Semantics of TOKI Constructions:

concerning time relationships

when two events are expressed
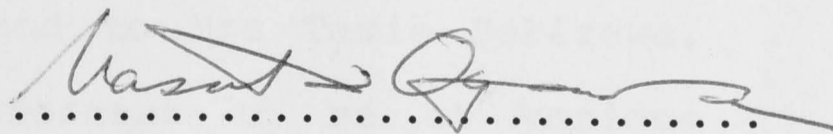
in TOKI constructions

by

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This is to certify that this
thesis is my own work and
that all sources used have
been acknowledged.

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ABSTRACT

Ogawa, Masako. 1984. Semantics of TOKI constructions:
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This work is concerned with explicating the semantics
of constructions which involve the temporal connective TOKI.
It attempts to clarify the time relationships between sub-
ordinate and main clauses linked by this connective, in the
light of an examination of the aspectual properties of
propositions.

The main concerns of this study are as follows:

1.   A consideration of the various factors which are
     relevant in determining the aspect of a clause. It
     will be argued that the aspectual properties of the
     subordinate clause proposition as a whole, and not of
     the verb alone, is relevant in determining the time
     relationships between the subordinate and main
     clauses in a complex sentence.

2.   A consideration of TOKI constructions: the conditions
     under which TOKI clauses are grammatically realized,
     and the time relationships which are designated in
     TOKI constructions.

CHAPTER ONE

Introduction

This is a study of the semantics of the Japanese
temporal connective TOKI. This work primarily concerns the
time relationships between two clauses which are linked by
this connective. The time relationships with which the
present study is concerned are defined as follows: When
two events, for example, are described in a subordinate and
a main clause, the order of the occurrence of each event is
generally clear. That is, one event may occur before or
after the other, the two events may occur at the same time,
or the temporal interval of one event may overlap with that
of the other over a certain period of time. This
relationship between the events specified by two clauses
--COTEMPORAL WITH (Heinämäki's terminology), EARLIER THAN,
or LATER THAN-- is defined as the time relationship.

I use the term CONNECTIVE to refer to TOKI, as
well as to AIDA, UCHI, ATO, MAE and MADE, for expedience
only. This term is more often applied to elements, such as
-NAGARA, -TE and -TE KARA, which are added to the verb as
part of its morphology, resulting in a nonfinite verbal
form which links that clause to the next.

Words like TOKI, however, in spite of having
basically the same function --that of linking two clauses--
differ significantly in terms of their syntactic properties.
These CONNECTIVES are all nouns, and function as head nouns

of relative clauses, being attached to the finite form of the predicate of the first of two clauses to be linked.

Compared to other temporal connectives, the TOKI connective ranges widely in the types of time relationships which can be understood to hold between the clauses it links. Constructions with the connectives ATO and MAE designate a sequential relationship and those with the connectives AIDA and UCHI designate a cotemporal relationship. However, TOKI constructions can show both of these two types of relationship i.e. sequential and cotemporal. This study attempts to pinpoint exactly what it is that determines a preference of one or the other of these interpretations in a complex sentence containing TOKI, by observing different combinations of verbal predicates in various forms as well as combinations of nonverbal, stative predicates (i.e. adjectives and nouns).

There have already been several studies of TOKI constructions (Teramura, 1971 and 1982/Josephs, 1972/Nakau, 1976/Narita, 1982). In these studies, it has been argued that the crucial factor in determining the time relationship between a subordinate and a main clause linked by TOKI, when the verb in the subordinate clause designates action or motion, is whether the verb appears in the -TA form or the -RU form. The -TA form in the subordinate clause verb is said to mean that the subordinate clause event occurs earlier than the main clause event, and the -RU form, to mean that the order of occurrence is reversed i.e. the main

clause event occurs first and the subordinate clause event follows. Consider the following examples:

la   Nihon   e   <u>kuru</u>   toki tomodachi   ga
      Japan   ALLAT come-IMPER   when friend   NOM

      kuukoo   made   kitekureta.
      airport   RESTR   come-give-PAST

      'When I was coming to Japan my friend came to the
      airport.' (i.e. to see me off)

lb   Nihon   e   <u>kita</u>   toki tomodachi   ga
      Japan   ALLAT come-PERF   when friend   NOM

      kuukoo   made   kitekureta.
      airport   RESTR   come-give-PAST

                          (Teramura's examples, 1971)

      'When I came to Japan my friend came to the
      airport.' (i.e. to meet me)

In la the main clause event (that is, my friend's coming to the airport) occurs first and the subordinate clause event (my arrival in Japan) follows. In lb, the order of the occurrence of the two events is the opposite.

However, the preceding explanation does not apply to the following example;

2   Kinoo   ano   kawa   de   oyoida   toki
      yesterday that   river   LOC   swim-PERF when

      ishi ni   butsukatte   ashi ni   hidoi kega
      rock LOC   hit-GER   foot LOC bad   injury

      o   shita.
      ACC   do-PAST.

      'Yesterday, when he was swimming at that river, he
      hit against a rock and injured his foot badly.'

The two events in 2 are interpreted as having occurred cotemporally. Although Josephs includes the preceding example, he makes no attempt to explain the rules which determine the time relationships between the two clauses in cases such as this.

In cases when stative predicates show up in the subordinate clause, it has been proposed that the -RU form and -TA form of the subordinate clause verb are neutralized when the tense of the main clause is past. In other words, there is no difference between the -RU and -TA forms in this case. However, as the following examples illustrate, when a stative predicate appears in the subordinate clause, the -RU form is preferred to the -TA form in most cases:

3a   Taroo   wa   wakai   toki kurooshita.
       Taroo   TOP   young-U.T. when have a hard time-PAST

       'Taroo had a hard time when he was young.'

3b   ?Taroo   wa   wakakatta toki kurooshita.
       Taroo   TOP   young-PAST when have a hard time-PAST

4a   Taroo   wa   kodomo   no   toki   atama   ni
       Taroo   TOP   child   COP-U.T.   when   head   LOC

       kega   o   shita.
       injury ACC do-PAST

       'Taroo had a head injury when he was a child.'

4b   ?Taroo   wa   kodomo   datta   toki   atama ni
       Taroo   TOP   child   COP-PAST when head LOC

       kega   o   shita.
       injury ACC do-PAST

Time relationship is invariably cotemporal when a stative predicate appears in the subordinate clause.

This study attempts to clarify the various time relationships in TOKI constructions on the basis of the investigation of aspect, which is determined at the propositional level. Therefore, the -TA and -RU forms of verbs are not considered to be major factors in determining the aspect. Rather the aspect is considered to be determined by other factors, such as the inherent aspectual properties of verbs, or the aspectual properties of the proposition as a whole, including the entire verb phrase, or other constituents such as the subject or adverbial elements. This work takes these relevant factors into consideration and attempts to establish some categories which show different aspectual properties, with particular relevance to TOKI constructions.

This study has greatly benefited from Vendler's work on aspect (1967) and also from Dowty (1972), who adopted much of Vendler's analysis. In addition, Teramura's work on aspect (1971 and 1982), Jacobsen's work on transitivity in the Japanese verbal system (1983), and Heinämäki's work on English temporal connectives (1978) have also been most helpful.

The material of this study is organized in the following way: Chapter 2 deals with the temporal-aspectual properties of propositions. I shall discuss some previous treatments of the factors which are relevant in determining aspect, and add some observations of my own. Chapter 3

deals specifically with the various time relationships which occur between clauses linked by TOKI. Chapter 4 summarizes the conclusions of the study and presents some problems which should be noted for further study. In Chapter 4 some differences between connectives TOKI, AIDA, and UCHI are also mentioned, although a detailed study of these differences is not within the scope of this study.

CHAPTER 2

Temporal-aspectual properties of propositions

This chapter examines the temporal-aspectual properties of propositions. The observation of aspectual phenomena should not be limited to verbs or verb phrases, but propositions as a whole must be taken into consideration in determining the aspect of the clause. Therefore, aspect is discussed at the propositional level.

The outline of this chapter is as follows: Section 2.1 deals with previous treatments. The following studies are discussed: Jacobsen's treatment of aspect in section 2.1.1, Vendlerian treatments in Section 2.1.2, and finally Heinämäki's treatment in 2.1.3. Section 2.2 concerns the temporal-aspectual properties of Japanese propositions. There are two major factors relevant in determining the aspect of propositions in Japanese, and these will be discussed in the first two subsections. 2.2.1 discusses whether or not the subject of the clause undergoes any change, and the effect of this upon the aspectual interpretation on the basis of Jacobsen's observations. 2.2.2 attempts to elaborate the Vendlerian concept of aspect. The last subsection, 2.2.3, also develops Vendler's work on the inherent aspectual properties of verbs, with particular reference to Japanese verbs. Native verbs, Sino-Japanese verbs, and English-Japanese verbs are examined in 2.2.3.1, 2.2.3.2, and 2.2.3.3, respectively.

2.1   Previous treatments: survey and problems

This subsection deals with previous studies of aspect. In section 2.1.1 and 2.1.2 we survey the studies of aspect in the simple clause. 2.1.1 concerns Jacobsen's treatment (1983) of aspect in the Japanese language. 2.1.2 deals with Vendler's treatment (1967) of the aspect of English verbs and verb phrases. Finally 2.1.3 looks at Heinämäki's treatment (1978) of aspect in English temporal connectives.

2.1.1   Jacobsen's treatment

Jacobsen's ideas, which are the concern of this subsection, are based on Okuda (1978). Okuda's approaches to the problem of aspect of verbs differs from that of Kindaichi (1947) and his successors, Fujii (1966) and Yoshikawa (1971),[1] particularly with regard to the problem of the verbal form -TE IRU. According to Jacobsen's review of Okuda's claims,[2] Okuda suggests that whether the verbal form -TE IRU is interpreted as indicating progressive aspect or perfective aspect depends on whether or not the subject of the clause undergoes a change of state. When the subject does go through a change of state, a verb in the -TE IRU form designates perfective aspect. When the subject does not undergo any change, then the -TE IRU verb indicates progressive aspect. Observe the following examples:

1   Mado   ga   ai-te iru.
     window   NOM   open-PERF

     'The window is open.'

2   Taroo   ga   hon   o   yon-de iru.3
     Taroo   NOM   book   ACC read-PROG

     'Taroo is reading the book.'

The subject 'mado' of 1 is considered to have undergone a change i.e. there is a change in the state of the window from that of 'being closed' to that of 'being open'. In contrast, there is no change in the state of the subject of 2.

On the basis of these observations by Okuda, Jacobsen further suggests that whether the subject undergoes a change or not depends on whether the subject is AGENT or PATIENT. The agent subject, according to him, does not undergo a change, as in e.g. 2, while the patient subject, on the other hand, does, as in 1. Jacobsen considers the agent to be the entity which is capable of initiating the action or motion, or which performs the action itself. He calls the verbs which take agent subjects DYNAMIC VERBS[4] and those which take patient subjects NONDYNAMIC VERBS.

In order to classify verbs into the categories of AGENT VERBS and PATIENT VERBS, Jacobsen applies the following syntactic tests: Verbs are AGENT VERBS, if

     (a) Passivization is possible,[5]

     (b) An imperative form can be made,

     (c) A potential form can be made.

Besides the preceding three tests, one further test, proposed by Heinämäki (1978),[6] can be used to recognize an AGENT VERB.

That is: (d) Possible occurrence in pseudo-cleft sentences.[7]

The preceding tests are to check the presence of a NP in the semantic role of agent as understood in the sense of an entity which is capable of initiating motion or action.

Jacobsen states the reason for his differentiation between patient subjects, which undergo a change of state, and agent subjects, which do not, as follows: An agent is an entity which performs an action or motion by itself, while a patient is an undergoer of the action or motion. Thus the patient is the one who is likely to experience some change as a result of the action or motion.

Let us look again at examples 1 and 2. The subject 'mado' of 1 is the undergoer of the action which is described by the verb 'akeru' ('to open'). In contrast, 'Taroo' in 2 is the agent.

