in Korean in an attempt to propose a unified and more principled account of these phenomena, with particular reference to temporal categories in complex sentences. The following questions may be conceived of as the major issues.

(1) a. Do both tense and aspect exist in Korean, or just one of them? If both exist, do they form separate grammatical categories, or are the two syncretized into one category?

b. To what extent is Korean susceptible to tense agreement in complex sentences?

c. How is embedded tense different from matrix tense? For example, to what extent is an embedded tense form suppressed vis-a-vis a matrix tense form?

d. What is the relation between embedded tense and the tense in the immediate upstair clause? What is a principled way of accounting for embedded tense with regard to the matrix tense and speech time? Is the notion of reference time or relative tense linguistically significant?
These issues are associated with other temporal phenomena in Korean, including:

e. What is the grammatical status of the reduplicated suffixal form -ess-ess? Is it a past-past marker or past-perfective marker, or some sort of modal or aspectual suffix?

f. What is the nature of the so-called retrospective mood suffix with regard to the tense and aspect system?

g. How many tenses are there in Korean -- two (past and nonpast), or three (past, present, and future)?

h. What kinds of aspectual forms are available in Korean?

i. Do the so-called modal suffixes (i.e., -keyss, -uli) denote future time in any way?

j. What are the syntactic functions performed by temporal adverbials in relation to the other temporal categories?

k. What roles do conjunctive suffixes play in the temporal interpretation of conjunctive sentences?

l. Do the other complementizers, such as the adnominal, nominalizing, adverbial, and quotative suffixes, have any role in temporal interpretations?

Many of these questions have been addressed independently of each other by linguists of Korean, but they are by no means dissociated from each other. The present
study was conceived and implemented with the objective of proposing a descriptive model that could answer these questions in an integrated, economical, and principled manner.

1.2 Previous approaches

There have been a number of works on temporal expressions in Korean, with a variety of theoretical orientations. The majority of the existing works are on how to interpret the morphological oppositions of the tense- or aspect-related inflectional categories which are realized as verbal suffixes. Only recently have some works appeared dealing with temporal expressions from a broader perspective, including tense and aspect in embedded clauses.

Previous works can, by and large, be categorized into the following three approaches:

1) Structural approach
2) Generative Semantic approach
3) Reichenbachian approach

Among the three approaches, the most relevant analysis for the present study is the Reichenbachian account. I will briefly review the other two accounts in this section, while taking up the Reichenbachian approach in the following section.
1.2.1 Structural approach

The structural approach has been adopted by many traditional, structuralist, and generative grammarians working on Korean (e.g., Martin 1954, Choi 1965, Na 1971, Gim 1980a/b, 1985). This approach is characterized essentially by the syntagmatic and paradigmatic analysis of the inflectional suffixes that are relevant to tense and/or aspect. This includes the identification of the tense/aspect morphemes, their morphemic slots in the syntagmatic verbal inflection, and the grammatical categories associated with them. For example, Martin (1954, 1963) proposes seven sequentially ordered slots for inflectional categories which are realized as various verbal suffixes. His scheme is summarized below. Notice that one slot (IV) is filled with more than one category, and some categories have more than one subcategory. Examples of suffixes are given in parentheses.


I. STATUS: Honorific (-usí)

II. TENSE: Past (-ess)

III. TENSE: Past (-ess)

IVa. TENSE: Future (-keyss)

IVb. ASPECT: Prospective (-ul)

V. STYLE: Formal (-ngup)

VI. ASPECT: 1. Indicative (-ni), -Ø

2. Subjunctive (-g(i), -Ø)
3. Retrospective (-ti, -tu)
4. Processive (-nu)n

VII. MOOD: 1. Assertive
   a. Declarative (-ta, etc.)
   b. Propositive (-ca, etc.)
2. Attentive
   a. Interrogative (-kka, etc.)
   b. Imperative (-la, etc.)
3. Apperceptive (-kwun, etc.)
4. Modifier (-u)n
5. Infinitive (-e)
6. Adversative (-una 'but')
7. Sequential (-uni(kka) 'as')
ETC.

Martin's mood category consists of eighteen subcategories, which include various kinds of clause unders, such as conjunctive, adnominal, nominalizing, and adverbial suffixes that are relevant to the present study. Since I will discuss tense and aspect categories in detail in Chapter Two, I will not comment further on Martin's system here. Suffice it to illustrate the inflectional categories Martin postulates with the following sentence.


John may have read the book.
According to a majority of the proposals in the structural approach, including Martin's, the category of tense corresponds to a natural division of time. That is, there are three tense categories: past, present, and future. Most traditional and many structuralist or generative grammarians assume that there are these three-way contrasts in the structure of Korean. Such analyses, however, have one significant drawback. That is, natural time does not always match the systematic grammatical contrasts encoding tense. In fact, as Lyons (1968:304-305) points out, tense itself is not found in all languages. In Korean, I propose that future tense does not exist as an inflectional category (cf. Sohn 1986:158), as we will see in Chapter Two.

Another major shortcoming of the analyses under the structural approach is that they fail to account for the empirical problem that tense in embedded clauses calls for a descriptive mechanism different from that for matrix tense. For instance, in relative clauses, it has been generally assumed in this approach that there are three different tense-indicating endings which simultaneously function as relative clause markers. Observe the following:

(4) a. [John-i e ilk-un] chayk
    nom e read-past book
    'the book that John read/has read'

b. [John-i e ilk-nun] chayk
    present
    'the book that John is reading'
c. [John-i ə ilk-ul] chayk
    future

'the book that John will read'

According to the usual structuralistic view, the adnominal clause endings -un, -nun, and -ul represent past, present, and future tense, respectively. However, this generalization does not hold in the following examples:

    nom read after this book-acc read-will-Dec

    I will read this book after John reads it.


    i) Mary read the book that John is reading (now).
    ii) Mary read the book that John was reading.

In (5a) the morpheme -un refers to a nonpast tense, despite the structural analysis that treats it as a past morpheme. In (5b), -nun represents nonpast as well as past, contrary to the structuralistic claim that -nun refers to a present tense. The examples above indicate that tense in embedded clauses may vary its time value depending on the matrix clause tense (cf. Nahm 1978:3). It will be shown later that the adnominal suffix -ul is a modal suffix, and not a future tense marker.

1.2.2 Generative semantic approach

The generative semantic account has been adopted by many grammarians of Korean, especially in the 1970's (e.g.,
Sohn 1974, 1975, Suh 1977, Song 1983). In this analysis, tense is a higher verb which gets lowered into a tenseless clause. Let us consider some English examples first. A simple past is represented as a higher verb with a proposition as subject (cf. McCawley 1971). For instance, (6a) may be represented as (6b) in generative semantic terms (examples are quoted from Hornstein 1981):

(6) a. John ate the cake.
   b. 
      \[ S_1 \]
      \[ NP \]
      \[ S_2 \]
      John eat the cake
      Past

The past perfect construction is understood as a past sentence embedded as a subject to a higher verb past, as illustrated below:

(7) a. John had eaten the cake.
   b. 
      \[ S_1 \]
      \[ NP \]
      \[ S_2 \]
      \[ NP \]
      \[ S_3 \]
      John eat the cake
      Past
      Past
In (6b), the past gets lowered into $S_2$ to yield as in (6a). Similarly in (7b), the past of $S_2$ gets lowered into $S_3$ and the past of $S_1$ gets lowered into the structure generated by the preceding lowering. This approach is largely based on the classical logical analysis of tense as a sentential operator. Consider the following complex sentences (quoted from Enc 1987):

(8) a. Mary found out that John failed the test.
   
   b. $PAST \left[ s_1 \right. \text{Mary find out} \left[ PAST \left[ s_2 \right. \text{John fail the test} \right] \right]$

In (8b), notice that the PAST of the complement clause is embedded under the PAST of the matrix clause. The tense of the sentence $S_2$ is evaluated with respect to the PAST of the higher clause. Therefore, the event of failing the test should be predicted to be prior to Mary's finding out about it. The complement tense in (8a) has a 'shifted reading' according to Enc's (1987) analysis. \(^1\)

Now let us consider some Korean examples. Sentence (9a) where the reduplicated tense/aspect suffix -ess-ess occurs may be represented in (9b) as the generative semantic approach (cf. Sohn 1974).

    the bird-nom die
    That bird had died.
   
   b. I REPORT $[PAST [PAST [ku say ka cwuk]]]$
The double tense/aspect form -ess-ess is usually regarded as denoting past in the past time. Therefore, postulation of (9b) as the underlying structure for (9a) seems to be well motivated from a semantic point of view.

Similarly, observe the following examples (quoted from Song 1983).

(10) a. Hakkyo-ey ka-◊-taka tolao-◊-n-ta.  
    school-at go return  
    *(He) is coming back while on his way to school.

  b. Hakkyo-ey ka-ss-taka tolao-◊-n-ta.  
    (He) is coming back after he has been to school.

    *(He) came back while on his way to school.

    (He) came back after he had been to school.

Song (1983) proposes under the Generative Semantic account that the respective sentences in (10) be represented schematically as follows, where E stands for an event.

(11) a. [E1-present  taka  E2-present] PRESENT  
  b. [E1-past  taka  E2-present] PRESENT  
  c. [E1-present  taka  E2-present] PAST  
  d. [E1-past  taka  E2-present] PAST

Another way of stating Song's claim is that there is only a single past in the Logical Form (LF) of sentences like (10c), which has the entire remainder of the construction in
its scope, and so pertains to both clauses, as shown in the diagram below.

(12) 

```
S
S
PAST
```

he goes home and comes back

Although Song's observation that, in his example sentences, the matrix clause -ess places the entire sentence in the past frame is insightful, this approach does not necessarily apply to other types of sentences. That is, evidence from other types of embedded clauses indicates that the embedded tense is not always in the scope of the matrix tense, as shown below.

    nom school-at go-comp thing-acc top know-past-Dec

i. Mary knew that John goes/will go to school.

ii. Mary knew that John went to school.

Although Song does not discuss this explicitly, when there are two -ess's in a complex sentence, there are two possible analyses. One analysis assumes that there are two potentially different times referred to. The second possibility is that the embedded clause past is in the scope of the main clause past tense. Then some special interpretation for the narrow-scope occurrence of -ess would apply. It has been suggested (cf. McCawley 1971) that the
English perfect is a narrow-scope of the past, because of paraphrasability like the following:

(14) a. John believes that Mary left.
    b. John believes Mary to have left.

In the case of Korean examples, I will argue that the overt form - esse in embedded clauses like (10b) and (10d) denotes perfectivity, not past tense. Supporting evidence is primarily based on the distinction between the notion of pastness and perfectivity. (This will be discussed in Chapter Two in detail.) The difference in meaning between (10a) and (10b) on the one hand, and between (10c) and (10d), on the other, suggests that the embedded clause - esse shows a completed action of going home (that is, perfectivity), whereas its absence indicates an uncompleted action.

In short, the dual temporal interpretations associated with embedded clauses appear to constitute one of the major stumbling blocks in the generative semantic approach.

1.3 Reichenbach's tense system

The most influential attempt at formalizing the relationship between event time and the use of tense has been Reichenbach (1947). Reichenbach's system has been discussed in dealing with a wide variety of languages (e.g. Hornstein 1977, 1981, An 1980, Netsu 1981, Soga 1983, C. Lee 1985). Hornstein (1977) develops 'a quasi-Reichenbachian'
framework and proposes rules for adverbs, e.g., 'now', 'yesterday', 'tomorrow', and temporal conjunctions, e.g., 'when' and 'before'. Despite his revision of part of Reichenbach's system, his approach is still basically Reichenbachian.²

According to Reichenbach, there are three elements involved in the description of tense: a speech time (S), an event time (E), and a reference time (R). The speech time is the time at which the speech act itself takes place. The event time corresponds to any one of a large set of times at which an event takes place. In addition to a speech time, there are alternative points of reference for a speaker. That is, a speaker is not constrained to talk about the actual situation he is in; he can select any other time, and use that time as the one he is principally referring to. This serves as the reference time. The reference time is intuitively a point of reference that functions for a speaker as an alternative to the time of speaking (cf. Johnson 1981). The way in which these three are interrelated is exemplified in a sentence like 'John had left'. In this example, the event time is the time when John left; the reference time is a time between speech time and the event time as shown in (15).

(15) \[ \begin{array}{c|c|c|c} E & R & S \\ \hline \text{------} & \text{|-----} & \text{|-----|------------------} \end{array} \]
Although the notion of reference time (R) has been controversial among scholars (e.g., Comrie 1985), R-time appears useful in the interpretation of time adverbials, as exemplified below (examples from Dinsmore 1982:224).

(16) a. At sunrise Mabel had a big breakfast.

b. At sunrise Mabel had had a big breakfast.

The reference time R of (16a) and (16b) is the time at which the sun rises, as in (17).

(17) \[ \begin{array}{c}
\text{R} \\
\hline
\text{sunrise}
\end{array} \]

For (16a) R = E in Reichenbach's system, whereas for (16b) E is prior to the time at which the sun is rising. These are represented in (18a) and (18b), respectively.

(18) a. \[ \begin{array}{c}
\text{R} \\
\hline
\text{E} \\
\text{sunrise}
\end{array} \]

b. \[ \begin{array}{c}
\text{E} \\
\hline
\text{R} \\
\text{sunrise}
\end{array} \]

According to Dinsmore (1982), by virtue of R, we can predict different entailments about the event time. That is, while (16a) entails that Mabel's breakfast occurs at sunrise, (16b) entails that it occurs prior to sunrise. Furthermore, the R time can characterize meaning differences
in such sentences as the following (examples from Dinsmore 1982:216).

(19) a. The turtle hopped across the road.
    b. The turtle has hopped across the road.
    c. The turtle had hopped across the road.
    d. The turtle would/was going to hop across the road.

In (19a)-(19c), E precedes S (E<S). But while for (19a) R coincides with E (R=E), for (19b) R = S, for (19c) R is between E and S, and for (19d) R<S and R<E. Notice that the different ordering of the three time points are associated with different time-related meanings.

Reichenbach (1947) claims that the three elements (S, E, and R) are relevant to every temporal expression. In his system, therefore, tense is represented in terms of positional relationships of the three time points, as illustrated below. (Dashes refer to an interval of time and commas to simultaneity):

(20)

<table>
<thead>
<tr>
<th>Structure</th>
<th>Examples</th>
<th>Names</th>
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<tbody>
<tr>
<td>a. E - R - S</td>
<td>I had seen John.</td>
<td>(past perfect)</td>
</tr>
<tr>
<td>b. E, R - S</td>
<td>I saw John.</td>
<td>(past)</td>
</tr>
<tr>
<td>c. R - E - S</td>
<td>I would see John</td>
<td>(conditional)</td>
</tr>
<tr>
<td></td>
<td>R - S, E</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R - S - E</td>
<td></td>
</tr>
<tr>
<td>d. E - S, R</td>
<td>I have seen John.</td>
<td>(present perfect)</td>
</tr>
<tr>
<td>e. S, R, E</td>
<td>I see John.</td>
<td>(present)</td>
</tr>
</tbody>
</table>
Not all tenses in Reichenbach's sense are formally distinguished in Korean as separate grammatical categories. I maintain that in Korean there are only two tenses—past and nonpast, with the nonpast tense regarded as including present and future times. In Chapter Two, I will argue in detail for the two-way contrast of the tense system in Korean.

According to Reichenbach, the time points E, R and S are interpreted as either durative stretches or punctual points of time, depending on aspectual characteristics. In some forms, an additional indication is given concerning the time extension of the event (ibid.:290). For example, English uses the present participle to indicate that the event covers a certain stretch of time. Thus, in Reichenbach's system, notions such as 'extended' and 'perfect' are treated under the label of tense, although they are concerned with states of events (which are aspectual notions) rather than with points in time.3

In the Reichenbachian system, tense in complex sentences can also be represented in terms of a configuration of S, R, and E, as illustrated below (quoted from Reichenbach 1947:293):

f. \[ S - E - R \]
   \[ S, E - R \] I will have seen John. (future perfect)
   \[ E - S - R \]

\[ g. S - R - E \]
\[ S - R, E \] I will see John. (future)
\[ S, R - E \]

\[ ^3 \text{In the Reichenbachian system, tense in complex sentences can also be represented in terms of a configuration of } S, R, \text{ and } E, \text{ as illustrated below (quoted from Reichenbach 1947:293):} \]
(21) a. I had mailed the letter
    when John came
    and told me the news.

    1st clause:  E1 - R1 - S
    2nd clause: R2, E2 - S
    3rd clause: R3, E3 - S

    b. He was healthier C1 R1, E1 - S
    when I saw him C2 R2, E2 - S
    than he is now. C3 S, R3, E3

Thus, in the Reichenbachian system, tenses in both simple and complex sentences are represented by the positional relationships between E, R, and S. Further notice in the vertical positioning above that in (21a) all the three reference times coincide, whereas in (21b) only two reference times coincide. The Reichenbachian analysis explicates dependency between a subordinate clause and its main clause (or a next higher clause) in terms of reference times.

Reichenbach's tense system will be partly modified in this dissertation, not only to attain greater generality in linguistic description but to accommodate the typological characteristics of Korean. The elaboration of such modifications will be presented in the immediately following section. In biclausal (and multiclausal) constructions in Korean, which I will focus on in the present study, R coincides with a matrix clause event time. Thus, for
simplicity, I will assume from now on that R is equivalent to the matrix event time, as illustrated below.

(22) a. John-un cip-ey ka-š-se Mary-lul manna-ss-ta.  
    top home-to go-past-and acc meet-past-Dec

John went home and then met Mary.

---|---|---|---|---
E1   E2(=R)  S

    while

While going home, John met Mary.

---|---|---|---|---
E1   S
---|---|---|---|---
E2(=R)

The diagram (22a) indicates that E1 precedes E2. Since the conjunctive suffix -šse 'and then' requires E1 to precede E2, the position of E1 in the diagram must be located prior to E2 which precedes speech time. In this case, the matrix clause event (E2) provides a reference time for the interpretation of the embedded clause event (E1). In (22b), the conjunctive suffix -myense 'while' requires two events to overlap. Since the matrix event takes place in the past, the embedded event also must occur in the past. Thus, again E2 provides the reference time for E1. In 1.4, I will discuss the typological reasons for the determination of E2 (=R), rather than E1 (=R).
1.4 Proposed approach

1.4.1 Tense, event time, and aspect

This dissertation makes an important distinction between tense and event time - a distinction that is crucial in any discussion of tense. The basic premise of my thesis is stated as follows:

(23) Tense is a grammatical category which names a relationship between one time and another - the relation between an event time and a speech time. Past tense names the relation in which the event precedes speech time and nonpast tense names the relation in which the event either follows or is simultaneous with the speech time.

This definition of tense contrasts with the more common view (cf. Hornstein 1981, Soga 1983, Commrie 1985) that tense categories refer to event times that bear a particular relation ('before' or 'after') to speech time. On this latter view, tense can have indefinitely many values since there are indefinitely many event times.

While tense in Reichenbach's system is defined in terms of the positional relationships of S, R, and E, tense in the present study refers to a relation between E and S. As noted earlier, past and nonpast tenses are defined as (24):

(24) a. X is past tense iff X names the temporal relation in which the event precedes speech time.
b. X is nonpast tense iff X names the relation in which the event follows or is simultaneous with speech time.

In the theory I propose, the actual event time is determined through the interaction of tense and a variety of lexical and pragmatic factors. Thus, in the sentence *John-ittena-ss-ta 'John left', for example, the past tense category indicates only that the event of leaving takes place at a time preceding the speech time. Other information about the event time must be supplied pragmatically (e.g., by the linguistic and extralinguistic context in which the sentence is uttered) or by modifiers with specific semantic content (e.g., *ecey 'yesterday').

In the case of Korean, I have proposed that there are only two tenses, past and nonpast. Past tense is represented typically by the past tense morpheme -ess, which has a phonologically conditioned variant -ass (occurring after a syllable containing the vowel /a/ or /o/) and a morphologically conditioned variant -es (occurring after the verb ha(y)- 'do'). The form -ass is contracted to -ss after a verb stem ending in the vowel a. Nonpast tense is formally represented by the null form -é.

Since tense names a temporal relation, it has the property of a referring expression like a noun phrase. Moreover, in the case of complex sentences, one tense can be
coindexed with another to indicate that each names the same
time relation, as shown below.

top home-to go-past-and sleep-past-Dec

John went home and slept.

The tense system of embedded clauses is particularly
complex in that the embedded tense often shifts the
interpreted time away from the time at which a matrix clause
is interpreted (cf. Enc 1987:635). The embedded tense in
Korean is sometimes interpreted with respect to a speech
time and sometimes with respect to a matrix clause tense, as
we will see repeatedly in this study. No satisfactory
solution for embedded tense has been proposed thus far,
although the problems involved have often been discussed
(e.g., Choi 1965, Nahm 1978, An 1980, Kwon 1985, C. Lee
1985).

While in simple sentences tense relates a given event
to speech time, in complex sentences the embedded clause
tense is interpreted with regard to speech time or a matrix
clause event time. Thus, the interpretation of tense varies
depending upon the types of syntactic structure.\textsuperscript{5}

In addition, the Korean temporal system is often
described in terms of aspect (cf. Nahm 1978) such as,
perfective vs. imperfective or previous vs. non-previous,\textsuperscript{6}
rather than in terms of tense. One of the reasons for this
proposal is that in Korean there is often a shift of
viewpoint in time reference. For example, the so-called
past marker may occur in a future event as well as past, in many constructions. The notion of aspect is distinct from tense since the former is a matter of ways of looking at an event (cf. Lyons 1968, Soga 1983), whereas tense is a matter of relative time points, such as past and nonpast. In Chapter Two, I will argue that both tense and aspect categories exist in Korean.

1.4.2 Descriptive model

The framework which I adopt for the present study is the Government and Binding (GB) theory, in particular, the Binding Theory (cf. Chomsky 1981, 1986). I will argue for two main proposals throughout this study. First, I will propose that the overt form -ess has the status of a name or R-expression in that it has inherent reference. That is, -ess always names a relation in which the event precedes the speech time, henceforth termed the 'past relation'. My second claim is that whereas -ess is a name or R-expression, -∅ is a pronominal in the sense that its reference can vary: it can name either the past or the nonpast relation. More specifically, the overt tense form -ess enters into the same interpretive patterns as names and a null form tense enters into the same interpretive pattern as pronominals. The first claim will be supported by showing that the interpretation of -ess is subject to the same principle of the Binding Theory as the interpretation of names (cf. Chapter Three).
Thus far, the Binding Theory has been largely restricted to referential dependences involving arguments NPs. In this thesis, I extend the Binding Theory to the tense/aspect phenomena in Korean. Specifically, I discuss two types of parallelism: the parallelism between the null tense and pronominals, and the parallelism between the overt form -ess and R-expressions. Observe the following Korean examples:

   top home-to go-past-and then, acc meet-past-Dec
   John went home and then met Mary.


   while
   While John was going home, he met Mary.

*b. John-un cip-ey ka-ss-umyense, Mary-lul manna-ss-
   -ta.

The embedded clauses in (26)-(27) do not allow the overt tense form -ess. There are two possible analyses for the ungrammaticality of (26b) and (27b). I will compare the more common view, a Reichenbachian approach, and my analysis based on Binding Theory. First, in the Reichenbachian analysis, tense in embedded clauses may take a main clause event time as a reference time. For instance, (26a) and (27a) would be represented as follows (for the postulation of the reference times, see 1.5.2):
As discussed earlier, the matrix clause event (E2) provides the R-time for the interpretation of the embedded clause event (E1). Thus, following the Reichenbachian approach, the embedded clause tense above would be interpreted as past which is the same as the matrix clause tense.

My analysis of Korean tense and aspect will be different from the Reichenbachian approach in several essential ways. For one thing, while Reichenbach's system does not distinguish tense and aspect as separate grammatical categories, my analysis proposes that the two notions should be separate in the description of Korean.

Second, my analysis will dispense with the notion of reference time, so far as complex sentences are concerned, in favor of extending the notion of event time to cover Reichenbach's reference time. This is because, among other things, in a complex sentence, Reichenbach's reference time is simply the matrix clause event time in Korean. The notion of reference time, however, is useful in the discussion of the past perfective suffix -ess-ess, retrospective-related suffix sequences like -e-te, -ess-te, and -ess-ess-te, and temporal adverbials.
Third, my analysis will introduce the notion of indexing and binding in an effort to lay a basis for the explication of temporal phenomena in Korean, as will be elaborated in Chapter Three. Thus, for example, non-occurrence of the overt past tense suffix -ess in the embedded clauses of (26) and (27) and many other complex sentences and its occurrence in certain other sentences will be explained in a more systematic way. More specifically, the ungrammaticality of (26b) and (27b) can be accounted for by the Binding Theory. I will claim that the overt tense -ess enters into the same interpretive pattern as names and is constrained by the same well-formedness condition on indexing names. Let us consider two cases which have different syntactic structures: relative clauses and conjunctive clauses. First, in the case of the relative clause, the following example shows that the relative clause tense has two readings:

\[(28) [John-i e ilk-Ø-nun] chayk-ul Mary-ka ilk-ess-ta.\]
\[nom read mod book-ace nom read-past-Dec\]

a. Mary read (or has read) the book which John is reading.

b. Mary read the book which John was reading.

In (28), the matrix clause has the past (or perfective) form -ess, while the relative clause has a null form tense -Ø. As the English translation indicates, the relative tense in (28) can be interpreted with respect to either speech time or a matrix clause tense. In the case of the former, the
null tense is interpreted as nonpast, whereas in the latter it is interpreted as past.

Secondly, observe the case of conjunctive clauses.

    nom home-loc in order to acc meet

John met Mary in order to go home.

In (29), the event of John's going home (E1) is interpreted as occurring after the event of meeting Mary (E2), as shown in the diagram (i) below.

(29) i)

\[
\begin{array}{c}
R(=E2) & E1 \\
\hline
\text{meeting Mary} & \text{going home}
\end{array}
\]

ii)

\[
\begin{array}{c}
R(=E2) & E1 & S & E1 \\
\hline
(a) & (b) \\
PAST & PAST & NONPAST
\end{array}
\]

However, the event of John's going home can take place before or after speech time as in (29ii). In other words, (29ii) is appropriate for the situations described by the following:

(29) iii) a. John-i ecey ohwu-ey cip-ey ka-Ø-lyeko,
    nom yesterday afternoon
    ccen-ey Mary-lul manna-ss-ta.
    in the morning

    In order to go home yesterday afternoon, John met Mary in the morning.

b. John-i nayil cip-ey ka-Ø-lyeko,
    nom tomorrow home-loc go in order to
In order to go home tomorrow, John met Mary yesterday.

The tense interpretations in the complex sentences in (28) and (29) are accounted for by both Reichenbachian and my approaches. However, in addition to the correct prediction of the ungrammaticality of various complex sentences, the theory I propose predicts the interpretation of the null tense in sentences like (28) and (29). Since I claim that -∅ is a pronominal, -∅ can receive its interpretation from an antecedent or it can refer freely (that is, -∅ can be interpreted deictically). In the former case, the null tense is interpreted with regard to matrix tense, and in the latter case, with regard to speech time.

It is important to notice that the lexical meaning of the conjunctive suffix constrains the possible interpretation of the null tense. That is, in (26) the temporal conjunctive suffix -(e)se 'and then' requires the first clause event to take place before the second clause event. In (27) the suffix -(u)myense 'while' requires the two events to overlap. This is schematized below. Unlike relative clauses, neither construction allows -∅ to have the deictic nonpast interpretation. (For details, see Chapter Four).
1.5 Typological characteristics

1.5.1 Syntactic structure

In this and following subsections, I will give a brief overview of the typological characteristics of Korean that are relevant to the present study. Korean is a typical Subject-Object-Verb (SOV) language. While nominal elements are relatively free in order, the verbal expression always comes at the end of a clause, whether the clause is a matrix or embedded. All kinds of modifying elements, whether they are adjectival, adverbial, conjunctive, or quotative, must precede the element they modify. Thus, for example, a time adverbial always precedes the verb it modifies, and a conjunctive clause always precedes its matrix clause. Thus, Korean is a typical left-branching or head-final language.

Furthermore, Korean is a typical agglutinative language. Thus, in Korean, words are formed aglutinatively by suffixing clear-cut meaningful units one after another to a stem. For example, as was observed in Martin's (1963) morphological analysis given in 1.2.1, various grammatical
categories, such as subject and hearer honorifics, tense, aspect, modal, mood, and sentence types, follow the verb stem in the form of verbal inflectional suffixes. Two or more clauses in various complex sentences, including conjunctive and relative constructions, can be combined with each other by means of many kinds of verbal suffixes. For instance, a conjunctive clause is related to its matrix clause by attaching a conjunctive suffix to the verb of the former clause, as has been observed thus far.

Korean may be called a discourse-oriented language, in that discourse contexts and speech situations frequently play a major role (cf. Sohn, forthcoming). For example, the notion of topic is as important as the notion of subject, and any major constituent of a sentence, such as the subject, object, adjunct, adverbial, or predicate, may be freely omitted, if recoverable from the discourse or situation.

Since complex sentences are the main concern of the present study, their classification is in order. There are five main types of embedded clause in complex sentences: (a) conjunctive clauses, which include both coordinate and subordinate constructions, (b) adnominal clauses, which include both relative and noun complement types, (c) verbal complement clauses, (d) quotative clauses, and (e) nominal or nominalized clauses.
1.5.2 Sequence of tenses

One of the most noteworthy tense-related characteristics of Korean is its total lack of tense agreement in complex sentences. The notion of tense agreement is treated in Ross (1967:333) as feature changing rules, as shown below.

(30) (a) X - [+V @Tense] - Y - [+V] - Z

\[1 \quad 2 \quad 3 \quad 4 \quad 5 \quad \rightarrow \]

\[1 \quad 2 \quad 3 \quad 4 \quad 5 \quad [\text{@Tense}]\]

(b) X - [+V] - Y - [+V @Tense] - Z

\[1 \quad 2 \quad 3 \quad 4 \quad 5 \quad \rightarrow \]

\[1 \quad 2 \quad 3 \quad 4 \quad 5 \quad [\text{@Tense}]\]

(30a) and (30b) may be exemplified by (31a) and (31b), respectively.

(31) a. I believed that the sun was out.

b. That the sun was out was obvious.

Thus, for instance, when a matrix verb has a past tense, the pastness is morphologically copied into a complement present (cf. Comrie 1985:104-107, Noonan 1985). Furthermore, depending on the kind of matrix verbs, certain sentences require the verbal complement tense to agree with the matrix verb tense, as in (32a), while certain other sentences do not have this requirement, as in (32b).

(32) a. Yesterday, John managed to open the door.
b. John promised to leave yesterday.

The total lack of tense agreement in Korean may be due to the SOV word order and discourse-orientatedness of Korean. According to Kuno (1978:104), Japanese, which is very much like Korean, shows a typological characteristic whereby the tense referred to by an embedded clause verb does not always agree with the tense reference of the main clause verb. In Korean, however, I will claim that there is no case where tense agreement holds. This typological property is particularly significant in the present study, because of its having direct bearing on the R-expression interpretation of -ess and the pronominal interpretation of the null form tense.

Compare the following sentences (which are Korean counterparts of Kuno's (1973:261) Japanese examples) with the corresponding English translations. Notice the presence in English and the absence in Korean of tense agreement.

    say-past-Dec

top book-acc write-comp is quot

John said that he was/is writing a book.

    say-past-Dec

top pro book-acc write-comp is quot

John said that he had been writing a book.

    top self-nom fool-is quot say-past-Dec
John said that he was/is stupid.

top self-nom fool-is-Dec-quot say-past-Dec

John said that he had been stupid.

The interpretation of the embedded clause tense in the (a) sentences above is ambiguous between past and nonpast. No tense agreement is observed in all the above sentences in Korean. (33b) and (34b) cannot be interpreted as (33a) and (34a). This indicates that in complement clause tenses in Korean, a null tense can be used to refer to the same time-relation as the matrix clause tense. The occurrence of -ess in the embedded clause in these sentences indicates that it names a relation different from the relation denoted by the null form. Namely, the embedded -ess indicates perfectivity in that the embedded clause has to be completed before the matrix clause event takes place. Thus, the embedded -ess and the matrix -ess in (33b) and (34b) have different functions. That is, the embedded -ess denotes a past perfect with regard to the speech time in my analysis.

Additional examples follow (cf. Kuno 1978:104):

top exam-nom difficult-nonpast-Dec-comp fact-acc
a-ʊ-n-ta.
know-nonpast-ind-Dec

John knows that the exam is/will be difficult.

know-past-Dec
John knew that the exam was/is difficult.

   John knew that the exam had been difficult.

While the complement clause in (35a) has one interpretation, (35b) has two interpretations: 'John knew that the exam was difficult' and 'John knew that the exam is difficult'. On the former reading, the null tense names the same temporal relation as named in the matrix clause. In contrast, on the second reading, the matrix clause tense is irrelevant for the interpretation of the complement clause tense. In other words, on the second reading, the complement clause tense is interpreted with respect to the speech time. Note further that in (35c) the form -ess in the complement clause encodes a time period prior to the time of the main clause verb and hence it is past perfect with regard to the speech time.

Another noteworthy phenomenon of tense disagreement is that in Korean, sentences with multiple verbs denoting the same time relation usually leave out all the overt tense markers except on the main verb, which comes at the last position of a sentence and at the highest position in a tree structure. Thus, for example, there is a class of temporal conjunctive suffixes in Korean which do not allow the overt tense marker -ess in the first conjunct at all. In such cases, the temporal conjunctive suffixes always reveal the temporal relation between the two events. As we have already seen in (26) and (27), which are repeated below,
when conjunctive suffixes like -(e)se 'and then' or -(u)myense 'while' already impose a temporal ordering between the two events, the occurrence of the overt -ess in embedded clauses causes ungrammaticality.

   top home-loc go-past-and then, acc meet-past-Dec
   John went home and then met Mary.


   while
   While John was going home, he met Mary.


Some might suggest that the embedded clause in such cases simply deletes the overt form -ess. I will argue in Chapter Three, however, that the null tense must be base-generated, while arguing against the deletion analysis in view of the insurmountable problems involved therein.

Tense disagreement of the sort illustrated in (36) and (37) leads us to postulate Reichenbachian reference times in a way different from the practice in English. In the English gloss corresponding to (36), for example, the first clause tense should function as a reference time (a la Reichenbach) or an implicit reference time or an antecedent (a la McCawley 1971:111). In Korean, however, the first clause not only syntactically lacks any overt tense marking, but semantically is unable to receive any temporal interpretation unless the second clause with tense marking
is expressed. That is, the interpretation of the first clause tense is crucially dependent upon the matrix tense in such complex sentences. Hence, unlike in English, postulation of the matrix (or immediately higher) clause tense as a reference time in complex sentences in Korean is justified.