Another insightful claim made by Jacobsen should also be mentioned here. Contrary to Okuda's general claim that only when the subject undergoes a change is the aspect interpreted as perfective, Jacobsen claims that even some agent verbs in the -TE IRU form are interpreted as perfective, rather than progressive. Consider the following:

3   Hanako wa   kimono   o   ki-te iru
       Hanako TOP   kimono ACC wear-PROG/PERF

    (i) 'Hanako is putting her kimono on.'

    (ii) 'Hanako has a kimono on.'

As the English translation shows, there is an ambiguity between the progressive aspectual interpretation in (i) and the perfective aspectual interpretation in (ii). Jacobsen explains the reason for this ambiguity as follows: Verbs like 'kagamu' ('squat'), 'tatsu' ('stand up'), 'kiru' ('put on') etc. are considered semantically reflexive.[8] Take 'kagamu' ('squat'), for example. This verb denotes movement of the whole of the body of the subject from the standing position to the sitting position and the subject himself undergoes the motion. Therefore, the subject of this verb is interpreted as the patient as well as the agent. Similarly the verb 'kiru' ('put on') denotes that some body part of the subject is affected by the action, i.e. the subject of this verb also can be simultaneously viewed as both an agent and a patient.

These dual semantic functions of the preceding verbs result in the two interpretations of the -TE IRU form, namely the progressive reading when the subject is thought of as agentive and the perfective reading when the subject is understood to be the patient.

Whether a verb in the -TE IRU form designates progressive aspect or perfective aspect in Jacobsen's opinion is relevant to the aspectual properties of propositions in which verbs take other forms, such as -TA and -RU, in the subordinate clauses of complex sentences. In other words, the aspectual difference between the progressive and the perfective is reflected in the interpretation of time relationships between subordinate and main clauses. This will be discussed in detail in Chapter 3.

2.1.2   Vendlerian treatments

Vendler (1967) attempts to classify English verbs, or rather verb phrases,[9] in terms of their temporal-aspectual properties. He distinguishes four classes of verb phrase: activities, accomplishments, achievements and states. Some examples of verbs or verb phrases which belong to each class are the following:

activities   : run, walk, swim, push a cart

accomplishments: paint a picture, make a chair[10]

achievements   : recognize, realize, reach the summit

states   : have, possess, desire, want, like

The preceding categories are characterized by different syntactic properties and logical inferences. Below are some criteria which are used in this categorization:

A. Whether or not the process described by the verb phrase has duration in time. When the process does have duration in time, the verb phrase is categorized as either an activity or an accomplishment. When the verb phrase does not describe an action with duration, then it belongs to either the achievement or the state category. Vendler calls the former CONTINUOUS and the latter NONCONTINUOUS. The distinction can be made by observing whether or not the verbs of the two groups take the -ING form. Consider the following:

4a   I am running. (activity) (Vendler's example)

4b   I am writing a letter. (accomplishment) (Vendler's example)

4c   *I am reaching the summit. (achievement)

4d   *I am knowing her. (state)

B.   Whether or not the verb phrase is compatible with durative time adverbials such as FOR AN HOUR:

5a   I ran for an hour. (activity)

5b   *I wrote a letter for an hour. (accomplishment)

5c   *I reached the summit for an hour. (achievement)

5d   I loved her for a year. (state)

C.   Whether or not the verb phrase is compatible with time adverbials that denote that the action is completed within a certain period of time, rather than simply performed over a certain duration, such as IN AN HOUR:

6a   *I ran in an hour. (activity)

6b   I wrote a letter in an hour. (accomplishment)

6c   I reached the summit in an hour. (achievement)

6d   *I loved her in a year. (state)

D.   Among the verb phrases which are grammatical in context i.e. 6b and 6c, whether or not IN AN HOUR entails WAS V-ing DURING THE HOUR:

7b   I was writing a letter during the hour. (accomplishment)

7c   *I was reaching the summit during the hour. (achievement)

The characteristics of the verb phrase groups observed above can be summarised as follows:

TABLE 1

verb phrases criteria	activities	accomplish-ments	achieve-ments	states
progressive going on in time	+	+	-	-
takes durative adv. such as FOR AN HOUR	+	-	-	+
occurs in the phrase IN AN HOUR	-	+	+	-
IN AN HOUR entails WAS V-ing DURING THE HOUR	n.a.	+	-	n.a.

note: '+' indicates 'yes'
        '-' indicates 'no'
        'n.a.' indicates 'not applicable'

One problem which Vendler himself was well aware of, is that in many cases the category membership cannot be determined on the basis of the verb by itself. In other words, the temporal properties of sentences depend on many sorts of things, such as the inherent properties of the verb (whether durative or not), the kinds of place adverbials (whether they designate a goal or not), the kinds of arguments.11

The point here is that what is usually referred to as aspect is not a matter of the verb alone. Rather the proposition as a whole should be taken into consideration when the aspect of the sentence is determined. This is illustrated in examples 8-10 below. When the aspect of each of these sentences is determined, criteria such as those noted above must be taken into account.

8a   The dog ran in the park for an hour. (activity)

8b   The dog ran home in an hour. (accomplishment)

The preceding examples show that when the goal is expressed by a place adverbial like 'home' in 8b, then the accomplishment interpretation is made.

9a   John ran for an hour. (activity)

9b   John ran a mile in an hour. (accomplishment)

This pair shows that when a quantifier such as 'a mile' in 9b appears, the sentence has accomplishment meaning.

10a   Guests arrived for two hours. (activity)

10b   Somebody arrived at 10 a.m.[12] (achievement)

The contrast in aspect between 10a and 10b seems to stem from the characteristics of the subject, in each case. The subject in 10a is an indefinite plural, while the subject in 10b, on the other hand, is a singular NP, and therefore specific. The plural subject allows the verb 'arrive' to be understood to have occurred again and again. Thus the 'arriving' can be thought of as a process with duration over time. A singular subject, however, can arrive only once, and no duration is involved.

In summary, the preceding examples show that whenever the sentence is interpreted as indicating an accomplishment, the various constituents of the sentence combined indicate that there is some point at which the event described in the sentence can be thought of as completed. This point is specified, for example, by place adverbials which designate a goal, or by quantifiers which are added to the arguments, or it may be specified by other factors.13

Related to the idea of an END-POINT in an accomplishment proposition, which marks the completion of the event, are the goals involved in achievement propositions. However, since achievements are viewed as happening instantaneously, it might be better to say that achievements include some point which functions as the borderline between a previous state and a subsequent, changed state. Observe the following:

11   I reached the summit.

This includes the point of 'reaching the summit' and we can understand the state of the speaker to have changed from 'not being on the summit' before this point, to 'being on the summit' after it.

The characteristics of the preceding four categories are summarized in the following table:

TABLE 2

categories characteristics	activities	accomplish- ments	achieve- ments	states
has duration over time	+	+	-	+
temporal interval is limited	+	+	+	-
includes a definite end-point or a point of change	-	+	+	-

It should be noticed that, in order to avoid confusion, the terminology ACCOMPLISHMENT will be used to refer only to verb phrases, following Vendler (1967). However, when the proposition as a whole is taken into consideration with respect to aspect, as is clearly necessary in many cases, I will employ the term TELIC. (See Dowty (1972) and Comrie (1976).)

So far we have seen that aspectual categories can be determined by certain grammatical features i.e. the kinds of adverbials included, the kinds of arguments etc. These are important factors in determining aspect which Vendler did not adequately account for. It should also be mentioned that the aspectual categories are sometimes determined at a higher level than the level of grammar, as pointed out by Heinämäki (1978,9). This is the extra

linguistic level. For example, when the speaker imagines that a certain person is in the habit of swimming a certain distance every day, then the following sentence has a TELIC reading.

12   John   finished   swimming   early   today.
     (See Dowty (1972))

However, in many other contexts, ordinary, aimless swimming would constitute a prototypical activity rather than an accomplishment.

As the preceding example shows, whether the sentence is telic or not is not determined only at the level of grammar, but the context (i.e. extra-linguistic factors) should also be taken into consideration. However, these extra-linguistic factors will not be discussed further in this thesis, which is primarily concerned with the level of grammar.

It should be noted that there is a mainstream of aspectual studies in Japanese. Kindaichi (1947) attempts to classify verbs into four classes. Fujii (1966) and Yoshikawa (1971) take over Kindaichi's classification with some significant modifications. Yoshikawa attempts to classify verbs into six groups, as follows:

TABLE 3

jootai dooshi 1 'stative verbs'	e.g. iru/aru 'exist' dekiru 'can'	
2		kekka dooshi 'result verbs'	hikekka dooshi 'nonresult verbs'
doosa dooshi 'active verbs'	keizoku dooshi 'continuative verbs'	e.g. kiru 'put on' noru 'get on'	e.g. yomu 'read' hanasu 'speak'
	henka dooshi 'change verbs'	e.g. kareru 'die' kawaku 'dry'	e.g. miru 'spot'
	shunkan dooshi 'instantaneous verbs'	e.g. shinu 'die' kekkon suru 'marry'	

Yoshikawa, like Fujii before him, argues that a distinction between result and nonresult must be set up in addition to Kindaichi's four main divisions. This distinction refers to whether or not an event gives rise to a resultative state. However, what is actually relevant in determining aspect in complex sentences is whether the proposition is telic or atelic i.e. whether or not there is some point at which the action or event is understood to be completed. (Please see Chapter 3).

The element which is common to all three of the linguists mentioned above (namely Kindaichi, Fujii and Yoshikawa) is that their treatment of aspect relies on an analysis of the verb alone. They pay little or no attention to the propositional level. However, as we have

seen from the discussion in this subsection, aspect is a property of the proposition as a whole, and is not confined to the verb alone, or even to the verb phrase.

2.1.3   Heinämäki's treatment

Heinämäki (1978) discusses the time relationships between two clauses which are linked by temporal connectives such as WHEN, WHILE, AFTER, BEFORE and UNTIL. In her discussion of WHEN constructions, Heinämäki examined the following sentences and illustrated the time relationships between the subordinate and main clauses in each one:

13   It was raining in New Orleans when we were there.
A when B14
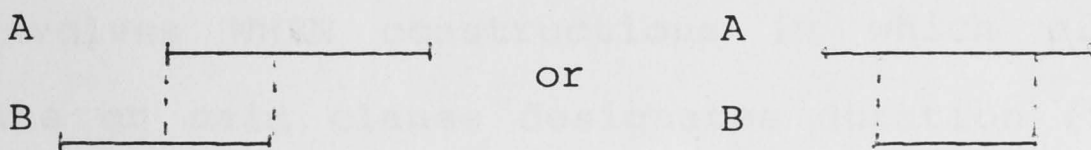
14   Everybody was away when John destroyed the documents.
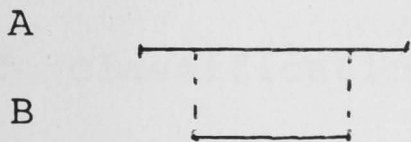
15   We were crossing the street when John noticed us.
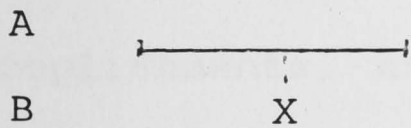
16   The balloon broke when Lydia was playing with it.
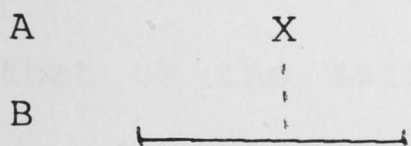
17   They built the wall when bricks were still very cheap.
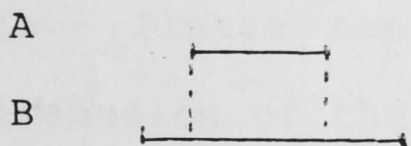
It is apparent that either the subordinate or the main clause or both can show duration in the preceding examples. Consider further the following of Heinämäki's examples.