The discussion so far indicates that the use of the null tense in complex sentences is not an accident, but rather it is based on cogent syntactic and semantic reasons. In other words, instead of the rule of tense agreement, the Korean language employs a systematic use of the null tense to indicate a temporal relation between clauses.

1.6 Scope of the study

The organization of the present dissertation is as follows. Since preliminary remarks have been made in this chapter, I will elaborate the main themes in the subsequent chapters. In Chapter Two, I will discuss all the essential temporal categories that constitute an integral part of temporal expressions in Korean. This chapter is intended not only to present linguistic facts and phenomena and their typology, but to present my alternative proposals that are consistent with the overall claims made in this study. Furthermore, it will be shown how non-tense categories interact with the tense category in the overall temporal expressions in Korean.
In Chapter Three, I will argue for the importance of tense indexing and binding. I will discuss a mechanism for interpreting coindexed tenses. A dual function of a null form tense is suggested. A base-generated null tense in embedded clauses is better motivated than the more commonly employed deletion analysis. This chapter also explores some syntactic phenomena of the null form tense in conjunctive sentences, using an X-bar scheme and the Binding Theory.

In Chapter Four, I classify two types of conjunctive sentences according to their temporality features. I discuss how such subclasses are correlated with their respective syntactic behaviors. Subordinate and coordinate clauses show different patterns with regard to the interpretations of the null form tense.

Chapter Five focuses on tense in such non-conjunctive clauses as adjectival, verbal complement, and nominal constructions. It will be shown that the main proposals made in previous chapters also hold true for the other types of embedded constructions.

Chapter Six summarizes the observations and findings made in the preceding chapters and suggests some significant theoretical implications. Also, some unresolved issues will be enumerated, suggesting some future research directions.
Notes to Chapter 1

**All Korean examples in this study are transcribed in the Yale Romanization System.**

1. However, according to Enc (1987), complement clauses can have a simultaneous reading as well as a shifted reading:

   (i) a. John heard that Mary was pregnant.

   b. PAST [s1 John hear [PAST [s2 Mary be pregnant]]]

   c. PAST [s1 John hear [PRES [s2 Mary be pregnant]]]

   (ia) has two readings: shifted reading (ib) and simultaneous reading (ic). On the reading of (ib), John hears at a past time that Mary was pregnant at a time prior to that. This reading is predicted in the treatment of tense as a sentential operator. However, (ia) has another reading as in (ic). On this reading, John hears at a past time t' that Mary is pregnant at the same time t'. That gives a simultaneous reading of (ia). As Enc (1987) points out, the simultaneous readings are problematic for the generative semantic analysis. For more details, see Enc (1987). Also, Hornstein (1977) discusses a weakness of the Generative Semantic account in that the system generates more possibilities than are actually to be found in natural languages.

2. According to Hornstein (1977), there are basic tense structures and derived ones. Basic tense structures are defined as follows:

   (i) Basic tense structure (TS) is maintained iff:

   a. None of SRE are associated in derived TS that were not associated in basic TS; (S: speech time, R: reference time, E: event time)

   b. The linear order of SRE in basic TS is maintained in derived TS.

   (ii) Constraints on SRE Movement.

   Rules shifting SRE to yield derived TS must maintain basic TS.

3. Diagram (i) illustrates this (Reichenbach 1947:291):
(i) a. Past perfect, extended

\[ \begin{array}{c}
\text{E} & \text{R} & \text{S}
\end{array} \]

b. Simple past, perfective

\[ \begin{array}{c}
\text{R,E} & \text{S}
\end{array} \]

Each tense need not appear in any one specific language. Rather, according to Hornstein (1981:130), the Reichenbachian theory of tense delimits the range a language learner can choose from in constructing the particular tense grammar of his language.

4. For instance, the notion of tense is defined as follows in Lyons (1968:305):

"The category of tense has to do with time-relations in so far as these are expressed by systematic grammatical contrast.....The essential characteristic of the category of tense is that it relates the time of the action, event, or state of the affairs referred to in the sentence to the time of utterance (time of utterance being 'now')."

5. English shows the same phenomenon. See Enc (1987).

6. Ota (1972:49) and Miura (1974) suggest that the Japanese language tense system may be described in terms of time-relationship.


Chapter 2
Temporal Categories in Korean

2.1 Overview

In this chapter, I shall discuss the grammatical categories that have bearing on temporal reference in Korean. Of primary interest among linguists dealing with Korean temporal expressions have been the morphological, syntactic, or semantic oppositions involving the so-called tense and aspect inflectional suffixes. In the temporal categories of Korean in a broad sense, however, I propose to include not only such tense and aspect suffixes as the past -ess, the perfect -ess, the pluperfect -ess-ess, and the null tense category -∅, but also such temporal modality elements as the retrospective mood suffix -te/-ti, temporal conjunctive suffixes (e.g., -tolok 'in order to'), and temporal adverbials (e.g., ecey 'yesterday', cen-ey 'before', hwu-ey 'after'). This chapter will conclude with a brief discussion of lexical (or phrasal) aspectual constructions, although these are not the main concern of this dissertation. An analysis that did not take these categories into account would lack descriptive adequacy, in that it would inevitably fail to provide an exhaustive description of the Korean tense and aspect system. As we will see, all these temporal categories interlock and coordinate with each other for temporal interpretations of sentences. The purposes of this chapter are thus three-
fold: (a) to present the typological characteristics of Korean temporal categories, (b) to attempt an integrated description of temporal interpretations in this and subsequent chapters, and (c) to delineate my alternative proposals regarding the explication of the temporal categories and their members.

A brief mention of the syntactic structure underlying the above-mentioned temporal categories is in order. Except for adverbials and lexical aspects, all the temporal categories have inflectional suffixes as members. This is a reflection of the fact that Korean is a typical agglutinative language. As will be seen, even phrasal aspects and many of the adverbial constructions are composed of an inflectional suffix followed by an auxiliary verb or a nominal. The typical order of the inflectional category slots that I propose may be presented informally as follows (cf. Martin 1954, 1963 as discussed in 1.3.1). Notice that only the categories that arc relevant to the present discussion will further be expanded with morphemic members given in parentheses. In the following, the parentheses in inflectional categories mean optional categories, while the others are obligatory. For instance, aspect is optional, while tense is obligatory in Korean.

(1) VERB --> STEM + INFLECTIONAL CATEGORIES

INFL. CAT. --> (SUBJ HONOR) + (ASPECT) + TENSE + (MODAL)

+ (ADDRESSEE HONOR) + MOOD + CLAUSE-ENDER
The organization of this chapter is as follows. In 2.2, I will argue for the postulation of separate categories of tense and aspect, despite the fact that past and perfect are realized on the surface in the same suffix -ess. This proposal coincides with my claim that the double form -ess-ess is past perfect (or pluperfect). I will also argue for the postulation of a null form -∅, which exhibits not only nonpast tense (present and future reference), but also past tense.

Section 2.3 will be devoted to the discussion of modality suffixes. In particular, it will be argued that the retrospective suffix has an inherent semantic feature of
past time, as against the indicative and requestive mood suffixes which inherently contain a speech time feature. Furthermore, the retrospective suffix has the function of setting a reference time preceding speech time, on the basis of which the propositional event time is oriented. The widely held view that the inflectional suffixes -keyes and -ul(i) are future markers will be repudiated, in favor of the minority view that they are purely modal markers.

Section 2.4 will be limited to the discussion of the basic nature of Korean temporal conjunctive suffixes, introducing the [±temporal] feature. Their detailed syntactic description is the concern of Chapters Three and Four.

Section 2.5 will be concerned with the discussion of various types of temporal adverbials. It will be shown that ambiguity in temporal interpretation of a sentence is disambiguated by an adverbial, and that there is rather strict agreement between a tense or aspect form and a temporal adverbial.

Finally, 2.6 will focus on a variety of semantically based lexical aspectual distinctions, which contrast with the inflectional aspect -esse.

2.2 Tense and aspect categories

It has often been claimed that Korean has only tense, and not aspect (e.g., Choi 1965), or alternatively that aspect is more essential than tense (e.g., Nahm 1978).
Others have claimed that tense and aspect are inseparable as a single inflectional category (e.g., Suh 1976). C. Lee (1985), on the other hand, claims that whereas tense is obligatory, aspect is optional. Part of this disagreement arises from the loose use of the terms. Since both tense and aspect have to do with the human conception of time, it is sometimes hard to separate the function of one from that of the other and to delineate the borderline between them. But the concepts are distinct from each other. Tense relates a given event time to speech time (Lyons 1968 describes it as "location in time"). Aspect, on the other hand, has to do with the "temporal distribution or contour of an action, event, or state of affairs" (Lyons 1968:315), regardless of the speech time. In other words, tense names the relation between an event and speech time, but aspect does not name a particular relation such as past or nonpast. Rather, the latter is concerned with the "internal temporal constituency of the one situation" (Comrie 1976:5).

Typically, tense is classified according to three temporal perspectives—past, present, and future. In the case of Korean, however, there is sufficient reason to believe that there are only two tenses, past and nonpast, as will be discussed shortly. Aspect is usually classified according to two perspectives—imperfective and perfective. These reflect how the speaker conceives of an action or state of affairs with respect to its course. When speakers
view a situation as a whole, without distinguishing the various separate phases that make up that situation (Comrie 1976:16), they can employ perfective aspect. But if speakers focus on the internal structure of the situation, they are likely to choose imperfective aspect. Under the imperfective aspect, there might be various aspectual distinctions, such as inchoative, iterative, habitual, punctual, durative, and so on. However, in Korean these distinctions do not correspond to separate inflectional categories but are expressed by means of special auxiliaries, such as \(-ki\ sicakha\) 'to begin' (inchoative), \(-hay\ tay\) 'to repeat' (iterative), \(-kon\ ha\) 'used to' (habitual), etc.² I distinguish the notion of aspect from the aspectual features of verbs in the present study. For instance, Gim (1985) claims that aspect is determined through the interaction of semantic features of verbs and extralinguistic elements. Yet, I will not consider this lexical sense of aspect here. I will be mainly concerned with two types of aspect, inflectional (i.e. \(-ess\)) and phrasal, and will discuss the former in the following section, while taking up the latter in 2.6.

2.2.1 Past and perfect form \(-ess\)

Common descriptions of \(-ess\) treat it as a past marker or as a perfective marker. Thus, most scholars who have considered \(-ess\) as a past marker have claimed that tense but not the aspect category is needed for an adequate account of
Korean. On the other hand, those who regard -ess as a perfective rather than a past tense marker have denied the existence of any tense category. Previous studies of -ess can be divided into at least three different approaches. The first approach considers -ess to be perfective aspect, and not past tense (e.g., Na 1971, Huh 1977, Nahm 1978). For instance, according to Na (1971), who treats the tense system of Korean as a three-way division of modality-aspect-tense, -ess refers to perfective aspect, whereas its covert form -Ø represents progressive aspect. This view is further supported by authors like Nahm (1978) and Huh (1977, 1981).

The second approach which has been accepted by most traditional Korean grammarians (e.g., Choi 1965, Gim 1980a/b, 1985), maintains that -ess marks past tense, and not perfective. The third approach (e.g., Suh 1976, S. Kim 1974) claims that the suffix -ess simultaneously represents tense and aspect, and thus suggests a single category term 'tense-aspect' to cover the dual function. Suh (1976), for example, claims that -ess has both tense and aspect features, suggesting seventeen meanings of -ess.3

This thesis takes the position that the primary function of -ess is to name a past relation. This suffix is a grammatical marker on the predicate that distinguishes a past relation from a non-past relation. The tense system in Korean exhibits a two-way division, i.e., past and non-past. The past tense names the relation in which the event precedes speech time and the nonpast tense names the
relation in which the event either follows or is simultaneous with a speech time. Therefore, in this view, tense can have only two values—past and nonpast, with the non-past tense including future as well as present times. While the past tense is represented by the overt form -ess or by -\(\emptyset\), non-pastness is expressed only by means of the null form.

As examples of a minimal pair which illustrates tense contrasts in Korean, consider the following sentences:

(2) a. Ku-ka chayk-ul ilk-ko iss-\(\emptyset\)-ta.

He is reading a book.

\[
\begin{array}{c|c}
S & E \\
\hline
\text{NONPAST} & -\emptyset \\
\end{array}
\]


He was reading a book.

\[
\begin{array}{c|c}
E & S \\
\hline
\text{PAST} & -\text{ess} \\
\end{array}
\]

The differences between (2a) and (2b) reflect the distinction between a non-past and a past relation. This is clear from the cooccurrence relations between temporal adverbials and the tense marker in a verb:


*He is reading a book yesterday/five minutes ago.


He is reading a book yesterday/five minutes ago.
yesterday/five minutes ago past
He was reading a book yesterday/five minutes ago.

top now leave-comp is-Dec
John is leaving now.
*John was leaving now.

The unacceptability of (3a) and acceptability of (3b) indicate that the past time adverbs, such as 'yesterday' and 'five minutes ago', are compatible with a predicate marked by -ess, but not with a predicate without -ess. The reverse situation holds with the examples in (4). All these indicate that -ess names the past relation.

Even though the past function of -ess is predominant in most cases, -ess also functions as a marker of perfective aspect. First, consider the minimal pairs below which illustrate the contrast between perfectivity and imperfectivity.

flowers-nom bloom-trans fade-past-Dec
The flowers died while they were still in bloom.
perf past
The flowers bloomed and died.

wear-retro-rel clothes-acc take off-past-Dec
I took off the clothes which I started putting on.

I took off the clothes which I was already wearing.

The differences in meaning between (5a) and (5b) on the one hand, and (6a) and (6b) on the other, are related to the distinction between perfective and imperfective rather than the distinction between past and non-past. In other words, the verb in the bracketed clause refers to an uncompleted event in (5a) and (6a), but to a completed event in (5b) and (6b), although the time reference of both is in the past.

Second, -ess cooccurs with adverbials indicating present time. That is, in Rachenbachian terms, the reference time is present and the event time is past, hence the temporal interpretation of present perfect, as observed below.

(7) Icey cip-ey ta o-ass-ta.
    now home-to almost come-perf-Dec

We are now almost at home.

(8) Suni-ka cikum mak ttena-ss-ta.
    nom now just leave-perf-Dec

Suni has left just now.

Third, -ess is even compatible with adverbials indicating future time in some limited types of construction.

(9) [Naynyen-ey Seoul-ey ka-ss-ul-ttay],
    next year-in go-perf-comp-time

    Kim-ul manna-1-kes-i-ta.
    acc meet-comp-fact-is-Dec
Next year when I go to Seoul, I will meet Kim.

(10) Nayil/ittaka ne-nun honna-ss-ta.
tomorrow/later you-top be in trouble-perf-Dec

You will be in trouble tomorrow/later.

If -ess is a suffix which marks only past tense, we would not be able to account for the fact that in (9)-(10), future time adverbs can occur with -ess.

Fourth, in most cases, the form -ess is ambiguous between perfective and past functions. This ambivalence becomes disambiguated by means of a temporal adverbial indicating the reference time, semantic features of the verbs involved, or a variety of discoursal or pragmatic information. Thus, in the following examples, time adverbs decide the function of -ess.

(11) a. Suni-ka cikum mak tochakhay-ss-ta.
now just arrive

Suni has just now arrived.

b. Suni-ka ecey tochakhay-ss-ta.
yesterday

Suni arrived yesterday.

c. Suni-ka sey si-ey tochakhay-ss-ta.
3 o'clock

Suni arrived at 3 o'clock.

In (11), what decides the interpretation between pastness and perfectivity in the ambivalent -ess is the occurrence of a specific time adverb. That is, in (11a), the sentence has the perfective meaning because of the present time adverb cikum mak 'just now'. In (11b), due to the past time adverb
ecey 'yesterday', the sentence has a past meaning. And in (11c) the time adverb sey si-ey 'at three' cannot refer to the present moment, and hence the sentence has only the 'past' reading. For the disambiguating function of verbs, see Nahm (1978), among other works.

The examples so far support the claim that the morpheme -ess has two functions, i.e., past and perfective. Now the question that has been posed is whether the two functions constitute one category, such as tense-aspect, or two separate categories, one for tense and one for aspect. The former proposal is based essentially on the semantic closeness and formal identity of the two morphemes. In view of the syntactic and semantic properties of the double form -ess-ess and the null form tense, as well as the coindexability only in tense, I will postulate two different categories in 2.2.2 and 2.2.3. Furthermore, I will propose that in the sequential order, the optional aspect category precedes the obligatory tense category, as alluded to in (1) earlier.

2.2.2 Pluperfect form -ess-ess

In addition to the single form -ess, Korean sentences allow the occurrence of the double form -ess-ess, which has usually been called a past-past (e.g., Martin 1954) or a past-perfective (e.g., Choi 1965) marker. In particular, previous studies of the double form have focused on its meaning difference with respect to the single form. There
are, by and large, three different definitions given to the double form:

i) ceasing or discontinuous

ii) past in the past

iii) past perfective

In the following, I will discuss these three one by one, arguing for the third definition. I will, however, show that the second definition is in fact a proper subset of the third.

The definition of -ess-ess in terms of 'ceasing' or 'discontinuity' has been proposed by Nahm (1978) and C. Lee (1985). Nahm considers the double form a separate morpheme distinct from -ess, claiming that the former is a 'discontinuous' aspect marker, whereas -ess is a perfective marker. Similarly, C. Lee maintains that the double form means that there was an event in the past and the event or the result state of the event discontinued at some time between the event time and speech time. Lee proposes that the single form has the meaning of some event occurring in the past and the pragmatically implicated meaning of the result state of the event continuing until the speech time. Lee presents the following diagram to demonstrate the contrast between -ess and its doubled form.

   nom U.S.-to go-past-Dec

   Insu went to the United States
In terms of the truth-condition, Lee asserts, the single form -ess can replace the double form, but the reverse brings about a meaning change, in that "the implicated meaning of the continued result state is sacrificed by the truth-conditional meaning of discontinuity." Let us take up some more examples below to observe the meaning distinction that exists between -ess and its doubled form.

    that person-nom die
    That person has been dead.

    That person had been dead (but he may be alive now).

(14) a. Suni-ka cip-ey ka-ss-ta.
    nom home-to go
    Suni went/has gone home.

   b. Suni-ka cip-ey ka-ss-ess-ta.
    Suni had been home.

    I-top ten-years ago U.S.-to come-past-Dec
    I came to the United States ten years ago.
I-top ten-years ago U.S. come

I have the experience of coming to the United States ten years ago.

(13a) has an entailment different from that of (13b), since the former indicates that the person is dead, while the latter implies that the person may be most likely alive now. Similarly, in (14a) Suni's going home takes place in the past, with the presupposition that Suni is not present at the place where the speech act is being performed. In contrast, (14b) has the implication that Suni had gone home, and she may have already come back (so, she may be at the speaker's place at speech time). Sentence (15a), quoted from C. Lee (1985), shows a contrast with (15b), the former indicating the resultative state of the past event continuing until speech time and the latter the sense of 'ceasing' or 'suspension'.

In view of the ceasing function, according to Lee, the double form causes ungrammaticality in the following examples from C. Lee (ibid.):

(16) Na-nun nay anay-lul o nyen cen pwuthe
I-top my wife-acc five years ago since

 cikum kkaci kyeysokhayse salanghay-ss-ess-ta.
now till continuously love

I used to love my wife continuously from five years ago until now.

Lee claims that the double form cannot occur with cikum- kkaci kyeysokhayse 'continuously until now' because of its
'ceasing' sense. Since the sense of 'ceasing' or 'suspension' is the distinct feature of -ess-ess, Lee argues, the unacceptability of the following sentence. The double form occurring in (17) serves as a counterexample to the 'past in the past' definition.

(17) ??Suni-ka Seoul yek-ey tochakhay-ss-ul ttay kicha-nun ttena-ss-ess-ta.
    station-at arrive time
    train-top leave

When Suni arrived at Seoul station, the train had left.

Although it is true that (17) sounds slightly unnatural as it stands, it becomes perfectly natural, if a past time adverb such as imi 'already' is provided. With such an adverb explicitly specified, -ess-ess denotes 'past in the past', in that the matrix clause event definitely occurs in the past time which precedes the embedded clause event.

(17)' Suni-ka Seoul yek-ey tochakhay-ss-ul ttay kicha-nun imi ttena-ss-ess-ta.
    station-at arrive when
    train-top already leave

When Suni arrived at Seoul station, the train had already left.

Thus, Lee's criticism against 'past in the past' is not particularly warranted. Furthermore, treating -ess-ess as if it had little morphological or semantic relation with -ess is counter-intuitive, let alone being descriptively unsatisfactory. It will be argued later that the 'ceasing'
sense is derived from the second -ess, which always names the past relation, provides a reference time and thereby insulates the event from current relevance.

Next, let us consider the second claim, i.e., that the suffix -ess-ess denotes past in the past. This definition has been proposed by Martin (1954), Huh (1977), and Gim (1985). Martin (1954:35), for example, treats the double form as the past-past marker, defining it as "more remote or more definitely complete than that of past -ess."

While C. Lee (1985) and Nahm (1978) treat the double form as a separate morpheme unrelated to -ess, Gim's (1985) position is that the double form is a reduplication of the single form -ess, in that both refer to a past relationship. Consider Gim's (1980a) example:

(18) Nay-ka ku-lul manna-ss-ul ttay, ku-nun koki-lul
    I-nom him meet time he-top fish-acc
    han mali-lul cap-ass-ess-ta.
    one catch

When I met him, he had caught one fish.

Regarding the double form -ess-ess in the matrix clause above, Gim claims that the second -ess of the double form refers to a time prior to the speech time and the first -ess denotes a time prior to the time in which the second -ess refers to. In other words, the time designated by -ess-ess in his analysis can be diagrammed as follows:
Pointing out that the meaning denoted by -ess-ess is in fact the same as the discontinuity sense above, Gim concludes that we do not have to set up two different morphemes, -ess and -ess-ess.

This second definition of the double form, the 'past in the past' sense, however, is not sufficient to explain perfectiveness denoted by -ess-ess, as illustrated below.

(20) a. John-i ku ttay mak tochakhay-ss-ess-ta
nom that time just arrive
John had just arrived at that time.

this flower-nom last year-in die
This flower was dead last year (but it is alive now).

cf. I kkoch-i caknyen-ey cwuk-ess-ta.
This flower died last year.

The sentences (20) indicate that the event is just completed at the time denoted by the past time adverb ku ttay 'at that time' or caknyen-ey 'last year'.

This leads us to the third definition of -ess-ess, i.e., 'past perfective'. Choi (1965:441-442) considers the double form to be past perfective. In a similar way, Na (1971:100-101) treats the first -ess as a perfective aspect and the second -ess as a past tense. The treatment of -ess-ess as past perfective is based on a consideration of the
aspectual feature of \(-\text{ess}\). As indicated earlier, \(-\text{ess}\) marks both pastness and perfectivity.

In more or less the same vein as the second and third definitions, I propose that \(-\text{ess-ess}\) is pluperfect. I use this term with the intention that it should encompass both the notions of past in the past and past perfective that we have dwelled on thus far in the second and third definitions of \(-\text{ess-ess}\). The meaning of the pluperfect, according to Comrie (1985:65), is that "there is a reference point in the past, and that the situation in question is located prior to that reference point". This 'past-in-past' definition is more or less what I mean by pluperfect, provided that "the situation in question" includes a perfective situation as well as a past situation. Thus, first, the double form names the relation in which an event \(E\) precedes a time that precedes the speech time. In addition, it also describes a phenomenon in which one event has been perfected at a time that precedes the speech time. This is shown in the diagram below, where the time of \(E_1a\) or \(E_1b\) in relation to \(E_2\) is represented essentially by the double form \(-\text{ess-ess}\).

(21) \[\begin{array}{cccc}
E_{1a} & R (=E_2) & S & \text{---|---|---|---|---|---|---|---} \\ 
\text{---|---|---|---|---|---|---|---} \ 
E_{1b} & \text{---|---|---|---|---|---|---|---} \ 
\end{array} \]

\((E_1=\text{aspect}, E_2=\text{past tense})\)

Now, there are several important points incidental to my proposal, which need to be clarified at this point.
First, the time of E2 in (21) corresponds to the second -ess in the double form, which functions as a reference time for E1. One may naturally ask how we know that the first -ess is not the reference time. My argument is, first of all, the putatively universal order of aspect + tense, rather than of tense + aspect. According to Lyons (1977a:705), aspect is ontogenetically more basic than tense, in that children whose native language have both, come to master the former more quickly than the latter. Also, Matthews (1974:146) notes that in Ancient Greek, which has both tense and aspect as inflectional categories, tense is relatively at the periphery of the word-form, whereas aspect is the most central of the inflectional categories of a verb. 5

Secondly, Korean inflectional suffixes are ordered in such a way that the later a suffix comes, the wider is its semantic scope, as has been proposed in the generative semantic approach (1.2.2). This means that if two temporal suffixes occur in sequence, the latter one functions as a reference time for the former. For example, in John-i o-ass-te-la 'I saw that John had come', the past tense -ass has the retrospective mood suffix -te 'I saw' as its reference time.

Another piece of evidence that aspect precedes tense is provided by the constructions involving lexical aspect to be discussed in 2.6. In these constructions, as illustrated in the progressive phrase ca-ko iss-ess-ta 'was sleeping',
aspect (progressive -ko-iss in this example) necessarily precedes tense (past -ess in this example).

Another noteworthy fact is that the second -ess that functions as a reference time invariably marks past tense, and never perfective. Thus, the notion of double perfectiveness is not linguistically encoded in Korean. The invariable pastness was amply observed in the 'ceasing' or 'discontinuity' function of -ess-ess. That is, due to the presence of a past reference time indicated by the second -ess, the event time is insulated from the speech time. Hence, the ceasing sense is pragmatically derived. If the event time has a current relevance, there is no reason to insert an unnecessary past tense suffix as an unspecified reference time. Thus, the second -ess of the double form serves as a temporal insulation device, so to speak, hence we obtain the 'ceasing', 'discontinuity', or even 'past experience' sense as a pragmatic consequence.

The existence of the invariable pastness sense is also observed in the fact that the double form -ess-ess does not occur with a future time adverb, such as nayil 'tomorrow' or naynyen 'next year', or a current time adverb, such as ta 'almost' or mak 'just now', while the single -ess allows it.

(22) Naynyen-ey Seoul-ey ka-ss/*ss-ess-ul ttay, next year-in in go-perf-adn time
Kim-ul manna-l kes-i-ta.
acc meet-adn thing-is-Dec

Next year when I go to Seoul, I will meet Kim.
(23) Nayil/ittaka ne-nun honna-ss/*ss-ess-ta. tomorrow/later you-top be in trouble-perf-Dec

You will be in trouble tomorrow/later.

(24) Icey cip-ey ta c-ass/*ass-ess-ta. now home-loc almost come-perf-Dec

We are now almost at home.

(25) Suni-ka cikum mak ttena-ss/*ss-ess-ta. nom now just leave-perf-Dec

Suni has left just now.

(26) Nayil Suni-lul mannapo-ass/*ass-ess-ca, tomorrow acc meet-perf-although
soyong-i eps-ta. use-nom not-Dec

It is useless to meet Suni tomorrow.

While the two forms are not replaceable in the future event because of the invariable pastness in -ess-ess, they are naturally replaceable in the past event, as illustrated in (27)-(28).

(27) Ku-ka ecey mango-lul mek-ess-ess-ta/ he-nom yesterday acc eat-perf-past-Dec/

mek-ess-ta.
eat-past-Dec

He had eaten/ate a mango yesterday.

(28) Kucekkey Suni-lul mannapo-ess/ass-ciman, the day before yesterday meet but
soyong-i epe-ess-ta. use-nom not-past-Dec

Although I met Suni the day before yesterday, it was useless.

Furthermore, I regard the first -ess of the double form as indicating perfective aspect (cf. the relationship
between E1a or E1b and E2 in diagram (21)). It is widely held that tense is a matter of relative time points, such as past and nonpast, whereas aspect is a matter of either the subjective ways of looking at an event, as in perfective, imperfective, durative, punctual, etc., or the objective developmental stages of an event, as in inceptive, progressive, resultative, etc. (e.g., Soga 1983:vii). When a speaker uses -ess-ess, his intention is not to mark two past tenses per se, but to indicate his subjective way of expressing that the event in question is more remote than, or completed by, a certain specified or unspecified past reference time. Thus, for example, compare the two sentences below, and notice that both sentences convey the meaning that the event took place ten years ago. However, in (29a) the speaker objectively describes the occurrence of the event at a past time, whereas in (29b) the speaker conveys his subjective view that the event that took place at a past time has no current relevance. He does the latter by setting up a past reference time by means of the second -ess as an insulation device and making the past event perfective with regard to the reference time.

(29) a. Sipnyen cen-ey i kos-ey o-ass-ta.
    ten years ago-at this place-at come-past-Dec
    (I) came here ten years ago.

b. Sipnyen cen-ey i kos-ey o-ass-ess-ta.
    (I) once came here ten years ago.
All the previous examples with -ess-ess can be interpreted in the same light. For example, in (17)', repeated below, the second -ess in the matrix clause marks the past tense, which is the same as the embedded clause tense. The first -ess of the -ess-ess denotes perfectiveness.

(17)' Suni-ka Seoul yek-ey tochakhay-ss-ul ttay nom station-at arrive-perf-comp time

kicha-nun imi ttena-ss-ess-ta.
train-top already leave

When Suni arrived at Seoul station, the train had already left.

The approach proposed here is somewhat parallel to calling the English construction had + past participle a past perfect regardless of the past-past sense or past perfective sense that it may have.

2.2.3 Unmarked tense form -

I have argued thus far that Korean has the perfective aspect -ess, the past tense -ess, and the pluperfect (past perfect) -ess-ess, and that the aspect category precedes the tense category, proposing, without argument, that the aspect category is optional, while the tense category is obligatory. I will argue in this subsection that the aspect category consists only of the perfective -ess, without a default counterpart which would be imperfective aspect, and that the tense category is composed of the overt -ess and the null form -
. If this is true, it follows that the aspect category is optional, while the tense category is
obligatory. The natural corollary is that an aspect cannot occur without a tense.

In Korean, there does not seem to be any cogent reason to postulate the subcategory of imperfective aspect, along with that of perfective aspect (for the opposite view in favor of both perfective and imperfective aspects, see Gim 1985). First of all, lack of the perfective suffix always and uniquely means that there is imperfectiveness. Secondly, the notion of imperfectiveness is semantically almost empty in Korean. That is, it is not particularly progressive, nor particularly inceptive, habitual, or durative, but it is simply lack of perfectiveness, that is, it is simply non-perfective. Third, it does not play any significant linguistic role to warrant its existence as a linguistic subcategory. Then, it follows that the notion of imperfectiveness is linguistically insignificant in Korean and should be dispensed with for simplicity.

One may argue against my claim that imperfectiveness in Korean is 'nearly contentless, by saying that it is in fact progressiveness and this aspect is represented by the covert form -∅. One may present sentences like the following, where a perfective sentence appears to be contrasted with a progressive sentence.

    nom now arrive-perf-nonpast-Dec

    John has just arrived.
b. John-i cikum tochakha-∅-n-ta.

John arrives/is arriving now.

Indeed, sentence (30b) appears to contain a marginal degree of progressiveness, as indicated by the English translation. However, the real English sense of progressiveness is expressed by a phrasal construction (-ko iss-ta), as we will discuss in 2.6. If the counterpart of the perfective aspect is progressive aspect and thus the aspect category is also obligatory, then there should be past progressive represented by the sequence -∅ (progressive) -ess (past). This is not the case, however. In Korean, all surface occurrences of -ess are associated only with simple past or perfective, but never with past progressive.

One may also claim that imperfectiveness is semantically rather conspicuous in certain types of constructions, such as in the so-called transferentive sentences. For example, observe the second sentence in the following in comparison with the first.

    nom school-to go-perf-∅-trans come-past-Dec

    John went to school, and then came back.


    John was going to school but came back.

In (31b), in contrast with (31a) where distinct perfectiveness is expressed, John's action of going to school was not completed before he came back, hence showing
rather clear imperfectiveness. Even here, however, it is simply the lack of the perfective -ess that results in the interpretation of an incompleted action. Besides, this contrast is observed with a class of verbs that denotes completable actions, such as kota 'to go', phalta 'to sell', nwupta 'to lie down', and cwukta 'to die', but not with incompletable verbs like nolta 'to play', ketta 'to walk', pota 'to see', and cata 'to sleep'. The latter class of verbs does not allow the perfective suffix -ess in transferentive constructions, so no distinct imperfective sense is obtainable, as shown in (32).

nom school-at play-trans come-past-Dec

John played at school, and then came back.

This indicates that the nature of the verbs involved is responsible for the appearance of some clear imperfective sense. Thus, this does not support the claim that imperfective aspect is a significant inflectional subcategory in Korean. All in all, postulation of the imperfective aspect is not warranted in Korean syntax.

The situation is quite different in the case of the tense category. As stated earlier, Korean has past and nonpast, -ess indicating past tense and the null form -9 indicating nonpast tense. Although it is true that the general meaning of a covert category indicates the absence of a certain property which the corresponding marked category has (cf. Jakobson 1957:136), the null form tense in
Korean performs many more syntactic and semantic functions than the overt form -ess does. For one thing, the null form expresses not only present and future event times, but timeless or generic phenomena. As a result, the null tense may occur with a wide variety of temporal adverbials. Thus, its semantic range is much wider than the range that the overt tense -ess covers. Second, its syntactic behavior varies, which is one of the main concerns of this dissertation. In particular, as we will discuss in great detail in the subsequent chapters, the -∅ tense in embedded clauses has two functions, deictic and anaphoric. By 'deictic', I mean that -∅ receives its nonpast interpretation with respect to speech time. By 'anaphoric', on the other hand, I mean that -∅ receives its temporal interpretation from an antecedent (i.e. a reference time) present in the sentence. Furthermore, the majority of conjunctive suffixes and other complementizers (such as verbal complement clause enders) will allow only the null form tense -∅.

In the following examples, observe a variety of functions that the null form tense (represented by -∅) performs.

    art-top long-nonpast-and life-top short-nonpast-Dec  
    [generic]  
    Art is long, life is short.  

b. John-i ceki o-∅-n-ta.  
    nom there come-nonpast-ind-Dec  
    [present]  
    There comes John.
   nom tomorrow come-nonpast-ind-Dec
   John will come/is coming tomorrow. [future]

   top nom cry-past-adn fact-acc see-past-Dec
   John saw Mary crying. [past]

   he-nom mango-acc eat-(non)past-conjunct-ret-Dec
   I thought that he would eat mangos. [future; past]

   nom school-to go-perf-past-trans come-past-Dec
   John went to school, and then came back. [past in conjunctive clause]

   nom mango-acc eat-past-comp try-past-Dec
   John tried mangos. [past in complement clause]

h. Ne-nun nayil cwuk-ess-ŋ-ta.
   you-top tomorrow die-perf-nonpast-Dec
   (Lit.) You will have died tomorrow. (or 'You will be in big trouble tomorrow.') [future]

Since the discussion of the various functions of -ŋ illustrated is one of the primary concerns of the subsequent chapters, it should not detain us here. Let me simply summarize what I have discussed in this and two previous subsections in the following paragraph.

Korean verbal inflectional categories contain seven sequential suffix slots, of which the second is occupied by the aspect category and the third by the tense category. The aspect category has a single member, i.e., the perfective aspect represented by the suffix -ess, whose occurrence is optional. The tense category has two
disjunctive members, i.e., past and nonpast, one of which must occur. Past tense is represented by either -ess or the null tense suffix -∅. In the latter case, -∅ is coreferential with a matrix past tense, as we will see later. When both aspect and tense occur, two things happen: (a) perfective + past = pluperfect (i.e., past perfective), and (b) perfective + nonpast = nonpast perfective (i.e., present perfective and future perfective). All this can be schematized as follows.

\[\begin{array}{c}
\text{Inf. Categories} \\
\text{/} / \\
\text{...(Aspect) Tense ...} \\
| | \\
\text{Perfective Past} \\
\text{Nonpast}
\end{array}\]

b. past = -ess, -∅
nonpast = -∅
pluperfect (past perfective) = -ess-ess, -ess-∅
nonpast (present/future) perfective = -ess-∅

As will be discussed in Chapter Five, the overt suffix -ess manifests some irregularity in its morphological shape, when it occurs in the adjectival (or adnominal or relative) clause ender.

2.3 Modality categories

As briefly sketched in 1.2.1, Martin (1954, 1963) assigns four of the seven inflectional slots to tense and
aspect, as follows: II. past tense (-ess), III. past tense (-ess), IVa. future tense (-keyss), IVb. prospective aspect (-ul), and VI. indicative, subjunctive, retrospective, and processive aspects. In the preceding sections, I have argued that Korean has only past and nonpast, which disjunctively fill Martin's slot III, and that Martin's II is an aspect category slot filled by the perfective suffix -ess. The present section concerns Martin's IVa, IVb, and VI. In particular, Martin's retrospective aspect will be treated as a mood with an inherent pastness feature (in 2.3.1), whereas Martin's future tense and prospective aspect will be viewed as modals (in 2.3.2).

2.3.1 Retrospective mood suffix

The so-called retrospective suffix -te (and its allomorph -ti) has been controversial as to its grammatical and semantic status. Some authors call it retrospective tense (e.g., Choi 1965:348, Na 1971), some others consider it aspect, as Martin (1954:37) does, and still others associate it with mood (e.g., Huh 1977, I. Yang 1972:4) or manner (e.g., S. Chang 1973:40). As these different terminological proposals imply, the suffix -te cuts across the definitions of mood, tense, and aspect, in that it not only expresses the past time and the speaker's perception, but also the speaker's subjective way of looking at an event (cf., Sohn 1975, 1986:137-153). From a generative semantic approach, Sohn (ibid.) recognizes three semantic units in
-te: PAST, REPORTER, and PERCEIVE. In what follows, I will review these three functions with regard to the tense and aspect categories that I have proposed, with particular focus on the pastness feature. In view of the inherent semantic features of the suffix that contain the REPORTER's PERCEIVING of an event in the PAST, as well as its sharing the same slot with such other mood categories as indicative, I would like to regard the retrospective suffix as a mood.

First of all, the past function of -te has been recognized by many other scholars (e.g., Choi 1965, Huh 1977, Na 1971). However, as Sohn correctly points out, -te is not restricted to past events alone. Consider the following:

(35) a. Suni-nun nayil hakkyo-ey ka-∅-te-la.
   top tomorrow school-to go
   (I found that) Suni goes to school tomorrow.

 *b. Suni-nun nayil hakkyo-ey ka-ss-ta.
    *Suni went to school tomorrow.

Notice that while the retrospective suffix -te occurs with a future-indicating adverb, this is not the case with the past tense suffix. What this indicates is that, although both indicate pastness, -te and -ss not only belong to different morphological slots, but have different syntactic functions. That is, the retrospective suffix behaves like a miniature of a matrix clause, with the speaker/hearer as the subject. Despite its morphological attachment to the verb, it is not
directly related to the event, nor does it directly refer to the event time.

I propose that a clause with -te involves one additional time other than speech time and event time, and that this additional time functions as a reference time. I further propose that this reference time is necessarily in the past, and that when the past tense -ess and -te occur together, the time indicated by -ess always precedes the time indicated by -te. When the unmarked tense -ø and -te occur together, the time indicated by the -ø cannot precede the time indicated by -te.

More specifically, with -te, there is a time of PERCEIVING the event involved, and this PERCEIVING necessarily takes place in the past. If this PERCEIVING takes place in the speech time, it is indicative mood and represented by -ni, -(nu)n, or -ø. Following a Reichenbachian system, the PERCEIVING time corresponds to a reference time, which necessarily precedes the speech time. For example, (35a) may be represented as follows in accordance with the Reichenbachian framework:

(35a)' Suni-nun nayil hakkyo-ey ka-ø-te-la.

(I noticed that) Suni goes to school tomorrow.

\[
\begin{array}{ccc}
R & S & E \\
\text{[I noticed]} & \text{tomorrow} & \\
\end{array}
\]

R: perception time
S: speech time
E: event time 'tomorrow'
Compare (35a) with (36), which is its indicative counterpart. Note that the time of the speaker/hearer's PERCEIVING in the indicative mood always coincides with the speech time.

(36) Suni-nun nayil hakkyo-ey ka-ŋ-n-ta.
   (I notice that) Suni goes to school tomorrow.

   S/R   E
   ---------------|
   [I notice]  tomorrow

In view of the PERCEIVING time associated with -te, it has been claimed that -te marks past tense. However, as we have already seen, the pastness of -te has nothing to do with the past tense of the event, which is represented typically by -ess. Instead, -te contrasts with the speech time of the indicative mood suffixes.

When both the past tense -ess and -te occur together, the time indicated by the former necessarily precedes the time indicated by the latter. Observe the examples below, where a pluperfect occurs before -te.

(37) Suni-nun hakkyo-ey ka-ss-ess-te-la.
     top school-to go-perf-past-retro-Dec

     I noticed that Suni had once gone to school.

   Aspect Tense R S
   -------|---------|---------|--------|-----
   perf -ess past -ess -te
On the other hand, when a nonpast perfective -ess-∅ or a simple nonpast occurs, the event may take place either at a time simultaneous with or after the PERCEIVING time, but never before it. This claim is illustrated below.

(38) a. ne-nun nayil cwuk-ess-∅-te-la.
    you-top tomorrow die-perf-nonpast-ret-Dec
    I noticed that you will be in big trouble tomorrow.

b. Suni-ka ecey hakkyo-ey ka-∅-te-la.
    nom yesterday school-to go-past-ret-Dec
    i. I saw Suni going to school yesterday.
    ii. I noticed (e.g., the day before yesterday) that Suni would go to school yesterday.

Thus, for example, the two interpretations of (38b) may be represented as follows.

(38) b. i) E/R(yesterday) S
    --------|------------------|-------------------> Suni's going (E)
    [I saw] (R)

    ii) R E(yesterday) S
    --------|------------------|-------------------> [I noticed] Suni's going

Next consider the REPORTER function. The suffix -te requires an agent argument, which Sohn (1986) calls the reporter. The reporter PERCEIVES a propositional content and may be either the speaker in statement or the hearer in question, as shown in (39)-(40) (examples from Sohn 1986:141):
    I saw John going.

    I-top happy-AH-retro-Dec
    I felt that I was happy.

(40) a. John-i ka-te-nya?
    Did you see John going?

    b. Tangsin-un kippu-p-ti-kka?
    Did you feel that you were happy?

In (39a) the reporter is the speaker, and in (46a) the hearer in performative terms. (Arguments for this reporter function are in Suh (1977), and against it in Gim (1980a).)

Third, the PERCEIVING function is the most distinct feature of -tee Sohn (1975) suggests that this performative sentence abstract predicate consists of the sense denoted by 'observe', 'experience', and 'infer', which are mutually exclusive, being conditioned by underlying structural relations. The notion of PERCEIVING is further confirmed in H. Shin (1986) and Gim (1980), although they do not agree on details. Both the REPORTER and PERCEIVING functions of the retrospective have led me to consider the suffix as belonging to the mood category, rather than to the tense or aspect category.

There are claims that the embedded clause -te is a separate morpheme from -te in a matrix clause in view of their slightly different functions (e.g., Nahm 1978). I am of the view, however, that the occurrence of -te in the two
cases is basically the same, as conceived by Gim (1980a) and Sohn (1986). Observe the following examples from Sohn (1986:147):

(41) a. [Ecey ha-te-n] il-ul onul kkuthmachi-ess-ta.
    I finished the work which I was doing yesterday.
    *b. [Ecey ha-n] il-ul onul kkuthmachi-ess-ta.
    *Today I finished the work, which I did yesterday.

(42) a. [Chayk-ul ilk-te-n] salam-i pakk-ulo naka-ss-ta.
    The person who was reading a book went out.
    *The person who was reading a book completely went out.

It has been claimed that -te has 'progressive' (Na 1971:24) or 'durative' meaning (I. Yang 1972:239). However, such imperfective senses are not associated with -te but rather are due to the lack of the perfective suffix -ess. Compare the minimal pair below.

    I took off the clothes which I already had on.
    b. [Ip-te-n] os-ul pes-ess-ta.
    I took off the clothes which I was putting on.

The embedded event is perfective despite the occurrence of the suffix -te. In (43b), the imperfectivity results from the lack of -ess. The occurrence of -te has nothing to do with the imperfectivity sense. The function of -te in both
sentences is again the speaker's PERCEIVING of the embedded event.

2.3.2 Modal suffixes

In addition to the retrospective suffix -te, there are some other modality elements which have frequently been proposed as temporal categories. For instance, we have seen that Martin (1954, 1963) views the suffix -keyss as the future tense marker and -ul as the prospective aspect marker. Lukoff (1982:102) calls -keyss 'imperfect/future' tense.

Despite the predominant (especially traditional grammarians') view that -keyss and -ul(i) mark future tense or aspect, I subscribe to the minority view that they are modal elements which have nothing to do with tense or aspect (e.g., Sohn 1986). That is, -keyss denotes the speaker's (in statements) or the hearer's (in question) volition or evidential or circumstantial conjecture/presumption. On the other hand, the suffix -ul(i) refers to the speaker's (in statement) or the hearer's (in question) prediction. In 2.2.3, I discussed various functions of the unmarked tense suffix -\( \emptyset \), which deictically refers to both present and future. It is this hidden tense suffix that causes -keyss or -ul(i) to look like a future tense marker.

The following set of examples par excellence are sufficient to refute the futurity thesis. Notice, first, that the suffixes in question can freely cooccur with the
past tense suffix, and, second, that no futurity sense shows up despite their presence.

(44) a. Ecey Seoul-ey pi-ka manhi o-ass-keyss-ta.
    yesterday in rain-nom much come-past-presume-Dec

    (I presume that) it rained a lot in Seoul yesterday.

b. Suni-ka cikum o-ko iss-keyss-ta.
    nom now come-comp is-presume-Dec

    Suni is presumably coming now.

c. Suni-nuun cikum ca-li-la.
    top now sleep-predict-Dec

    Suni must be sleeping now.

d. Ku i-nun cwuk-ess-ul salam i-ta.
    that person-top die-past-predict person is-Dec

    That person is a person who was presumed dead.

2.4 Conjunctive suffixes

Conjunctive suffixes are of paramount importance in the description of temporal expressions in Korean. Firstly, they contain temporal information as an inherent semantic feature. Secondly, they play an essential syntactic role in constraining the occurrence of tense and aspect suffixes in the conjunctive clauses in which they occur. Thirdly, they interpret the temporal status of tense and aspect suffixes with regard to matrix tense or speech time.

Chapter Three will touch on conjunctive sentences and Chapter Four will be entirely devoted to the syntactic description of the temporal phenomena of conjunction. Thus, this section is intended as a brief discussion of the classification of Korean conjunctive suffixes. From the
structural point of view, these suffixes are members of Martin's slot VII (mood), as shown in 1.2.1, and of my Complementizers (which are in turn members of clause-enders), as presented in (1) in 2.1. It has been customary that conjunctive suffixes are classified, by and large, into subordinating and coordinating suffixes, depending mainly on their semantic properties. For instance, Kwon (1985) classifies them as follows.

(45) A. Coordinating

1. Connection
   -ko 'and'
   -umye 'and'
   -umyense 'while doing'
   -kose 'and then'
   -keniwa 'as well as'

2. Contrast
   -una 'but'
   -eto 'but, although'
   -cima 'but, however'
   -utoy 'but, although'
   -kenman 'but, although'

B. Subordinating

3. Cause-effect relation
   -uni 'since, as'
   -unikka 'because'
   -ese 'as, for, so'
   -nulako 'as, because of doing'

4. Condition
   -umyen 'if, when'
   -ketun 'if, provided that'
   -eya 'if only, on the condition that'
   -untul 'even if'

5. Purpose
   -ule 'for the purpose of'
-ulyeko 'in order to'
-koca 'intending to'

6. Evaluation
-tasiphi 'as, in the same way that'
-kentay 'judging from'

7. Result
-key(kkum) 'so that'
-tolok 'to the extent that, so that'
-ulako 'so that'

8. Addition
-tus(i) 'as if, in the same way'
-ca 'as soon as'
-taka 'and then, while doing'
-ulswulok 'the more ... the more'

Semantically interesting though it is, Kwon's (ibid.) classification is not supported by syntactic justification. As a matter of fact, the meaning-based division between coordinating and subordinating suffixes is vague, and there are many marginal cases. (A similar observation has been made about Japanese (Kuno 1973, 1978)). For example, the same suffix (e.g., -ko 'and') is used for coordinate- or subordinate-like clauses.

I propose to classify conjunctive suffixes according to their temporality feature. As we will see in Chapter Four, this classification sheds significant light not only on the dichotomy between coordination and subordination, but on the syntactic explication of temporal interpretations regarding conjunctive sentences. Based on the presence or absence of temporality features, two major classes can be differentiated, with each having further subclasses. By
temporal feature, I mean a sequential or overlapping time-relationship between the conjunctive (called embedded hereafter) event time and the matrix event time. I will term the two classes: (a) [+temporal] (e.g., -esse 'and then, as', -ko 1 'and', -kose 'and then', -ulyeko 'in order to', -tolok 'so that', -taka 'while, and then', -umyense 1 'while'); and (b) [-temporal] (e.g., -ko 2 'and', -ciman 'but', -una 'but', -kenman 'even though', -nikka 'because', -umyense 2 'although').

While [+temporal] suffixes denote a temporal sequential constraint, such as subsequence, after, or overlapping between an embedded time and the matrix time, there is no such temporal restriction with [-temporal] suffixes. Notice in the preceding paragraph that suffixes like -ko 'and' and -umyense 'while' can have either temporal or non-temporal features posited of them. I regard such suffixes each as two different but homophonous units in view of the different meanings involved. The two types of conjunctive suffixes are illustrated in the following.

    school-to go-past-and nom acc meet-past-Dec
    John went to school and then met Mary. ([+temporal])

    top school-to go-past-but top not-go-past-Dec
    John went to school, but Mary didn't. ([-temporal])

In the [+temporal] type, the embedded clause does not allow the presence of the overt past -esse at all, although
the embedded clause event is interpreted as past. This fact is illustrated in (46a). None of the other [+temporal] suffixes allow the perfective suffix -ess either (except for -taka, as we have observed in earlier examples). On the other hand, [-temporal] suffixes freely allow the overt past tense suffix, as shown in (46b). As for those homophonous suffixes which are associated with [+/-temporal], the embedded clause allows only the null tense when they are [+temporal], but it allows both tense forms when they are [-temporal].

Furthermore, the differentiation of conjunctive suffixes in terms of temporality contributes to the explication of at least two other important syntactic facts. For one thing, it provides a syntactic basis for the controversial semantic distinction between coordination and subordination. Examine the following examples, where -ko 1 'and then' and -ko 2 'and' are contrasted.

    window-acc open-past-and sit-past-Dec
    (I) opened the window and sat down.


    nom dance-acc dance-and nom sing-past-Dec
    John danced and Mary sang.


It has been pointed out that conjunctive clauses with -ko have two meanings, one sequential 'and then' and the other
coordinating 'and' (e.g., Lukoff 1982:104). Interestingly, on the former reading, the embedded clause allows only the null form \(-\emptyset\), whereas on the latter reading, it allows both \(-\emptyset\) and \(-\text{ess}\) without any change in meaning. As stated earlier, the two meanings of \(-\text{ko}\) correspond respectively to the [+temporal] and [-temporal] type. I propose that the [+temporal] \(-\text{ko}\) is subordinate and the [-temporal] \(-\text{ko}\) is coordinate. The other suffixes can also be classified in this way.

Second, the temporality feature that I propose also ties in, in general, with my distinction between anaphoric and deictic tense. In other words, it is conducive to the determination of the so-called endophoric interpretation (e.g., D. Yang 1977), which corresponds to the anaphoric tense in the present study, and exophoric (deictic) interpretation of the embedded clause tense with regard to the matrix clause tense. This suggests that [+temporal] suffixes cause embedded tense to receive an anaphoric or endophoric interpretation, whereas [-temporal] suffixes predict deictic or exophoric interpretation. For further discussion on the syntactic behavior of conjunctive suffixes, see Chapters Three and Four.

2.5 Temporal adverbials

Temporal adverbials constitute another significant component of the temporal patterns of Korean, in that they play important roles not only in temporal reference but in
the temporal interpretation of cooccurring tense and aspect
suffixes.⁹

Temporal adverbials are of two general types: lexical
and clausal. The former include time adverbs and adverbial
phrases, which are, in turn, subclassified commonly as
follows.

(49) a. points of time

  cikum, icey, 'now'
onul 'today'
molay 'the day after tomorrow'
encey 'yesterday'
kucey 'the day before yesterday'
encey 'when'
achim-ey 'in the morning'
caknyen-ey 'last year'
kùttay 'at that time'

b. duration

  hangsang 'always'
camkkan (tongan) 'for a moment'
seysi-kan 'for three hours'
olay (tongan) 'for a long time'

c. relative time

  pelsse 'already'
acik 'still, yet'
cikum-kkaci 'up until now, still'
kot, palo 'immediately'
pangkum 'just now'
nacwung-ey 'later'
ittaka 'later'
yocum 'lately, recently'

d. repetition/frequency

  nalmata 'everyday'
ttayyttay-lo 'sometimes'
cacwu 'frequently'
kakkum 'once in a while'
maynyen 'every year'
Another classification I would like to propose is in terms of their relational values, such as anterior (<), simultaneous (=), and posterior (>), with regard to the speech time on the one hand, and of cooccurrence with tense and aspect suffixes. Classification of this sort will provide a better syntactic basis for an integrated temporal description. Such a classification is illustrated below with some representative adverbs. Pluperfect (past perfective) behaves the same way as past tense in terms of + or -.

(50) RELATIONAL VALUES TENSE ASPECT

<table>
<thead>
<tr>
<th></th>
<th>&lt;</th>
<th>=</th>
<th>&gt;</th>
<th>past</th>
<th>nonpast</th>
<th>nonpast perf</th>
</tr>
</thead>
<tbody>
<tr>
<td>cikum 'now'</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>onul 'today'</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>nayil 'tomorrow'</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>ecey 'yesterday'</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>hansi-ey 'at one o'clock'</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>hangsang 'always'</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>pankum 'just now'</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>kumpang 'now'</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>mak 'just'</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>pelsse 'already'</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Relational values with regard to a reference time other than the speech time are expressed by demonstrative phrases, such as ku cen-ey 'previously', i nal 'on this day', ku taum
cwu-ey 'the following week', and ku cen nal 'on the previous day'.

Clausal temporal adverbials are composed typically of the so-called temporal connectives (or conjunctives), which consist of an embedded clause and its temporal head noun followed by the particle -ey 'at, in'. These include -ki cen-ey 'before', -ki-ey aphse 'preceding the time when, before', -n twi-ey 'after', -n taum-ey 'following the time when, after', -ul cek-ey 'at the time when', -ul ttay-ey 'when', and -ul mwulyep-ey 'around the time when'. Notice that these adverbials also manifest relational values, but this time only with regard to the matrix event time, which serves as a reference time. For example, -ki cen-ey 'before' is posterior to, -n twi-ey 'after' is anterior to, and -ul cek-ey 'at the time when' is simultaneous with the matrix event time.

Temporal adverbials serve to denote an explicit time referent in the Reichenbachian sense. As a result, their most important syntactic function in temporal interpretation is to disambiguate potentially ambiguous structures. First of all, different senses associated with nonpast are disambiguated, as observed below.

(51) a. Suni-nun hangsang kongpuwa-∅-n-ta.
    top always study-nonpast-ind-Dec

Suni always studies. [generic]

b. Suni-nun cikum kongpuwa-∅-n-ta.

Suni is studying now. [present]
c. Suni-nun *nayil kongpuha-Ø-n-ta.*

Suni will study tomorrow. [future]

Second, past tense and present perfective are disambiguated, as shown below.

(52) a. Suni-nun ecey *ttena-ss-ta.*
    top yesterday leave-past-Dec

Suni left yesterday.

b. Suni-nun pangkum *ttena-ss-Ø-ta.*
    just now perf-nonpast-Dec

Suni has just left now.

Third, the deicticity (exophorism) and anaphoricity (endophorism) of the unmarked null tense in an embedded clause are also disambiguated by means of adverbials. For example, (53a) is ambiguous in two ways, although (53ai) is more natural. This ambiguity is differentiated in (53b) and (53c).

(53) a. Ecey Suni-nun ilha-Ø-ko is/was-Ø-comp ai-lul  
    working child-acc
    kkwucic-ess-ta.
    scold-past-Dec

   i. Yesterday Suni scolded a child who was working.
   ii. Yesterday Suni scolded a child who is working.

b. Ecey Suni-nun ku ttay ilha-ko is/was-Ø-comp ai-lul
    kkwucic-ess-ta.

    Yesterday Suni scolded the child who was working then.

Yesterday, Suni scolded the child who is working now.

Fourth, ambiguity occurring in a clause with a retrospective suffix is also differentiated. For example, (54a) is in three ways ambiguous, whereas (54b) is in two-ways ambiguous and (54c) has no ambiguity.

(54) a. Suni-nun ka-∅-te-la.
   i. I saw Suni going.
   ii. I noticed that Suni will go.
   iii. I had noticed that Suni was going.

b. Suni-nun ecey ka-∅-te-la.
   i. Yesterday, I saw Suni go.
   ii. I had noticed that Suni was going yesterday.

Fifth, ambiguity also occurs in clausal temporal connectives. For example, observe the following examples (quoted from C. Lee 1985:442).

   I-top child come-∅-NOM before-at depart-past-Dec
   i. I departed before the child came.
   ii. (Lit.) I departed before the child will come.

b. Ai-ka o-ass-ta.
The child came.
As C. Lee (1985) points out, sentence (55a) does not entail (55b). This is not only because the child's coming may take place in the future (with regard to the speech time), but because the child's coming may not take place at all. The second reason is immaterial for the present purpose. Let us call the event of the speaker's departure E1, and that of the child's coming E2. The diagram below illustrates that E2 can occur before or after the speech time.

\[
\begin{array}{c|c|c|c}
   & E1 & E2 & S \\
\hline
\text{My departure} & \text{E2} & S & \text{E2} \\
\end{array}
\]

The fact that the child's coming can take place either before or after the speech time is very crucial for the pronominal function of the null tense. That is, when E2 precedes S (as shown in the (a) position above), then the null form \(-\emptyset\) refers to the same past relation as the matrix tense. In that case, the null form is anaphoric. On the other hand, when the E2 follows S (as shown in the (b) position), the null form refers to a non-past relation, and hence it is deictic. Since this kind of phenomenon will be the concern of the next chapters, let us go back to the topic of disambiguation. That is, by placing a temporal adverbial such as \textit{ecêy} 'yesterday' or \textit{mâyil} 'tomorrow' in the bracketed embedded clause in (55a), we can easily disambiguate the ambivalent temporal interpretations.
Along with the disambiguating function, temporal adverbials play another important role. As has been alluded to thus far (especially in (44)), they constrain the occurrence of a tense or aspect suffix to a great extent. This is largely due to their inherent temporal semantic features. This phenomenon can be illustrated with temporal connectives -ki cen-ey 'before' and -n twi/hwu-ey 'after' below. Observe (55a) again, and note that the overt past form -ass cannot occur in the embedded clause, as shown in the ungrammatical structure below.

(55) *a. .........o-ass-ki cen-ey......

Incidentally, it is interesting to note that while a temporal connective like (55a) does not allow the overt form -ess, non-temporal connectives with the -ki nominalizer do freely allow -ess, as shown in (57).

    I-top child-nom come-perf-ŋ-NOM because leave-past-Dec
    I departed because the child had come.

An explanation for the phenomenon will be offered in Chapter Three. Next, consider another temporal connective for clauses, -n hwu-ey 'after'.

    top nom come-past-after-at leave-past-Dec
    Mary departed after John came.

    John came.
Unlike cen 'before' clauses, the hwu 'after' clause in (58a) entails sentence (58b). The relative clause event (E1) must precede the matrix clause event (E2), as shown in (59).

(59) \[ E1 \rightarrow E2 \rightarrow S \]

Because of the inherent temporal feature (anterior to the matrix event time) of hwu, (59a) allows only the past or perfective adnominal form -n (to be discussed in Chapter Five).

2.6 Lexical aspect

In Korean there are, by and large, two different ways of expressing aspectual phenomena: inflectional and lexical\(^{10}\) (cf. Nahm 1978, C. Lee 1982, Gim 1985). Since I have examined suffixal aspect in 2.2.1, I will focus on the second type of aspect in this section, although the description of lexical aspect is not the main concern of this study.

Lexical aspects include auxiliary verbs that express aspectual distinctions, e.g. -ki sicakha- (inchoative), -e iss- (perfective), -e tay- (iterative), and -ko iss- (progressive). These aspectual auxiliaries are preceded by main verbs, forming a compound verb (or in transformational grammar's terms, verbal complementation). Each auxiliary verb is obligatorily preceded by its own fixed
complementizer, such as -ki, -e, or -ko, which must be suffixed to a preceding verb.

The first major division in aspectual oppositions is between perfectivity and imperfectivity. "Perfectivity indicates the view of a situation as single whole, without distinction of the various separate phases that make up that situation; while the imperfective pays essential attention to the different ways of the internal structure of the situation." (Comrie 1976:16) Since the imperfective aspect is concerned with the internal structure of the situation, there can be a number of sub-divisions, e.g. habitual, progressive, inchoative, etc. These are expressed by various auxiliaries in Korean.

Lexical perfectivity in Korean is expressed by the auxiliary verb construction -e iss- (i.e., infinitive suffix + the existential verb). Compare sentence (60a) where a suffixal perfective occurs, with (60b) where a lexical perfective occurs.

(60) a. John-i cip-ey ka-ss-taka o-ass-ta. nom home-to go-perf-trans come-past-Dec
   John went home and came back.

   b. John-i cip-ey ka-a iss-taka o-ass-ta. nom home-to go-comp be-trans come-past-Dec
   John had been home and came back.

   As the English translations indicate, both -e iss- and -ess are used to refer to the completion of 'going home'. Yet, their aspectual implications are not precisely the
same: -e iss- puts emphasis on the final stage of the situation, whereas -ess emphasizes its totality. Consider more examples:

(61) a. Os-ey hulk-i mwut-e iss-ta.
cloth-at dirt-nom put-perf-Dec

There is dirt on the clothes.

b. Os-ey hulk-i mwut-ess-ta.
put-perf-nonpast-Dec

south province-in now cherry-nom bloom

The cherry blossoms are in bloom in the southern province now.

bloom-perf-nonpast-Dec

Sentences (61a) is symmetric with (61b) since the results of the past situation still hold, i.e. the continuing result of a previous situation. However, (61a) and (62a) put more emphasis on the final stage of the situation, i.e. on the termination of the situation. On the other hand, (61b) and (62b) put no more emphasis on the end of the situation than on any other part of the situation. Rather, all parts of the situation are presented as a single whole.

It has been claimed that the suffix -ess is historically derived from -e iss- through historical contraction (e.g., Huh 1977, K. Lee 1981, Gim 1980b). In contemporary Korean, -e iss- appears only with a limited number of intransitive verbs, while -ess does not have such a restriction.
In what follows, I will discuss other types of lexical aspect, which involve imperfectivity. The following table represents the sub-divisions of aspect and their representative form.

(63) **Classification of aspectual opposition**

i) Perfective: 
- *e iss* (lexical)  
- *ess* (suffixal)  

ii) Imperfective

- Progressive  
  - *ko iss*  
- Inchoative  
  - *ki sicakha*  
- Habitual  
  - *kon ha*  
- Iterative  
  - *hay tay*

As we saw above, imperfectivity is concerned with the internal temporal structure of a situation, with a situation viewed from within (Comrie 1976:24). I will focus only on the progressive aspect below in view of its having been controversial.\(^{12}\)

Progressive aspect is exemplified in the following.

(64) John-i cip-ul ciz-ko iss-ta.  
    nom house-acc build-comp be-Dec  

John is building a house.

The progressive meaning in (64) comes from the auxiliary verb construction *-ko iss* (i.e., *ko* 'and' + existential verb). *-ko iss* occurs only with an action verb and expresses a progressive event or action.

Let us compare the progressive *-ko iss* with the perfective *-e iss*.
    top home-to go-comp be-Dec
    John is at home.

    John is going home.

The progressive form -ko iss- and the perfective form -e iss-
are similar to each other, in that both consist of
a complementizer followed by the existential verb iss-.
However, -ko iss- occurs with intransitive or transitive
verbs freely, while -e iss- occurs only with a limited
number of intransitive verbs, as exemplified in (66).

    nom book-ace close-comp is-Dec

    nom book-ace close-comp is-Dec
    John is closing the book.

Although -ko iss- carries a progressive aspect, with
the meaning 'be in the process of', its function is
different from that of the English progressive be + -ing.
Consider the following:

(67) a. I chayk-ul ilk-ko iss-ta.
    this book-acc read-comp be-Dec
    I am reading this book.

b. I chayk-ul ilk-ko iss-kela.
    this book-acc read-comp be-Imp
    *Be reading this book.
While Korean allows the progressive aspect to freely occur in an imperative sentence, English allows it only very rarely. In addition, -ko iss- can occur with 'stativity' verbs, such as alta 'know', mitta 'believe', and kkaytatta 'recognize'. In English, on the other hand, subclasses of verbs like these do not occur in the progressive form, as shown below.

(68) a. Na-nun chayk-ul kaci-ko iss-ta.
   I-Top book-acc have-comp be-Dec
   *I am having a book.

   I-top the fact-acc know-comp be-Dec
   *I am knowing the fact.

Even in Korean, the -ko iss- constructions above indicate a considerable degree of stativity. Furthermore, -ko iss- represents stativity as well as progressivity. For instance,

   nom red-mod cloth-acc wear-comp be-Dec
   i) John is in the process of putting on red clothes.
   ii) John is in the state of wearing red clothes.

   nom shoes-acc wear-comp be-Dec
   i) John is in the process of putting on shoes.
   ii) John is in the state of wearing shoes.

   nom heavy-comp suitcase-acc carry-comp be-Dec
   i) John is in the process of picking up a heavy suitcase.
ii) John is in the state of holding a heavy suitcase.

Sentences in (69) are ambiguous between two interpretations: progressive and stative. The verbs sin- 'wear', ip- 'wear', and tul- 'carry' are all action verbs, not stative verbs. But when they are combined with -ko iss, they can refer to a stative situation, i.e. 'in the state of' as well as a progressive action. From this perspective, the two lexical aspects, -ko iss- and -e iss- share the feature of resultative state. Interestingly, -e iss- is not acceptable where -ko iss- can have the stative meaning, as shown below.

    top red-mod clothes-acc wear-comp be-Dec

   i) John is in the process of putting on red clothes.
   ii) John is in the state of wearing red clothes.


Notice that (70b) is ungrammatical, while (70c) is acceptable. Although the ungrammaticality of (64b) may be due to the constraint that -e iss- cannot occur with a transitive verb, in many cases, the perfective suffix -ess and the lexical perfective -e iss- are in complementary distribution. 13

One final note is in order. It should be noted here that subjectivity is involved in the aspectual system (Lyons
1977a). The same situation may be represented as either a process or an event according to whether the speaker is concerned with its internal temporal structure or not. Such aspectual notions as stativity, progressivity, and iteration are also subjective. Korean cannot be an exception.

In summary, aspect in Korean is realized in both inflectional and lexical forms. In the latter case, the syntactic and semantic characteristics of the verbs involved are also closely related to aspectual expressions.
Notes to Chapter Two

1. From this perspective, many linguists (cf. Fillmore; 1975, Lyons; 1977a, Comrie; 1976, 1985) have classified tense as a deictic category, but aspect as a non-deictic category.

2. See S. Shin (1986), for details.

3. The seventeen meanings of -ess that Suh proposes include: the result state up to the present, the occurrence in the present, present progressive, repetition or habit in the present, present perfective, the result state of the present perfective, continuity in the present, future perfective, the result state of the future perfective, future state, past state, past progressive, past perfective, past progressive, presumptive past, repetition or habit in the past.

4. Since the verb ota 'to come' implies that 'I' is in the United States at a speech time, Lee suggests that (15b) is a counterexample to N. Kim's (1975) claim about the 'not any longer' sense of the double form (cf. Lukoff's (1982:336).

5. It was also pointed out to me by Anatole Lyovin (personal communication) that Russian, which has both tense and aspect as an inflectional category, shows the same phenomenon.


7. C. Lee (1985) points out that both -keyss and -(u)l kes-i (lit. 'is a fact to do/be') can indicate futurity, but they differ in terms of the speaker's commitment to 'presumptive' (or 'conjectural') modality. Compare sentences (i-a) and (i-b) (from Lee).

(i) a. Samsipnyen twi-ey cikwu-ka phokpalha-1 kes-i-ta.
   Thirty years after-loc earth-nom explode
   30 years later, the earth will explode.

   I presume the earth will explode thirty years later.
Sentence (i-a) is natural, whereas (i-b) sounds somewhat awkward, because, according to Lee, the shorter the form (i.e., -kevss in the examples), the closer the meaning is to the speaker's internal frame of mind, i.e. a stronger commitment. Then, (ib) is pragmatically unnatural because a layman is not in a position to utter such an expression without any strong scientific or circumstantial evidence.

Other parallel phenomena are observed, for example, in suffixal vs. phrasal causatives, suffixal vs. phrasal passives, and short form negation vs. long form negation in Korean.