18   John built a sail-boat when Bill wrote a detective story.15

    A

    B

19   Bill got surprised when John built a sail-boat.

    A   X

    B

20   When John pushed the button, the bomb exploded.

    A   X

    B   X

        It should be noted that Heinämäki's examination simply involves WHEN constructions in which either the subordinate or main clause designates duration (i.e. with the -ING form of nonstative verbs or with stative verbs) (13 through 17). Despite the fact that Heinämäki is quite aware of classification of verbs and recognizes its importance, she does not examine in detail various combinations of activities with activities, activities with accomplishments, and so on. Moreover, she does not observe whether or not the time relationship varies depending on whether the subject of the subordinate is the same as that of the main clause or not. Her observations concerning the problem of subjects, particularly with respect to examples like 18-20 above, are rather inadequate. Please see Sections 3.2.2.3 and 3.2.2.4 for my own discussion of these problems.

2.2   The temporal-aspectual properties of propositions
         in Japanese

This subsection examines the temporal-aspectual
properties of propositions in Japanese. Whether or not
the propositions as a whole designate some kind of change
is relevant to the aspectual interpretation, and further,
this fact is relevant to the time relationships between
the two clauses of a complex sentence. This CHANGE is
expressed in the form of either a completion of action or
motion, or a change in the state of the subject.

Subsection 2.2.1 examines in more detail
Jacobsen's observations regarding subjects which undergo a
change, and those that do not. 2.2.2 attempts to provide
a hierarchy of telicity, elaborating the Vendlerian
concept of aspectual properties. Finally, in 2.2.3 the
inherent aspectual properties of verbs will be examined
with respect to derived forms of verbs, and PAIRING VERBS
(after Murata (forthcoming)). The term PAIRING VERBS
refers to pairs of intransitive and transitive verbs which
exhibit both morphological and semantic similarity, for
example:

Vint.	Vt.
kimaru 'be decided'	Kimeru 'decide'
tatsu 'be built'	tateru 'build'
ukabu 'float'	ukaberu 'set afloat'

2.2.1 One factor in determining telicity: Change involving the subject

In Section 2.1.1 I outlined Jacobsen's suggestion concerning the relationship between subjects which undergo a change, and subjects which have the semantic role of agent, that of patient, or that of both agent and patient simultaneously. On the basis of this concept, Jacobsen classifies Japanese verbs into four groups. There are patient verbs: 'aku' ('open'), 'denki ga tsuku' ('light comes on'); agent verbs: 'yomu' ('read'), 'kaku' ('write'); patient-agent verbs, i.e. semantically reflexive verbs, which are further divided into transitive verbs: 'kiru' ('put on'), 'kaburu' ('put on') and intransitive verbs: 'shagamu' ('squat').

My claim is that it is something of an oversimplification to attempt to establish clear-cut divisions among these categories of verbs. Rather the verbs are more profitably categorized in the form of a continuum. AGENT and PATIENT are the two extreme points on this continuum, and verbs are placed on this scale according to the degree to which their subjects undergo change.

This is illustrated in the following diagram:

DIAGRAM 1

		activities	accomplishments
high	patient		oyu ga waita 'water boiled'
	agent/ patient	hashitta 'he ran'	shaganda 'he squatted'
			kimono o kita 'he put kimono on'
		tabako o sutta16 'he smoked'	
low	agent	hon o yonda 'he read a book'	oyu o wakashita 'he boiled water'

degree of change in the subject (vertical axis, arrow pointing from high to low)

17
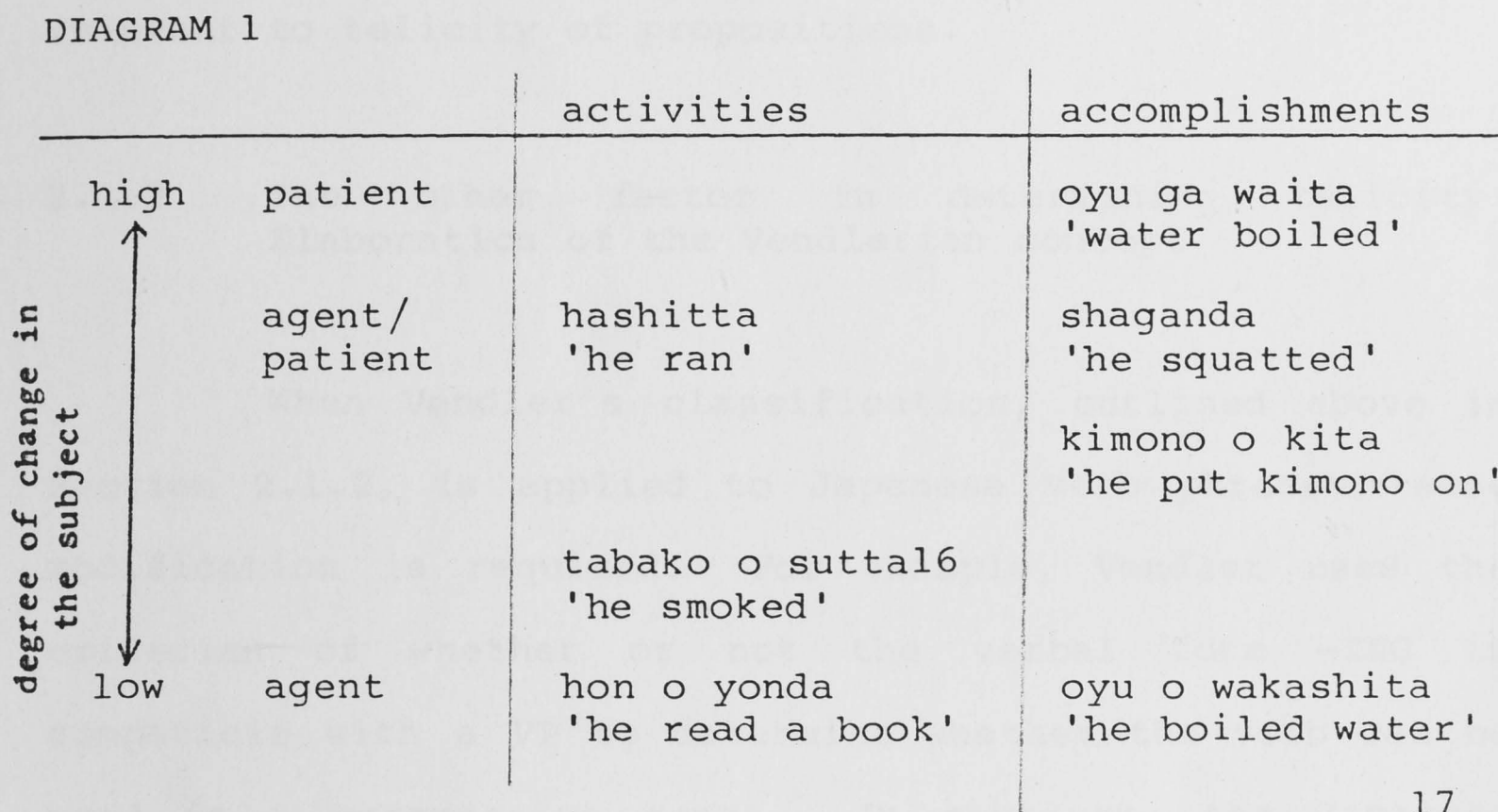
Note: In the above diagram verbs are cited in
        the past tense form because it seems to be
        easier to observe any change in the
        subject in the context of the past tense.

In this diagram the example verb phrases which have been
used are divided into two groups, activities and
accomplishments, on the basis of Vendler's criteria.   The
reason for this added distinction in the diagram is to
show how different types of verb phrases, classified
according to one type of parameter (i.e. Vendler's tests)
behave in different ways along another parameter ---that
of the degree of change in the subject.   An examination of
both types of parameter is necessary in determining
aspect, particularly where the borderlines between various
aspectual categories are somewhat unclear, as is the case
between activities and accomplishments.   This will be
considered in detail in Subsection 2.2.2.

The main point here is that this continuum of the degree of change in the subject is one factor which is relevant to telicity of propositions.

2.2.2 The other factor in determining telicity: Elaboration of the Vendlerian concept

When Vendler's classification, outlined above in Section 2.1.2, is applied to Japanese verb phrases, some modification is required. For example, Vendler uses the criterion of whether or not the verbal form -ING is compatible with a VP to determine whether the verb can be used in a progressive sense. In contrast, the Japanese equivalent form -TE IRU has not only progressive <u>and</u> perfective, but also stative meaning.

Thus whether or not this form is compatible with verbs cannot be used as a criterion in Japanese verb classification. Instead of examining the compatibility of verbs with the -TE IRU form, we need to distinguish whether a sentence with a verb in the -TE IRU form designates progressive aspect or some other kind of aspect. For this purpose Jacobsen proposed the following test for Japanese verbs: Whether or not the verb in -TE IRU form is compatible with 'yamesaseta' ('made--stop V-ing').[18] The verb in the -TE IRU form is compatible with 'yamesaseta' if, and only if, the sentence designates that the process is going on in time i.e. it has progressive aspect. Consider the following:

21a Taroo ga   itazura o   shi-<u>te iru</u>
     NOM mischief ACC   do

no   o   yamesaseta.
COMP ACC stop-CAUS-PST

'I made Taroo stop his mischief.'

Therefore -TE IRU indicates progressive aspect in this sentence.

21b *Taroo ga   hon   o   issatsu   kai-te <u>iru</u>
     NOM   book ACC   one-CL   write

no   o   yamesaseta
COMP ACC stop-CAUS-PST

*'I made Taroo stop having written one book.'

21c *Taroo ga   yama   no   choojoo   ni
     NOM   mountain GEN   summit   LOC

tsui-<u>te iru</u>   no   o   yamesaseta.
reach   COMP ACC stop-CAUS-PST

*'I made Taroo stop having reached the summit.'

The ungrammaticality of the combination with 'yamesaseta' ('made --- stop V-ing') in sentences b. and c. above shows that the -TE IRU form here does not convey progressive aspect. In both of these sentences it indicates perfective aspect.

21d *Taroo   ga   okaasan ni   ni-<u>te iru</u>
     NOM mother   DAT resemble

no   o   yamesaseta.
COMP ACC stop-CAUS-PST

*'I made Taroo stop resembling his mother.'

Once again, the ungrammaticality of this example is attributable to the fact that the -TE IRU form is indicating an aspect other than the progressive. In this case the aspect is stative.19

The criteria and the characteristics of verb phrases which belong to each category are summarized in the following chart:

TABLE 4

categories criteria	activities	accomplish- ments	achieve- ments	states
-TE IRU indicates progressive aspect	+	+ or - *	-	-
takes durative time adverbials e.g. ICHI JIKAN 'for an hour'	+	+ or - *	-	+
occurs with the phrase ICHI JIKAN DE 'in an hour'	-	+	+	-
ICHI JIKAN DE entails ZUTTO V-te ita 'was V-ing during the hour'	n.a.	+	-	n.a.

> *note: The reason for this will be discussed in more detail later (Section 2.2.3.1). At this point it will suffice to note that in the case of those pairing verbs which are accomplishments, the transitive member tends to focus more on the process of the action or event, thus resembling an activity in some respects, while the intransitive member designates the terminal point of the accomplishment more strongly than the process, and thus has more similarities with the achievement verbs.

Examples of verbs and verb phrases which belong to each category are the following:

ACTIVITIES

       hataraku 'work'

       kooen o hashiru 'run through the park'

       ubaguruma o osu 'push a baby carriage'

ACCOMPLISHMENTS

       hon o issatsu yomu 'read a book'

       ie o tateru 'build a house'

ACHIEVEMENTS

       choojoo ni tsuku 'reach the summit'

       U.F.O. o miru 'spot a U.F.O.'

STATES

       iru/aru 'exist'

       niru 'resemble'

We must emphasize that we are not making a list of verbs, but a list of categories.

The basic concept of each category is as follows. Activities designate a process over a length of time. Accomplishments involve both an interval during which some activity is going on, and a moment at which the task is completed. Achievements are viewed as happening instantaneously. States include time duration, however, they

include no temoral boundaries as activities do. The

following diagrams illustrate each of these conceptS:

activities |——————————|

accomplishments   ——————————X

achievements   X
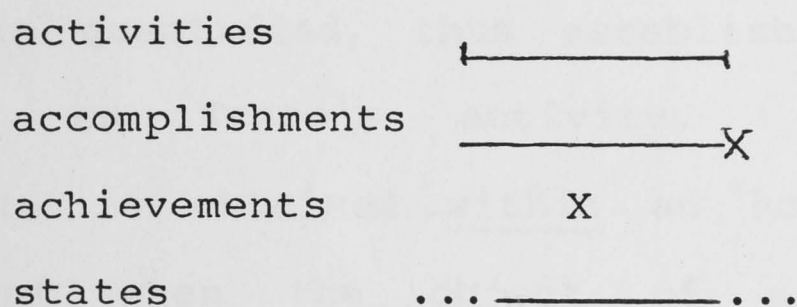
states   ...——————————...

> Note: In the case of states, the line without
> boundaries on both sides means that the
> starting point and/or the ending point of
> the state is vague or unimportant. The
> state referred to by the verb is the main
> concern.

As mentioned briefly above, however, the

borderline between the various aspectual categories is

often far from clear. This is particularly so in the case

of the categories of 'activity' and 'accomplishment'. Any

verb which behaves as an activity in one context, can

become an accomplishment in another, as long as a boundary

on the activity is indicated in some way. Hereafter our

main concern involves the borderline between activities

and accomplishments. Firstly, consider the following

examples:

22   Taroo   wa   hon   o   ichi jikan   yonda.
      Taroo   TOP   book ACC   one   hour   read-PAST

      'Taroo read a book for an hour.'

23   Taroo   wa   ichi jikan   de   hon   o
      Taroo   TOP   one   hour   INS   book   ACC

      is-satsu   yonda.
      one-CL   read-PAST

      'Taroo read one book in an hour.'

22 simply describes the activity in which Taroo was engaged for the duration of an hour. In 23, however, the object is quantified, thus establishing some kind of a boundary on Taroo's activity. This boundary, or end-point, is attained <u>within</u> an hour. These examples show that when the object of a sentence takes a quantifier, the sentence is interpreted as telic. Thus, when the specificity of the object is increased by some means i.e. quantifier attaching in this case, then the telicity becomes higher. My claim is that there are certain parameters which are relevant in determining telicity and they suggest a continuum. It should be noted, in particular, that the parameters are relevant not only to objects but also other elements in the sentence, such as subjects, other arguments or adverbial elements.

Hopper and Thompson (1980) have identified some parameters which relate to the degree of transitivity of a proposition. Among their parameters, certain ones which seem to be relevant to the present argument are cited here.[20] Note that, as their work chiefly concerns transitivity, the object is the only argument to which they pay attention.

TABLE 5

	TRANSITIVITY	
	high	low
aspect	telic	atelic
punctuality	punctual	nonpunctual
affectedness of object	object totally affected	object not affected
individuation of object	object highly individuated	object nonindividuated
	INDIVIDUATED	NONINDIVIDUATED
	proper	common
	human/animate	inanimate
	concrete	abstract
	singular	plural
	countable	mass
	referential/ definite	nonreferential

One of the most insightful points in their study is their suggestion of the following Transitivity Hypothesis:

> The Transitivity Hypothesis predicts that if the verb is telic (i.e. is on the high side of the Transitivity scale for ASPECT), then the object will be also signalled as being on the high side of the other scale relevant for objects in this language, viz. INDIVIDUATION.

Thus, the following prediction can be made, according to the Transitivity Hypothesis: If an object is individuated by the parameters noted, then Transitivity is high, and this means, at the same time, that aspect will also be signalled as being on the high side of the scale, i.e. the proposition is telic.

I suggest that when we examine arguments other than the object, the individuation of nouns and the degree of telicity are also related to each other. That is, the more a noun is individuated, the more clearly the telicity is designated.

For example, the following contrast in the degree of telicity seems to stem from the difference between the abstractness of the place described by the locative noun phrase in 24a and the concreteness of the place described by the noun phrase, i.e. the goal, in 24b:

    24a Hanako   wa   kaimono   ni   itta.
               TOP shopping LOC   go-PAST

    'Hanako went shopping.'

    24b Hanako   wa   Tookyoo   ni   itta.
               TOP Tokyo   LOC   go-PAST

    'Hanako went to Tokyo.'

Besides the semantic difference between the locative noun phrase in 24a and 24b, the following syntactic difference supports the preceding claim: The particle NI in 24b can be replaced by the particle E which clearly designates a goal. However, this substitution cannot be made in 24a.

    25a *Hanako wa   kaimono   e   itta.
               TOP shopping ALLAT go-PAST

    25b Hanako   wa   Tookyoo   e   itta.
               TOP Tokyo   ALLAT go-PAST

Whether the locative noun phrase denotes a GOAL or a NONGOAL should be considered along with the other parameters of the telicity scale.

Another significant factor which is relevant to telicity is the presence of a quantifier. Consider the following examples:

26a Kyaku   ga   kita.
    guests NOM   come-PAST

    'Guests came.'

26b Kyaku   ga   juu nin   kita
    guests NOM   10-CL   come-PAST

    'Ten guests came.'

The subject 'kyaku' in 26a conveys no clear terminal point, unless there is more specification about the guests in the context. In contrast, when the subject is modified by a quantifier, as in 26b, then it is understood either that ten guests arrived at the same time, i.e. instantaneously, or the event of the arrival of the ten guests took place over a period of time. The latter interpretation of the quantifier is relevant to telicity. The quantifier in this case functions to indicate a process which starts when the first guest has arrived and ends when the tenth guest has arrived. The exact terminal point is specified by the numeral. Observe these additional examples.

27a Kooen   o   hashitta.
    park   ACC   run-PAST

    'I ran through the park.'

27b Kooen   o   hyaku meetoru   hashitta.
    park   ACC 100   meters   run-PAST

    'I ran 100 meters through the park.'

In 27b, the quantifier denotes the process and the terminal point as 26b does. The interpretation results in a telic reading. It means that the runner at last has 'accomplished' the goal of running the distance indicated by the quantifier.

It should be noted, however, that there are other cases in which a quantifier does not function as an indicator of a terminal point. Consider the following:

28   Yakuza   juu nin   to   kenkashita.
      gangsters   10-CL   COM   fight-PAST

'I fought 10 gangsters.'

28 does not imply that I started fighting with the first gangster and kept on fighting up to the tenth gangster. Rather, it implies that there were ten gangsters altogether involved in the fight. Therefore the quantifier in this case does not function to indicate a terminal point. The point is that quantifiers can function to clearly denote a terminal point in some cases.

The preceding observations are summarized in the following diagram:

DIAGRAM 2

parameters of arguments

concrete/proper/count./

clavity of the terminal point		

clear   arguments   concrete/proper/count./
               with quantifiers
               indicating   referential/goal
               process   24b, 25b
                  26b, 27b

not   arguments   abstract/common/mass/
clear   with quantifiers
               indicating no   nonreferential/nongoal
               process   24a
                  26b, 27b, 28
               arguments
               without
               quantifiers
                  26a, 27a

Note: As examples for concrete/abstract parameters,
       see 34a and 34b, respectively.

       The numbers in the diagram above represent
       examples cited in this section.

It should be noted that the clarity of the terminal point

is considered to be a continuum which consists of the

preceding parameters.

It is concluded that the parameters which appear

in the two hierarchies shown in Diagrams 1 and 2 are

relevant to the temporal-aspectual properties of proposi-

tions. They cannot function separately. In other words,

when the aspect is determined, the parameters from both

diagrams function together and the parameter which is in

the higher position on the scale in the diagram determines

the degree of telicity of the proposition concerned.

2.2.3 Inherent aspectual properties of verbs

Not all aspect is necessarily determined at the propositional level, but it is sometimes determined at the morphological level. This subsection deals with the inherent aspectual properties of Japanese verbs. In Subsection 2.2.2 we have observed aspectual properties at the propositional level, and in this subsection we are concerned with aspectual properties at the morphological level. I am particularly concerned with verbs which designate the features of accomplishments at the morphological level. Section 2.2.3.1 concerns native Japanese verbs, and 2.2.3.2, Sino-Japanese digraph verbs of this type. Finally, in 2.2.3.3 English-Japanese verbs are briefly mentioned.

2.2.3.1 Native verbs[21]

This subsection firstly looks at the aspectual properties of pairing verbs, then goes on to examine the derived forms of verbs such as the causative and passive forms.

Some examples of pairing verbs in Japanese are:

Vint.	Vt.
kanashimu 'feel sad'	kanashimasu 'make--sad'
heru 'decrease'	herasu 'make--decrease'
okiru 'occur'	okosu 'make--occur'

Among these pairing verbs each pair designates different aspectual properties at the morphological level, i.e. kanashimu/kanashimasu designate activities, heru/herasu designate accomplishments, and okiru/okosu designate achievements. I have been unable to find any examples of pairing verbs which designate states. It is important to notice that the intransitive member of these pairs more clearly designates the type of aspect attributed to that pair above. This is particularly true in the case of accomplishment pairing verbs.

Let us observe some accomplishment pairs in more detail. The following pairs are representative accomplishment verbs:

Vint.	Vt.
heru 'decrease'	herasu 'make--decrease'
fueru 'increase'	fuyasu 'make--increase'
waku 'boil'	wakasu 'boil'
hairu 'go in'	ireru 'put in'
naoru 'be repaired'	naosu 'repair'

In the preceding examples the intransitive member of each pair conveys the idea of terminal point of the action very clearly. Thus it designates the feature of accomplishment more clearly than its transitive counterpart. This can be proved by the following paraphrase test used by Izumi (1983):22

29a Taroo wa   kaban o   naoshita   kedo
         TOP   bag   ACC repair-PAST but

         mada   naotteinai.
         yet   be repaired-NEG-PRES

    *'Taroo repaired (i.e. he only worked on) the
    bag, but it is not done yet.'23

  b *Kaban   ga   naotta   kedo
     bag   NOM   be repaired-PAST   but

         mada   naotteinai.
         yet   be repaired-NEG-PRES

    *'The bag was repaired (i.e. worked on), but it
    is not repaired yet.'

A transitive and an intransitive verb shows up in 29a and
29b, respectively. The awkwardness of 29b stems from the
logical conflict between the first clause and the second,
i.e. while the first clause indicates that the event is
completed, the second clearly states that it is not. In
contrast, the naturalness of 29a proves that the transitive
verb 'naosu' ('repair') does not designate the completion
of the action. In other words, the transitive verb does
not necessarily include the terminal point of an
accomplishment, but may refer primarily to the activity
involved.

    The preceding observation can also be supported by
the evidence of the following test, suggested for English
by Vendler (1967) and Freed (1979):

30a Oyu   o   wakashi-owatta.
     hot water ACC   boil-finish-PAST

     'I finished boiling the water.'

  b *Oyu   ga   waki-owatta24.
     hot water NOM   boil-finish-PAST

     'The water finished boiling.'

In 30a, the terminal point, i.e. the completion of the action, is designated by adding the aspectual form 'owaru' ('finish'). This means that the transitive verb 'wakasu' by itself does not clearly designate the terminal point. However, since the intransitive verb 'waku' lexically includes the notion of a terminal point, it is felt to be redundant to attach 'owaru' to it.

     The following conclusion can be drawn from the preceding observations: When pairing verbs are accomplishments, the transitive verbs basically play the role of designating the PROCESS (although the existence of a terminal point can also be understood) and the intransitive verbs, that of designating the TERMINAL POINT itself. This can be illustrated as follows:

Vt.   ————————————————————————
              process   terminal
                                 point

Vint.   -●
              process   terminal
                                 point
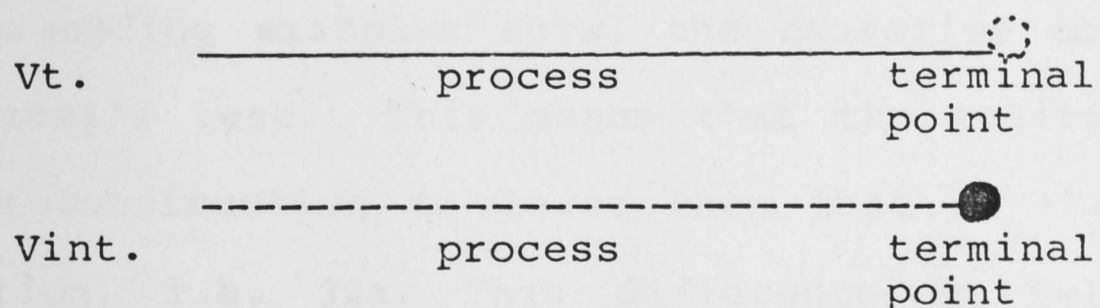
Now, let us examine derived forms of verbs, such as causatives and passives, the original forms of which do not have paired counterparts. Firstly, consider the following examples:

31a Taroo wa   hon   o   3 satsu yonda.
          TOP   book ACC   3 CL   read-PAST

   'Taroo read three books.'

  b Watashi wa   Taroo ni   hon   o   3 satsu
     I   TOP   DAT   book ACC   CL

   yoma-seta.
   read-CAUS-PAST

   'I made Taroo read three books.'