8. In this connection, Sohn (1986:160) points out, "Many people must erroneously call -kevss and -(u)li future tense markers because they do not recognize this important unmarked category..."

9. For discussions of temporal adverbials in other languages, such as English and Japanese, see Crystal 1966, Huddleston 1969, Hornstein 1977, Smith 1978, and Netsu 1981, among other works.

10. Some scholars treat semantic characteristics of verbs such as stativity or activity as aspektual features. For example, Vendler's (1967)' classification of verbs in English is a good example of a semantic approach to aspektual properties.

11. In this connection, G. Mathias (personal communication) provided me with an insightful idea to test the importance of postulating the null form tense. Compare, for example, the following sentences.

   (i) Os-ey hulk-i mwut-ess-9-ta (=61b)).
   There is dirt on the clothes.

   (ii) Ecey os-ey hulk-i mwut-ess-ta.
   There was dirt on the clothes yesterday.

While sentence (i) can be changed to mwut-o ics-ta, the (ii) sentence predicate cannot. This supports my claim that -ess in (i) denotes perfective aspect, which is followed by the null form tense, while -ess in (ii) denotes past tense.

12. The inchoative aspect which is represented by the auxiliary -ki sicakha- is used to indicate the beginning of a situation.
The child starts to eat the rice.

Habituality is very similar to iterativity. However, they are distinct in that the mere repetition of a situation is not sufficient for a habituality form (Comrie 1976:21). The following examples show the difference between a habitual and an iterative aspect.

(ii) Ku yeca-nun ppalkan os-ul ip-kon ha-n-ta.
The woman-Top red cloth-acc wear-habitual-ind-Dec

The woman habitually wears red clothes.

(iii) Ku yeca-nun kichim-ul hay tay-ess-ta.
The woman-top cough-acc do iterative-past-Dec

*The woman used to cough.

Sentence (iii) is not a habitual aspect, although it involves the successive occurrence of coughing. In English, it would be not possible to use the habitual form with used to for the iterative meaning of (ii). Furthermore, a situation can be referred to by a habitual form without there being any iterativity at all (Comrie 1976:27). For instance, in English, "The temple of Diana used to stand at Ephesus", there is no necessary implication for the successive occurrence of several instances of the situation.)

13. K. Lee (1981) suggests that the perfective function of -e iss- has historically been carried over to -ess-. In Middle Korean, -e iss- did not have any particular distributional limitation. But since -ess took over the function of -e iss-, the latter seems to have begun to have a limited distribution. In addition, the perfective function of -e iss- partially overlaps with -ko iss-.
Chapter 3
Tense Indexing and Binding

This chapter will deal with tense indexing and binding, the two most significant syntactic notions in the present study. As discussed in previous chapters, I maintain that there are only two tenses in Korean, past and nonpast, and that there are two forms expressing tense, -ess and -∅. This chapter will argue two proposals. First, the overt tense form -ess is an R-expression subject to Principle C of the Binding Theory and entering into the same interpretive patterns as names. Second, -∅ is a pronominal entering into the same interpretive patterns as pro (or pronominals).

3.1 Two forms of tense
3.1.1 -Ess: R-expression

While tense in Reichenbach's system is defined in terms of positional relationships involving speech time (S), reference time (R), and event time (E), tense in the present study refers to a relation between E and S. The definitions of past and nonpast tenses are repeated in (1):

(1) a. X is past tense iff X names the relation in which an event precedes the speech time.
   b. X is nonpast tense iff X names the relation in which an event follows or is simultaneous with the speech time.
As discussed earlier, the tense suffix -ess always names the past relation, whereas the null form can name either a past or nonpast relation. I take the position that -ess has the status of a name or an R-expression in that it has inherent reference. In particular, it always names a relation in which an event precedes the speech time, that is, the past relation. To see that -ess has the properties of an R-expression, observe the parallel between the R-expression, John, and -ess below.

    top school-to go-past-Dec
    John went to school.

    b. [John-un hakkyo-ey ka-(*ss)-se] (*John-un)
       top school-to go-past-and top
       kongpwuhay-ss-ta.
       study-past-Dec

       John went to school and studied.

       acc meet-to go-past-but nom not stay-past-Dec

       (I) went to see John, but John was not there.

Notice, first, that both John and -ess maintain their inherent sense wherever they occur, without being affected by their syntactic position. Second, as noticed in (2b), the suffix -ess is not allowed in the embedded clause of certain types of sentences in the same way as John cannot be repeated in certain constructions. Third, as observed in (2c), both John and -ess may be repeated in certain
definable contexts, the exact nature of which will be discussed later.

The above pre-theoretical observations will be cast into a more rigorous theoretical framework in later sections.

3.1.2 -∅: Pronominal

As for the second form used to express tense contrasts in Korean, i.e., the null element -∅, I take the position that it is fundamentally different from the suffix -ess. In particular, this study argues that whereas -ess is a name or R-expression, -∅ is a pronominal. Prima facie evidence for this view comes from the fact that the reference of -∅ can vary: it can name either the past or the nonpast relation. This stands in contrast with the overt form -ess, which names only the past relation. Now consider some examples.

(3) a. John-un cip-ey ka-∅-se, Mary-lul manna-ss-ta.
    top home-to go-past-and acc meet-past-Dec

    John went home and met Mary.

    while

    While John was going home, he met Mary.

In (3) the null tense is interpreted as past, which is the same as the matrix clause tense. I treat this as a case in which -∅ receives its interpretation from an antecedent, that is, the matrix clause tense. This phenomenon is similar to empty pronouns in Korean. That is, the null
tense in (3) is anaphoric in the same sense that an empty pronoun in Korean is anaphoric when it refers to a tautosentential antecedent. For instance (from D. Yang 1982),

    nom arrive-past-when nom meet-past-Dec

    When John arrived, Mary met (pro).

b. [Mary-nun cip-ey ka- construcción subjetiva] pro ca-ssa-ta.
    top home-to go-past-as soon as sleep

As soon as Mary went home, (pro) went to bed.

The empty object in (4a), which I term pro (cf. D. Yang 1982, Chomsky 1986), is coreferential with John, while the empty subject in (4b) refers to Mary. In the same way, the embedded -∅ in (4a) is coreferential with the matrix past tense -ess in both (4a) and (4b). Thus, a parallel is observed between the null tense and empty pronouns in that both can be interpreted as anaphoric when there is a tautosentential antecedent.

Furthermore, both the tense and empty pronouns can be taken to be deictic. For example,

    nom acc meet quot say

    John said that (pro) met Mary.

b. [pro ku il-ul cey ttay-ey kkuthnay-∅-nun] kes-un
    that work-acc in time finish cem thing-top

    John-eykey cwungyoha-∅-ta.
    to important

    It is important to John that (pro) finish the work in time.
In (5), pro may refer to John (that is, anaphoric interpretation), or somebody else (that is, deictic interpretation). Similarly, the null form can refer freely without being coreferential with the matrix tense. Observe the following examples in which -Ø can name either the past or nonpast relation.

    nom go because also go-past-Dec
    i) Mary went there because John went.
    ii) Mary went there because John goes.

    nom read mod book-acc nom read-past-Dec
    i) Mary read the book that John read (or had read).
    ii) Mary read the book that John is reading.

Let me touch on some further parallels between the null form tense and empty pronouns in Korean. Consider some examples in which pro appears in a subject or object position.²

(8) a. Mary-ka pro manna-ss-ta.
    nom pro meet-past-Dec
    Mary met (pro).

    nom arrive as soon as acc meet-past-Dec
    As soon as John arrived, (pro) met Mary.

c. [John-i tochakha-Ø-camaca] Mary-ka pro manna-ss-ta
    nom arrive as soon as nom meet-past-Dec
    As soon as John arrived, Mary met (pro).
Korean allows omission of overt arguments as in (8) without any morphological reflex on verbs or auxiliaries giving information about the identity of the missing arguments (cf. Whitman 1986). The interpretation of the missing pronouns in (8) is dependent upon the discourse or pragmatic context.

This parallels the deictic use of the null form tense. Specifically, pro is preferred to an overt pronominal when there is discourse-recoverable information or a tautosentential antecedent. Similarly, null tense can be used deictically or anaphorically. Consider the following examples in which pro is interpreted as deictic as in (9a) and (9b), or as anaphoric as in (9c).

(9) a. pro annyengha-ŋ-sey-yo? peace-nonpast-pol-Q
   How are you?

b. pro eti ka-ŋ-sey-yo? where go-nonpast-pol-Q
   Where are you going?

c. [Mary-nun cip-ey ka-ŋ-camaca] pro1 ca-ss-ta.
   top home-to go as soon as1 sleep-past-Dec
   As soon as Mary went home, she went to bed.

Sentences (9a) and (9b) lack the deictic pronoun 'you', while sentence (9c) does not allow the potential pronoun kunye-nun 'she' in the position of pro.

Second, a null tense in a simple clause is always taken to be deictic since there is no tautosentential antecedent.
with which the null form can be coindexed. Similarly, empty pronouns in simple clauses are interpreted as deictic. For instance, both pro and the null tense in simple sentences as in (9a) and (9b) are interpreted as deictic, since there is no tautosentential antecedent.

Third, as we have seen, the interpretation of the embedded null tense in a conjunctive sentence can depend on semantic features of the subordinating or coordinating conjunctive suffix involved. For instance, one set of temporal suffixes, such as -ese 'and then', -kose 'and then', -umyense 'while', and -taka 'while' allow only the anaphoric interpretation. Another set of suffixes, such as -tolok 'in order to' allows both the anaphoric and the deictic interpretation. Furthermore, a third set of suffixes, including -eto 'although', -ciman 'but', and -kena 'or', allow only the deictic interpretation.

The semantic features of such conjunctive suffixes also help determine the interpretation of pro.

(10) [pro_1 nolay-lul pwulu-ŋ-myense]
    song-acc sing while
    wuli, -nun keli-lul hayngcinhay-ss-ta.
    we -top street-acc march-past-Dec

While singing a song, we marched along the street.

(11) [pro_1 hwa-ka na-ŋ-se] Chelwu
    -nun pang-ul naka-
    anger-nom get and
    i top room-acc leave-
    ss-ta.
    past-Dec

Chelwu got angry and left the room.
(12) \[\text{pro}_i \text{ cip-ey ka-}³\text{-taka} \text{ John}_i \text{ Mary-lul manna-ss-ta.} \]
\[\text{home-to go and } \text{nom acc meet-past-Dec} \]

While John was going home, he met Mary.

In (10)-(12), \text{pro} is coreferential with the matrix subject (cf. D. Yang 1984), as the coindexing indicates. Thus, only the anaphoric interpretation is allowed. Note that the subordinate conjunctive suffixes, such as \text{-umyense}, \text{-ese}, and \text{-taka} allow only an anaphoric tense interpretation, as illustrated below.

(10)' \[\text{pro nolay-lul pwulu-}³\text{-myense} \]
\[\text{past} \]
\[\text{wuli-nun keli-lul hayngcinhay-}³\text{ ss}_i \text{-ta.} \]
\[\text{we-top street-acc march-past-Dec} \]

While singing a song, we marched along the street.

(11)' \[\text{pro hwa-ka na-}³\text{-se} \text{ Chelwu-nun pang-ul naka-anger-nom get-past-and top room-acc leave-ss}_i \text{-ta.} \]
\[\text{past-Dec} \]

Chelwu got angry and left the room.

(12)' \[\text{pro cip-ey ka-}³\text{-taka} \text{ John}_i \text{ Mary-lul manna-ss}_i \text{-ta.} \]
\[\text{home-at go-past-and hom acc meet-past-Dec} \]

While John was going home, he met Mary.

This contrasts with the following examples in which \text{pro} is interpreted as either deictic or anaphoric:

(13) \[\text{pro}_i/-j \text{ nolay-lul pwulu-}³\text{-tolok} \]
\[\text{in order to} \]
\[\text{wuli}_i \text{-nun cenchwuk-ul khye-ess-ta.} \]
\[\text{we-top stereo-acc turn on} \]

In order to sing a song, we turned on the stereo.
Although (pro) got angry, Chelswu sang a song.

The interpretation of pro above can be taken to be anaphoric (that is, referring to the matrix subject) or deictic (that is, referring to somebody else).

Semantic features of the matrix verb also help to determine the interpretation of pro, as shown below.

In (15a), pro is coreferential with Mary, while in (15b) it is coreferential with John. This difference is due to the lexical properties of the matrix verbs seltukhata 'persuade' and yaksokhata 'promise' (cf. 5.2).

In short, like all pronominals, -q can receive its interpretation from an antecedent, or it can refer freely. However, since there are only two values for tense, i.e., past and nonpast, -q can have only two values, thus it is
much more restricted in its reference possibilities than regular pronominals. I propose that while the null tense in a matrix clause is always deictic, the null tense in an embedded clause can be deictic or anaphoric. By 'anaphoric' tense, I mean that $-$0 receives its interpretation from an antecedent which is structurally determined. (This notion will be further discussed in Section 3.2 in connection with tense indexing.) By 'deictic' tense, I mean that $-$0 receives its interpretation contextually. Thus, the notion of the anaphoric tense is structural, whereas deictic tense is contextual. The anaphoric interpretation occurs where $-$0 names the same past relation as designated by the matrix tense. The deictic interpretation occurs where $-$0 names a different relation. I state the dual function of $-$0 in (19) and the interpretive rule for deictic $-$0 in (20) below.

(19) $-$0 as a pronominal
   a. The null form tense is a pronominal which is taken to be anaphoric or deictic.
   b. Anaphoric tense is structurally determined.
   c. Deictic tense is contextually determined.

(20) Interpretive rule for the deictic use of $-$0
   The deictic interpretation of the null form is nonpast, unless otherwise specified.

3.2 Coindexing tenses

As just noted, tense in the present study is a referring expression like a noun phrase. Thus, tense can
bear an index to indicate coreference or disjoint reference with respect to another tense category. In the case of nominals, two NP's are coreferential if they have the same index. They are not coreferential if they do not have the same index (cf. Riemsdijk & Williams 1986:199). For instance:

    top he-nom prize-acc win acc hope-past-Dec
    John_i hoped that he_i would get the prize.

    b. [John_i-i tochakha-š-ki cen-ey] ku_i/-1 -ka ttena-nom arrive NOM before he-nom leave
       past-Dec
       He_i left before John_i arrived.

In (21a), John and he can be interpreted as referring to the same person, whereas in (21b) John and he cannot be so interpreted (only disjoint reference is possible). To indicate that certain pairs of NPs cannot corefer and that certain NPs do corefer, the Binding Theory employs a rule to assign indices freely (cf. Riemsdijk & Williams 1986, "Index NPs freely") and subsequently filters out the unwanted cases of indexing (by the Binding Conditions, cf. 3.3).

Turning to tense, I assume that two tense categories name the same temporal relation (that is, past or nonpast) if they are coindexed. This contrasts with the more common or traditional view that tenses refer to event times. In other words, the traditional view might assume that when two tense categories are coindexed, the two events must cooccur.
However, the present study assumes simply that coindexed tenses have the same value for the past or nonpast relation. This proposal is based on the distinction between tense and event times, as discussed in Chapter One: Tense does not refer to event times.

Following the assumption that coindexed tenses have the same value for the [±past] feature, two tense categories can be coindexed even when their event times are different. For example,

(22) John-un cip-ey ka-6₁-se Mary-lul manna-ss₁-ta.
     top home-to go-past-and acc meet-past-Dec

     John went home and then met Mary.

The two events above are sequential, not simultaneous or overlapping because the first clause event (E₁) must precede the second clause event (E₂). Nevertheless, the null tense is coindexed with the matrix clause tense since it names the same temporal relation as a matrix clause (that is, the past relation). Thus, the null tense above is taken to be anaphoric. The temporal ordering between the two events is represented in the diagram below.

(22)'

\[
\begin{array}{ccc}
E₁ & E₂(=R) & S \\
\text{-------------|-----------|------------------------|---------} \\
\text{going home} & \text{meeting Mary} \\
\end{array}
\]

Next consider another example in which two events have a 'before' time-relation.
    nom come comp before-time nom depart-past-Dec

    Mary left before John came.

The temporal connective -cen 'before' requires the first clause event to follow the second clause event, as shown in the diagram below.

(24) E2
    -------------|------------|
    E1
    Mary's departure  John's coming

However, E1 can occur before or after speech time since sentence (23) does not entail (25).

    John came.

Diagram (26) below shows two possible interpretations of the embedded clause tense.

(26) E2 E1 S E1
    ------|------|------|------|---------------------->
    -ess  0  0
    |  |  |
    PAST PAST NONPAST

Note that the null tense above is interpreted as past if it occurs before S, and is interpreted as nonpast after S. These two readings are schematically represented as follows.

In (27), the reference of $\emptyset$ varies between past and nonpast. (27a) indicates that $\emptyset$ is taken to be anaphoric (that is, past), whereas in (27b) $\emptyset$ is deictic (that is, nonpast). As stated earlier, the deictic tense of $\emptyset$ in embedded clauses is interpreted as nonpast. (27) can be schematized as follows.

(28)

<table>
<thead>
<tr>
<th>first clause</th>
<th>second clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. $\emptyset_i$</td>
<td></td>
</tr>
<tr>
<td>$\emptyset_i$</td>
<td></td>
</tr>
<tr>
<td>(PAST)</td>
<td></td>
</tr>
<tr>
<td>(PAST)</td>
<td></td>
</tr>
<tr>
<td>b. $\emptyset_j$</td>
<td></td>
</tr>
<tr>
<td>$\emptyset_j$</td>
<td></td>
</tr>
<tr>
<td>(NONPAST)</td>
<td></td>
</tr>
<tr>
<td>(PAST)</td>
<td></td>
</tr>
</tbody>
</table>

When the null form is coindexed with the matrix past tense, it encodes the past relation. In contrast, when it is not coindexed, it encodes the nonpast relation. In both cases, the precise event times are determined through the interaction of tense and a variety of lexical (e.g., conjunctive suffixes, temporal connectives, or time adverbials) and pragmatic factors.

Thus, unlike in English, the first clause tense in Korean can name a nonpast relation even though the matrix clause encodes past tense.

(29) [Nayil John-i o-$\emptyset_j$ -ki ceney] eccey Mary-ka ttena-   tomorrow before yesterday

\[
\text{ss}_i\text{-ta}
\]
\[
\text{past-Dec}
\]

?Mary left yesterday before John comes tomorrow.
Sentence (29) is perfectly acceptable in Korean, while the corresponding English sounds awkward.

On the basis of these observations, I propose the following mechanism for tense indexing.

(30) a. Index tense freely.
   b. When two tenses are coindexed, they have the same value for the [+past] feature.

(30) indicates that the coindexed null tense and the matrix tense always name the same temporal relation. My arguments for indexing tense are based on the assumption that tense is a referring expression like an NP. In the case of NPs, after assigning indices freely, the unwanted cases of indexing are filtered out by the Binding Condition (cf. 3.3). For instance,

(31) a. Mary$_i$ saw her$_j$.
   *b. Mary$_i$ saw her$_i$.

To rule out the second, well-formedness conditions on Logical Form (LF) are required in the Binding Theory. In the case of tense, the unwanted indexing is filtered out by the semantic features of the conjunctive suffix involved, a temporal adverbial, or by other information about the event which may be supplied pragmatically. For instance,

(32) [John$_i$ chwum-ul chwu-$
\begin{array}{c}
\text{nom} \\
\text{acc}
\end{array}$ -myense] nolayhay-ss$_i$ -ta.
   While dancing, John sang a song.
The null tense above must be anaphoric with the matrix -esse. The deictic interpretation is not allowed. This is due to the semantics of -umyense 'while' since it requires the two events to occur simultaneously, and thus only the anaphoric tense is allowed.

If a matrix clause has a nonpast tense, then the coindexed null tense is interpreted as nonpast, as shown below.

(33) [John-un cip-ey ka-Ø₁-se] Mary-lul manna-Ø₁-n-ta.

John goes (or will go) home and then meets (or will meet) Mary.

In (33), both embedded and matrix clauses have a null form which names the nonpast relation. Since the nonpast relation includes present and future time reference, there are four possible temporal interpretations, as shown below.

(34) a. John goes home and meets Mary.
   *b. John goes home and will meet Mary.
   c. John will go home and will meet Mary.
   *d. John will go home and meets Mary.

Note that the temporal interpretation on (34b) and (34d) is not allowed in either Korean or English. The temporal conjunctive suffix -esse 'and then' requires the first clause event to precede the second clause event, and thus the reverse temporal ordering is not allowed.

When multiple embedding is involved, anaphoric null tense is coindexed from right to left.
John got up early in the morning, ate breakfast and, as soon as a bus came, he jumped up, ran and got on it.

Sentence (35) contains five null tense forms, all of which are coindexed with the matrix tense.

The discussion so far indicates that an anaphoric tense is always coindexed with an antecedent, as stated below.

(36) Anaphoric tense is coindexed with its antecedent.

The treatment of tense as a referring expression allows us to account for some parallels between tense categories and other nominals within the framework of the Binding Theory. The parallel that I propose is not entirely new nor surprising. Similar proposals have been made by McCawley (1971) and Partee (1973, 1984) in a transformational approach, and recently within the GB framework by Ene (1987).

3.3 Syntactic explication (X-bar theory)

Since the previous section provided a mechanism for tense indexing, this section will discuss tense binding. Specifically, the following two claims will be argued.
(37) i) -Ess is an R-expression subject to Principle C.
    ii) -∅ is a pronominal entering into the same interpretive pattern as pro.

Principles A, B, and C of the Binding Theory are stated in (38); and the definition of binding is given in (39) (Chomsky 1986:166). The notion of c-command in this study is based on a maximal projection, as in (40).

(38) A. An anaphor is bound in a local domain.
    B. A pronominal is free in a local domain.
    C. An R-expression is free.

(39) X binds Y iff X c-commands Y, and Y and X are coindexed.

(40) X c-commands Y, if the first maximal projection above X dominates Y.

Before discussing how the above Binding Principles work with Korean nominals, let us consider the syntactic structure of Korean. Let us first consider the X-bar schema for English proposed in GB by Chomsky (1986):

(41) 

\[
\begin{array}{c}
\text{Specifier} \\
C'' (=S') \\
\text{C'} \\
\text{INFL'' (=S)} \\
\text{Adjuncts} \\
N'' \\
I' \\
I \\
V'' \\
V \\
N''
\end{array}
\]
In (41), the largest category of any type is called the 'maximal projection' of the head: thus, $C''$ is the maximal projection of $C$, and ${{\text{INFL}}''} (=I'')$ is the maximal projection of $I$. Chomsky (1986) takes $C$ to be the head of what was traditionally called $S'$ and ${{\text{INFL}}}$ to be the head of what was traditionally called $S$. Note in (41) that Specifiers and Adjuncts are sisters of $X'$ (i.e. $C'$). The categories that are sisters to a head are called internal arguments. Arguments come under $X'$, being constituents that a head subcategorizes for.

Structure (41) which is for English, must be slightly modified for Korean because Korean is a head-final language (Subject-Object-Verb language). At present, it is unclear in Korean what elements, if any, come under the Specifier of $C''$. (According to Moon (1987), topic may come under $C''$.) Since it is irrelevant for the discussion here, I will not go into details. As for the properties of $\text{INFL}$, Chomsky (1981) says that $\text{INFL}$ is a bundle of features that includes $[[\pm \text{tense}] (\text{AGR})]$. I assume that in Korean the element $\text{INFL}$ contains a tense category as well as inflectional markers such as aspect, honorifics, modal, etc. Sentence enders are assumed to come under $\text{COMP}$ in that they can change the type of a sentence.

My assumption that $\text{INFL}$ contains a null tense category in Korean is supported by the following examples:
It is difficult for me to do that work.

As soon as John arrived, Mary met him.

The embedded clauses above have been treated as tenseless since they do not allow the overt tense form. Within the GB framework, INFL assigns Nominative Case to the subject of a tensed clause. In an untensed clause such as an infinitive clause in English, Nominative Case is not assigned as exemplified in (44) (cf. Riemsdijk and Williams 1986:231).

(44) *[[The boy] to win] would [upset me].

If we assume that INFL in Korean contains tense, realized as either an overt or null form, we can account for why Nominative Case is assigned to the subject NP above. (However, not all Nominative Cases are assigned in this manner.9)

On the other hand, Yim (1984:106) argues that INFL, which is the head of a clause, is the collection of features [[+tense] [+past]]. According to him, only finite clauses
have the feature [+past], while infinitives are left unspecified for this feature. Furthermore, he makes a distinction between the [+tense] and [+past] features: the [+past] feature is morphologically realized only in finite clauses, while infinitives lack this feature. He further claims that in Korean the [+tense] feature exists not only in finite clauses but also in non-finite clauses. Thus, Yim accounts for the occurrence of the Nominative Case on the subject of an infinitive by assuming that the [+tense] feature can assign Nominative Case. However, Yim's arguments contradict the fact that a non-finite clause by definition has no tense. The embedded clause in (42) and (43) above are analyzed as having a null form tense in the present study. Thus, they are treated as tensed clauses. For instance, in (42) nay-ka is assigned Nom Case by the null tense category.

In a simple clause, as shown in Chapter Two, past and non-past are represented by -ess and -®, respectively. Now, using the X-bar schema, let us consider how the simple sentence can be represented.

    nom school-to go-past-Dec
    John went to school.
In (45b), INFL is the head of S, and C" is understood as S'.
I assume that the matrix COMP in Korean contains a sentence ender such as the declarative marker -ta. I also assume that Korean is a configurational language in that the VP node exists (cf. Saito 1985). As for the tense category under consideration, INFL contains the tense category T, which in turn contains either the [+past] or [-past] feature. When a sentence has a non-past tense, the null element -Ø occurs as in (46).

nom school-to go-nonpast-ind-Dec
John goes/is going to school.
Next let us observe how subordinate clauses can be analyzed in an X-bar schema.

    top school-to go-past-and acc meet-past-Dec
    John went to school and then met Mary.

b. S-structure
In (47b), INFL is the head of S, and C'' is understood as S'.
A subject in Korean can be marked by either the topic suffix
-nun/-un or the nominative case -i/-ka. In (47b), the noun
phrase John-un occurs in the subject position of the matrix
clause, while pro, being coreferential with John, occurs in
the subject position of the embedded clause. The embedded
clause in (47), being a subordinate clause (i.e., [pro
hakkyo-ey ka-se]), is in the adjunct position. The
subordinating suffix -ese 'and then' is in the Comp
position. Of course, the embedded null tense is under T of
the lower INFL, whereas the overt form -ess is under T of
the higher INFL.

Before arguing that -ess is an R-expression obeying
Principle C, let us recall how Principle C works with
regular names in Korean. As stated earlier, Binding
Principle C says that R-expressions must be free in any
domain. This is seen in the following examples.

       he_i-top poss father'acc like-past-Dec

*He_i liked John_i's father.

*b. Ku_i-nun [nay-ka John_i-ul cohaha-Ø-n-ta]-ko
       he_i-top I-nom acc like quot
       sayngkakhay-ss-ta.
       think-past-Dec

*He_i thought that I like John_i.

In (48), the R-expression John is c-commanded and coindexed
with the pronoun ku 'he'. Thus, the ungrammaticality of
(48) is correctly ruled out by Condition C. Consider the S-structure of (48a).

(49) S-structure of (48a):


*He liked John's father.

If there is no c-commanding antecedent, there is no binding, although two NPs may be coindexed, as exemplified in (50).


His father liked John.

b. S-structure

*Ku-uy apeci-ka John-ul cohahay -ss -ta.
Turning to the claim that the overt tense form -ess is an R-expression subject to Principle C, consider the following ungrammatical sentences.

    nom school-to go-past-and  acc meet-past-Dec  
    John went to school and met Mary.

    as soon as
    As soon as John went to school, he met Mary.

    in order to
    In order to go to school, John met Mary.

    while
    While going to school, John met Mary.

In the biclausal sentences given above, the occurrence of the overt past tense suffix -ess in the embedded clause causes ungrammaticality. Recall that the overt form -ess has the status of a name or R-expression in that it has inherent reference, that is, the past relation. An immediate consequence of this claim is that it predicts that -ess may not occur in both an embedded clause and matrix clause within the same sentence, as illustrated in (51). Let us consider the S-structure of (51a) as a representative example.
The ungrammaticality of (52) follows from Principle C of the Binding Theory together with our assumption that -ess names the past relation. Since both instances of -ess have the same referent (i.e. the past relation), they will bear the same index. Because R-expressions must be free, the ungrammaticality of (52) is correctly ruled out since the -ess in the embedded clause is in fact bound (i.e. coindexed and c-commanded) by the -ess in the matrix clause. More specifically, the INFL in the matrix clause in (52) c-commands the INFL in the lower clause. Following the definition of c-command in (39), the first maximal projection above -ess in the second clause is the entire sentence (the matrix I'). The -ess in the embedded clause is thus c-commanded by the matrix -ess. So, the -ess in the
embedded clause is bound by the -ess in the matrix clause, thereby violating Principle C.

The ungrammaticality of *(52) is ruled out for the same reason as in the following example in which two coreferential names occur.

    top nom sick quot say-past-Dec

*John₁ said that John₁ had been sick.

Principle C prohibits the two John's from being coreferential. My claim that -ess is an R-expression entering into the same interpretive pattern as that of any other name is, therefore, supported by Binding Principle C.

Turning now to the null element -Ø, while the overt form -ess is an R-expression, the null form is a pronominal entering into the same interpretive pattern as pro. Let us reconsider sentence (54).


    John went to school and then met Mary.
b. S-structure

The null tense in (54) is taken to be anaphoric (coindexed with the matrix tense), as the English translation indicates. Note that the deictic interpretation (that is, nonpast), is not allowed, as shown below.


This is due to the semantic properties of the conjunctive suffix -ese 'and then'. As discussed in Chapter Two, the temporal conjunctive suffix -ese requires the first clause event (John's going to school) to precede the second clause event (John's meeting Mary). Since the matrix clause already denotes pastness, the embedded tense has to be interpreted as past. Thus, only the anaphoric interpretation is allowed for the null tense in (55). This suggests that the semantic properties of the conjunctive
suffix help determine an anaphoric or deitic interpretation of the null tense.

Note further that the INFL in the matrix clause in (54) c-commands the INFL in the embedded clause. Under the definition of binding in (39), the null tense in the lower INFL is bound by the tense in the higher INFL. This phenomenon at first glance seems to be parallel to NP anaphora, in that it satisfies Binding Principle A which requires an element to be bound. However, I argue that the null form is a pronominal, not an anaphor on the ground that the null form -∅ does not necessarily have to be coreferential with the matrix tense. In other words, if the null form is indeed an anaphor, it always has to be coindexed with a c-commanding antecedent, but this does not hold true for the null tense. Recall that the reference of the null tense can vary when the complementizer and other temporal elements involved do not require a particular interpretation. It can refer either to the past or to the non-past relation, unlike -ess which refers only to the past relation. For instance, look at the following.

(56) John-i ka-∅-nikka Mary-to ka-ss-ta.
    nom go because also go-past-Dec

  i) Mary went because John went.
  ii) Mary went because John is going.

Sentence (56) has two readings. Like all pronominals, the null form -∅ can receive its interpretation from an antecedent (i.e. anaphoric), or it can refer freely (i.e. 
deictic). In (56) above, the former interpretation occurs where \(-\emptyset\) denotes the same past relation designated by the matrix \(-\text{ess}\). The latter interpretation occurs where \(-\emptyset\) denotes a nonpast relation. The two interpretations are represented below.

\[(57)\]

i) John-i \ ka-\(\emptyset\)\_i-nikka \ Mary-to \ ka-\(ss\)\_i-ta.

ii) John-i \ ka-\(\emptyset\)\_j-nikka \ Mary-to \ ka-\(ss\)\_j-ta.

The null tense above need not be coindexed with the matrix tense because pronominals do not require coindexing, as shown below.

\[(57)'\]

John\_i-i [ku\_i-ka \ ttena-\(\emptyset\)-keyss-ta]-ko \ malhay-ss-ta.

\[\text{nom he-nom leave quot say-past-Dec}\]

John\_i said that he\(_i/j\) would leave.

In (57)', ku 'he' can be bound or free. My theory predicts that the potential event times of 'John's going' in (57) can bear either the past or nonpast relation to speech time.

The former interpretation arises if \(-\emptyset\) receives the anaphoric treatment and is coindexed with the matrix \(-\text{ess}\).

The latter interpretation arises if \(-\emptyset\) is taken to be deictic, in which case it must denote the nonpast relation.

3.4 Null tense in embedded clauses

This section will discuss ways as to introduce the null form tense in embedded clauses. I will compare two possible approaches: the deletion analysis and the base-generation
analysis. It will be shown that base-generation is preferred to the deletion analysis in several respects.

3.4.1 Deletion analysis

The deletion analysis of various embedded elements that are coreferential with matrix elements has been adopted by many early generative grammarians of Korean. This analysis assumes that there is a full tense form at deep structure, which is deleted on the surface by means of a transformational rule which applies when there is a coreferential tense form in the matrix clause. Thus, for instance, I. Yang (1972:116-119), in discussing verbal complement constructions in Korean, proposes (58b) as the underlying deep structure of (58a).

(58) Surface structure

   nom pickle-acc eat-comp-acc try-past-Dec
   'John tried eating kimchi.

Deep structure


Yang's case marking rules introduce appropriate case particles; and his so-called obligatory modality deletion rule deletes -ess-ta because of its coreference with the matrix modality elements -ess-ta, so that the surface form (58a) may be derived. We can apply the same procedure for the following conjunctive sentence.
(59) **Surface structure**  
   nom school-to go-and study-past-Dec  
   John went to school and studied.

**Deep structure**  

Although Yang does not discuss this issue, we may also be able to postulate an optional deletion rule, in handling the coordinative -ko 'and' construction. This rule would hold that the past tense suffix -es may be viewed as deleted optionally without a change in meaning. Observe the following examples.

(60) **Surface structure**  
   nom sing-and nom dance-past-Dec  
   John sang, and Mary danced.

**Deep structure**  
   John sang, and Mary danced.

c. [[John nolayhay-ss-ta]-ko] [Mary chwumchwu-ess-ta]

Thus, we may say that (60c) underlies (60a) and (60b), and that a modality deletion rule deletes the embedded sentence ender -ta obligatorily and -es optionally, so that both (60a) and (60b) may be derived.
Insightful as it may be, Yang's obligatory modality deletion leads to some unsatisfactory consequences. For one thing, postulation of elements which never surface tends to make the grammar needlessly complicated as well as redundant. This is particularly true with Korean, because as we have seen in Chapter Two, there are seven inflectional category slots. If the matrix clause has all the slots filled in, we are compelled to set up all seven suffixes including tense and aspect in the embedded clause and then obligatorily delete them.