31b is the causative construction of 31a. When Izumi's
test is applied, the following contrast is observed:

32a *Taroo wa   hon   o   3 satsu yonda   kedo
            TOP   book ACC   3   CL   read-PAST but

   mada   yomi-owa-tte-inai.
   yet   read-finish-GER-NEG

   *'Taroo read three books, but he has not
     finished reading them yet.'

  b Watashi wa   Taroo ni   hon   o
     I   TOP   DAT   book ACC

   3 satsu yoma-seta   kedo mada Taroo   wa
   3 CL   read-CAUS   but   yet   TOP

   yomi-owa-tte-inai.
   read-finish-GER-NEG

   'I made Taroo read three books, but he has not
   finished reading them yet.'

As the preceding examples show, the causative construction
passes Izumi's test. This means that the telicity of the
causative construction is lower than that of the original
construction, i.e. 32a. This difference in telicity was
first observed by Jacobsen (1983). I suggest that the
contrast is caused by the fact that clause 32a, which
includes a terminal point clearly indicated by means of a
quantifier, is embedded in the clause which has causative

- 41 -

verb -SASE and the causer ('I') at the matrix level. Since
the matrix clause itself does not clearly include a
terminal point, the telicity becomes lower.   This is
illustrated in the following diagram:

DIAGRAM 3

```
            S ------------------------------ATELIC
          /   \
        NP     VP
        |     /  \
        N    NP   V
        |    |    |
     watashi      seta
       'I'       'made'
      AGENT   S  ----------------------TELIC
            /   \
          NP     VP
          |     /  \
          N    NP   V
          |    |    |
        Taroo       yoma
              /  \  'read'
             N    Q
            hon  3 satsu
           'book'
            |_____|
              ACCOMPLISHMENT
```
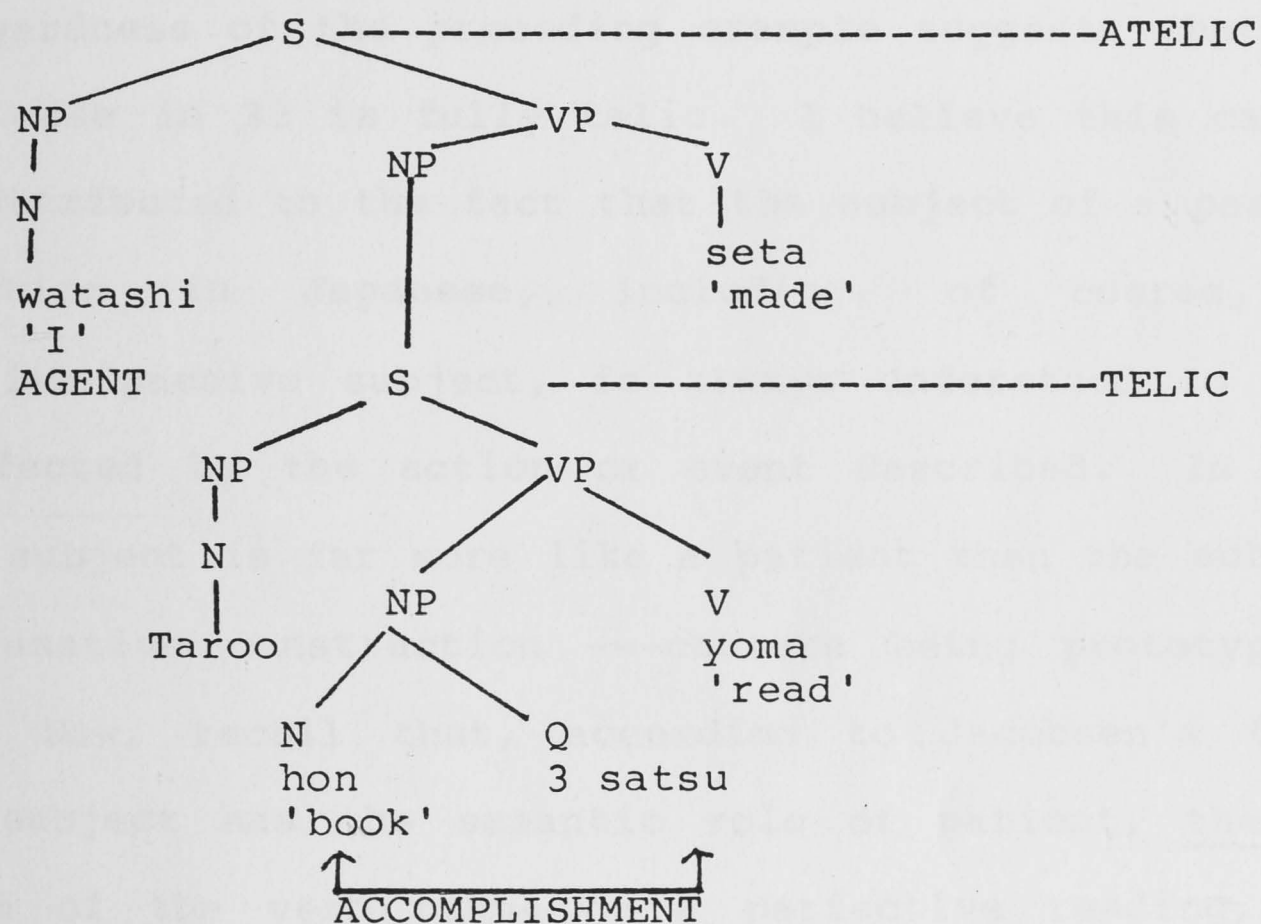
Secondly, observe the awkwardness of the passive
construction in the context of Izumi's test. The sentence
below is an example of the well-known ADVERSITIVE PASSIVE
construction in Japanese, in which the subject feels
negatively affected by the events described in the
remainder of the clause.

33   *Watashi wa   Taroo   ni   hon   o   3 satsu
      I   TOP   DAT book ACC   3 CL

      yoma-reta   kedo,   Taroo wa   mada
      read-PASS   but   TOP   yet

      sore   o   yomi-owatte-inai.
      it   ACC   read-finish-NEG

*(Lit.)   'Taroo read three books on me, but he
          has not finished reading them yet.'

The awkwardness of the preceding example suggests that the first clause in 33 is fully telic. I believe this can be partly attributed to the fact that the subject of a passive construction in Japanese, including, of course, an adversitive passive subject, is always understood to have been affected by the action or event described. In this way the subject is far more like a patient than the subject of a causative construction ---causers being prototypical agents. Now, recall that, according to Jacobsen's test, when a subject has the semantic role of patient, the -TE IRU form of the verb takes on a perfective reading, and when the subject is an agent, the reading is progressive. I suggest that this increase in the telicity of the proposition, when the subject is a patient, relates also to the interpretation of the -TA form of the verb, i.e. the -TA form is interpreted as perfective also. Please see sentence 33. Compare this with the -TA form of the verb in sentence 32b, in which the subject is an agent, and notice how in this case the interpretation is not telic (and therefore perfective), but atelic.

2.2.3.2 Sino-Japanese digraph verbs

This subsection concerns Sino-Japanese digraph verbs. The structure of the verbs under consideration involves the combination of a Sino-Japanese digraph with the Japanese verb SURU.[25] Sino-Japanese verbs also designate aspect at the verbal level. They are divided into the following three groups. (N.B. There is no class of STATE VERBS amongst the Sino-Japanese verbs, because the verb SURU inherently designates action.)

TABLE 6

categories	activities	accomplish-ments	achievements
e.g.			
	benkyoo-shita 'studied'	yooi-shita 'prepared'	mokugeki-shita 'saw'
	kenkyuu-shita 'researched'	shuunoo-shita 'received'	ichibetsu-shita 'took a glance'
	renshuu-shita 'practised'	setchaku-shita 'tagged'	hakken-shita 'found'

Note: The examples all are cited in the -TA form.

A particularly interesting aspect of Sino-Japanese verbs, which I would like to discuss in this section, involves transitive verbs which designate accomplishment aspect. For example:

34a Osake   o   yooi-shi-te iru.
     sake   ACC prepare-do-PERF

          'I have prepared some sake.'

34a can be paraphrased as follows, with a slight change in meaning:

34b Osake no   yooi   o   shi-te iru.
     sake   GEN preparation ACC   do-PROG

     (i)   (Lit.)'I am doing the preparation of
            some sake.'
     (ii)   'I have prepared some sake.'

The object of the verb, i.e. 'osake', in 34a has been changed to the role of modifying noun followed by the particle NO[26] and the particle O inserted between the digraph 'yooi' and the verb 'suru'. Thus the digraph itself becomes the object in 34b.[27] As the preceding examples show, the -TE IRU in 34a is interpreted by native speakers as indicating perfective aspect. It implies that the bottles of sake have already been placed on the table. In 34b, on the other hand, -TE IRU can be interpreted as indicating progressive aspect, i.e. it can imply that I am preparing the sake now, or it can have a perfective reading, as in 34a above.[28] Our concern is to explain the contrast between the two -TE IRU forms.

Before going into this point in detail, it should be noted that there are some constraints on the possible occurrence of both these types of sentence in some cases.[29]   Compare the following:

35a Sono   kane nihyaku   man   en   o   sookin-shita.
    the money   2 million   yen ACC send-do-PAST

    'I sent 2 million yen of that money.'

  b Sono   kane   nihyaku   man   en   no   sookin   o
    the   money 2 million   yen GEN sending ACC

    shita.
    do-PAST

    '(Lit.)'I did the sending of million yen of that
            money.'

36a Sono   kane   no   hanbun   ijoo   o   sookin-shita.
    the   money GEN half   more   ACC send-do-PAST

    'I sent more than half of that money.'

  b *Sono   kane   no   hanbun   ijoo   no
    the   money GEN half   more   GEN

    sookin   o   shita.
    sending ACC do-PAST

    (Lit.)'I did the sending of more than half of
           that money.'

35a and 36a both have quantified objects.   35a has a semantically equivalent sentence in 35b.   However, 36a does not have an equivalent of this type.   This contrast seems to stem from the difference in the concreteness designated by each quantifier.   The numeral quantifier in 35 can be considered to be more concrete than the quantifier of 36. Thus, the numeral quantifier with the particle NO specifies the noun 'sookin' in 35 more definitely than does the quantifier in 36.   It is thus claimed that only quantifiers

which specify the noun definitely can occur in the following construction:

FORMULA 1

[quantifier-particle NO-digraph noun-particle O-verb SURU]

Some other verbs which exhibit the same characteristic as 'sookin suru' ('send money') are 'kyuusui suru' ('deliver water'), 'shakkin suru' ('borrow money'), 'chokin suru' ('deposit money') etc.