Secondly, introduction of deletion rules adds extra devices to the grammar. One might think that deletion analysis has an advantage of dispensing with the coindexing of i and j type. However, deletion rules, both obligatory and optional, need coindexing anyway, because only coreferential elements are to be deleted. Furthermore, deletion of many lexical items which never surface makes the grammar extremely inelegant.

Third, there is a problem in semantic interpretation in the deletion analysis. It is true that the sentences in (58)-(60) entail the following sentences, respectively.

John ate kimchi.

John went to school.

John sang.
Thus, regarding truth-condition, there appears to be no problem with establishing -ess underlyingly, so far as the above examples are concerned. However, examine the following sentences.

(62) **Surface structure**
       John came back on his way to school.
    **Deep structure**

(63) **Surface structure**
       John met Mary in order to go to school.
    **Deep structure**

Needless to say, (62a) and (63a) do not entail (64), because the embedded clause event in (62a) and (63a) is not completed, whereas sentence (64) presupposes that the event is completed in the past.

(64) John-i hakkyo-ey ka-ss-ta.
    John went to school.

D. Yang (1981) also points out the semantic problem in the deletion analysis, proposing that a missing tense in embedded clauses should be treated as a base-generated zero
anaphora. Consider the following examples (which are taken from Yang).

(65) a. Chelswu-ka nolay-lul pwull-ess-ko,
   nom song-acc sing-past-and
   chwum-ul chwu-ess-ta.
   dance-acc dance-past-Dec

   Chelswu sang a song and he danced.

b. Chelswu-ka nolay-lul pwulu-ŋ-ko,
   nom song-acc sing-past-and
   chwum-ul chwu-ess-ta.
   dance-acc dance-past-Dec (Tense deletion from (65a))

   i) Chelswu sang a song (first) and (then) danced.

   ii) Chelswu sang a song and danced (at the same time).

Sentences (65a) and (65b) have the same D-structure and their cognitive meanings are considered to be the same according to the deletion analysis. However, there is a difference in meaning between the two, as pointed out by D. Yang (ibid.). In (65a), the actions of singing songs and dancing are considered independent and separate, while in (65b), the two actions have temporal dependency. In other words, (65b) is ambiguous between two meanings: one is a simultaneous time-relation, and the other is a sequential time-relation. Thus, the two events in (65b) have a cause-effect relation (or the first clause event provides a precondition for the other event). In contrast, in (65a), the first clause event has nothing to do with the second
clause event, hence there is no cause-result relationship (cf. Chapter 4.6).

In addition, it is difficult to implement the deletion rule in the inverted Y-model which is represented below.\(^{11}\)

\[
(i)
\]

\[
\text{D-Structure}
\]

\[
\text{S-Structure}
\]

\[
\text{Phonetic Forms} \quad \text{Logical Forms}
\]

S-structure is derived from D-structure (by NP- and wh-movement), LF is derived from S-structure (by Quantifier Raising and other construal rules), and PF is also derived from S-structure (by deletion, stylistics, and phonological rules). Within this system, the deletion phenomenon should not affect an interpretation. The tense deletion analysis follows grammatical principles rather than construal or stylistics rules. In the following, I will argue that (65a) and (65b) have different D-structures, S-structures, and LF's.

3.4.2 Base-generation

The problems raised with the deletion analysis can be solved by hypothesizing that null tense is base-generated under T(ense), which is in turn a member of INFL (at D-structure, S-structure, and PF). Coindexing at LF shows the coreferential relationship between the null tense category
and its antecedent. Thus, semantic interpretive rules instead of deletion take place at LF. For instance, in the base-generated null tense analysis, (65a) and (65b) would have different D-structures: (65b) has a null tense in the embedded clause, while (65a) has an overt -ess in the embedded clause. The base-generated null tense is coindexed with the matrix tense, as represented below.

(65b) [Chelswu-ka nolay-lul pwulu-ʃi-ko] chwum-ul chwu-essi-ta.

i. Chelswu sang a song and then danced.

ii. Chelswu sang and danced (at the same time).

The null form tense above denotes the same past relation as the matrix tense. Because of the coindexing, which is required by the suffix -ko, the disjoint reference for the null tense is not allowed in the above. That is, the null tense cannot be taken as deictic (i.e. nonpast). The ambiguity between (65bi) and (65bii) is due to the ambiguity in the -ko clause which can mark either coordination or subordination. As we will show in great detail in Chapter Four, the subordinate -ko does not allow -ess in an embedded clause. Thus, by employing an indexing mechanism, the base-generation analysis can explain the anaphoric or deictic interpretation of the null tense.

As for the problem of semantic interpretations that has been raised with regard to the deletion hypothesis in (62) and (63), it is assumed under the base-generation hypothesis
that coreference in tense does not entail the identical event times but only the same relation to speech time, past or nonpast.

At this point, one may ask how we can determine whether the index of a given embedded tense is i or j, or both. In 3.2, an indexing principle was proposed for the present study, which is repeated below.

(30) a. Index tense freely.
   b. When two tenses are coindexed, they have the same value for the [±past] feature.

(30) indicates that any embedded tense may be indexed as either i or j. Here, i indicates anaphoric tense whose interpretation depends on the matrix tense, whereas j indicates deictic tense whose interpretation is contextually determined. If there is no constraining element, such as a temporal conjunctive suffix, a time adverbial or other indexical, or discoursal or pragmatic information, the tense of the embedded clause is taken to be deictic or anaphoric. Thus, for example, observe the following sentences.

    nom go-past-because also go-past-Dec
    i. John went, so Mary did too.
    ii. John is going, so Mary went.

    John had gone, so Mary went.
The two interpretations of (68a) and the single reading of (68b) are represented as follows.

(69) a. i. John-i ka-∅₁-nikka Mary-to ka-ss₁-ta.
    (Anaphoric)
    (Deictic)

    (Anaphoric)

Notice in (69b) that the embedded -ess functions as perfective aspect, and the null form tense is coindexed with the matrix tense because the first clause event is completed before the second clause event. Thus, the representation of (69b) correctly predicts the given past perfective reading. That is, the first clause -ess has a perfective meaning, in that John's going has to be completed prior to Mary's going.

To summarize this chapter, I have proposed the following. First of all, the overt past tense suffix -ess is an R-expression in the same way that names such as John are. Second, the null tense form is a pronominal in the same way as he, she, or it is. Third, coindexing and Binding Principle C are essential in explicating the interpretation of the null tense in a principled way. Fourth, the distinction between deictic and anaphoric tenses is of paramount significance. Thus, for example, matrix tenses are (except for the -∅ tense before the retrospective mood) always deictic; and the embedded null tense can be
both anaphoric and deictic. The choice between anaphoric and deictic interpretations is sometimes due to the semantic properties of the complementizers. Fifth, base-generation of the null tense is preferred to the deletion analysis.
Notes to Chapter 3

1. Pro falls under the classification of [+pronominal,
   -anaphor] among the four types of Empty Categories (Chomsky
   1986), which are shown below.

   (i) a. NP trace [+anaphoric -pronominal]
       b. PRO [+anaphoric +pronominal]
       c. pro [-anaphoric +pronominal]
       d. variable [-anaphoric -pronominal]

   D. Yang (1982) claims that there is no need to posit a
   separate PRO in Korean, thus proposing a single category
   pro.

2. As for the grammatical identity of empty pronouns, Huang
   (1984) claims that there is a subject-object asymmetry with
   respect to the unidentified empty pronouns. That is, while
   the missing object is a variable bound by a null topic, the
   missing subject is a true empty pronominal. Arguments
   against this claim are made in Whitman (1986).

3. The term 'anaphoric tense' is discussed in Manzini &
   Wexler (1981), but not in the same sense as in the present
   study.

4. For example, in a historical present or before the
   retrospective suffix -te (as discussed in Chapter 2), -∅ can
   be taken as past.

5. I argued in S. Shin (1986) that there is an anaphoric
   binding between the omitted and the overt tense in a matrix
   clause whereby the null tense is coindexed and c-commanded
   by a higher clause tense. This claim is revised in this
   thesis to clarify that tense is a pronominal which has two
   interpretations, deictic and anaphoric.

6. Enc's (1987) recent research shows a new approach to the
   theory of tense in embedded clauses. Tense in her analysis
   is treated as referential expressions denoting intervals
   (whereas in the present analysis, tense names a relation
   rather than intervals). She further claims that the
   semantic interpretation of temporal expressions is subject
   to syntactic constraints.

7. In Stowell's framework (1981), tense is the head of S.
8. Fukui (1987) argues that Japanese, which is very similar to Korean structurally, lacks Specifiers.

9. For instance, the so-called multiple nominative constructions like the following are exceptions.

(i) John-i yangmal-i kwumeng-i na-ss-ta.
    nom socks-nom hole-nom exist-perf-Dec

As for John, his socks have holes in them.

10. I will propose two types of -ko clauses, subordinating and coordinating, in Chapter 4.

11. Sag (1976), who treats VP Ellipsis in English as a genuine deletion rule, seems to face the same problem because his assumption on deletion is inconsistent with the inverted Y model of Chomsky.
Chapter 4
Temporality in Conjunctive Sentences

4.1 Overview

This chapter will discuss some salient syntactic phenomena existing in conjunctive sentences, with particular reference to the behavior of the overt form -ess and the null tense form -∅. As has been observed, typical conjunctive sentences in Korean are formed from two or more clauses by means of various conjunctive suffixes that fill the last inflectional slot (i.e., the complementizer position) of the predicate of each embedded (or conjunctive) clause. The last clause in a conjunctive construction is always the main (or matrix) clause, whose complementizer position is filled with a sentence type ender such as the declarative, interrogative, imperative, or propositive. Each sentence type ender consists of one of the six speech-levels which is conflated with the sentence type in question. These sentence enders do not occur in embedded clauses, except in clauses ending in the conjunctive particle -man(un) 'but'. Thus, compare the two sentences below.

(1) a. [Ce-nun ca-ss-una] phikonha-p-ni-ta.
   I-top sleep-past-but tired-AH-ind-Dec
   Although I slept, I feel tired.

   b. [Ce-nun ca-ss-up-ni-ta -manun] phikonha-p-ni-ta.
   I-top sleep-past-AH-ind-Dec but tired-AH-ind-Dec
   Although I slept, I feel tired.
Notice in (1a) that the embedded clause does not have the sentence-type ender, -(u)p-ni-ta in this case, whereas (1b) must have one, because the conjunctive particle -man(un) occurs. Since the -man(un) clauses behave the same way as other non-temporal clauses, such as those with -una 'but', the rest of this chapter will be concerned mainly with the regular type where a conjunctive suffix (not the particle) occurs, as illustrated in (1a).

There are various types and subtypes of conjunctive constructions that are sensitive to different temporal interpretations. In 4.2, I will propose four sets of syntactic features to differentiate different types and subtypes of temporal conjunctive constructions. These sets of features are as follows, some of which are hierarchical (see (11)): temporal vs. non-temporal, anaphoric vs. deictic, and perfective vs. non-perfective. The temporal category is divided into three subtypes: before, after, and, overlapping. While the before type is divided into perfective vs. non-perfective, the other two types are non-perfective. Based on this typological classification, I will subsequently discuss the constructions in which the first clause event precedes the second clause event (4.3), the constructions where the two events occur overlappingly or simultaneously (4.4), and the constructions where the first clause event follows the second clause event (4.5). In 4.6, I will deal with conjunctive clauses that are non-temporal. The discussion will include those suffixes which
are ambivalent (thus homophonous) between temporal and non-temporal. Throughout this chapter, I will examine different constructions in the light of the proposals presented in Chapter Three. The following two claims which were discussed in Chapter Three will be further applied to other conjunctive constructions.

(i) The null form tense is a pronominal.
(ii) The overt tense -ess is an R-expression subject to Principle C.

4.2 Syntactic subcategorization

Conjunctive suffixes may be subcategorized in terms of temporality, anaphoricity, and perfectivity. Let us first consider the temporality classification. (See Longacre 1985:243-244 for further discussion of temporality.)

4.2.1 Temporal vs. non-temporal

In 2.4, I have proposed to distinguish between [+temporal] and [-temporal] conjunctive suffixes, depending upon whether a suffix has a relational value of temporal ordering (sequential or overlapping) or not. Compare the two sentences below, and notice that (2a) is temporal, whereas (2b) is not.

    school-to go-past-and nom acc meet-past-Dec

    John went to school and then met Mary.
   top school-to go-past-but nom absent-past-Dec

   John went to school, but Mary was not there.

First of all, semantically, (2a) requires that the two events denoted by the two clauses must occur in the order presented; whereas there is no inherent temporal ordering (sequential or overlapping) between the two events denoted by the clauses in (2b). Second, syntactically, the first clause in (2a) does not allow the occurrence of the overt tense suffix -ess, as has been stated earlier, which is not the case with (2b). In non-temporal conjunctives, choice of -ess and -∅ is free, depending on the speaker's temporal perception of the event with regard to the speech time. Thus, (3a) is ungrammatical, while (3b) is grammatical.

   John went to school and then met Mary.

   b. John-un hakkyo-ey ka-∅₁-na, Mary-nun cip-ey
      top school-to go-nonpast-but top home-at
      iss-∅₂-ta.
      stay-nonpast-Dec

   John is going to school, but Mary is staying home.

The ungrammaticality of (3a) follows from Condition C of the Binding Theory which is repeated as follows.

(iii) R-expressions must be free.

As for the S-structure of (3a), I am assuming that Infl is the head of S, and tense the head of INFL.
The two -ess's in (3a) are coindexed since both name the past relation. Because the embedded -ess is c-commanded and coindexed with the matrix -ess, (3a) is correctly ruled out (violation of Condition C). Only a null form tense is allowed in the embedded clause above.

On the other hand, the occurrence of the overt form -ess in (2b) does not violate Condition C since there is no c-command relation between two tenses, as shown below.
The two clauses in (2b) are analyzed as a coordinate construction. (The justification for this analysis will be discussed in 4.6.) The second clause -ess does not c-command the first clause -ess since the maximal projection is the [I"] node and this blocks the c-command. Thus, although both instances of -ess above have the same referent (that is, the past relation), there is no violation of Condition C.

A [+temporal] conjunctive suffix has either a before relation (e.g., -ese 'and then, and so', -taka 'and then, while doing', -kose 'and then'), or an after relation (e.g., -ulyeko 'in order to', -key 'so that', -tolok 'so that', -koca 'intending to'), or an overlapping relation (e.g., -umyense 'while', -nulako 'while doing') that exists between the first clause and the second clause. These are illustrated below.

**Before:** (2a)

**After:**

(6) Hakkyo-ey ka-ø,-lyeko, John-i Mary-lul manna-ss₁-ta.
    school-to go-in order to nom acc meet-past-Dec

    In order to go to school, John met Mary.

**Overlapping:**

(7) Hakkyo-ey ka-ø₁-myense, John-i Mary-lul manna-ss₁-ta.
    while

    While John was going to school, he met Mary.
In each of the sentences above, there are two actions involved, i.e., John's going to school and his meeting Mary. In (2a), the event of John's going to school must precede the event of meeting Mary, whereas in (6) the opposite is true. In both (2a) and (6), the two events have a sequential time relationship, while in (7), the two events are overlapping. The interpretations of such temporal relationships as sequential or overlapping between two events is due to the semantic properties of the conjunctive suffixes. In other words, the conjunctive suffix -ulyeko 'in order to' requires that the embedded clause event take place after the matrix clause event. In the case of -esse 'and then', the opposite relationship holds. The suffix -umyense 'while doing' requires the embedded clause event to overlap with the matrix clause event.

As shown in (3a), all the [+temporal] conjunctive suffixes require that, when both the embedded and matrix clauses refer to events taking place sequentially or simultaneously in the past, the overt past tense form -esse never occur in the embedded clause, (following from Condition C). This is further illustrated by the following ungrammatical sentences with the past -esse in the embedded clauses.

(6)' *Hakkyo-ey ka-ss₁ -ulyeko, John-i Mary-lul manna-ss₁ -ta.

In order to go to school, John met Mary.
While John was going to school, he met Mary.

4.2.2 Anaphoric vs. deictic

Another important set of syntactic features that is functional in distinguishing different conjunctive constructions in terms of temporality is the opposition between anaphoric and deictic, a concept crucial throughout this study. The two notions are repeated below.

(8)  a. Anaphoric tense is structurally determined.
    b. Deictic tense is contextually determined.

This distinction cuts across the temporal and non-temporal suffixes, although temporal suffixes are predominantly associated with the anaphoric interpretation and non-temporal suffixes are typically associated with the deictic one. To this extent, non-temporal conjunctive constructions are also relevant in discussing temporal interpretations in Korean. We will see in 4.5 that clauses with posteriority temporal suffixes like -ulysko 'in order to' are associated with both anaphoric and deictic interpretations of the null form tense. As for the anaphoricity of non-temporal constructions, compare the following sentences.

    top dance-past-and top sing-past-Dec

    John danced, and Mary sang.
   top dance-past-and  top sing-past-Dec

John danced, and Mary sang.

Notice that both sentences in (9) mean exactly the same thing, and also are non-temporal, in that no temporal ordering is presupposed between the first clause event and the second clause event in both sentences. Yet, the null form tense in the first clause in (9a) is to be interpreted anaphorically as past in coreference with the matrix past tense -ess, whereas -ess in the first clause in (9b) is not anaphoric. Only null form tense is considered as anaphoric. Although both instances of -ess in (9b) name the past relation, the interpretation of the two tenses is independent, and is not structurally determined as I will show in section 4.6.2. Parallel phenomena will be observed with some other non-temporal constructions in 4.6.

4.2.3 Perfective vs. non-perfective

A final relevant feature that is associated with temporal conjunctive clauses is perfectivity. That is, conjunctive suffixes may be divided into those which allow a perfective suffix and those which do not. All the non-temporal suffixes allow it, as well as the overt tense suffix, but most of the temporal suffixes do not allow an aspect suffix. The only exception among the temporal suffixes is the transferentive suffix -taka 'while', as will be elaborated in 4.3.2. Optional occurrence of the
perfective suffix in the transference construction causes us to regard the perfectivity feature as distinctive, or otherwise it would be implicationally predictable from the temporal/non-temporal distinction.

A close examination of the temporal suffixes reveals that the other suffixes with the anteriority feature incorporate the perfective feature as one of their inherent features, while the transference suffix -taka does not. Thus, I propose that anteriority suffixes like -esse 'and then', -kose 'and then', and -camaca 'as soon as' do not allow the perfective suffix to occur before them, because their inherent perfective feature makes the perfective suffix totally redundant. The inadmissibility of the past suffix -esse in these patterns is ruled out by Principle C of the Binding Theory, as we have already seen. Consider the following examples.

    nom school-to go-past-and come-past-Dec
    On the way to school, John came back.

b. [John-1 hakkyo-ey ka-Ø₁-se] nol-ass₁-ta.
    and play-past-Dec
    John went to school and played.

    as soon as play-past-Dec
    As soon as John went to school, he played.

Notice in (10) that none of the three sentences has a perfective suffix, but only the embedded clause of (10a) is
interpreted as non-perfective, whereas those in (10b) and (10c) denote perfectivity. In order to make the embedded clause event in (10a) perfective, we must use the perfective suffix -ess. Then, all the three sentences become parallel in terms of perfectivity.

In short, anteriority suffixes have a [+perfective] feature, except -taka which has a [-perfective] feature. One might naturally ask what happens with the simultaneity and posteriority suffixes, which should also have a [-perfective] in view of the nature of their temporal ordering. My answer is that although these suffixes have [-perfective] feature, they cannot have an overt aspect marker -ess, because they require the embedded clause event to occur overlappingly with or following the matrix clause event. That is, occurrence of the perfective suffix is semantically and pragmatically prohibited.

Needless to say, there are other syntactic features, such as equi-subject constraint, that are needed for an overall description of conjunctive sentences. I have, however, limited myself only to those which have direct bearing on temporal expressions.

Let me conclude what I have proposed in this and the two previous subsections as shown in the following scheme, with relevant examples.
4.3 Anteriority constructions

Temporal conjunctive sentences in which the first clause event must precede the second clause event are called anteriority constructions in this study, for convenience sake. As discussed in the previous section, these are divided into two sets: those whose first clause allows neither the overt past tense suffix nor the perfective suffix and those whose first clause allows the perfective suffix. The latter set has a single member, i.e. the transferentive construction. The former may be termed unmarked anteriority clauses for convenience sake.
4.3.1 Unmarked anteriority clauses

There are, in general, two subtypes involved in this type of construction. In one type, such as with -eso 'and then', -kose 'and then', and -teni 'after' the two events may be temporally gapped, whereas in the other type, such as with -camaca 'as soon as' and the temporal connective -n cuksi 'at the moment when', the two events must be consecutive without temporal gapping. Thus, in the former, two temporally sequential adverbials may be allowed, but in the latter only a single adverbial is accepted. Observe the following.


John came yesterday, and left today.

b. [John-i ecey o-∅₁-camaca] (*onul) ttena-ss₁-ta. nom yesterday come-past-upon today leave-past-Dec

As soon as John came yesterday, he left (*today).

When occurring with a verb that denotes both an action and its changed result, the suffix -kose (and its abbreviated form -ko) 'and then' becomes semantically ambiguous between the regular meaning of a single anterior event and the resultativeness of an anterior event. Observe the following examples (quoted from Lukoff 1982:366).


i. (He) put on his overcoat and left the house.

ii. (He) left the house wearing his overcoat.
b. [Cim-ul tul-Ø₁-kose] ku salam-ul ttalaka-ss₁-ta.
    bag-acc hold-Ø=and the person-acc follow-past-Dec

i. (I) picked up my baggage and followed him.

ii. (I) followed him, carrying my baggage.

The semantic ambiguity observed in the above examples may be attributed to the nature of the verbs involved. In any case, the ambiguity does not affect my proposal that the non-occurrence of the overt past tense form in all the unmarked anterior clauses is accounted for in terms of Binding Principle C. If the embedded clause has the overt tense suffix -ess which refers to the same time relation as the matrix tense (that is, past), they will bear the same index. However, because R-expressions must be free, such a sentence is rendered ungrammatical. Such a sentence is unacceptable in the same way as English sentences such as 'John₁ said that John₁ was tired' and 'My father₁ said that my father₁ was sick.' If the embedded clause has a null tense form, as has been seen in the above examples, the sentences become acceptable in the same way as the English sentences 'John₁ said that he₁ was tired' or 'My father₁ said that he₁ was sick' are acceptable.

As has been repeatedly stated, the null tense form -Ø has two values, past and non-past, (because -Ø is a pronominal, its reference can vary). However, the interpretation of -Ø can be constrained by the lexical meaning of the conjunctive suffix used. With all temporal suffixes, including the anterior ones, -Ø names a past or
nonpast relation coreferential with the matrix tense. Thus, anteriority constructions can be represented as in the following diagram.

\[
\begin{array}{c|c|c|c}
E1 & E2 & S \\
\hline
\hline
\text{\_\_\_\_\_\_\_\_\_}\text{\_\_\_\_\_\_\_\_\_}\text{\_\_\_\_\_\_\_\_\_}\text{\_\_\_\_\_\_\_\_\_}\text{\_\_\_\_\_\_\_\_\_}\text{\_\_\_\_\_\_\_\_\_}\text{\_\_\_\_\_\_\_\_\_}
\end{array}
\]

\[
\begin{array}{c|c|c|c}
\emptyset_1 & \text{ess}_1 & \text{\_\_\_\_\_\_\_\_\_}
\end{array}
\]

E1: first clause event
E2: second clause event

In short, in anteriority relations, a null form tense is always taken as anaphoric.

4.3.2 Transferentive clauses

Although the term 'transferentive' is used (a la Martin and Lee 1969) in this study simply for convenience sake, the suffix -\text{taka} (or its free variant -\text{ta}) have been variously called 'interruptive', 'transferentive', 'durative', or 'contiguous'. As these terms indicate, there are at least four different definitions regarding the semantic properties of -\text{taka}.

First, according to Choi (1965) and Lukoff (1945, 1982), -\text{taka} is called an 'interruptive form' which indicates an interruption of an action that has been switching to another action. Observe the following example.

\[
\begin{array}{l}
[\text{Akka-nun mwun-i o-\emptyset_1-taka}\text{ icye-nun pi-ka o-\emptyset_1-n-ta}.]
\end{array}
\]

\[
\begin{array}{l}
\text{while agwo-top snow-nom come now-top rain-nom come}
\end{array}
\]

It was snowing a while ago and it is raining now.
The interruptive sense appears rather clearly when a transferentive clause is contrasted with a non-transferentive anteriority clause. For instance, let us compare the -taka clause and -ko clause.

(16) a. Kongpwu-lul ha-Ø₁-ko ca-ss₁-ta.
    study-acc do 'and' sleep
    (I) went to bed after (finishing) my study.

a'. Kongpwu-lul ha-Ø₁-taka ca-ss₁-ta.
    (I) went to bed in the middle of studying.

b. Pap-ul mek-Ø₁-ko ttena-ss₁-ta.
    meal-acc eat 'and' leave
    (He) left after (finishing) the meal.

b'. Pap-ul mek-Ø₁-taka ttena-ss₁-ta.
    (He) left in the middle of eating.

Thus, it is claimed that the -ko clause marks a sequential time-relation between the two events, whereas the -taka clause signals an interruption of the first clause event.

Second, Martin and Lee (1969) call -taka a transferentive form which indicates a shift in action, either of the verb action itself or of its direction or of the recipient of its benefit. Martin and Lee state that the form -taka has the meaning, 'when so-and so- happens....'; this is followed by another action which interrupts or shifts the trend of the first, so that it is discontinued in favor of the second. On the other hand, when -taka is attached to -ess, the ending conveys the meaning 'when so-
and so- has happened...", and the following verb tells of something contradictory or unanticipated that happened right after the action of the first clause.

Third, Lukoff (1945, 1982), while accepting the term 'interruptive', maintains that -taka clauses focus attention on the durative aspect of an event. He further points out that -ess-taka indicates an event which has been completed or finished.

Fourth, while most previous descriptions of -taka focus on the interruptive or transferentive function, Song (1983) claims 'contiguity' as the core meaning of -taka. Song provides the following example.

(17) Mangseli-taka kapcaki ttena-ss-ta.
hesitate suddenly leave-past-Dec

(He) suddenly left after hesitating a while.

Song argues that a natural interpretation of (17) is that 'after a moment of hesitation, he left suddenly' rather than 'hesitation has been interrupted by a sudden departure'. Hence the notion of 'interruption' for -taka is not appropriate. Instead, he proposes 'contiguity' as the core meaning of -taka, claiming that such other meanings as conditional, concurrence, and interruptive are derived from this basic sense. By 'contiguity', Song means the perceptions of speakers who view two events to be contiguous, but not a continuity in a physical and temporal sense.1
At any rate, the conjunctive suffix -\textit{taka} is unique in many respects, differentiated from other conjunctive suffixes. First of all, as Song observes insightfully, the suffix -\textit{taka} has three senses, that is, interruption, concurrence, and condition, as illustrated in (18a), (18b), and (18c), respectively.

\begin{itemize}
  \item[(18)]
  \begin{enumerate}
    \item a. Kongpwu-lul ha-\textit{taka} TV-lul po-ass_{i}-ta.
        study-acc do acc watch
        I switched to watching TV in the middle of studying.
    \item b. Nolum-ul ha-\textit{taka} ton-ul ilh-ess_{i}-ta.
        gambling do money lose
        He lost money while he was gambling.
    \item c. Khal-ul kaciko cangnan ha-\textit{taka-nun tachi-\textit{taka}-n-ta}.
        knife with play do top get hurt
        If you play with a knife, you will get hurt.
  \end{enumerate}
\end{itemize}

Secondly, while the other anteriority suffixes do not have an equi-subject constraint, -\textit{taka} clauses generally do. This fact is illustrated below.

\begin{itemize}
  \item[(19)]
  \begin{enumerate}
    \item a. John-i ka-\textit{taka} Mary-lul manna-ss_{i}-ta.
        nom go-past acc meet-past-Dec
        On the way, John met Mary.
    \item b. *John-i ka-\textit{taka} Mary-ka ku-lul manna-ss_{i}-ta.
        nom go-past nom him-acc meet-past-Dec
        While John was going, Mary met him.
  \end{enumerate}
\end{itemize}

Thirdly, as already indicated, the most important characteristic of -\textit{taka} clauses in the present study is that -\textit{taka} clauses show a very distinct feature with regard to temporality. While all other conjunctive suffixes belonging
to the [+temporal] type allow only the null tense in the embedded clause, the -taka clause allows the occurrence of the overt form -ess in the embedded clause. Let us consider what the significance of this is. Observe the following examples.

(20) a. John-un cip-ey ka-∅₁-taka o-∅₁-n-ta.

top home-to go ¹ come

John is coming back on his way home.


John is coming back after he has been home.


John was going home, but (on his way) he came back. (i.e. John has not gone home.)


John came back after he had been home.

The presence of -ess in the embedded clause in (20b) and (20d) plays a key role in the interpretation of a completed action. That is, where embedded clauses lack the overt form -ess, the action is interpreted as being not completed, as shown in (20a) and (20c). Thus, the occurrence of the embedded clause -ess specifies perfectivity. This is confirmed by the fact that the embedded -ess is incompatible with a matrix clause whose meaning does not semantically allow a completed embedded clause event. However, it is compatible with a matrix clause which allows a completed embedded clause event, as illustrated in the following: ²
(21) a. Kongpwu-lul ha-∅₁-taka kohyang sayngkak-i na-ss₁-ta.
study-acc do hometown thought-nom arise

While I was studying, a thought of my hometown arose.

*b. Kongpwu-lul hay-ss₁-taka kohyang sayngkak-i
na-ss₁-ta.

Because he had studied, he destroyed himself.

In the following, I will argue that while the matrix -ess denotes the past relation, the embedded -ess denotes perfective aspect. First of all, a piece of evidence for this claim is observed in the fact that -ess in -taka clauses can occur with a future time adverb. Consider the following:

(22) John-i nayil cip-ey ka-ss-taka molay o-n-ta.

John will have been home tomorrow, and will come back the day after tomorrow.

If -ess in the embedded clause above refers to the past relation, rather than perfective, we will not have a simple way to account for the occurrence of -ess with the future time adverb nayil 'tomorrow'.

Second, as I discussed in 2.2.1, -ess can function as a pure perfective aspect marker, as the following examples (repeated here for convenience sake) indicate.

(23) a. Icay cip-ey ta o-ass-ta.

We are almost at home now.
b. Ne-nun nayil honna-ss-ta.
You will be in trouble tomorrow.

Next year, when I go to Seoul, I will meet Kim.

Third, as I indicated in 4.2.3, -taka is the only anteriority temporal suffix that has the [-perfective] feature. This lack of inherent perfectiveness triggers the suffix -ess when perfectiveness is called for. Interpretation of -ess as past tense would fail to capture this fact.

Fourth, as I also briefly touched on in 2.2.1, -taka occurs only with those verbs which denote a completable action. If -ess were a past marker, there would be no reason why such a cooccurrence restriction should hold. Examine the following sentences.

   John went to school and then came back.

   John played at school, and then came back.

Now, let us turn to my proposed syntactic explication of the phenomena. Consider the following sentences again.

John was going home, but (on his way) he came back.

    nom home-to go-perf-past-and come-past-Dec

John went home and then came back.

I have proposed that the null tense form (i.e. -∅) in the above examples bears the same index as the matrix tense, i.e., past tense. More specifically, in (25a), the embedded verb is not followed by the overt past tense suffix -ess despite the pastness of the event, while in (25b), the embedded verb is followed by the perfective suffix -ess but not by the tense suffix -ess, again despite the pastness of the event. This omissibility indicates that the matrix tense functions as the antecedent of the omitted tense of the embedded clause. Since the embedded clause event must precede the matrix clause event in the [+anaphoric] -taka, the null tense in the embedded clause has the same value as the matrix tense (that is, anaphoric). As I have emphasized repeatedly, non-occurrence of the overt past form -ess can be accounted for in light of Binding Principle C.

Furthermore, notice in sentence (25a) that the time of John's going home and the time of his coming back both occur sequentially in the past, without any temporal gap between the two events. In sentence (25b), on the other hand, the time of John's going home not only precedes the time of his coming back but also the first event is definitely perfected before the second event takes place. Thus, we can say (26a), but not (26b).
    morning-in home-to go afternoon-in return

    I had gone home in the morning and returned in the afternoon.


(26a) and (26b) clearly indicate that the overt form -ess in the embedded clause is not the same -ess that appears in the matrix clause and cannot be coindexed with it. As I stated just above, the embedded -ess is a perfective aspect marker. There is a null tense form following the perfective, and this null tense is coindexed with the matrix past -ess, as shown below.

(26)' Achim-ey cip-ey ka-ss-∅₁-taka, ohwu-ey tola-o-ass₁-ta.
    (= (26a))

Therefore, the claim that -∅ in anteriority constructions is always taken to be anaphoric still holds. Because the null form -∅ above receives its interpretation from the antecedent, which is the matrix tense, the two tenses are coindexed.

Four types of [+anaphoric] transferentive construction may be recognized depending on whether the aspect or tense suffix -ess occurs in embedded or matrix clauses.
The tree structures associated with the temporal pattern of the above four types are illustrated below. Let us first observe Type I where the embedded clause does not have \(-ess\) while the matrix clause does.

nom home-to go-and come-past-Dec

John was going home, (but on his way) he came-back.

b. 

As discussed in Chapter Three, INFL contains various inflectional categories such as aspect and tense. Tense is the head of INFL and can bear an index. When there is a
null tense form under the INFL of the embedded clause as in (28b), the null form tense receives its interpretation from the matrix tense. Since the two tenses name the same temporal relation (that is, past), they bear the same index.

Next, consider Type II where -ess does not show up in the embedded clause while the perfective -ess may occur in the matrix clause. Although (29a) has the same form as (28a) in Phonological Form (PF), notice that their S-structures and their meanings are not the same. (29a) is intended to mean a present perfective. In Type I, -ess functions as tense, while in Type II it is aspect.


John has just come back from his way home.

b. 

\[
\begin{align*}
\text{NP} & \quad \text{I''} & \quad \text{C''} & \quad \text{I'} & \quad \text{C'} & \quad \text{VP} & \quad \text{I} \\
\text{NP} & \quad \text{I'} & \quad \text{C} & \quad \text{V} & \quad \text{Asp} & \quad \text{T_i} \\
\text{PP} & \quad \text{V} & \quad \text{T_i} \\
\text{John-i [pro cip-ey ka -ŋi -taka]} & \quad \text{o -ass -ŋi -ta} \\
\end{align*}
\]

Notice that the embedded tense is interpreted as nonpast. We must ascribe the pragmatic pastness to the
nature of the suffix -taka which requires an embedded clause event to precede the matrix clause event. If the latter event takes place or is perfected at the speech time, therefore, -taka forces us to interpret the former event as taking place pragmatically in the past. The interpretation of the pastness associated with the null form tense in the -taka clause is somewhat similar to that of the null form before the retrospective suffix -te.