There is yet another constraint on the use of this pattern which can be concluded from examples such as the following:

37a Chikyuu   o   dasshutsu-shita.
     earth   ACC   depart from-do-PAST

     'I left the earth's magnetic field.'

  b *Chikyuu   no   dasshutsu   o   shita.
      earth   GEN   escaping   ACC   do-PAST

38a Basu   wa   sono   teiryuujo   o   tsuuka-shita
     bus   TOP   the   bus stop   ACC   pass-do-PST
                                                   PAST

     'The bus passed the bus stop.'

  b *Basu   wa   sono   teiryuusho   no
      bus   TOP   the   bus stop   GEN

     tsuuka   o   shita.
     pass   ACC   do-PAST

When the preceding examples are compared to 34, the following difference is observed: The objects in 37a and 38a are not true objects. The particle O in 37a is interchangeable with the particle KARA, which indicates SOURCE. The object in 38a is a traversal object which shows syntactic properties different to those of objects

which are patients, themes etc. Thus, it is concluded that the construction which was illustrated as Formula 1 on Page 46 is allowed if, and only if, the objects are true objects.

We have observed some constraints with respect to the use of Sino-Japanese digraph verb constructions. However, this is by no means an exhaustive treatment of this topic, and far more study needs to be done in this area.[30]

Let us go back to the problem of the difference in aspectual interpretation noted above between the construction in which the Sino-Japanese digraph forms part of a verb in combination with the verb SURU, and the one in which this digraph is itself the object of SURU. Recall the examples:

```
34a  Osake    o      yooi-shi-te iru.
     sake     ACC    prepare-do-PERF
```

'I have prepared some sake.'

```
  b  Osake    no     yooi         o      shi-te iru.
     sake     GEN    preparation  ACC    do-PROG
```

(Lit.)'I am doing the preparation of some sake.'

Firstly, consider the following activity verbs:

```
39a  Taroo   wa      nihongo     o      benkyoo   shi-te iru.
             TOP     Japanese    ACC    study     do-PROG
```

```
  b  Taroo   wa      nihongo     no     benkyoo   o
             TOP     Japanese    GEN    study     ACC
```

```
     shi-te iru.
     do-PROG
```

'Taroo is studying Japanese.'

When the digraph verbs are activities, the two constructions show no difference in their aspectual interpretations. Both -TE IRU forms express progressive in 39. In contrast, when the verb is an accomplishment predicate, such as '(osake o) yooi-suru' ('prepare (some sake)'), two interpretations are made. My claim is that the contrast between 34a and 34b is due to the difference in their object. Referring to diagram 2 in Section 2.2.2., the object in 34a is located higher on the scale than the object in 34b in terms of the parameter of INDIVIDUATION. The noun 'osake' is concrete, while the noun 'yooi' is abstract. Therefore, the two constructions designate different aspects.

2.2.3.2 English-Japanese verbs

Verbs which fall into this group consist of an English loan word followed by the Japanese verb SURU. Compared to the number of Sino-Japanese verbs, they are small in number, though they have been increasing recently. As with Sino-Japanese verbs, English-Japanese verbs can also be categorised into the following three classes:

TABLE 7

activities	accomplishments	achievements
toreeningu-shita 'trained'	inputto-shita 'make an input' (into a computer)	nokku-shita 'knocked'
jogingu-shita 'jogged'	oobaarappu-shita 'partially reiterate'	nokku auto-shita 'knocked out' (boxing)
ranningu-shita 'ran'		

Clauses containing these verbs indicate different aspectual interpretations, depending on the various aspectual properties of the verbs. That is, the aspect of such clauses would be determined at the morphological level of the verb.

NOTES TO CHAPTER 2

[1]These linguists attempt to explain the semantics of the -TE IRU verbal form by classifying verbs into certain groups. Yoshikawa examines other aspectual forms as well. It should be noted that the scope of their studies is limited to the verbs themselves, and there is no observation of aspectual phenomena at any level, i.e. the verb phrase or propositional level.

[2]As I was unable to obtain Okuda's article, I have cited Jacobsen's summary of it.

[3]-TE IRU is realized as -DE IRU when the final consonant of the underlying form of the verb is voiced.

[4]Jacobsen's terminology, DYNAMIC, involves a different concept from the one which will be used in Chapter 3 of this thesis. Hereafter, to avoid confusion, Jacobsen's dynamic verbs and nondynamic verbs will be called AGENT VERBS and PATIENT VERBS, respectively.

[5]This test is used by Mikami (1972) to classify verbs. Mikami suggests that when the passivization is possible, the verbs are classified as NOODOOSHI 'active verbs', and when it is not possible, they are classified as SHODOOSHI 'passive verbs'. Mikami does not limit the concept of passive to true passives, but he includes all types of passive, such as adversitive passives, in the semantic domain and indirect passives in the syntactic domain. The difference between Mikami's concept of AGENT

and that of Jacobsen is that Mikami limits the category AGENT to verbs which take animate subjects, while Jacobsen, on the other hand, considers the following inanimate subjects as AGENT as well, because they pass the passivization test:

ame ga furu 'it rains'/kaze ga fuku 'the wind blows'.

[6]This test is used by Heinämäki (1978) to classify verbs.

[7]Examples of each test are given below:

PASSIVIZATION

    Ame   ga   futta.
    rain   NOM   rain-PAST

    'It rained.'

→Watashi   wa   ame   ni   fura-reta.
    I   TOP   rain   by   rain-PASS-PAST

    'I got caught in the rain.'   (adversitive passive)

    Hon   ga   ureta.
    book   NOM   be sold-PAST

    'The books were sold.'

→ *Watashi   wa   hon   ni   urerareta.
    I   TOP   book   by   be sold-PASS-PAST

    'Unfortunately the books were sold.'

IMPERATIVE FORM

    Hon   o   yonda.
    book   ACC   read-PAST

    'I read the book.'

→ Hon   o   yome.
    book ACC read-IMP

    'Read the book.'

    Denki   ga   tsuita.
    light   NOM   come on-PAST

    'The light came on.'

⟶ *Denki   yo,   tsuke.
  light   E.P.   come on-IMP

(lit.) 'Light, turn on!'

POTENTIAL FORM

Heya   ni   haitta.
room   LOC   enter-PAST

'I entered the room.'

⟶Heya   ni   hair-eta.
 room   LOC   enter-POT

'I was able to enter the room.'

Nimotsu   ga   haitta.
luggage   NOM   go in-PAST

'The luggage went in.'

⟶ *Nimotsu   ga   hair-eta.
  luggage   NOM   go in-POT

*'The luggage fitted in.'

CLEFT SENTENCE

Taroo   ga   hon   o   yonda.
          NOM   book   ACC   read-PAST

'Taroo read the book.'

⟶ Taroo   ga   shita   no   wa
           NOM   do-PAST   COMP   TOP

hon   o   yomu   koto   desu.
book   ACC   read   COMP   COP

'What Taroo did was read the book.'

Nimotsu   ga   haitta.
luggage   NOM   go in-PAST

'The luggage went in.'

⟶*Nimotsu   ga   shita   no   wa
  luggage   NOM   do-PAST   COMP   TOP

haitta   koto   desu.
go in-PST   COMP   COP

(Lit.)* 'What the luggage did was to go in.'

[8]In Japanese there is no reflexive noun or suffix which is equivalent to the ones which exist in Indo-European languages. The noun JIBUN in Japanese is limited in its use, and it is not exactly equivalent to the function of Indo-European reflexive pronouns.

[9]Hereafter 'verbs' and 'verb phrases' are represented by 'verb phrases' for convenience.

[10]Yoshikawa (1971) discussed a class of verbs, which he calls HENKA DOOSHI 'change-of-state verbs'. Examples are: kareru 'die'/kawaku 'dry' etc. Yoshikawa, however, does not consider aspect at the level of the proposition as a whole. Rather he limits his classification to verbs alone i.e. he examines only the inherent properties of verbs. Yoshikawa's HENKA DOOSHI seems to be a subgroup of Vendler's ACCOMPLISHMENTS.

[11]Dowty (1972) pointed out that the kind of subject is relevant to the aspect of a sentence. Heinämäki (1978) suggests that place adverbials are relevant as well.

[12]When the time adverbials which specify a certain point of time are compatible, the proposition is interpreted as an achievement. This is yet another criterion for classification.

[13]This will be discussed in more detail in Section 2.2.

[14]'A' represents the main clause, and 'B' the subordinate clause.

[15]It should be noted that Heinämäki suggested that when the verbs of both the subordinate and the main clauses are accomplishments, the time relationship is interpreted as sequential, as in 18. However, according to some native speakers, the two clauses in this case designate a cotemporal occurrence. Therefore the time relationship can also be illustrated as:
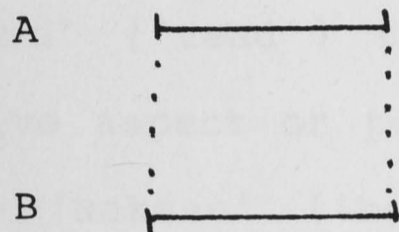
[16]I am indebted to Tamie Sekizawa for her suggestion that this type of verb is also considered to be reflexive, as well as verbs like 'kimono o kiru' ('put a kimono on'). Since the mouth is a part of the body, the subject is interpreted as agent and patient at the same time. Some examples are:

```
Taroo    wa     ima      tabako       o     su-tte iru.
         TOP    now      cigarette   ACC    smoke-PROG
```

'Taroo is smoking now.'   (agent subject)

```
Taroo    wa     moo       tabako      o     su-tte iru.
         TOP    already   cigarette  ACC    smoke-PERF

         Mada      chiisai   noni        ha      ga
         still     small     although    teeth   NOM

         makkuro   da.
         black     COP
```

'Taroo has already smoked. Even though he is still small, his teeth are already black.' (patient subject)

Therefore, there would seem to be a difference between this type of verb and verbs like 'korosu' ('kill'), in which the action does not affect the subject, and thus the subject has the role of agent only.

[17]It is observed that when a verb phrase in the diagram which is low on the scale that represents the degree of change in the subject appears in the -TE IRU form, then the following contrast can be seen: When the verb 'yomu' ('read') takes the -TE IRU form, it implies progressive aspect or perfective aspect. In contrast, when the verb 'wakasu' ('boil') takes the -TE IRU form, the progressive interpretation is most natural, whereas the perfective interpretation seems somewhat unnatural in this case, or at least less than natural. This observation can be tested by inserting the adverbial 'moo' ('already') which is compatible with the perfective aspect. Compare the following:

Taroo	wa	ima	hon	o	yon-de iru.
	TOP	now	book	ACC	read-PROG

'Taroo is reading the book now.'

Taroo	wa	moo	hon	o	yon-de iru.
	TOP	already	book	ACC	read-PERF

'Taroo has already read the book'.

Taroo	wa	ima	oyu	o	wakashi-te iru.
	TOP	now	hot water	ACC	boil-PROG

'Taroo is boiling some water now.'

?Taroo wa moo oyu o wakashi-te iru.

	TOP	already	hot water	ACC	boil-PERF

'Taroo has already boiled some water.'

This contrast in aspect seems to be relevant to the difference in telicity which is determined by the individuation of the object noun phrase. This will be dealt with in the next subsection, 2.2.2.

[18]Jacobsen (1983) uses this test to divide verbs into agent verbs and patient verbs. This test seems to be adequate to determine the difference in the meaning of the -TE IRU form.

[19]The verbs ('iru' and 'aru' ('exist')) which belong to this category do not take the -TE IRU form. Therefore, the test is not applicable to these verbs.

[20]For the other parameters, see Hopper and Thompson (1980, 255).

[21]The term 'native verbs' refers to verbs which originally existed in Japanese, before the influx of loanwords from Chinese and European languages.

[22]Izumi (1983) used this test to compare French and Japanese verbs. This test was originally used by Ikegami. However, as I was unable to obtain the latter's article, hereafter it is called Izumi's test for convenience.

[23]In English the first clause is telic. Therefore, a logical conflict occurs between the main and subordinate clauses.

[24]It might be suggested that the awkwardness of the sentence is due to the combination of a nonagent subject and the verb 'owaru', which is used with agent subjects. However, the verb 'owaru' is used with nonagent subjects, too. In the following situation it is perfectly natural.

Watching the lotus blooming in a slow—motion picture:

Hasu   no   hana   ga   hirai-te-kite
lotus   GEN   flower NOM   open-GER-come

ima   hiraki-owatta.
now   open-finish-PAST

'The lotus started blooming and it has just bloomed.'

(Lit.)'finished opening.'