My analysis states that the higher -ess under Aspect cannot be coindexed with the lower clause tense -∅, because tense is the head of INFL and hence only tense can bear an index.

Next, consider Type III, in which the perfective -ess appears in the embedded clause, but the past -ess does not occur in the matrix clause. Consider the following example.

    nom home-to go-perf-nonpast-and come
    John has gone home and is coming back.

b. 

John-i [pro cip-ey ka-ss ∅ -taka] o-∅ -n -ta
The matrix tense indicates non-past and is co-indexed with the lower clause tense. What this entails is that the lower tense is understood as referring to the same temporal relation as the matrix one, i.e. non-past. But the lower aspect cannot be understood as being the same as the matrix aspect, which is empty.

Next consider Type IV where the embedded clause has the perfective -ess and the matrix clause has the past tense -ess.

   nom home-to go-perf-past-and come-past-Dec

   John went home and came back

   b. 

   In (31b), the matrix -ess c-commands the lower clause -ess, but a binding relationship is not possible between the tense and aspectual categories. Only tense categories bear an index. On the other hand, the lower null tense is coindexed with the higher -ess. The lower clause -ess
cannot occur under Tense. Suppose that in (31b) the embedded clause has an overt form -ess under Tense, not under Aspect. Then the lower tense -ess would be bound by the higher INFL. This is a violation of Principle C. Besides, the meaning of (31b) indicates that the embedded clause event is completed before the matrix clause event (that is, perfective aspect), and hence it is interpreted as past perfective.

Violation of Condition C would give rise to ungrammaticality. Note the following ungrammatical sentences.


(32a) has the sequence of -ess-ess in the embedded clause: the first -ess is aspect, and the second one is a past tense marker. The second -ess in the embedded clause is bound by the higher INFL. Because the embedded -ess is an R-expression, it must be free (i.e., following Condition C). In (32b), when the matrix clause -ess is under Tense, i.e. past, the embedded clause -ess is bound by the higher INFL. So the ungrammatical sentence (32b) is correctly blocked, since it violates Condition C. Note that there is another possibility for the position of the matrix clause -ess in (32b). That is, if the matrix clause -ess is under Aspect, i.e. perfective, there is no binding relationship between the embedded and the higher clause -ess, since the
matrix tense is not coindexed with the embedded clause -ess. Thus, (32b) would be predicted to be acceptable. In fact, there is disagreement among people about the acceptability of (32b). To some people, (32b) is marginal or judged to be better than (32a) in terms of acceptability. In contrast to the sentences in (32), the following sentences are acceptable.

    John had gone home and had come back.

    John was going home, but on the way he had just come back.

In the sentences above, the matrix verb has the meaning of past perfective. In (33a) the embedded -ess is not bound by the higher INFL because the former is aspect but not tense. On the other hand, in (33b) the lower  is bound by the higher INFL. Note that in (33b) the embedded null tense is coindexed with the second -ess of the matrix verb, namely by past tense. This explains why (33b) has the meaning that John has not gone home (i.e., lack of perfective). Since the lower aspect does not bear coindexing with the first -ess of the matrix verb, the former cannot be interpreted as the same perfective aspect as the matrix one. The following trees illustrate these facts. (33a)' and (33b)' are the S-structures of (33a) and (33b), respectively.
The reason why the matrix verbs allow the cluster of -ess-ess as in (33a)-(33b), while the subordinate verbs do not allow it as in (32), is explained by the claim that -ess is an R-expression subject to Principle C.
4.4 Overlapping constructions

Compared with transferentive clauses, overlapping constructions are rather straightforward. They permit neither the perfective suffix nor the overt past tense suffix in the first clause, and the suffixes involved are always anaphoric. In the overlapping time relation, the intersection of the intervals of the two events is specified by such suffixes as -umyense (1) 'while (doing), at the same time as' and -nulako 'while (doing)'. The suffix -umyense is a homophonous entity with two meanings, one 'while' and the other 'although'. When used in the former meaning (i.e., -umyense (1)), it is temporal and always anaphoric. When it is used in the latter meaning (i.e., -umyense (2)), it is non-temporal and deictic or anaphoric. I consider the suffix -nulako to be always temporal, despite the fact that in certain pragmatic situations it behaves as if it were non-temporal, as will be discussed shortly. First, observe the following example with -umyense.

    school-to go-past-while nom acc  
    meet-past-Dec  
    While going to school, John met Mary.

* b. Hakkyo-ey ka-ss₁ -umyense,  
    John-i Mary-lul manna-ss₁-ta.  

In (34a), the null form -Ø in the embedded clause marks the same past tense as the matrix clause tense, and thus
functions as an anaphoric tense. Due to the sense of overlapping or simultaneity that \textit{-myense} has, two different time adverbs are not allowed, as shown below.

(35) *Ecey hakkyo-ey ka-∅₁-myense, onul John-i Mary-lul yesterday school-to go-past-while today nom acc
manna-ss₁-ta.
meet-past-Dec

While John went to school yesterday, he met Mary today. (John did not meet Mary until today.)

Thus, (34a) may be schematically represented as follows.

(36)

\begin{itemize}
  \item going to school
  \item meeting Mary
\end{itemize}

The tree structure representing (34a) may be drawn as follows.

(37) S-structure of (34a)

\begin{itemize}
  \item [Pro hakkyo-ey ka -∅₁-myense] John-i Mary-lul manna-ss₁-ta.
\end{itemize}
The null tense above is coindexed with the matrix tense. If there were an overt tense form -esse instead of -∅, it would violate Condition C, and hence would be ruled out as in (34b).

In general, -umyense constructions are subject to the equi-subject constraint between the embedded and matrix clauses. Rarely, however, there are cases where the two subjects are not identical, as shown below.

    day-nom brighten-past-while bird-nom cry-past-Dec
    As it dawned, birds chirped.

    nom song do-past-while kids-top run-past-Dec
    While John was singing, the children ran.

As for -nulako constructions, they show a similar pattern to [+temporal] -umyense 'while' clauses. First of all, overt tense -esse is not allowed in an embedded clause. Observe the following.

(39) a. Ecey kongpwuhay-∅/*ss-nulako, cam-ul mos ca-ss-i-ta.
    yesterday study-past-while sleep-acc not sleep
    While studying yesterday, I couldn't sleep.

    snow road-acc clean-past-while troubled-past-Dec
    While cleaning the snow road, I had a hard time.

Moreover, due to the overlapping or simultaneity sense, two different time adverbials are not permitted.
*(40) a. Onul kongpwuha-ŋ1-nulako, ecey cam-ul
today yesterday
mos ca-ss1-ta.
*While studying today, I couldn't sleep yesterday.

b. Ecey nwun-kil-ul chiwu-ŋ1-nulako, onul kosaynghay-
ss1-ta.
*While cleaning the snow road yesterday, I had a
hard time today.

Some previous analyses in the GB framework are
confronted with difficulties in dealing with overlapping or
simultaneity constructions, because the embedded clause in
these sentences is considered tenseless. In my analysis,
however, this does not pose any problem, because I assume
that a null tense category is present. By virtue of the
null tense category, INFL can assign the Nom Case in
embedded clauses, as exemplified in (38).

4.5 Posterity constructions

Posterity temporal constructions are those whose
embedded clause ends in such complementizer (conjunctive)
suffixes such as -ulyeko 'in order to', -ule 'to', -koca
'intending to', -key 'so that', and -tolok 'so that, in
order that', as well as such temporal connectives as -ki
wihaye 'for the purpose of'. By virtue of their inherent
futurity or prospectiveness feature, all of these embedded
clauses are subject to anaphoric or deictic tense
interpretation. Observe the following example and notice
that there may be two interpretations of the embedded clause tense, i.e., past and nonpast.

\[ (41) \text{Hakkyo-ey ka-} \theta_i-\text{lyeko, John-i Mary-lul manna-ss, -ta.} \]
\[ \text{school-to go-(non)past-to nom acc meet-past-Dec} \]

In order to go to school, John met Mary.

One potential controversy may arise from the treatment of such a set of suffixes that are assumed to allow both interpretations. That is, one may question whether the two interpretations (deictic and anaphoric) are not grammatically ambiguous but simply pragmatically vague. I will maintain that the former is the case on the following grounds. In sentence (41), the embedded clause event (i.e., John's going to school) must necessarily take place after the matrix clause event (i.e., John's meeting Mary), as in the diagram below:

\[ (42) \]
\[ \begin{array}{c}
E2 \quad E1 \quad S \\
\hline
\vdots \quad \vdots \quad \vdots \\
\end{array}
\]
\[ \begin{array}{c}
\text{meeting Mary} \\
\text{going to school}
\end{array} \]

However, the event of John's going to school can also occur after the speech time, as shown in the diagram below:

\[ (43) \]
\[ \begin{array}{c}
E2 \quad E1 \\
\hline
\vdots \quad \vdots \\
\end{array}
\]
\[ \begin{array}{c}
\text{meeting Mary}
\end{array} \]
Thus, the event of John's going to school (denoted by E1) can occur before S or after S. The former interpretation occurs where \(-\emptyset\) refers to the same past relation denoted by the matrix tense \(-\text{ees}\), with the temporal ordering between E2 and E1 being constrained by the semantic nature of the conjunctive suffix in question. The latter interpretation occurs where \(-\emptyset\) refers to a non-past relation, either present or future time. The two interpretations are represented below.

\begin{align*}
(44) & \quad \text{a. } \text{Hakkyo-ey } \text{ka-}\emptyset \text{ -lyeko, John-}i \text{ Mary-lul manna-}ss_i \text{-ta.} \\
& \quad \text{b. } \text{Hakkyo-ey } \text{ka-}\emptyset \text{ -lyeko, John-}i \text{ Mary-lul manna-}ss_j \text{-ta.}
\end{align*}

Now one may claim that the two interpretations in (44) are vague, because the embedded event time may refer to any time including future, as long as it is after the matrix event time. However, recall that the notion of tense in the present study is crucially distinguished from the notion of event time. That is, tense is a grammatical category which names a relation between the speech time and the event time, whereas event time is not a grammatical category. In this view, tense has only two values, past and nonpast. Contrast this with the more common view that tense categories refer to event times which bear a particular relation to the speech time. In this latter view, tense can have infinitely many values since there are indefinitely many event times. From the perspective I subscribe to, the null tense in (41)
can refer either to the past relation, as in the interpretation in (44a), or the nonpast relation, as in (44b). Therefore, they are not vague, but ambiguous. This claim is further born out by the following examples, where the ambiguity is disambiguated by means of temporal adverbials.

(45) Nayil hakkyo-ey ka-∅ -lyeko, kucey John-i Mary-lul tomorrow manna-ss₁-ta. meet-past-Dec
day before yesterday

In order to go to school tomorrow, John met Mary the day before yesterday.


In order to go to school yesterday, John met Mary the day before yesterday.

The sentences in (45)-(46) clearly indicate that deictic interpretation in (45) is justifiable in view of its nonpast relationship with regard to the speech time. Co-indexing of the zero form in (46) is justifiable in view of its coreference with the matrix tense and its past relationship with regard to the speech time.

The following tree is proposed for the two interpretations of (41).
As with pronominals, the null form tense above receives its interpretation from the antecedent (which is the matrix tense). In this case, the two tenses are coindexed. In addition, the null tense above can be taken to be deictic, in which case it names a nonpast relation.

4.6 Non-temporal constructions

Non-temporal conjunctive suffixes include, inter alia, -ko 'and', -kena 'or else', -una 'but', -ciman 'but', -eto 'but', -umyense 'even though', -unikka 'because', and the temporal connective -nun tey 'but, and'. Many of the non-temporal sentences (except -umyense 'although') are coordinative, and the first clause in them behaves like a matrix clause, so far as temporality is concerned. I propose tree (48a) for coordinate constructions, whereas (48b) is for subordinate constructions.
There are some suffixes which are [+anaphoric], such as -ko, -unikka, and -nun tey. Constructions where this type of suffix occurs show interesting syntactic and semantic characteristics by virtue of their ambivalent nature. The suffix -ko is different from the rest of the [+anaphoric] suffixes, in that it can be either temporal or non-temporal. Thus, -ko clauses involve not only the controversial syntactic contrast between subordination and coordination, but also anaphoric and deictic interpretations of the null tense.

I will proceed as follows. First, I will briefly examine the syntactic behavior of genuine non-temporal
conjunctive constructions in 4.6.1. This will provide a
basis for comparison with the behavior of the other types of
conjunctions to be discussed in the subsequent sections.
Second, I will devote much space to the tense pattern of -ko
clauses in 4.6.2, and show that the two meanings of the
suffix -ko are associated with their respectively different
syntactic structures. Moreover, I will propose a syntactic
mechanism in dealing with the unique phenomenon of -ess/-§
alternation in -ko clauses. Thirdly, in 4.6.3, I will touch
on some other non-temporal conjunctive suffixes which
manifest both deictic and anaphoric characteristics.

4.6.1 Deictic clauses

So far as temporal interpretation is concerned, most
non-temporal clauses except -umyense 'while' and -nikka
'because' clauses are all deictic. That is, non-temporal
suffixes such as -kena 'or else', -ciman 'but', -una 'but',
and -eto 'even if' behave as if they were simple sentences
or matrix clauses, with the speech time as the only deictic
center. Therefore, there is no restriction as to the
occurrence of the overt past tense form and the perfective
suffix. Observe the following sentences.

(49) a. John-i ka-σ-kena, Mary-ka ka-σ-n-ta.
    nom go-nonpast-or nom go-nonpast-ind-Dec
      Either John or Mary is going.

      Either John is going or Mary went.

Either John or Mary went.


Either John had gone, or Mary went.

It is noteworthy in (49a) that the null form tense in the first clause independently designates a non-past relation. In other words, the null form tense in the second clause, which also names the non-past relation, does not require an anaphoric interpretation of the first clause tense. I suggest the following:

(50) A deictic tense has disjoint reference (or has no indexing).

The reinterpretation of indexing tense as in (50) allows us the following indexing:

(49)' a. John-1 ka-∅₁₁/ₙ-kena, Mary-ka k-∅₁₁-n-ta.

Either John or Mary is going.

Sentence (49a)' does not allow an anaphoric null tense. By reinterpreting the mechanism of indexing the deictic tense, we can account for such sentences as John-un naimata hakkyo-ey ka-∅₁₁-ko, Mary-nun nayil ka-∅₁₁-n-ta 'John goes to school every day and Mary will go tomorrow'.

Notice that in (49b) above, the null form tense is not coindexed with the other tense category. Notice further in the above examples that there is no temporal cooccurrence restriction between the two clauses in each sentence. The
two clauses are totally independent of each other as far as these relative event tenses are concerned, as shown below.

    nom yesterday go-past-or day before yesterday go
    John went either yesterday or the day before yesterday.

    go-past-or
    John went either yesterday or the day before yesterday.

Notice that (51b) does not allow an anaphoric null tense, the occurrence of which renders the sentence ungrammatical. This indicates that genuine [-anaphoric] conjunctive clauses maintain maximal temporal independence, a fact which is not shared by even coordinatively used -ko clauses, as we will see in 4.6.2 below.

There are some homophonous suffixes that are both temporal and non-temporal. The suffix -ko, to be discussed in the following subsection, is one case, and -umyense is another. For example, the suffix -umyense is homophonic between a temporal -umyense [1] 'while', as we have already discussed in 4.4, and a non-temporal -umyense [2] 'although, despite the fact that'. While the former does not allow the occurrence of -ess in an embedded clause, the latter does, as shown in (52):

(52) a. John-i pap-ul mek-ess-ø₁-umyense, ttek-to mek-ess
    nom rice-acc eat although rice cake-also eat
    -ta.
i) Although John had eaten rice, he also ate rice cake.

ii) *While eating rice, John also ate rice cake.


i) While John was eating rice, he also ate rice cake.

ii) *Although John ate rice, he also ate rice cake.

Note that (52a) cannot be interpreted in the temporal meaning in the sense of (ii), whereas in (52b) only the temporal reading is allowed. Note further that the occurrence of -ess is not allowed with the temporal meaning of 'while' (i.e., a simultaneous action).

4.6.2 -ko clauses

It is well known that conjunctive clauses with -ko have two different semantic properties. As Lukoff (1982:104) points out, clauses with -ko are generally translatable into English as '...and'. However, there are two senses of '...and': (1) coordinating 'and', as in enumerating a series of actions, conditions, qualities, and so on, and (2) sequential 'and', where the action, condition, quality of the last clause is ordered in time after that of the clause with -ko. The two types of -ko in Lukoff's classification correspond respectively to [-temporal] and [+temporal] in my analysis. In this section, I suggest that the [+temporal] -ko (-ko [1]) is a subordinating suffix, whereas the [-temporal] one (-ko [2]) is a coordinating suffix. To support this proposal, I will present the semantic,
morphological, and syntactic properties that -ko clauses are assumed to have.

Incidentally, it is interesting to note that English 'and' shows a pattern similar to -ko. As Ross (1967:93) points out, there are instances of the morpheme 'and' which must be derived from sources different from the coordinate 'and'. For instance, there is a difference in relativizability between (53a) and (53b).

(53) a. I went to the store and bought some whisky.
   b. I went to the store and Mike bought some whisky.

(54) a. Here's the whisky which I went to the store and bought.
   b. *Here's the whisky which I went to the store and Mike bought.

Ross argues that there are clear syntactic indications that the relative clause in (54a) is not an instance of ordinary sentence conjunction. Among some supporting pieces of evidence which Ross provides, the following test is particularly noteworthy.

(55) a. I went to the store and have bought some excellent whisky.
   b. *The excellent whisky which I went to the store and have bought was very costly.

There are restrictions on the tenses that may appear in such sentences as (53a). (55a) parallels (53a) in everything but tense, but the NP the whisky is not relativizable, as (55b) shows. Furthermore, sentences like
(53a) are not subject to the Coordinate Structure Constraint, as Ross points out. Ross's Coordinate Structure Constraint provides a crucial test for distinguishing the two types of -ko clauses in Korean.

Let us observe some semantic evidence first. The -ko clauses may be classed into two tense-related groups: (a) Group A, in which the optional -ess in the first conjunct neither causes ungrammaticality nor changes the time-relation of the two events, and (b) Group B, in which the occurrence of -ess in the first conjunct causes ungrammaticality or changes the temporal ordering between two events. Let us consider Group A first.

    top play and top study-past-Dec
    John played and Mary studied.

(57) Mary-nun Sue-lul cilthwuhay-∅/ss-ko miwehay-ss-ta.
    top acc jealous and hate-past-Dec
    Mary was jealous of Sue and she hated her.

    sky-top high and wind-top cool-past-Dec
    The sky was high and the wind was cool.

    top novelist-cop and artist-be-past-Dec
    Chelswu was a novelist and artist.

Notice that in (56)-(59), -ess in the first conjunct can be omitted without changing the meaning. The two subjects in each sentence can be the same or different. The two events of each sentence have neither temporal ordering
nor conceptual dependency on each other. For instance, in (56) the event of John's playing and the event of Mary's studying are conceptually independent, in that the two events are symmetric and do not have any cause-effect relation. Nor does one event provide a precondition or specify the information about the other event. To be more precise, sentence (57)' can be analyzed as a simple combination of (57a)' and (57b)' as follows.

(57)' Mary-nun Sue-lul cilthwuha-ši-ko, miwehay-ssí-ta.  
     top          acc jealous-past-and hate-past-Dec

Mary was jealous of and hated Sue.

a. Mary-nun Sue-lul cilthwuhay-ss-ta.

Mary was jealous of Sue.

b. Mary-nun Sue-lul miwehay-ss-ta.

Mary hated Sue.

Note that (57)' does not have the overt -ess in the first conjunct. Yet the null tense in the first conjunct is interpreted as past, because (57)' is understood as a combination of two past events (a) and (b). We can switch the order of the two conjuncts without affecting the meaning, as in (57)":

(57)" Mary-nun Sue-lul miweha-š-ko, cilthwuhay-ss-ta.

Mary hated and was jealous of Sue.

The meaning of (57)" remains the same as (57) and (57)'. Thus, a null tense -š can appear as a free variant of -ess in the first conjunct of Group A. Furthermore, this
type of -ko does not impose any particular time ordering
between the two events, because, as we have observed above,
there is no cause-effect relation between the two events.
This stands in contrast with examples in Group B, where the
first conjunct must precede the second conjunct event, as
observed in the following examples.

    top brother-with fight and home-acc leave

    John fought with his brother and left home.

    top lunch-acc eat and sleep-past-Dec

    John ate lunch and took a nap.

    top rain-acc catch and play around

    Sue was caught by rain and played outside.

    top farming-acc make and live

    Sue lived by farming.

In (60)-(63), the temporal relation between the two
events denoted by each sentence is clear. For example, in
(60) the event of fighting with his brother must take place
before that of leaving home. Similarly in (61), eating
lunch happens before taking a nap. In other words, in Group
B, the event of the first conjunct must precede that of the
second conjunct. This is confirmed by the fact that
switching the two conjuncts can produce opposite time-
relations, as illustrated in (61) and (61)'.
(61) John-un cemsi mek-ŋ₁-ko, naccam ca-ss₁-ta.
     top lunch eat nap take-past-Dec
     John ate lunch and (then) took a nap.

(61)' John-un naccam ca-ŋ₁-ko, cemsi mek-ess₁-ta.
     John took a nap and (then) ate lunch.

Switching the two conjuncts in a sentence in Group B can also produce ungrammaticality due to semantic incongruity, as shown in (62)' and (63)'.

(62)' *Sue-nun tolatani-ŋ₁-ko pi-lul mac-ass₁-ta.
     top play around and rain-acc catch-past-Dec

(63)' *Sue-nun sal-ŋ₁-ko nongsa-lul ci-ess₁-ta.
     top live and farm-acc make-past-Dec

The differences in (61)', (62)', and (63)' show a contrast with examples in Group A where switching the two conjuncts does not cause ungrammaticality nor differences in temporal relations. Furthermore, the distribution of the first conjunct -ess in Group B is different from that in Group A, in that Group B does not allow -ess in the first conjunct. Interestingly, the occurrence of -ess in the first conjunct of sentences (60), (61), and (62) changes the tense interpretation of the clause, in such a way that the two events do not show a precedence relationship any more. The two events are considered separate and independent, a phenomenon that we found in Group A. Hence such sentences belong to Group A.

The interpretation of the null tense in the embedded clause also shows a different behavior. In Group A, the
interpretation of the null tense is either deictic or anaphoric. In Group B, on the other hand, the interpretation of the null tense is anaphoric, because the null tense is dependent upon the tense of the second conjunct. It should be mentioned here that there is a class of ambiguous sentences (henceforth Group C) which are ambiguous between Group A and B. Consider the following examples:

(64) John-i nolayha-Ø-ko chwum-ul chwu-ess-ta.
    nom sing-past-and dance-acc dance-past-Dec
    a. John sang a song and he danced.
    b. John sang a song first and then he danced.
    c. John sang a song and danced at the same time.

(65) Nwun-i nok-Ø-ko kkoch-i phi-ess-ta.
    snow-nom melt-past-and flowers-nom bloom-past-Dec
    a. Snow melted and flowers were in bloom.
    b. Snow melted and then flowers began to bloom.
    c. Snow melted and at the same time flowers began to bloom.

Note that the sentences in (64) and (65) each have three possible interpretations, a, b, and c. The interpretations in (a) show a pattern similar to Group A, that is, no temporal ordering between the two events. Yet the interpretations in (b) and (c) are similar to Group B, in that the two events are temporally related. Namely, they have precedence or simultaneous time-relations.

Also note that sentences (64) and (65) allow the occurrence of -ess in the first conjunct, as in (64)' and (65)'. This is similar to the phenomenon observed in Group A.
Interestingly, when -ess appears in the first conjunct, sentences (64)'-(65)' tend to be interpreted as (a), not as (b) or (c). In other words, with -ess in the first conjunct, the two events are considered to be unrelated and separate. This is exactly what we found in Group A.

Yet, sentences (64) and (65) are similar to Group B, in that the two events have temporal ordering under the (b) and (c) interpretations. Switching two conjuncts result in a meaning change in the (c) interpretation, as illustrated in (66) and (67).

John danced (first) and then sang a song.

Flowers were in bloom and then snow melted.

A test for disambiguating -ko in Group C is provided by morphological evidence, which is the topic of what immediately follows.

The suffix -ko in the Group A sentences cannot be replaced by the [+temporal] suffix -kose 'and then'. This holds true regardless of whether or not there is an overt -ess in the first conjunct. Thus, sentences in (56)-(59) become unacceptable with -kose, instead of -ko.
The lexical property of \(-\text{kose}\) requires the event of the embedded clause to take place before that of the matrix clause. Since the sentences in Group A do not imply any temporal relation between two events, substituting \(-\text{kose}\) in Group A causes ungrammaticality.

In contrast, the sentences belonging to Group B can cooccur with \(-\text{kose}\) naturally. As I mentioned earlier, \(-\text{ko}\) in Group B can be interpreted as simultaneous or sequential. Similarly, Group B sentences with \(-\text{kose}\) have two interpretations, that is, sequential relation, as in (60)', and (61)', and simultaneous relation, as in (62)' and (63)'.

(60)' John-un hyeng-kwa ssawu-\text{kose} cip-\text{ul} naka-\text{ss-\text{ta}}.

John fought with his brother and left home.

(61)' John-un cemsim-\text{ul} mek-\text{kose} ca-\text{ss-\text{ta}}.

John ate lunch and took a nap.

(62)' Sue-nun pi-\text{lul} mac-\text{kose} tolatani-\text{ess-\text{ta}}.

Sue was caught in the rain and played outside.

(63)' Sue-nun nongsa-\text{lul} cis-\text{kose} sai-\text{ass-\text{ta}}.

Sue lived by farming.

Similarly, in the sentences where \(-\text{ko}\) is ambiguous between sequentiality and simultaneity, \(-\text{kose}\) also shows the same ambiguity, as illustrated below.
It has been assumed by some Korean linguists (e.g., H. Kim 1977, Song 1976) that -ko in Group B is a form contracted from -kose, while -ko in Group A has nothing to do with -kose. Thus, I suggest that the ability of cooccurring with -kose is a crucial test for disambiguating the sentences in Group C. For instance, (64) and (65) can cooccur with -kose. So they are considered as Group B. In contrast, sentences (64)'-(65)' where -ess appears in the first conjunct cannot cooccur with -kose, and hence belong to Group A. The morphological evidence here provides an independently motivated mechanism for distinguishing the two types of -ko. This will justify setting up different underlying syntactic structures for the two -ko's, as we will see later.

Now, let us move on to syntactic evidence. So far the semantic and morphological evidence clearly predicts whether -ess is omissible and what its interpretation is. In the following, I will show that sentences in Group A have in fact a coordinate structure and those in Group B have a subordinate structure. I suggest that the different tense behavior of -ko clauses are due to their different syntactic structures. There are clear syntactic indications that
Group A and Group B have different structures. For example, as we have already observed, the fact that switching the order between the two clauses results in meaning change only in Group B is partly a syntactic test. Another test is provided by Ross's Coordinate Structure Constraint.

(69) **The Coordinate Structure Constraint**

In a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct. (Ross 1967:88-114)

Consider some Korean examples. The sentences in Group A are generally subject to the above constraint, although questioning an element in a conjunct is not bad.5

(70) John-un chayk-ul ilk-ʔ/ess-ko,
    top book-acc read and

Mary-nun naccam-ul ca-ss-ta.
    top nap-acc sleep

John read a book and Mary took a nap.

a. [Mwues-ul Mary-nun hay-ss-ko],
    what-acc top do and

John-un chayk-ul ilk-ess-nun-ka?
    top book-acc read Q

*What did Mary do and John read a book?

*b. *[Yeki-ey [John-i e ilk-ess-ko],
    here-loc nom read-past-and

    [Mary-ka naccam ca-n] chayk-i iss-ʔ-ta.
    nom nap took-rel book-nom be-nonpast-Dec

*Here is the book John read and Mary took a nap.

Note that in (70) the NP Mary-nun which is the element of the second conjunct may be questioned in Korean, as in
(70a), partly weakening Ross's Constraint for universal applicability. However, the element chayk 'book' in the first conjunct cannot be relativized, as shown in the ungrammaticality of (70b).

While the sentences in Group A are partly subject to the Coordinate Structure Constraint, the sentences in Group B do not show such a restriction at all.

    John fought with his brother and left home.

    With whom did John fight and leave home?

b. [John-i hyeng-kwa ssawu-§-kose] naka-n] ku cip-i
   nom brother-with fight-and leave the house
   pwultha-ss-ta; burn down

*The house in which John fought with his brother and then left was burned down.

There is a difference in relativizability between Group A and Group B, as exemplified in (70) and (71), respectively. Moreover, both English and Korean show the 'across-the-board rule application': Wh-movement can extract parallel wh-phrases out of conjuncts when all conjuncts of a coordinate structure are affected. For instance, compare the two sentences below (cf. Riemsdijk & Williams 1986:27):
(72) a. I wonder which books Mary hates and Sam likes.

b. [Mwusun chayk-ul Mary-ka silheha-Ø-ko, which book-acc nom dislike-and
Sam-i cohaha-Ø-nun-cj na-nun kwungkumha-Ø-ta. nom like comp I-top wonder

In short, semantic, morphological, and syntactic evidence shows that Group A has a coordinate structure and Group B has a subordinate structure.

In the following, I will dwell on the syntactic analysis of -ko clauses. The discussion so far has argued that there are two types of -ko clauses, [+temporal] -ko and [-temporal] -ko; that [+temporal] -ko occurs in a subordinate clause and [-temporal] in a coordinate clause; and that the different behavior of tense in the two clause types is as follows.

(73) position
types of -ko

<table>
<thead>
<tr>
<th></th>
<th>1st clause</th>
<th>2nd clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. subordinate -ko</td>
<td>*-ess/-Ø</td>
<td>-ess or -Ø</td>
</tr>
<tr>
<td>b. coordinate -ko</td>
<td>-ess/-Ø</td>
<td>-ess or -Ø</td>
</tr>
</tbody>
</table>

The subordinate -ko allows only the null form -Ø, whereas the coordinate -ko allows -ess and -Ø as free variants in embedded clauses. Semantic and morphological arguments have shown whether -ess is omissible (depending on its syntactic structure). However, they do not provide an explanation for the unacceptability of -ess in a subordinate clause. In the following, I will show that the
The unacceptability of -ess in a subordinate clause is in fact predicted by Condition C of the Binding Theory. A GB analysis of the pattern in (73) is as follows.

(74) a. A null tense is a pronominal.
   b. An overt past tense -ess is always free (i.e. not bound). (Principle C)

I will consider, first of all, the parallel between the overt past tense form -ess and an R-expression. As we have already observed, while a subordinate -ko clause does not permit -ess at all, a coordinate -ko clause allows it in the embedded clause. Let us consider the former first, using the X-bar schema. Observe the following ungrammatical sentence with -ess in the embedded clause, and its tree structure.

   top rain-acc catch play around

   b. S-structure

```
  C''
   /    \                        
  I'' (=S) C'                  /  \        
    /    \                     /   \       
   NP C''                      C'    I'     
      /    \                  /     \      
     C' I''                  VP I
        /    \                /  \   \   
       NP I'               Ti 
          / \            /    \   
         VP V         I Ti
            /  \  \  \  \  \  \ 
           NP V Ti
                
*Sue-nun [pro pi-lul1 mac-ass-ko] tolatani-ess -ta
```
In (75b), the embedded clause -ess is bound by the tense in the matrix clause, because the latter c-commands and is coindexed with the lower -ess. This violates Condition C, and hence gives rise to the ungrammaticality of the sentence. As we have already observed, when there is a null tense instead of -ess in the embedded clause of (75), the sentence becomes grammatical. The ungrammaticality of (75) can be explained by Binding Principle C: R-expressions must be free. The question that arises here is why -ess is allowed in a coordinate -ko clause. Is this a violation of Principle C? My answer is no. Observe the following:

    sky-top high-past-and wind-top cool-past-Dec
    The sky was high and the wind was cool.

b. S-structure

Compared with the structure for a subordinate clause, as postulated in (75b), (76b) shows some important differences.
Above all, (76b) is a coordinate sentence in which two C"(=S') are conjoined, while (75b) is a subordinate construction. The reasons for not representing (76b) in the same way as (75b) are many-fold. For one thing, as discussed with regard to semantic evidence, a coordinate -ko clause is semantically different from a subordinate -ko clause, in that the former is conceptually independent of the matrix clause, which is not the case with the latter. Morphologically also, we have seen that -ko is replaceable freely with the [+temporal] suffix -kose 'and then', when it marks a subordinate clause, but not when it marks a coordinate clause. Also, syntactic evidence indicates the independence of the first conjunct from the second. All this contributes to the postulation of the coordinate -ko as an entity which signals two equal and independent clauses.

The X-bar theory does not provide any clear structure that can be associated with conjunctions. For example, it is unclear what the head of a coordinate structure is. There are several possible positions for -ko in (76b) (e.g., Cho & Morgan 1987). For example, one possible position may be that which is connected to I', and another may be connected to I" in the form of a complementizer. I simply assume here that the latter position is the case, as shown below.
Now returning to (76b), note that a c-command relation between the two tenses is not possible. The maximal projection of the second conjunct -ess is the first clause I" which is represented as S. Thus it blocks c-command of the first conjunct tense, though coindexing is still allowed. In other words, -ess in the first conjunct is free, i.e. not bound. This pattern is parallel to R-expressions: R-expressions (such as a lexical NP) must be free in all domains. Observe the following (quoted from Riemsdijk & Williams 1986:200).

(78) [s John arrived late]s and [s the bastard had the nerve to criticize Mary]s.

In the above, John can be coreferential with the epithet the bastard in (78). But John does not c-command the bastard. When the c-command relation does hold between an NP and an epithet, it yields an ungrammatical sentence:

(79) *John thinks that the bastard will win.

The tense phenomenon in connection with -ess shows a parallel pattern. For instance, in (76b) the c-command
relation does not hold between tense in the first conjunct and second conjunct tense (although coindexing is permitted). When the c-command relation holds between the two tenses, the sentence will be rendered ungrammatical, as we already observed in the case of the subordinate -ko. On the basis of this observation, the following claim is further confirmed:

(80) The overt past -ess must be free. (Principle C)

The advantage of (80) is that it explains the parallel between the two phenomena, which at first glance look totally unrelated. Furthermore, (80) explains the contrast between the unacceptability of -ess in a subordinate clause and the acceptability of -ess in a coordinate clause. That is, the unacceptability is due to the fact that -ess fails to be free, since it is c-commanded and coindexed with the tense in the matrix clause. In contrast, -ess in a coordinate clause does not violate condition (80) and is grammatical, as in (76b).

Thus far, I have argued that the overt form -ess is an R-expression, following from Principle C. Next, let us consider the null form -∅. The S-structure for sentences in Group E would be as follows:

(81) a. Sue-nun pi-lul mac-∅₁-ko/*ass-ko tolatani-ess₁-ta.
   Sue was caught in the rain and played outside.
The INFL in the matrix clause in (81b) c-commands the INFL in the lower clause and is coindexed. Notice here that the disjoint reference is not allowed:

(81)' Sue-nun [pro pi-lul mac-$g$-ko] tolatani-ess$_i$-ta.

Since the [+temporal] conjunctive suffix -ko (and its putative variant -kose) requires the embedded clause event to take place before or sometimes at the same time as the matrix clause event, only the anaphoric interpretation is allowed. In other words, the embedded null tense refers to the same past relation as the matrix tense. This prediction is confirmed by the following ungrammatical example.

(82) *Sue-nun ecey pi-lul mac-$g$-ko, onul tolatani-ess-ta. top yesterday rain-acc catch today play around
Sue was caught in the rain yesterday and played outside today.

The time adverbs ecey 'yesterday' and onul 'today' cannot occur with [+temporal] -ko clauses within the same sentence.7

We have seen so far two types of parallels: one between a pronominal and a null tense, and the other between an R-expression and -ess. Let us consider how the null tense in a subordinate and the null tense in a coordinate clause are related. Recall that a coordinate -ko clause also allows the null tense -∅ as a free variant of the overt -ess. Consider the following sentence again.


The sky was high and the wind was cool.

b. S-structure

In (83b), the c-command relation does not hold between -∅ and -ess. The first maximal projection of -ess in the second conjunct is the bracket [I"]. This blocks c-command of the null tense, and hence binding is not allowed.
Nevertheless, the interpretation of the null tense in (83) is past, which is coreferential with the second conjunct tense. Recall that sentences in Group A (i.e., coordinate clauses) do not have a temporal ordering or a cause-effect relationship between the two events. The two events are considered conceptually independent and separate. Yet, the interpretation of the null tense is dependent upon the matrix tense. That is, the coordinate -ko can be either deictic or anaphoric, hence, like all other pronominals, the null tense in such cases is interpreted as deictic or anaphoric, which is respectively illustrated below.

   
   ka-ss₁-ta.
go-past-Dec

   Sue went to school yesterday, and John today.

b. Sue-nun nayil hakkyo-ey ka-∅₁-ko, John-un top tomorrow school-to go-nonpast-and, top
   
   ecey ka-ss₁-ta.
yesterday go-past-Dec

   Sue goes to school tomorrow and John went yesterday.

In (84a), the null tense of the first conjunct is interpreted as past, hence anaphoric, coreferring to the second conjunct tense. In (84b), on the other hand, the null tense of the first conjunct is nonpast, hence deictic, even though the second conjunct is past. This supports the claim that the null tense is a pronominal because the null tense can receive its interpretation from an antecedent
(that is, the matrix tense) or it can refer freely (that is, deictically). (84a) and (84b) are diagramed as follows:

(84a)  
\[
\begin{array}{cccc}
E1 & E2 & S \\
----&|\--|--|--&|\\sim\i & ess_i \\
\end{array}
\]

(84b)  
\[
\begin{array}{cccc}
E2 & S & E1 \\
|\--|--|--|\--|--|--&|\\ess_i & \emptyset_j \\
\end{array}
\]

The overt tense form occurs in the last verb rather than in the preceding verbs when the tenses are coreferential in complex sentences. For example, compare the following:

   nom dance dance and nom sing-past-Dec  
   John danced and Mary sang a song.

   John danced and Mary sang a song.

c. *John-i chwum chwu-\ess_i-ko, Mary-ka nolayha-\emptyset_i-n-ta  
   John danced and Mary sang a song.

d. John-i chwum chwu-ess-ko, Mary-ka nclarhay-\emptyset-n-ta  
   John danced and Mary sings a song.

In (85a), a null form coindexed with the second clause tense occurs in the first clause. However, sentence (85c) in which the null form occurs in the second clause and the overt form in the first clause, is unacceptable with the same meaning as in (85a). Note that Principle C of the
binding theory would not block the ungrammaticality of (85c), since there is no c-command relation. I would like to propose the following generalization:

\[(86) \text{In coordinate clause structures an overt tense form is allowed in both conjuncts or in the last conjunct.}\]

There are some parallels between this tense phenomenon in coordinate clause structures and NP coordinate structures in Korean. That is, nominative or accusative case markers in NP coordinate structures appear in the last NP, as illustrated below.

\[(87) \text{a. } \left[\text{John-kwa Mary}\right]-\text{ka ka-ss-ta.}\]
\[\text{and nom go-past-Dec}\]
\[\text{John and Mary went.}\]
\[\ast \text{a. John-kwa-ka Mary-ka ka-ss-ta.}\]
\[\text{b. Sensayngnim-i }\left[\text{John-kwa Mary}\right]-\text{iul cohahay-ss-ta.}\]
\[\text{teacher nom and acc like-past-Dec}\]
\[\text{The teacher liked John and Mary.}\]
\[\ast \text{b. Sensayngnim-i John-kwa-lul Mary-lul cohahay-ss-ta.}\]

In addition, plural markers in Korean show a pattern similar to the tense pattern in coordinate clauses. Specifically, when there are more than two plural NPs, the plural marker -tul tends to appear in both NPs or in the last NP, but not in the first NP, as shown below,

\[(88) \text{a. Haksayng-tul-kwa kyoswu-tul-i o-ass-ta}\]
\[\text{student-pl and professor-pl-nom come}\]
\[\text{Students and teachers came.}\]
   Students and teachers came.

c. Haksayng-tul-kwa kyoswu-ka o-ass-ta
   i. *Students and teachers came.
   ii. Students and a teacher came.

Sentence (88c) is unacceptable with the same meaning as (88b), but is acceptable with a different meaning as in (ii).

The discussion so far indicates that anaphoric tense is coindexed and does not require a c-command relation, as stated below.

(89) Anaphoric tense is coindexed with its antecedent.

As just noted above this notion of 'anaphoric' is a bit unusual since the c-command requirement is not necessary.

4.6.3 Other [+anaphoric] clauses

In addition to the suffix -ko, there are some other non-temporal suffixes or adverbials that have the [+anaphoric] feature. Two typical forms are the suffix -unikka 'because, since, so' and the clausal connective -n tey 'in the circumstance that, and, but, although'. These two forms manifest slightly different syntactic patterns, as will be discussed briefly in what follows.

Observe the following sentence and the associated readings.
(90) John-i ka-∅₁⁻nikka, Mary-to ka-ss₁⁻ta.
    nom go-past-so         also go-past-Dec

i. John went, so Mary did too.

ii. John is going, so Mary went too.

Notice in the above examples that -unikka does not impose any particular temporal ordering between the two events. Even in the reading (90i), John's going may take place before, simultaneously, or after Mary's going, as shown below.

(91) a. John-i kucey ka-∅₁⁻nikka, Mary-to ecey ka-ss₁⁻ta.
    Since John went the day before yesterday, Mary also went yesterday.

b. John-i ecey ka-∅₁⁻nikka, Mary-to kucey ka-ss₁⁻ta.
    Since John went yesterday, Mary also went the day before yesterday.

c. John-i akka ka-∅₁⁻nikka, Mary-to akka ka-ss₁⁻ta.
    Since John went a while ago, Mary also went a while ago.

Notice that the null tense -∅ in the embedded clause in the (90i) reading is anaphoric, in that its interpretation hinges upon the matrix clause tense, while the (90ii) reading is clearly deictic, with the speech time as the deictic center.

In contrast, observe the following sentences in which the suffix -ess occurs in the first clause.

    Since John had gone, Mary also went.

Since John went, Mary is going too.

In (92a), John's going must occur before Mary's going, as if -unikka were an anteriority temporal suffix, whereas John's going in (92b) is interpreted uniquely in relation to the speech time. Because of the extreme distributional limitation of -unikka in terms of temporal anteriority (i.e., only after -ess), however, I propose that -ess is perfective in (92a) and that the null tense -Ø that follows the perfective is coreferential with the matrix tense, as shown below.

(92) a'. John-i ka-ss-Ø₁-unikka, Mary-to ka-ss₁-ta.
    nom go-perf-past-so also go-past-Dec

Our second set of examples is related to the clausal non-temporal connective -n tey 'and, but, although', which consists of the adnominal suffix -n and the defective noun tey 'circumstance, place, when'. Observe the following sentence and the two readings associated with it.

(93) Nwun-i o-Ø₁-nu-n-tey, nalssi-ka ttattushay-ss₁-ta.
    snow-nom come-Ø-ind-adrn-comp weather-nom warm-past-Dec
    i. It was warm, although it was snowing.
    ii. It was warm, although it is snowing.

The (93i) reading is anaphoric, whereas the (93ii) reading is deictic. Now, examine the following sentence, where -ess occurs in the embedded clause.
The sentences in (94) are analysed as coordinate clause construction since the first clause allows the sentence ender -yo as follows:

(94)' a. Nwun-i wa-ss-nu-n-tey-yo, 
   snow-nom come-past-ind-adn-comp-Dec 
   nalssi-ka ttattushay-ss-eyo. 
   weather-nom warm-past-Dec 
   It was warm, although it snowed. 

   nom go-past-ind-adn-comp-Dec also go-past-Dec 
   John went, so did Mary too.

Unlike the parallel -unikka clauses, (94) shows that the two events denoted by each sentence do not manifest any temporal ordering. Nor is there any evidence that the form -n tey requires an anaphoric tense interpretation. That is, the first clauses are always interpreted as deictic. In this respect, the -n tey clauses are similar to coordinate conjunctive -ko clauses. Since I have discussed indexing and other syntactic proposals with regard to -ko and other conjunctive suffixes, I will not repeat them here.
Notes to Chapter 4

1. For instance, in (17), the speaker views the two events as contiguous, one following the other. In other words, in Song's view, the suffix -taka conjoins two logically unrelated events, performed by the same agent or happening to the same experiencer, which the speaker perceives to be contiguous (Song 1983).

2. As discussed in 1.3.2, Song (1983) claims that the tense relation in -taka constructions allows only two possibilities. First, when the form -ess occurs in the matrix clause, the time for the entire sentence is in the past. Second, when -ess occurs in the embedded clause and the matrix clause has the nonpast tense, -ess casts only the embedded clause in the time frame of pastness and thus contrasts with the tense of the matrix clause. Song seems to have overlooked constructions like the following.

(i) Celehkey nol-ŋ/-taka sihem-ey tteleci-ess,-ta.
like that play-ŋ-and exam-at fail-past-Déc

Playing around like that, he failed the exam.

Intuitively, there may be two alternative interpretations associated with (i), one to regard the null tense in the embedded clause as past tense, and the other to regard it as nonpast tense, as may be translated respectively as 'While he played around like that, he failed the exam' and 'While he plays around like that, he failed the exam.' In the former interpretation, the suffix is anaphoric, whereas in the latter, it is deictic. Song's analysis predicts only the former interpretation, that is, the embedded clause must have the same past interpretation as the matrix tense. I too assume that only the anaphoric interpretation holds, because a close examination of the sentence indicates that semantically the matrix clause event 'his failing' is temporally preceded by 'his playing' and that the deictic adverbial celehkey 'like that' can occur syntactically in simple past tense sentences, as in celehkey nol-ass-ta 'he played like that.'

3. A simultaneous relation is also possible in Group B for some Korean speakers. Whether (60)-(63) are interpreted as precedence or simultaneous relations seems to be controlled by pragmatic factors. For instance, the two events in (61) cannot be interpreted as a simultaneous relation because the event of eating lunch cannot logically take place at the same time as taking a nap.
4. For some Korean speakers, (64)' and (65)' are interpreted as (b) as well as (a).

5. However, genuine non-temporal constructions (4.6.1) are strictly subject to Ross's Constraint.

(i) *[Mwues-ul Mary-ka hay-ss-una] John-i chayk-ul
what.acc nom do-past-but nom book-acc
ilk-ess-ta.
read-past-Dec

*What did Mary do, but John read a book.

6. William O'Grady (personal communication) pointed out to me that this is presumably because there is no wh movement in Korean.

7. However, when the two events are considered conceptually independent and separate, -ko clauses allow the two time adverbs ecey and onul as follows:


As for Sue, yesterday she was caught in the rain and today she played outside.

In such cases, -ko clauses lose their temporal feature, and hence become non-temporal -ko clauses. Thus, the sentence above can allow the presence of the overt -ess in the embedded clause, as in ii:


8. This was suggested by William O'Grady (personal communication).
Chapter 5
Tense in Non-Conjunctive Embedded Clauses

5.1 Overview

This chapter will discuss temporal phenomena in embedded constructions other than conjunctive sentences, with particular reference to the tense category. Non-conjunctive clauses of the embedding type are composed of adnominal clauses, consisting of relatives and noun complements (or nominal complements or appositives), verbal complement clauses, quotative constructions, and nominalized clauses. These will be taken up in that order in sections 5.2, 5.3, 5.4, and 5.5, respectively.

It will be shown that the various proposals delineating temporal patterns of Korean that have been made in the foregoing chapters are not only applicable, without any particular modification, to non-conjunctive embedding, but also are supported by the additional data provided. Specifically, the claim that the overt tense form -ess is an R-expression and the null tense form -$ is a pronominal will be further supported. Other associated proposals, such as those on the aspect/tense distinction, the postulation of the null tense, the deictic/anaphoric distinction, and coindexing, are all applicable to non-conjunctive embedding constructions. It will also be observed that there are significant parallels between different types of conjunctive constructions and different types of non-conjunctive
embedding. For one thing, just as temporal conjunctive suffixes allow neither the overt past tense nor the overt aspect (-taka allows perfective -ess), so verbal complementizers allow no overt -ess. Second, the null tense in both anteriority and overlapping clauses and verb complement clauses other than future-oriented ones (with a suffix like -key) is interpreted only as anaphoric. Third, both temporal conjunctive clauses and verbal complements allow the null form tense which is taken to be anaphoric or deictic. Such conjunctive suffixes include -ulyeko 'in order to' and -koca 'intending that'. Such verbal complementizers include -ko (as in -ko siphta 'wish to do') and -key 'so that' (as in causatives). Fourth, nominalized clauses with nominal suffixes like -ki and -um are ambiguous between an anaphoric and a deictic interpretation. When they are anaphoric tense, they do not accept the occurrence of -ess; but when they are deictically used, they accept it. This behavior is parallel to that of biclausal conjunctive constructions with such suffixes as -umyense 'while, although'. Finally, adnominal and quotative constructions are parallel to -ko clauses, in that they are [+/-anaphoric] and allow occurrences of both overt past and perfective. Elaboration of these and other observations will be the concern of the rest of this chapter.
5.2 Adnominal constructions

5.2.1 Morphological notes

Before taking up the matter of temporal interpretations in adnominal (or adjectival) clauses in the subsequent subsections, let me briefly comment on the composition of adnominal complementizers.

While matrix, conjunctive, and other embedded clauses employ the suffixes -ess and -∅ to indicate tense contrasts (which appear before other elements such as the complementizer), adnominal clauses (i.e. relative and noun complement) manifest a different morphological system. There are three different sets of complementizers relating an adnominal clause to its matrix clause: (a) -(u)n (with action verb), (b) -nun (with action verb)/-(u)n (with stative verb), and (c) -(u)l (with action verb; but also occasionally with stative verb). In addition to their complementizer function, the three sets of suffixes are usually associated respectively with past, present, and future time reference. They actually function to indicate these temporal contrasts, as observed below (e.g., Choi 1965, Na 1971).

(1) a. ka-n salam 'a person who went/has gone' (action)
    cwuk-un salam 'a person who died/has died' (action)

    b. ka-nun salam 'a person who goes/is going' (action)
    cwuk-nun salam 'a person who dies' (action)
khu-n chayk 'a big book; a book which is big'
   (stative)
coh-un chayk 'a good book; a book which is good'
   (stative)
c. ka-l salam 'a person who may go/will go'
   (action)
aphu-l salam 'a person who may be sick/will be sick'
   (stative)
??pwulk-ul cip 'a house which may be red/will be red'
   (stative)

The classic practice of treating the three sets as the complementizers that indicate past, present, and future time reference is not only an oversimplification, but a misinterpretation in several important respects. First, as we will see shortly, the so-called past tense involves perfective too, as the English translations indicate. Second, the so-called present tense may refer to the (definite) future, as well as the present, and also to the past if it is coreferential with a matrix past tense, as observed in (2a) and (2b). Third, the so-called future tense does not exist in Korean. The suffix -(u)l is not a future tense marker, but a predictive or prospective modal, as attested in (2c) through (2e).

(2) a. nayil ka-nun salam 'a person who will go tomorrow'
      yesterday cry person-acc see-past-Dec
      (I) saw a person who was crying yesterday.
   c. cikum ka-l salam 'a person who may be going now'
d. ecey ka-ass-ul salam 'a person who may have gone yesterday'

e. Mary-nun ecey ilk-ul chayk-ul onul ilk-ess-ta.
top yesterday read book-acc today read-past-Dec

Mary read the book today, which she was supposed to read yesterday.

Thus, the examples in (1c)-(1e) do not contain any future tense marker, but only the nonpast tense marker -∅ with a prospective modal suffix. In Korean, I maintain that there are only two tenses: past and nonpast in all matrix, conjunctive, and other embedded clauses.

Now, let us briefly consider the morphological structure of each of the three adnominal complementizers. As for the relativizer suffix -(u)n, it is assumed that the form has been restructured from -ess-nun, with the deletion of -ess-n (e.g., Nahm 1978). (William O'Grady has suggested an alternative analysis which assumes a zero tense in relative clauses. This null form can be taken to be anaphoric or deictic. Thus, there is no overt form -ess in this analysis, while the suffix -(u)n has a perfectiveness-like feature.) I subscribe to this assumption, in that there are at least two cases where the assumed original form is synchronically actualized. First, the Kyungsang dialect, which is presumed to retain historically earlier forms, allows the form -ess to occur with -nun in relative clauses, as shown below.
The second piece of evidence in support of the assumed "-ess-nun" form comes from such defective noun constructions as the following, where ci 'whether' and tey 'circumstance, place' are defective nouns.

   (I) don't know whether John went.

b. John-i ka-ss-nu-n tey
   'in the circumstance that John went'

Furthermore, the overt form "-ess" occurs freely in an adnominal clause if followed by such inflectional suffixes as the retrospective, as in "-ka-ass-te-n salam 'a person who had gone', and the prospective, as in ka-ass-ul salam 'a person who was supposed to go'.

For descriptive purposes, I propose to analyze -(u)n as -ESS-N, rather than as -ESS-nun or -ESS-un. The form -ESS-nun will not be used because -nun is not actualized in standard speech. The form -ESS-un is also problematic since -ess cannot occur with -un in the Kyungsang dialect, as the
ungrammaticality of the following expressions in this dialect indicate.

(5) *a. chayk-ul ilk-ess-un haksayng.
   *b. pap-ul mek-ess-un haksayng.
   *c. koki-lul cap-ass-un haksayng.

Thus, (6a) can be analyzed as (6b) simply for descriptive convenience.

(6) a. John-i ilk-un chayk nom read book
    the book that John read/has read

   b. John-i ilk-ESS-N chayk

Both the overt form -ess and the covert form -ESS in an adnominal clause have two interpretations, past and perfective, as has been noticed in the English translations in (6a). This dual function corresponds to the two functions of the matrix past/perfective form -ess. Thus, for instance, (6a) can be represented as follows:

    'the book that John has read'

    'the book that John read'

As for the complementizer -nun, I consider it not to contain any tense category. (The same thing holds true for
The fact that the form -ess can occur with -nun in the Kyungsang dialect and in some defective noun constructions suggest that the form -nun does not have a temporal feature. Moreover, structures like the following defective noun clause indicate that -nun is in no way to be treated as a tense-related complementizer.

(8) John-i ka-ss-keyss-nun tey nom go-past-think-comp circumstance

'in the circumstance that John may have gone'

Therefore, -nun is to be considered a combination or conflation of an indicative suffix (-n, -nu, -nun) and the complementizer (-un, -n, or -N). I will not analyze it into the constituent morphemes in what follows.

Finally, -(u)l might be regarded as having been derived historically from -(u)l-nun in view of the existence of such free variations as -(u)l ci vs.-(u)l-nun ci 'whether (it) may ...'. I will simply use the form -(u)l without further analysis.

5.2.2 Relative clauses

The fact that the tense in adnominal clauses, including both relatives and noun complements (or nominal complements), is interpreted deictically as well as anaphorically has drawn the attention of many Korean linguists (e.g., Nahm 1978, D. Yang 1977, An 1980, N. Kim 1984, C. Lee 1985). For example, D. Yang (ibid.) points out
that the tense in relative clauses is sometimes interpreted with respect to the speech time and sometimes with respect to a matrix clause event time. Both D. Yang (ibid.) and C. Lee (ibid.) suggest, however, that tense in adnominal constructions is basically interpreted in relation to the tense of the main clause (that is, it receives an anaphoric interpretation), and that the deictic interpretation is rather marginal. It will be shown that tense in relative and noun complement clauses is in fact ambiguous between the two interpretations, unless there is a particular deictic context that disambiguates one from the other.

As an initial approximation, observe the following examples (quoted from D. Yang 1977). (e stands for the gap for a head noun).

   top nom read book-acc read-past-Dec
   Mary read the book that John read/had read.¹

   Mary read the book that John reads/read.

   Mary read the book that John will/would read.

The embedded clause of each sentence in (9) has two interpretations, deictic and anaphoric, as the English glosses indicate. The dual interpretations have led some authors to think that tense in Korean relative clauses is vague or arbitrary (cf. Nahm 1978).² However, as pointed
out by D. Yang (ibid.) and An (1980), the interpretation of relative clause tense is neither vague nor arbitrary, but rather systematic.

Now, I maintain throughout the present study that:

(10) a. Both aspect (optional) and tense (obligatory) categories occur in that order in matrix and embedded clauses.
b. Tense is either past or nonpast. Therefore, a null tense must occur when no overt past suffix appears.
c. Only tense can be indexed with another tense.
d. An anaphoric null tense is coindexed with the matrix tense.
e. The deictic interpretation of the null form tense is nonpast (unless otherwise specified).

Thus, the sentences in (9) are represented as follows in my framework.

    Mary read the book that John had read.

    Mary read the book that John has read.

    Mary read the book that John read/was reading.
    Mary read the book that John reads/is reading.

    Mary read the book that John would read (in past).

    Mary read the book that John may/will read.

(11a) represents that the embedded clause has the perfective aspect -ESS, while the tense is covert and is coreferential with the matrix past tense. Hence, we obtain past perfective. (11a'), on the other hand, indicates that the null tense is deictic and thus nonpast. Hence, we obtain nonpast perfective. The null form tense -∅ in (11b) is coindexed with the matrix -ess, indicating that the embedded clause event takes place in the same time frame as that of the matrix clause event. This is not the case with (11b'), where the embedded clause event takes place at present or generically. (11c) denotes a case where John's reading may take place between the matrix clause event time (i.e., the time of Mary's reading) and the speech time, whereas (11c') indicates that John's reading may take place at or any time after the speech time.

In order to express the above-mentioned time relations more explicitly, let us add time adverbials such as ecey 'yesterday', kucey 'the day before yesterday', onul 'today', cikum 'now', and nayil to the sentences in (11). The results are shown below.
ecey ilk-ess₁-ta.
Mary read the book yesterday that John had read
the day before yesterday.

a'. Mary-nun [cikum John-i e ilk-ESS-∅₁-N] chayk-ul
ecey ilk-ess₁-ta.
Mary read the book yesterday that John has just
read.

b. Mary-nun [(c'ecey) John-i e ilk-∅₁-nun] chayk-ul
ecey ilk-ess₁-ta.
Mary read the book yesterday that John read/was
reading (yesterday).

b'. Mary-nun [cikum John-i e ilk-∅₂-nun] chayk-ul
ecey ilk-ess₁-ta.
Mary read the book yesterday that John is reading
now.

c. Mary-nun [ecey John-i e ilk-∅₁-ul] chayk-ul
kucey ilk-ess₁-ta.
Mary read the book the day before yesterday that
John would read yesterday.

c'. Mary-nun [cikum/nayil John-i e ilk-∅₂-ul] chayk-ul
ecey ilk-ess₁-ta.
Mary read the book yesterday that John may/will read
now/tomorrow.

As I noted in Chapter Three, I regard INFL as
containing various inflectional grammatical categories
including tense, which serves as the head of INFL. Based on
this assumption, together with the other proposals that I
have presented in (10) above, I propose that, for example, sentence (11a) has the following S-structure.

(13) S-structure of (11a)

\[
\begin{align*}
&\text{NP} \\
&\quad \text{VP} \\
&\quad \quad \text{I'} \\
&\quad \quad \quad \text{C'} \\
&\quad \quad \quad \quad \text{I''} \\
&\quad \quad \quad \quad \quad \text{C''} \\
&\quad \quad \quad \quad \quad \quad \text{C} \\
&\text{T}_{1} \\
&\text{Asp T}_{1} \\
&\text{V} \\
&\text{NP} \\
&\text{N} \\
&\text{V} \\
&\text{NP} \\
&\text{I} \\
&\text{C} \\
&\text{I'} \\
&\text{NP} \\
&\text{C'} \\
&\text{I''} \\
&\text{C''} \\
&\text{C'} \\
\end{align*}
\]

Mary-nun [John-i e ilk-ESS -g 1 -N] chayk-ul ilk-ess 1 -ta.

Mary read the book that John had read.

It has been argued in earlier chapters that the overt tense form -ESS is an R-expression which obeys Condition C. The occurrence of the overt form -ESS in embedded clauses does not violate Condition C, because the form -ESS denotes either perfective aspect or a deictic past tense which has nothing to do with the matrix past tense. Hence it cannot be coindexed with the matrix tense.

What I have said so far about relative clause constructions with the matrix clause in the past tense is also applicable to the sentences whose matrix clause is in
the nonpast tense. I will briefly examine a few examples.

Observe the following sentences (quoted from Nahm 1978 but rewritten according to my framework).

(14) a. [Nayil e mantu-ESS-Ø₁-N] mwulken-un nayil
tomorrow make perf-nonpast-comp things-top tomorrow

phal-Ø₁-keyss·ta
sell-nonpast-intend-Dec

I will sell the things tomorrow that I will make

tomorrow.

b. [Nacwungey e nam-ESS-Ø₁-N] mwulken-un
later remain-perf-nonpast-comp things-top

nay-ka cheliha-Ø₁-keyss-ta.
I-nom handle-nonpast-intend-Dec

I will deal with the things which will remain later.

In (14), -ESS-N in the relative clause cooccurs with a
future-indicating time adverb like nayil 'tomorrow' or
nacwungey 'later'. Thus, there is no apparent way to
interpret it as a past tense marker. Rather, it denotes
perfective aspect. Furthermore, it is assumed that there is
a null tense form following the aspect suffix, which is
coreferential with the matrix nonpast tense. This is
clearly supported by the meaning of the sentences, both of
which denote a future perfective event. That is, the
embedded clause event is supposed to be completed before the
matrix clause event in both sentences.

In nonpast matrix constructions too, when the embedded
clause tense is not coindexed with the matrix clause tense,
the two tenses denote different time relations. That is,
the embedded tense is deictic and is interpreted with respect to the speech time, as shown below.

(15) Mary-nun [John-i ecey ilk-ESS #1-N] chayk-ul
    yesterday read-past-comp
    
    nayil          ilk-∅-keyss-ta.
    tomorrow       read-nonpast-presume-Dec

(I presume that) Mary will read the book tomorrow that John read yesterday.

The embedded form -ESS denotes pastness, whereas the zero form in the matrix clause is nonpast in accordance with the usual convention (cf. Chapter 3). Since the two tenses are not coindexed in (15), there is no violation of Condition C.

As I indicated at the outset of this section, D. Yang (1977) argues that the basic tense system in embedded clauses in Korean is endophoric (i.e., anaphoric) on the grounds that tense in embedded clauses is basically controlled by the matrix event time rather than by the speech time. Similarly, C. Lee (1985) claims that in Korean, relative clause tense is primarily interpreted in relation to the matrix clause tense. As I have observed thus far, however, this is not the actual case, although pragmatically it may be the case that one interpretation is preferable to the other. I propose that tense in all relative clauses can be either anaphoric and deictic, which may be disambiguated by various means, as stated below.

(16) Relative clause tense can be either anaphoric or deictic. One or the other interpretation can be suppressed by means of time adverbials, other indexicals, matrix verbs, discoursal contexts, or
pragmatic situations.

I will not repeat all the examples that I have given thus far in order to support the claim that relative clause tense is anaphoric or deictic. I will limit myself to making a few comments on D. Yang's (ibid.) observations. Yang proposes (ibid.:217-8) that when the embedded clause tense is the same as the matrix clause tense, there seems to be a slight preference for the endophoric (i.e., anaphoric) interpretation. Observe the following sentence quoted from Yang without modification.

(17) Mary nun John i ilk-ul chayk ul ilk-ul kes-i-ta.
    TOP NM read-FUT book AC read-FUT NOM-is-DEC

Mary will read the book that John will read.

Yang observed that (17) out of context is more likely to be interpreted as John's reading preceding Mary's reading than as John's reading following Mary's reading. However, it is extremely difficult to concur with Yang's intuitive judgment, because hardly anyone whom I consulted has agreed with Yang's judgement. Rather, many, including myself, feel that there is no particularly preferred ordering between the two events, and tend to think that the embedded -ul (prospective marker) refers, more preferably, to future time with respect to the speech time (thus deictic) rather than with respect to the matrix clause future time (anaphoric).4

Yang presents some of his arguments based on the assumption that sentences like (18) are exclusively
endophoric. ((18) is quoted from Yang without modification.)

(18) John i chengsoha-ko iss-nun salam ul ttayli-ess-ta.
     NM sweep-ing is-PRES man AC hit-PAST-DEC

John hit a/the man who was sweeping.

However, that (18) is ambiguous is easily proven by the fact that (18) is a perfect answer to the following question. This proves the case that (18) will be used only exophorically (i.e., deictically).

(19) John-i ce salam-tul cwung nwukwu-lul ttayli-ess-ni?
     nom that persons among who-acc hit-past-Q

Who did John hit among those people over there?

A third comment on Yang's treatment of sentences like the following (directly quoted) is:

(20) John un ecey ilk-ul chayk ul acikto ani ilk-ess-ta.
     TOP yesterday read-FUT "book AC yet not read-PAST-DEC

John has not read yet the book that he should have read yesterday.

Yang (ibid.:225) states, "Note that the adverb ecey 'yesterday' co-occurs with the future-tensed predicate ilk-ul 'read'. This is a clear indication that the generic use of the future tense -ul is timeless." A better account, according to my proposal that there is no future tense in Korean, would be to attribute timeless genericness to a deictically interpreted null tense -∅ and consider -ul
simply a complementizer syncretized with a 'predictive' or 'prospective' modal suffix, as shown below.

(20)' John-un [pro ecey ilk-ʊ-ul] chayk-ul acikto
an ilk-ess-ta.

John did not read the book that he should have read yesterday.

One might say that the embedded -ʊ in (20)' is anaphoric, and that the occurrence of -ʊ with ecey 'yesterday' is because -ʊ refers to past tense. This is not true, however, because ecey can occur with -ʊ, even if the matrix tense is nonpast. Incidentally, the fact that the embedded tense in (20)' is exclusively deictic weakens Yang's claim that embedded tense is basically endophoric or anaphoric.

The discussion thus far has already implied that there are strong parallels between conjunctive and relative clauses with respect to tense, e.g., the binary distinction between past and nonpast, the function of the null tense, and the anaphoric/deictic distinction. In particular, the behavior of clauses marked by conjunctive suffixes such as the coordinative -ko 'and' and that of relative clauses share the common features that both are [+anaphoric] and both allow the occurrence of the overt past tense and perfective suffix. One characteristic difference between conjunctive and relative clauses is that in the former, the lexical meanings of conjunctive suffixes (especially temporal ones) constrains the possible interpretations of
the null form tense to a large extent. On the other hand, in the latter, temporal adverbials or indexicals (that is, speech time-based adverbs) and the semantic properties of matrix verbs, as well as discoursal and pragmatic contexts, constrain the interpretation of the null form tense. This brings us to the second half of the generalization made in (16). Observe the following:

(21) a. [Ecey kangto-iul ha-ESS-N] salam-i yesterday robbery-acc do-past-comp person-nom
    sip il cen-eyto kangtocil-ul hay-ss-ta.
    10 days before-also robbery-acc do-past-Dec

The person who did the robbery yesterday also committed robbery ten days ago.

b. [Yeki moi-ESS-Ø-N] salam-un nay-ka motwu here gather-perf-nonpast-comp people-top I-nom all
    cheliha-keyss-ta.
    handle-will-Dec

I will deal with the people who are gathered here.

c. [Akka ney-ka tosekwan-eyse pilli-ESS-N] chayk-ul earlier you-nom library-loc borrow-past-comp
    ne-pota ku-ka mence pillieka-ss-ta.
    you-than he-nom first borrow-past-Dec

He borrowed earlier from the library the book which you borrowed just a moment ago.

d. John-i [pro cikum kongpwuha-Ø-nun] ce haksayng-ul
    pro now study-nonpast-comp that student-acc
    ttayli-ess-ta.
    beat-past-Dec

John beat that student who is studying now.

Note in (21) that relative clause tenses have only one reading, that is deictic. Observing such constructions,
Nahm (1978) states that it is unclear when the relative clause tense is interpreted with respect to the speech time, and when with respect to the matrix tense. Notice in (21), however, all the sentences contain deictic expressions in their relative clauses, which are underlined. Deictic expressions, such as ku ttay 'then', cikum 'now', ittaka 'later', ecey 'yesterday', and akka 'a while ago' (see 2.5) are inherently speech-time oriented (cf., Comrie 1985). In cases where there are deictic expressions, the relative clause tense can no longer receive its interpretation from the matrix clause tense, and hence there is no anaphoric reading. (22) stipulates the tense phenomena observed above.

(22) When there is a speech time-based indexical in an embedded clause, the indexical stipulates the event time.

Thus, the tense interpretation of the embedded clause has to be consistent with the semantic content of the indexical. In short, one or the other interpretation can be suppressed by means of time adverbials or indexicals in relative clauses. In addition, there are other means of disambiguating the two interpretations, such as discoursal or situational contexts, which do not concern us here, and the semantic properties of matrix verbs, which will be briefly touched upon below. Observe the following so-called pseudo-relative construction.
This type of construction may be called pseudo-relative, in that it does not contain a gap. It is not a noun complement because the embedded clause and the head noun are not in an noun complement relation. In any case, such constructions have a matrix verb which is related to the five senses, such as tutta 'hear', pota 'see', and mathta 'smell'. In view of the nature of the matrix verbs, which entail perception of a prior event, the embedded clauses are to be interpreted as anaphoric.