The nonagentivity of the subject in the above sentence is proved by the fact that the adversitive passive construction is blocked.

*Hana   ni   hirak-arete   komatta.
flower   DAT   bloom-PASS   be in trouble-PAST

(Lit.)'The flowers have bloomed on me.'

This test of the compatibility of the verb 'owaru' ('finish') is used by Freed (1979) to examine compatibility of the verbs with certain complements.

[25]For a detailed analysis of Sino-Japanese digraphs, refer to Jacobsen (1983).

[26]Kuno (1973) states that the Japanese disallows sequences of more than one O-marked nominal in the surface structure.

[27]Jacobsen states that this transformation cannot be applied to all digraph verbs. It can only apply to agent verbs. The following sentence does not contain an agent verb, and thus it cannot appear in a construction like that of 34a.

```
Bukka      ga      antei-shita.
prices     NOM     stable-do-PAST
```

'Prices became stable.'

```
*Bukka     ga      antei     o      shita.
prices     NOM     stable    ACC    do-PAST
```

[28]I am indebted to Mieko Ohso, who pointed out to me the difference in meaning between these two sentences.

[29]As far as verbs with incorporated objects allowing an additional object are concerned, Jacobsen (1983, 162) claims that the following factors are relevant:

> ... Incorporated objects, having been
> lexicalized into a verb form and having
> therefore lost their independent status as
> noun phrases (see the following examples),
> ... cannot refer to specific entities.
> When a given object must be set aside from
> other similar objects in its class or
> otherwise specifically referred to, it can
> appear as an independent object of a verb
> already having an incorporated object.
> While the semantic CONTENT of the
> incorporated object and independent object
> overlaps in the resulting constructions,
> the redundancy is ignored because of the
> distinct semantic FUNCTION of referring
> borne by the independent object.

In the following example, the Sino-Japanese digraph 'chokin' can be analyzed into a constituent verb 'cho' ('deposit') and a constituent noun, i.e. the incorporated object 'kin' ('money'). The verb 'chokin-shita' takes an independent object 'kane' ('money').

```
e.g.    Kono      kane     o      chokin-shita.
        this      money    ACC    deposit-PAST
```

'I deposited this money.'

Jacobsen (1983, 162) further states:

> Independent objects are also common when some sort
> of semantic elaboration--qualitative or
> quantitative--of the incorporated object is
> necessary.

However, it seems to be necessary to examine in some detail
the elaborating function of the quantifiers. There seems
to be a contrast in quantifiers which appear in the
constructions treated in this section. In the following
section I attempt to observe factors other than those
mentioned by Jacobsen and I include further discussion on
quantifiers.

[30]The following phenomenon is also worthy of
further investigation: Certain nouns cannot appear in the
construction 'noun-particle O-digraph-verb SURU'.

    Tenisu   no   renshuu   o   suru.
    tennis   GEN   practice ACC   do-FUT

    'I will practise tennis.'

    *Tenisu   o   renshuu-suru.
     tennis   ACC   practice-do-FUT

This was pointed out by Mieko Ohso.

CHAPTER THREE

TOKI CONSTRUCTIONS

This chapter is concerned with explicating the semantics of TOKI constructions in the light of the aspectual properties of the predicates which are linked by this temporal connective TOKI.

The outline of the chapter is as follows: Subsection 3.1 deals with previous studies of TOKI constructions. 3.2 examines TOKI constructions in detail. 3.2.1 concerns some conditions which must be fulfilled for the grammatical use of TOKI as a clause linker. 3.2.2 deals with the time relationships between the subordinate and main clauses in TOKI constructions. 3.2.2 is divided further into four sections, in which the following verbal forms are examined:

3.2.2.1:   The -TA form in the main clause

3.2.2.2:   The -RU form in the main clause

3.2.2.3:   The -TE IRU form in the subordinate clause

3.2.2.4:   The -TE IRU form and the -TE ITA form in both
             subordinate and main clauses.

3.1   Previous treatments: survey and problems

Previous treatments of TOKI constructions are to be found in most literature which deals with complex

sentences in Japanese, particularly that which is concerned with the aspect of verbs in subordinate and main clauses. I would like to briefly review certain of these statements here, and point out some problems which can be seen to arise from these previous approaches to aspect in TOKI constructions.

Firstly, it should be noted that the SIMPLE PAST form (represented by -TA form hereafter) and the SIMPLE NON-PAST form (represented by -RU hereafter)[1] are both ambiguous when they appear in independent clauses. They can function as indicators of past/nonpast tense or as indicators of perfective/imperfective aspect.

The term TENSE is used to represent the temporal relationship between the moment of speech and the time at which the event described in the clause occurs. There are three types of tense, namely past, present, and future. The term ASPECT, on the other hand, is used to represent internal temporal structure of an event, i.e. it refers to whether the action or event described is completed (i.e. perfective) or not completed (i.e. imperfective). Aspect has no relevance to the moment of speech.[2]

Now let us observe the ambiguity of the -TA and -RU forms in independent clauses. Example 1 below is potentially ambiguous between the temporal and aspectual interpretations of the -TA form, as is illustrated in the two English translations, (i) and (ii).

1   Watashi   wa   suteeki   o tabeta.
       I   TOP   steak   ACC eat-PAST/PERF

(i) I had some steak.

(ii) I have had some steak.

This ambiguity can be avoided by using time adverbials such as KINOO 'yesterday', which indicates past time, or MOO 'already', which is compatible with perfective aspect.

2   Kinoo   watashi wa   suteeki   o   tabeta.
     yesterday I   TOP   steak ACC   eat-PAST

    'I had some steak yesterday.'

3   Watashi   wa   moo   suteeki   o   tabeta.
     I   TOP   already   steak   ACC eat-PERF

    'I have already had some steak.'

The -TA form in 2 now functions unambiguously as an indicator of past tense and in 3 it clearly indicates perfective aspect.

Historically speaking, this ambiguity is explained as follows: In the classical Japanese language there was a clear distinction between the verb suffixes which expressed TENSE (i.e. -KI and -KERI) and those which expressed perfective aspect (i.e. -TSU, -NU). However, in modern Japanese these four suffixes are no longer used, and they have all been replaced by a single suffix -TA which was derived from -TARI, a perfective form. As a result this suffix -TA has two functions, i.e. it is a marker of both tense and aspect. The NONPAST -RU suffix has also come to

have two functions -- marking either nonpast tense or imperfective aspect.

Since there are two functions for both of these suffixes, it is necessary to clarify whether the -TA form of a subordinate clause verb functions as an indicator of perfective aspect or as an indicator of past tense, and also whether the -RU form functions as an indicator of imperfective aspect or of nonpast tense.

In order to determine the functions of a -TA or -RU form in a particular subordinate clause, i.e. whether it is functioning as a tense or aspect marker, Nakau (1976) applies a time adverbial insertion test to both the subordinate and main clauses. Nakau claims that when one of these suffixes in a subordinate clause has a time referent of its own (i.e. past or nonpast), then it will allow the subordinate clause to contain a time adverbial independent of the main clause. In this case the suffix is functioning as a tense marker. When the understood time reference of the subordinate clause event is under the control of the tense of the main clauses, the -TA or -RU form of the subordinate clause verb has the function of an aspect marker, and no independent time adverbial can be included. This indicates that markers of aspect do not have time referents of their own.

The following examples of complex sentences, from Nakau (1976), show that whether the -TA and -RU forms in subordinate clauses have a temporal or an aspectual interpretation depends on the properties of the particular connective used to link the subordinate to the main clause.

4　Kinoo　　　denwa　　　o　　shita　　kara
　　yesterday telephone　ACC　do-PAST　because

　　kyoo　　　Taroo　　ga　　kuru-daroo.
　　today　　　　　　　NOM　　come-EVID

　　'Because I rang Taroo up yesterday he will come to
　　my place today.'

5　Taroo　　ga　　asu　　Nihon　　e　　tatsu　　node
　　　　　　　NOM　tomorrow　Japan　ALLAT　leave-FUT　because

　　kyoo　　atte-okitai.
　　today　meet-PERF-DES

　　'Because Taroo is going to leave for Japan tomorrow
　　I want to have seen him today.'

6　*Kinoo　　　denwa　　　o　　shita　　toki
　　yesterday telephone　ACC do-PERF　when

　　kyoo　　Taroo　　ga　　kuru.
　　today　　　　　　　NOM　come-FUT

　　*'When I rang Taroo up yesterday he will come
　　today.'

7　*Kinoo　　　denwa　　o　　　shi-te iru　　aida ni
　　yesterday telephone ACC　　do-PROG　　　　while

　　kyoo　　Taroo　　ga　　kita.
　　today　　　　　　　NOM　come-PAST

　　*'While I was ringing Taroo up yesterday he came
　　today.'

8　*Kinoo　　　denwa　　o　　shi-te iru　　uchi ni
　　yesterday telephone ACC　do-PROG　　　　while

　　kyoo　　Taroo　　ga　　kita.
　　today　　　　　　　NOM　come-PAST

　　*'While I was ringing Taroo up yesterday he came
　　today.'

4 and 5 show that both the -TA and the -RU forms of clauses

linked by the connectives KARA and NODE can have time

reference independent of that of the main clause, i.e. past

time and nonpast time, respectively. However 6, 7, and 8
show that the same forms in clauses linked by TOKI, AIDA,
and UCHI cannot have time reference of their own.
Constructions with different time adverbials in the
subordinate and main clauses of sentences linked with these
connectives are simply illogical. Therefore, whether the
suffix on the verb of the subordinate clause is interpreted
as a marker of aspect or tense depends on the type of
connective used. On the basis of this observation, Nakau
divided Japanese connectives into two groups; connectives
which are subject to a temporal reading belong to Class
(a), those subject to an aspectual reading, to Class (b).
(Nakau, 1976, 436)

    Class a: node 'because', kara 'because', nara 'if', ga
          'but', keredomo 'though', noni 'although', to
          'if'

    Class b: mae 'before', ato (ni/de) 'after', made
          'until', madeni 'before/by', uchi ni 'while',
          toki (ni) 'when', aida (ni) 'while', ya-ina-
          ya 'as soon as', totan (ni) 'as soon as',
          ta-ra 'if/when', kekka 'as a result of'

As far as constructions involving the temporal
connectives TOKI, AIDA, UCHI are concerned, the results of
Nakau's test show that the subordinate clause tense is
under the control of the main clause tense, and therefore
that the -TA and -RU forms function as indicators of aspect.

There is additional evidence which supports the
claim that the -RU and -TA forms in TOKI-clauses function
as aspect markers. Observe the following examples:

9   Nihon   e   iku   toki
     Japan   ALLAT go-IMPER   when

     kaban   o   kattekudasai.
     bag   ACC   buy-IMP

     'When you are going to Japan please buy me a bag.'
     (i.e. on your way)

10   Nihon   e   itta   toki
     Japan   ALLAT go-PERF when

     kaban   o   kattekudasai.
     bag   ACC   buy-IMP

     'When you go to Japan please buy me a bag.'
     (i.e. after you have arrived)

11   Nihon   e   iku   toki
     Japan   ALLAT go-IMPER   when

     sono   kaban   o   kaimashita.
     the   bag   ACC   buy-PAST

     'When I was going to Japan I bought that bag.'

12   Nihon   e   itta   toki
     Japan   ALLAT go-PERF   when

     sono   kaban   o   kaimashita.
     the   bag   ACC   buy-PAST

     'When I went to Japan I bought that bag.'

In Japanese complex sentences, the verbs of the subordinate and main clause are not necessarily marked with the same suffix -TA or -RU. Therefore there are four possible combinations of -RU and -TA forms in complex sentences involving two clauses like those above. The main clause verbs in both 9 and 10 have imperative forms, which are nonpast in tense, and the subordinate clause verbs in these examples take the -RU and -TA forms, respectively. 11 and 12 show the past tense in the main clauses and again both the -RU and -TA forms show up in the subordinate clauses.