Finally, let us consider the case where the retrospective mood suffix -te occurs in relative clauses. As discussed extensively in 2.3, Korean can use this suffix both in matrix and embedded clauses. The mood form -te in a relative clause indicates that there is a reference time, represented by -te, which precedes the speech time. The event time is either simultaneous with (in the case of -∅) or precedes (in the case of -ess) this reference time.

Consider the following.

wear-past-ret-comp clothes-acc take off-past-Dec

(I) took off the clothes that I started putting on.


(I) took off the clothes that I was already wearing.

(25) a. [e cis-∅-te-n] cip-ul he-∅-n-ta.
build-∅-ret-comp house-acc destroy-nonpast-ind-Dec
I am destroying the house that I was building.

b. [e cis-ess-∅-te-n] cip-ul hel-ess-ta.

I destroyed the house that I had built.

Note that the presence of -ess in the embedded clauses is associated with a perfective meaning, and hence it is aspectual. Note also that the null form tense is interpreted only as past, due to the inherent pastness of the retrospective suffix -te, which provides the reference time for the interpretation of the null tense. Moreover, whenever -te appears in a relative clause, only the deictic interpretation is valid, as shown below.


Mary read the book the day before yesterday that John read yesterday.


Mary is reading the book today that John was reading yesterday.

Thus, -te functions as a temporal indexical that suppresses the anaphoric interpretation. Incidentally, this fact again weakens the claim for the predominant anaphoric interpretation of the zero form in relative clauses.

One question still not clearly answered is: how does the null tense -∅ before a retrospective mood suffix receive the past tense interpretation? The answer is: "From -te".
But how? I have been assuming that only tense categories can be indexed. The suffix -te is not considered a tense suffix in the present study. Therefore, -∅ and -te cannot be coindexed because they are different types of categories. I propose therefore a rule of tense feature copying of the following sort.

(27) -∅ ---+ [+pastness] / ___ -te

(When an embedded null tense suffix occurs before a retrospective mood suffix, it copies the [+pastness] feature from the mood suffix.)

This rule should also be applicable to the null tense form occurring before a retrospective suffix in a matrix clause.

One final note with regard to the retrospective suffix, is that rarely can the double form -ess-ess be used before -te in the embedded clause.


One might argue that the occurrence of the double form violates the Condition C, because probably one -ess denotes past tense and is coreferential with the matrix past tense. The double form in these constructions is purely emphatic. In other words, the aspectual form -ess is repeated for pragmatic emphasis. Furthermore, most Korean speakers do not recognize a meaning difference between a clause with -ess-te and the same clause with -ess-ess-te. Some speakers consider sentences like (28) unnatural. In a matrix clause,
even a treble form -ess-ess-ess is often used for emphasis, although such a form may be rendered as a performance error.

To summarize, the tense pattern in relative clauses is essentially parallel to that of conjunctive sentences. The relative clause allows two interpretations for a null tense form, anaphoric and deictic, which may be disambiguated by lexico-structural as well as discourse-pragmatic means. The occurrence of the double form is allowed only when preceded by the -te form and is a very restricted phenomenon. The claim that -∅ is a pronominal and -ess is an R-expression is supported by the tense interpretation of relative clauses.

5.2.3 Noun complement clauses

The tense pattern of noun complement clauses shows a phenomenon similar to that of relative clauses, in that the same three sets of complementizer (-un, -nun, and -ul) are used, that the tense interpretation is ambiguous between deictic and anaphoric, and that this ambiguity may be disambiguated by means of time adverbials or other indexicals, matrix verbs, discourse contexts, or speech situations. There are differences too. One morphological difference is, as already indicated in 5.2.1, that in some noun complement clauses with a defective noun, the past/perfective complementizer -un (i.e., my -ESS-N) is obligatorily replaced by the more regular form -ess-nun, as shown below.
nom go-past-comp whether unaware-nonpast-presume-Dec

I don't know whether John went/has gone.

Syntactically also, noun complement constructions are not only much less productive in occurrence than relative constructions, but also have more strict internal cooccurrence restriction between an noun complement clause and its matrix clause. In tense interpretations also, noun complement clauses are less free (thus less frequently ambiguous) in the choice between anaphoric and deictic interpretations. Compare (30a), which is a relative sentence, with (30b), which is a noun complement sentence.

John saw a person who had gone, went/was going, goes, is going/may go, will go to school.

John saw Mary coming.

Notice that the relative clause in (30a) allows all three complementizers with a variety of anaphoric and deictic interpretations. On the other hand, the noun complement clause in (30b) allows only -nun, whose interpretation is constrained by the fact that the matrix verb pota 'to see' entails perception of a prior event. Furthermore, (30b) is exclusively anaphoric. With these preliminary notes,
observe the following noun complement constructions, represented in their surface form.

    top nom school-to go-past-comp know-past-Dec
    Mary knew that John had gone to school.

    Mary knows that John went to school.

    Mary knew that John went/is going to school.

In (31) the defective noun kes 'fact/thing', which functions as the head noun of each noun complement clause, is preceded by the complementizer -(u)n or -nun. Notice that the embedded event in (31a) is interpreted as past perfective, in (31b) as past or present perfective, and in (31c) as past or nonpast. Observe (31a), which is interpreted exclusively as anaphoric and has the past tense suffix in the matrix clause. There is no violation of Condition C in (31a) because the only possible reading the noun complement clause has is in the past perfective. That is, the time of the noun complement clause event precedes the time of the matrix clause event, hence there is no violation of Condition C. (31b), on the other hand, is either deictic or anaphoric. Therefore, the sentences in (31) may be represented as follows in my framework.
(32) a. Mary-nun [John-i hakkyo-ey ka-ESS-∅₁-N] kes-
top nom school-to go-perf-past-comp fact-
ul al-ass₁-ta.
acc know-past-Dec

Mary knew that John had gone to school.

b. Mary-nun [John-i hakkyo-ey ka-ESS-∅₁-N] kes-ul a-∅₁-n-
ta.

Mary knows that John has gone to school.

al-ass₁-ta.

Mary knew that John was/is going to school

Notice in particular that the null form -∅ can be indexed
with the matrix clause tense to show the same or different
temporal relation. Thus, coindexing is necessary in (32a),
while both coindexing (i) and non-coreferential indexing (j)
are needed in (32b) and (32c) to indicate both anaphoric and
deictic interpretations. Consider one alternative S-
structure of (32c) as an example.
(33) S-structure of (32c):

The null form tense above refers to the same past relation designated by the matrix -ess. Or it can denote nonpast relation with respect to the speech time (with j indexing). It was shown in the previous section that when there is a speech time-based indexical, its tense excludes one interpretation. Similarly, in the noun complement clause, the null form tense is interpreted only deictically when there is a speech time-base adverb. Observe the following.


al-ass-ta.
know-past-Dec
Mary knew that John will go to school tomorrow.

Note that there is a future time adverb nayil 'tomorrow' in the embedded clause above. Therefore, the interpretation of the noun complement clause tense in (34) is determined with respect to the speech time, not with respect to the matrix clause tense. The matrix clause tense no longer functions as an antecedent for the interpretation of the null tense in cases like (34).

Without any particular speech-time based context, the null form tense in the embedded clause has two interpretations, past and nonpast. This supports my claim that -∅ acts like a pronominal whose reference can vary depending on syntactico-semantic factors.

Earlier, it was briefly mentioned that there are some syntactic differences between relative and noun complement clauses. An elaboration is in order. It was indicated that while relative clauses have no restriction on the occurrence of different complementizers, noun complement clauses show heavy restrictions. That is, the semantic properties of the matrix clause verb and the head noun, as well as indexicals, constrain the occurrence of complementizers. Consider the following.

(35) Mary-nun [John-i hakkyo-ey ka-∅ i/sj -nun] kes-ul po-ass i-ta. see school-to

Mary saw John going to school.
The null form tense above can have only the past relation, coreferential with the matrix tense. It does not allow a nonpast (that is, deictic tense) interpretation. This contrasts with constructions like (32c) where the verb alta 'to know' occurs. The difference between the two types of construction in terms of tense interpretation is due to the different semantic properties of the matrix verbs pota 'to see' and alta 'to know'. The former requires the embedded clause event to be observed at the time indicated by the matrix tense. This requirement does not exist with verbs like alta.

In addition to the main verb, semantic properties of the head noun involved also play a role in the occurrence of tense-related complementizers in the noun complement clause. For instance, time-indicating head nouns, such as ttay 'time', cek 'time', and mwulyep 'around the time', allow only the prospective complementizer form -(u)l, as shown below.

   to go-perf-past-comp time he-acc met-past-Dec
   When I went to Pusan, I met him.

   When I was going to Pusan, I met him.

c. [Pusan-ey ka-EΣ-N] ttay...

d. [Pusan-ey ka-ʊ-nun] ttay...
On the other hand, head nouns like *hwu 'after' allow only the form -(u)n (i.e. -ESS-N), as illustrated below.

(37) a. [Pusan-ey ka-ESS-ŋ-N] hwu ku-lul manna-ss-ta.
   After I went to Pusan, I met him.
   *b. [Pusan-ey ka-ŋ-l] hwu...
   *c. [Pusan-ey ka-ŋ-nun] hwu...

I consider the ungrammatical forms in the above to be due to the fact that the head noun *hwu 'after' requires the embedded clause event to take place before the matrix clause event. Thus, only the form -(u)n (-ESS-N) is allowed, since it has the property of perfective or past by virtue of the form -ESS.

5.3 Verbal complements

Verbal complement clauses are expressed by means of such verbal complementizers as the so-called infinitive suffix -e (and its vowel harmonic variant -a), the gerundive -ko, the resultative -key, the suspactive -ci, the desiderative -ko, and the conditional -umyen.

There are strong parallels between verbal complements and temporal biclausal sentences as follows. (i) Neither type of construction allows the overt tense form -ess in embedded clauses; (ii) Except for the conjunctive suffix -take and such verbal complementizers as -eya 'if only' and -umyen 'if', none of the sentences in the two types allow
the perfective suffix -ess, (iii) All the sentences in the
two types allow the anaphoric interpretation of zero tense.
(iv) Only a limited number of complementizers (e.g., the
posterity conjunctive -ulyeko 'in order to' and the verbal
complementizer -ko 'to') allow both anaphoric and deictic
interpretations of zero tense. Let us consider some
examples.

    comp try
    John tried to go to school.

    comp want
    John wanted to go to school.

    comp complete
    John completed going to school.

    comp is
    John was going to school.

    comp is
    John was at school.

f. John-un Mary-lul [pro hakkyo-ey ka-ø/*ss-key]
    comp
    hay-ss-ta.
    John caused Mary to go to school.

    comp not
    John didn't go to school.
Notice that all the sentences in (38) allow only the null form tense in the embedded clause. As Kwon (1985) also points out, the tense interpretation of verbal complement clauses is determined with respect to matrix clause tense. Thus, all the sentences but (38b) and (38f) require their embedded clause to be interpreted as past, since the matrix clause tense is past. If the matrix clause has nonpast tense, the embedded tense will also be interpreted as nonpast. This contrasts with a tense phenomenon observed in adnominal clauses since the latter shows ambiguous interpretations. However, as noticed in (38b) and (38f), those complement clauses which end in such future-oriented complementizers as the adverbializer -key 'so that' and the desiderative -ko 'to' allow both an anaphoric and a deictic interpretation of the zero form, as the following disambiguation of (38f) indicates.

    John made Mary go to school yesterday.

    *John made Mary go to school tomorrow.

The reason why verbal complement clauses exclude one tense interpretation seems to be due to their syntactico-semantic properties. That is, the embedded and matrix verbs in verbal complement constructions in Korean manifest a strong 'cohesion' to the extent that syntactically they
behave like a compound verb (for the notion of 'cohesion', see Sohn (1986)). Indeed, no adverbial or modifier can intervene between the embedded and matrix verb in the sentences in (39). Thus, the following sentences are unacceptable.6

(40) *a. John-un [pro hakkyo-ey ka-∅] a ecey po-ass-ta. school go comp yesterday try

John went to school yesterday.


John wanted to go to school yesterday.

*c. John-un [pro hakkyo-ey ka-∅] a kot peli-ess-ta. school go comp soon complete

John soon went to school.

The examples so far do not allow the overt form -ess, nor the double form in verbal complement clauses. However, as mentioned earlier, there are complementizers that allow the occurrence of -ess. These complementizers also allow the ambiguous temporal interpretations between anaphoric and deictic readings. Observe the examples of ambiguous interpretations first in the following.

(41) a. John-un [pro ecey hakkyo-ey ka-∅₁-ya] hay-top yesterday school-to go-past-comp do-

ss₁-ta. past-Dec

John had to go to school yesterday.


John had to go to school today.
Next, examine the cases where -ess shows up. In the following are given the sentences in (41) and (42), but with the suffix -ess.

(43) a. John-un [pro ecey hakkyo-ey ka-ss-ø₁-eya]
     top yesterday school-to go-perf-past-comp
     hay-ss₁-ta.
do-past-Dec
     John had to have gone to school yesterday.

b. John-un [pro nayil hakkyo-ey ka-ss-ø₁-eya]
    hay-ss₁-ta.
John had to have gone to school tomorrow.

(44) a. Na-nun [John-i ecey hakkyo-ey ka-ss-ø₁-umyen]
    I-top nom yesterday school-to go-perf-past-comp
    hay-ss₁-ta.
think-past-Dec
    I wished that John had gone to school yesterday.

b. Na-nun [John-i nayil hakkyo-ey ka-ss-ø₁-umyen]
     hay-ss₁-ta.
I wished that John would have gone to school tomorrow.
As the English translations help show, the overt -ess in the above sentences indicates perfective aspect, whether it is associated with the sense of obligation, as in (43), or the subjunctive sense, as in (44).

In short, all the foregoing observations support the following generalization regarding the tense pattern of verbal complement clauses.

(45) No overt tense form is allowed in verbal complement clauses. (Principle C)

5.4 Quotative constructions

Quotative sentences in Korean are expressed by means of quotative particles: the indirect particle ko 'that' and the direct particles hako 'saying that' and jako 'saying that'. Direct quotations are not the concern of this study, because they are not different from normal unquoted sentences in syntactic structure. Two interesting aspects of indirect quotative clauses in contrast with the other embedded clauses are that first, they allow both past and perfective -ess and second, they have sentence type enders (i.e., declarative, interrogative, propositive, and imperative). However, these sentence enders lack speech level, that is, they are neutral in terms of speech levels. Observe the following example (quoted from N. Kim 1984:113), with appropriate modifications to fit in my framework.
Although N. Kim (ibid.) maintains that (46) functions as both indirect and direct quotations, with the readings (46i) and (46ii), my (and others') intuitive judgement of (46) is that the (46ii) reading is marginal. N. Kim further states that if (46) is interpreted as a direct quotation, the tense of the quotative sentence will be interpreted as 'present tense'. If it is interpreted as an indirect quotation, the tense of the quotative sentence will be interpreted as past to agree with the tense of the matrix verb. However, this claim misses the important fact that even in an unambiguous indirect quotative clause, its tense can be ambiguous. Thus, we have the (46iii) reading.

Consider further the following sentence, which is an unambiguous indirect construction in N. Kim's sense, because the reflexive subject form caki 'self' (instead of na 'I'), which is coreferential with John, indicates that the clause is only indirect.

   self-nom himself go

John said that he himself will go/would go.
Notice that (47) has both anaphoric and deictic readings, despite its pure indirectness. Thus, indirect quotations behave like relative clauses. The S-structure for (46) is represented as follows.

(48) S-structure of (46):

The treatment of the quotative particle -ko as a complementizer, has been accepted by many generative grammarians. The sentence ender -n-ta in the embedded clause above is considered to belong under INFL like modal elements. Note that when the null tense is coindexed with the matrix past tense, it is interpreted as past. When it is not coindexed, it indicates nonpastness. Thus, the following sentence is allowed.
(49) John-i na-ekeykey [Mary-ka cikum ye } ecy malhay-ss-ta.
John said to me yesterday that Mary is coming now.

In cases where there is an overt form -ess in the embedded clause, it refers to a time prior to the event time of the matrix clause, that is, it is perfective. In this case, there is a null tense that immediately follows the perfective suffix which is coreferential with the matrix tense. This fact is observed in (50a). On the other hand, the overt past tense suffix -ess is impossible when the matrix clause also contains this form, as the ungrammaticality of (50b) and the grammaticality of (50c) show.

(50) a. John-i [Mary-ka rtena-ss-{-ta]-ko 
om leave-perf-past-Dec com say-past-Dec
John said that Mary had left.

*John said yesterday that Mary left a while ago.

C. John-i [Mary-ka akka ttena-ss-ta]-ko malha-{-n-ta.
John is saying that Mary left a while ago.

Thus, the S-structure of (50a) looks like the following.
In the above, the null tense is coindexed with the matrix tense. Thus, the interpretation of the overt form -ess followed by the past -Ø, is perfective in the past.

The discussion so far suggests that quotative clauses exhibit the same general tense pattern as those of the other embedded clauses. However, there is a unique characteristic associated with quotative clauses. That is, the double form -ess-ess can occur freely in the quotative clause, while its occurrence is marginal or unacceptable in other embedded clauses.


John said that Mary had once left.
The embedded clause tense above indicates the temporal relation in which its event denotes past perfective at the time denoted by the matrix tense. One problem in this case is how to handle the occurrence of the two -esse's, neither of which is a past tense suffix. One possible way to get around this problem is to recognize the duplication of -esse as a stacked perfective, indicating perfective in the perfective. Such a duplication is unique to quotative constructions (and probably before a retrospective suffix in matrix clauses). Another solution may be to treat quotative constructions (and probably also retrospective constructions) as if they were the combinations of two independent sentences, i.e., the quoted part and the quoting part. I will not elaborate these alternatives.

5.5 Nominalized constructions

Nominalized clauses are formed by means of such nominalizing affixes as -ki and -um, whose difference has been a time-honored topic among Korean linguists. In general, -ki is related to non-factivity and -um to factivity (cf. I. Yang 1972). Compare the following sentences.

(53) a. Mary-nun [John-i hakkyo-ey ka-ss-ŋ-um]-ul
   top nom school-to go-perf-past-comp-acc
   al-ass-ta.
   know-past-Dec

Mary knew that John had gone to school.
b. Mary-nun [John-i hakkyo-ey ka-ESS -g_{i}-N] kes-ul
go-perf-past-comp thing-acc
al-ass_{i}-ta.
know-past-Dec
Mary knew that John had gone to school.

Sentences (53a) and (53b) have roughly the same meaning. However, their syntactic structure is different: while the former has a headless embedded clause, the latter has the defective head noun kes 'thing'. Headless embedded clauses may be classed as nominalized clauses, in that the clause is formed by a nominalizing suffix and functions as a nominal in a larger sentence. On the other hand, sentences like (53b) are noun complement constructions, as we have seen in 5.2.3.

Since a nominalized clause functions as a nominal, the node dominating the clause is NP. I propose the following tree structure for (53a).
Nominalized clauses with -∅ are associated with both anaphoric and deictic interpretations of the null form tense. Observe the following.

    know-past-Dec
    Mary knew that John was going to school yesterday.

    Mary knew that John is going to school tomorrow.

D. Yang (1977:218) claims that the tense of a complement clause can be interpreted only as endophoric,
that is, anaphoric, giving the following examples (the null
tense forms are inserted by me).

(56) a. Mary-nun [John-i ku chayk-ul ilk-Ø-ki-lul]
top nom that book-acc read
  pala-ss-ta.
  hope-past-Dec

Mary wanted John to read the book.

b. Mary-nun [John-i ku chayk-ul ilk-ess-Ø-ki-lul]
pala-ss-ta.

Mary wanted John to have read the book.

As I mentioned above, it is true that (56b) has only an
anaphoric reading for the null form since the embedded
clause event is interpreted as past perfective. This is not
the case with (56a), however, contrary to what Yang
observed, as evidenced in the following pair of sentences.

(57) a. Mary-nun [John-i ku chayk-ul ecey ilk-Ø₁-ki]-lul
  pala-ss₁-ta.

Mary wanted John to read the book yesterday.

b. Mary-nun [John-i ku chayk-ul nayil ilk-Ø₂-ki]-lul
  pala-ss₂-ta.

Mary wanted John to read the book tomorrow.

Finally, compare the following sentences.

(58) a. Mary-nun [John-i ku chayk-ul ecey ilk-ess-Ø₁-ki]-lul
  pala-ss₁-ta.

Mary wanted John to have read the book yesterday.
b. Mary-nun [pro kongpwuha-$$s_1$$-ki] sicakhay-$$s_1$$-ta.
   top     study-past-comp begin-past-Dec
   Mary began to study.

*c. Mary-nun [pro kongpwuha-ess$$s_1$$-ki] sicakhay-$$s_1$$-ta.
   Mary began to study.

The ungrammaticality of (58c) is, needless to say, due to the violation of Condition C. Notice that the semantic properties of the matrix verb affect the occurrence of -ess and consequent temporal interpretations. Thus, for example, the matrix verb *palata 'to want' has irrealis mood as one of its semantic features, whereas the verb sicakhata 'to begin' requires the embedded clause to occur simultaneously with the 'begin' clause.
Notes to Chapter 5

1. Incidentally, there is still another reading in (9a): "Mary read the book that John has read" and another reading in (9c): "Mary read the book that John may/might read."

2. Similar phenomenon is discussed by Kuno (1973:262) in connection with Japanese relative clause tenses.

3. Consider the following interpretation.
   
   
   Mary read the book that John read.
   
   My theory predicts the interpretations of (11a) and (11a'), but not (11a''). An alternative analysis will be proposed in Chapter 6.

4. In this connection, C. Lee (1985) also points out that the event in the relative clause with the suffix -ul can precede or follow the matrix clause event.

5. In the case of the head noun kes 'fact/thing', the main verb requires the embedded clause verb to take certain complementizers. For example (from M. Lee 1968 requoted from N. Kim 1984),

   
   His handling things is prompt.

   *b. Ku-nun il-ul cheliha-n kes-i sinsokha-ta.

   *His having handled things is prompt.

   M. Lee (1968) observes that certain classes of main verbs impose a tense restriction calling for the nonoccurrence of the form -un in the complement clause. N. Kim (1984:136) further points out that the form -ul as well as -un is unacceptable in the complement clause, as shown below.


   I. Yang (1972) suggests a 'modality adjustment rule' to account for the tense phenomena in complement sentences.
6. The compound verb-like behavior of the two verbs does not warrant translation as a compound verb, because frequently the accusative particle -(l)ul or a delimiter can be inserted between the two verbs:

   John wanted to go to school.

    John wanted to go to school too.
Chapter 6
Summary

6.1 Findings

The purpose of this study has been to propose a unified account of temporal expressions in Korean. The major proposals made in this study are summarized as follows:

(1) a. There exist both tense and aspect in Korean: while tense is obligatory, aspect is not.

b. The notion of tense is crucially distinct from that of event time. While tense is a grammatical category which names a relationship between an event time and speech time, an event time is not a grammatical category.

c. Tense in Korean has only two values—past and nonpast. Past tense names the relation in which an event precedes speech time and nonpast tense names the relation in which the event follows or is simultaneous with speech time.

d. There are two forms for expressing tense contrasts: -ess (which always names the past relation) and -# (whose value can change). The overt tense form -ess enters into the same interpretive pattern as names or R-expressions and is subject to Principle C of the Binding Theory. The null form tense behaves like pro
(or pronominal) in that its reference can vary: it can name either a past or a nonpast relation.

e. Like all pronominals, a null form tense can receive its interpretation from an antecedent (which I termed an "anaphoric interpretation") or it can refer freely (a "deictic interpretation"). The deictic interpretation of the null form is nonpast, unless otherwise specified.

f. Since tense in the present study is a referring expression like a noun phrase, it can bear an index to indicate coreference or disjoint reference with respect to another tense category. Coindexed tenses have the same value for the [+past] feature. Thus, two tense categories can be coindexed even when their event times differ.

g. When an overt tense form is coindexed and c-commanded by another tense category, it gives rise to ungrammaticality (violation of Principle C). Principle C accounts for the fact that the past marker -ess is not allowed in embedded clauses where a matrix tense names a past relation.

h. The main thesis, that -ess is an R-expression subject to Principle C and -∅ is a pronominal, holds true in various types of biclausal constructions such as subordinate, coordinate, relative, complement, and
nominalized clauses.

The main proposals above address in an integrated and principled way the other issues raised in Chapter One involving temporal expressions in Korean. Other findings associated with the major proposals above are illustrated below.

(2) a. The reduplicated suffix \(-\text{ess-ess}\) marks past-perfective, consisting of overt tense and aspectual features. Thus, the form \(-\text{ess-ess}\) names a time-relation in which an event is completed before a past reference time.

b. The so-called retrospective suffix \(-\text{te}\) is neither a past tense marker nor aspect. However, it functions to provide a pastness interpretation.

c. Conjunctive suffixes play a central role in the temporal interpretation. They are divided into two types: \([+\text{temporal}]\) and \([-\text{temporal}]\). The temporality feature helps determine the anaphoric or deictic interpretation of the null form tense.

d. The transferentive suffix \(-\text{taka} \ 'while'\) lacks inherent perfectivity and hence allows the overt aspectual marker \(-\text{ess}\).

e. The suffix \(-\text{ko} \ 'and/and then'\) has dual functions--
subordinating ([+temporal]) and coordinating
[-temporal]). In both -ko clauses, the overt past -ess
must be free, which follows from Principle C.

f. Temporal adverbials help to disambiguate the
temporal interpretation and provide a reference time.
Different senses associated with nonpast or past are
disambiguated. Furthermore, the deictic and anaphoric
interpretations of the null form tense in embedded
clauses are also disambiguated by means of adverbials.

6.2 Theoretical implications and residual problems

The present study makes important distinctions between
tense and event times. The treatment of tense as a
referring expression allows us to account for two parallels
within the framework of the Binding Theory. First, the
parallel between an overt tense and an R-expression
(Principle C) has been applied to various biclausal
sentences in Chapters 4 and 5. The second parallel between
a null form tense and pro has also been extensively
discussed throughout this dissertation. These two parallels
which at first glance look unrelated are in fact covered by
the same grammatical principle (that is, Binding Theory).
This explains the phenomena which have not been adequately
addressed thus far in Korean linguistics.
Coindexing and Principle C are essential in explicating the interpretation of the two tense forms in a principled way.

Furthermore, my assumption that INFL contains a tense category, realized as either an overt or a null form, can account for why nominative case is assigned to the subject NP of so-called tenseless clauses in Korean.

However, there is a residual problem with regard to tense indexing. Specifically, tense in relative clauses raises a problem since the abstract form -ESS-N is rarely actualized in phonetic forms. In Chapter Five, I proposed to analyze -(u)n as -ESS-N. A problematic case with this analysis is shown below, since the interpretation in (3c) is not predicted by this analysis.¹

       top nom read book-acc read-past-Dec

   a. Mary read the book that John had read.
   b. Mary read the book that John has read.
   c. Mary read the book that John read.

Notice that there are three possible interpretations associated with the relative clause tense. It is noteworthy here that the relative clause suffix -(u)n always exhibits a meaning of completion (cf. Nahm 1978, Gim 1980 a/b, H. Shin 1986). In other words, an event or action in -(u)n clauses is completed or prior to that of its matrix clause. In this regard, the tense pattern in -(u)n clauses can be
reanalyzed. That is, -(u)n is analyzed as the optional aspect marker -ESS followed by the null form tense -∅ and the suffix -N. This analysis of -un as -(ESS)-∅-N can predict all three interpretations of (3), as shown below.

(4) Mary-nun [John-i e ilk-(ESS)-∅_{i/j}-N] chayk-ul
ilk-ess_{i}-ta.

Since the aspectual marker -ESS is optional above, the tense pattern in (4) has four possible combinations, as represented below.

(5) Relative Clause       Matrix Clause
(i) ESS-∅_{i}             ess_{i}
(ii) ESS-∅_{j}             ess_{i}
(iii) ∅_{i}                ess_{i}
(iv) ∅_{j}                ess_{i}

The pattern (5-i) indicates that a null form tense in the embedded clause is coindexed with the matrix clause tense. The tense interpretation for the relative clause in (5-i) is past perfective, as in (3a). (5-ii) shows that a null form tense is not coreferential with the matrix tense, which is past. The relative clause tense in (5-ii) is interpreted as present perfective, as in (3b). The pattern (5-iii) indicates the case where the aspect marker -ESS does not occur and the null form tense is coindexed with its matrix tense. Thus, the tense in relative clause in (5-iii) is interpreted as simple past. Finally, consider (5-iv) where
the null form tense is not coreferential with its matrix tense. This pattern (that is, -∅_{j} \ldots \ldots \text{ess}_{i}) is not permitted in my analysis. Since the form -(u)n already specifies the meaning of completion (past or perfective), the nonpast interpretation of the relative clause tense is contradictory. Therefore, all three interpretations for the relative clause tense in (3) is correctly predicted in my analysis. My analysis of -(u)n as -(ESS)-∅-N in (5) can also account for the following.

(6) [John-i ecey casalha-n] kes-un amwu-to  
nom yesterday suicide fact-top anybody-also  
yeychuk moshay-ss-ta.  
predict not-past-Dec  

Nobody could predict that John would commit suicide yesterday.

(7) [John-i Mary-lul silheha-n] kes-un  
nom acc dislike fact-top  
Mary-ka sikhay-ss-ki ttaymwun-i-ta.  
nom be jealous-past-NOM reason-is-Dec  

The reason why John disliked/has disliked/had disliked Mary is because she was jealous.

In (6), the relative clause tense is interpreted as simple past, following from (5-iii). The past time adverb ecey 'yesterday' blocks the present perfective meaning, and semantic properties of yeychuk 'predict' do not allow the past perfective meaning. Thus, only the (5-iii) pattern is allowed for (6). The relative clause tense in (7) shows the same pattern as (4).
A second issue involves the syntactic position of different types of modifiers. For instance, the position of adjunct clauses ending in ttay 'time' has not been discussed thus far. I assume that such an adjunct clause is attached to C" on the ground that it can have a topic marker -nun (cf. Moon 1987). Consider the following:

(8) [John-i tochakhay-ss-ul ttay] (-nun) kicha-nun nom arrive-past-prospective time top train-top

imi ttena-ss-ess-ta.
already leave-perf-past-Dec

When John arrived, the train had already left.

(9) [Nay-ka ku-lul manna-ss-ul ttay] (-nun)
I-nom him, meet-pa~t time top

ku-nun koki-lul han mali-lul cap-ass-ess-ta.
he-top fish-ace one catch-perf-past-Dec

When I met him, he had caught one fish.

The sentences above have been discussed in Chapter Two in connection with the double form -ess-ess (perfective-past). Note that the topic marker -nun can occur with the adjunct clause above. Following Moon (1987), I assume that topic in a sentence initial position occupies the specifier position of C". That is, if there is more than one occurrence of -nun as in (8)-(9), only the first can be topic and is positioned in the specifier position of C". Note further that the past tense in the matrix clause of (8)-(9) can be coindexed with the first clause -ess since both -ess's name the past relation. However, I maintain that there is no violation of Principle C because there is no c-command
relation between the two tense categories. Consider the S-structure of (8).

(10) S-structure of (8)

[John-i tochakhay-ss₁-ul] ttay-(nun)

In (10) above, the second clause tense -ess can be coindexed with the first clause tense (i.e. -ss), but does not c-command the first clause tense. Since the maximal projection of the second clause tense is the [I"], it blocks c-command of the first clause tense. As a result, there is no violation of Principle C.

A third issue which was not discussed in detail in this study is the tense phenomenon in quotative constructions. Quotative clauses show the same tense pattern as other embedded clauses. However, unlike in the other embedded clauses, the double form -ess-ess can occur freely in the quotative clause. I suggested in Chapter 5 that the duplication of -ess in such constructions seems to indicate double perfective since there is no change in meaning between the single form and the double form.
However, another solution may be to treat quotative constructions as the combination of two independent sentences, as in the coordinate -ko clause. However, this dissertation suggests a framework which fits the tense phenomenon in quotative clauses into an overall integrated account.

There are additional issues which need future investigation. For example, consider the following:

(11) [John-i ecey ka-∅-se] cikum o-∅-n-ta.
      nom yesterday go and now come-nonpast-ind-Dec

John went yesterday and is coming back now.

Sentence (14) shows that the past time adverb ecey 'yesterday' cooccurs with a null form tense. Note that the matrix tense in (14) is interpreted as nonpast. I suggested that the deictic interpretation of the null form is nonpast, unless otherwise specified (cf. section 3.1 in Chapter 3). The occurrence of the past time adverb in (11) supports this dissertation's basic theory that the interpretation of the deictic tense can be influenced by indexicals or a semantic context.

Finally, a major area for further study is aspectual phenomena. Future development of the framework for aspect such as has been accomplished for tense in this dissertation would make a valuable contribution to Korean linguistics.
6.3 Conclusion

The significance of this dissertation is that it provides a more comprehensive framework for Korean tense and aspect than available previously. It integrates a theory of tense and aspect with the current Binding Theory. Whereas formerly, many Korean linguists addressed parts of these issues, this dissertation addresses tense in an overall integrated manner.

While no linguistic theory can explain all phenomena perfectly, this dissertation creates a new unifying theory of tense in Korean.
Notes to Chapter 6

1. Suppose in (3) that only the tense category is overt in the embedded clause, while aspect is simply empty, as illustrated below.

    past past
Mary read the book that John read.

In sentence (i), since the two tense categories refer to a past relation, they bear the same index. However, coindexing the two tense categories violates Principle C since the R-expression, -ESS is bound by the matrix tense, as shown below.

(ii) S-structure of (i)

The embedded clause tense is c-commanded and coindexed with the matrix tense, hence violating Principle C. My theory of indexing tense does not allow disjoint reference for the embedded tense above, since both instances of -ess name the same temporal relation.
2. Professor Ho-min Sohn has suggested an alternative analysis (personal communication), which constrains the mechanism for tense indexing. That is, I proposed that when two tenses are coindexed, they have the same value for the [±past] feature. However, the alternative analysis allows disjoint reference for the embedded tense as in (iii) below. This analysis assumes the following:

(i) A deictic tense has disjoint reference.

(ii) The overt form -ess is always taken to be deictic.

Following this proposal, the past suffix -ess is deictic in that it is interpreted as past with regard to speech time. In other words, the deictic tense is taken to be independent of the matrix tense, and there is no coreferential relationship with the matrix tense. More specifically, the two tenses in (iii) below are independent of each other, that is, there is no temporal dependency relationship between them, although both refer to past relations. Thus, the two tenses bear disjoint reference, as shown below.


Mary read the book that John read.

This alternative proposal could be the basis for insightful future research.
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