If it were supposed that the -TA form indicates
past tense in TOKI-clauses, then it would be difficult to
explain the combination of the -TA form in the subordinate
clause and the -RU form in the main clause of example 10,
and also the combination of the -RU form in the subordinate
clause and the -TA form in the main clause in 11.
Therefore it is considered that the -TA and -RU forms in
TOKI-clauses are subject to the perfective/imperfective
aspectual interpretations.

Our task, then, is to explain the aspectual
phenomena which can be observed in the preceding examples
of TOKI constructions. Before offering my own explanation,
I would like to justify further my rejection of the
explanations proposed by others so far. The following are
two problematic areas encountered in previous studies.

1. The explanation of the time relationships between
   subordinate and main clause events, which has been
   advocated by Teramura (1976), and Narita (1982).

2. The explanation of the semantics of the connective TOKI
   in terms of the duration of the temporal interval of
   the subordinate and main clause events, given by Toyota
   (1972).

Let us briefly note the inadequacies of these previous
proposals, and in Section 2, below, I will offer my own
suggestions as to how to remedy them.

In studies of aspect in TOKI-clauses conducted to
date, the difference between the -TA and -RU forms in
subordinate clause verbs is explained in the following way:
Perfective aspect (shown by the -TA form), when associated

with subordinate clauses, indicates an action that has been perfected at the moment represented by the main clause. On the other hand, imperfective aspect (shown by the -RU form) in subordinate clause verbs indicates that the action represented by the verb is not completed, i.e. it is imperfective at the moment represented by the main clause. This is pointed out by Teramura (1971), Nakau (1976), and Narita (1982), and this treatment of aspect in TOKI subordinate clauses is common to all authors who have studied aspectual phenomena in subordinate clauses.

My claim is that this explanation about the use of the -RU and -TA forms is applicable to certain TOKI constructions only and is not adequate in all cases.

Firstly, compare the sentences in each of the preceding pairs, 9 and 10. 9 implies that the action of 'going to Japan' is not completed at the moment of the action of 'buying the bag'. The meaning of 9 is, therefore, 'Before you arrive in Japan buy me a bag somewhere outside Japan'. In contrast, 10 implies that the action of 'going to Japan' is completed at the moment of 'buying the bag'. Therefore it means 'After you arrive in Japan, buy me a bag somewhere in Japan'. The same observations can be made with respect to the pairs of sentences numbered 11 and 12. As far as these four examples (9, 10, 11, 12) are concerned, the previous treatment of aspectual tense in TOKI-constructions is indeed, appropriate.

A comparison of the preceding examples and the following ones, however, reveals an interesting point.

13   Kinoo   ano   kawa de oyoida   toki
      yesterday that river LOC swim-PERF when

      ishi ni   butsukatte,   ashi ni   hidoi
      stone LOC   hit-GER   leg   LOC   bad

      kega   o   shita.
      injury   ACC   do-PAST

      'Yesterday when he was swimming at that river, he hit against a rock and injured his foot badly.'

14   Heya   no   sooji   o   shita
      room   GEN   cleaning   ACC do-PERF

      toki   50 sento   o   mitsuketa.
      when   50 cents   ACC   find-PAST

      'When I was cleaning my room I found a 50 cent coin.'

In 13 and 14 both the subordinate clause verbs are in the -TA form, which should be interpreted as indicating that the action of the TOKI clause precedes that of the main clause. Nevertheless, the implication of sentence 13 is that the main clause event occurs while the TOKI clause action is in process, just as the English translation shows. The same observation can be made concerning sentence 14. This is the first problematic area of aspect in TOKI constructions which is not adequately covered by the explanations given in previous studies, and it is the clarification of this issue which is the main purpose of my thesis. This will be dealt with in detail in Section 2.

A second problem that arises with respect to TOKI constructions is also relevant to the time relationships

between subordinate and main clauses. Observe the
following sentences:

15 *Geta o nuida toki agatte-kita.
ACC take off-PERF when come up-GER-come-PAST

(Toyota, 1977)

'When he had taken off his geta he came over here.'

Toyota (1977) compares the preceding example with the
following, which is grammatical:

16 Geta o nuida toki waratte-itta.
ACC take off-PERF when smile-GER-say-PAST

'When he had taken off his geta he spoke, smiling.'

She tries to explain the contrast between 15 and 16 as
follows (Toyota, 1977, 98):

> If the main clause action occurs, and is
> completed, in a certain limited temporal duration
> after the completion of the subordinate clause
> action, the sentence is natural, as 16 shows. If
> the temporal duration of the main clause action,
> on the other hand, is somewhat longer, then the
> sentence is unnatural, as in 15.

Toyota shows this difference diagrammatically as follows:

15 Geta o nuida ├────┤   bad
   agatte kita   ├───── ──┤

15 Geta o nuida ├────┤   good
   waratte itta   ├────┤

Toyota's claim that the temporal duration of the main
clause action is relevant to the grammaticality of TOKI-

constructions is insightful. However, it would seem that her definition of the temporal duration designated by the verb in the main clause (i.e. 'agatte kita' and 'waratte itta', respectively) is not sufficient. The examples and diagrams above do not explicitly justify her claim, i.e. it is not clear why the duration described by the verb 'agatte kita' in sentence 15 is considered longer than that described by the verb 'waratte itta' in 16. This problem will also be considered in Section 2.

3.2   TOKI constructions

The purpose of this section is to discuss the various TOKI constructions in detail. The first subsection deals with conditions under which TOKI constructions are grammatically realized. The second observes the time relationships between subordinate and main clauses and attempts to pinpoint what determines a preference for the sequential or the cotemporal interpretation.

3.2.1   The conditions for TOKI-clauses

This subsection deals with the two conditions necessary for TOKI-clauses to be grammatically realized. One condition is that the event described in a TOKI-clause be factual. This will be treated in 3.2.1.1. The other condition is that there must be a change in the state of the event which is described in the TOKI-clause. This will be treated in 3.2.1.2.

3.2.1.1 Factuality

It is pointed out by Teramura (1981) that a TOKI-
clause can be realized if, and only if, the event it
describes was true, is true, or will be true.[3] In other
words, the TOKI connective is incompatible with a clause
which describes a nonfactual event. For example, the
following example, which has designated an evidential in
the subordinate clause, is considered to be nonfactual, and
thus the sentence is ungrammatical.

17 *Hiru-ne   o   suru-daroo   toki
     afternoon nap   ACC   do-EVID   when

     jama   ga   hairu-daroo   na.
     interruption   NOM get in-EVID   ILLOC

   *'When I will take an afternoon nap I will be
     interrupted.'

In order to explain the truth condition for TOKI-clauses,
let us examine the basic clause structure of Japanese in
detail. Clause structure is illustrated by Teramura (1971)
(1982) as follows:

$$(\text{noun+particle})* \quad \begin{array}{l}\text{predicate}\\\text{stem}\end{array} \quad \left(\begin{array}{l}\text{-hajime}\\\text{-tsuzuke}\\\text{-owari}\\\text{-yami}\\\vdots\end{array}\right) \quad (\text{-sase}) \quad (\text{-rare}) \quad \left(\begin{array}{l}\text{-hajime}\\\text{-tsuzuke}\\\text{-owari}\\\text{-yami}\\\vdots\end{array}\right) \quad \left(\begin{array}{l}\text{i-}\\\text{ari-}\\\text{shima-}\\\text{mi-}\\\text{ok-}\\\vdots\end{array}\right) \quad (\text{mas}) \quad \begin{array}{l}\text{-ru}\\\text{-ta}\\\vdots\\\vdots\end{array} \quad \left[\left(\begin{array}{l}\text{-daroo}\\\text{-rashii}\\\text{-yooda}\\\text{-sooda}\end{array}\right)(\text{des-}) \begin{array}{l}\text{-ru}\\\text{-ta}\end{array}\right] \quad \left(\begin{array}{l}\text{-ne}\\\text{-yo}\\\text{-zo}\end{array}\right)^4$$

ASPECT 3   CAUS   PASS   ASPECT 3   ASPECT 2   ASPECT 1   EVIDENTIAL   SENTENTIAL PARTICLE

Note: (   )* indicates that the element can have any number of occurrences, including zero.

(   ) indicates optional

[   ] indicates optional

-73-

Teramura (1978 and 1982) claims that the clauses consists of two parts, namely proposition and mood. The proposition and mood appear in the form of a continuum of the elements which constitute the clause. Thus it is difficult to draw a clear boundary between the proposition and the mood. He claims that the boundary which divides proposition and mood is somewhere around the elements designated as ASPECT 2 and ASPECT 1. However, there is some degree of overlap at this boundary. In other words, these ASPECT categories include both propositional and modal characteristics. As evidence for these dual characteristics of the ASPECT 1 category, Teramura (1971) gives the following examples:

18 Moo   ano hon o   yonda   ka.
    already   that book ACC read-PERF ILLOC

    'Have you already read that book?'

19 Saa   katta   katta!
    c'mon   buy-PERF   buy-PERF

    (Lit.) 'C'mon - have bought it!' (i.e. 'Buy it
                                            now.')

As examples of the dual characteristics of the ASPECT 2 category, the following are given:

20 Moo   ano hon o   yon-de-shimatta.
    already that book ACC read-GER-PERF

    'I have already read that book.'

21 A,   mizu   o   koboshi-te-shimatta!
    oops water   ACC spill-GER-PERF

    'Oops! I've (accidentally) spilt some water!'

The -TA form and the -SHIMATTA form, in 18 and 20 respectively, show that the event has already occurred, and thus is factual. In contrast, -TA in 19 does not imply that the 'buying' has actually occurred. It refers to an event which is going to occur in future <u>as if it had already happened</u>. 21 implies not only that the event is completed but also that its occurrence was not intended by the speaker. Thus, 19 and 21 express something of the speaker's attitude towards the events, and, therefore -TA and -SHIMATTA in these cases represent the category of mood.

In the preceding diagram of clause structure those elements to the left of ASPECT 2 designate proposition and those to the right designate mood.

Now let us find out where certain forms - the potential, the intentional and the desiderative - are located in the clause structure continuum. Observe the following:

22 Kyoojuu   ni   yon-de-ok-eru.
    today   LOC   read-GER-ASPECT 2-POT-ASPECT-1

    'I will be able to read it today.' (Potential)

23 Taroo   wa   sono   hon   o
              TOP the   book   ACC

    yon-de-mi-   yoo   to suru.
    read-GER-ASPECT 2-INTEN-ASPECT 1

    'Taroo will try to read the book.' (Intentional)

24 Taroo   wa   sono hon   o
              TOP   the   book ACC

    yon-de-oki-   taka-tta.
    read-GER-ASPECT 2-DES-ASPECT 1

    'Taroo wanted to read the book.' (Desiderative)

It can be observed that the position of these three expressions in the clause structure, i.e. potential in 22, intentional in 23, and desiderative in 24, is between ASPECT 2 and ASPECT 1. This might lead us to suppose that these three forms can also be said to belong to both the categories of proposition and mood.

However, their consistent grammaticality in TOKI constructions shows that they are, in fact, true propositions, despite their location in the clause structure on the border of the categories of proposition and mood. Observe the following:

25   Tetsuda-tte ager-areru   toki   denwashimasu.
       help-GER   give-POT   when   call up-FUT

      'I'll call you up when I can help you.' (Potential)

26   Otoko ga Yooko no kata   ni tsukama-tte,
      man NOM   GEN shoulder LOC cling-GER

      senro   e   ori-yoo to shi-ta   toki
      tracks ALLAT climb-INTEN -PERF   when
                   down
      kochira   kara ekiin   ga te   o
      this side ABL station NOM hand ACC
                   attendant
      ageta.
      raise-PAST   (Y. Kawabata, Yukiguni)

      'The man, clinging to Yoko's shoulder, was about to climb down to the tracks from the platform opposite when from this side a station attendant raised a hand to stop them.'
          (Translated by E. Seidensticker, Snow Country) (Intentional)

27   Taroo   wa   gohan   o tabe-tai   toki
              TOP   meal   ACC eat-DES   when

      tabeta.
      eat-PAST

      'Taroo ate meals whenever he wanted to.'
      (Desiderative)

The potential, intentional and desiderative forms, in 25, 26 and 27, respectively, are all compatible with TOKI-clauses. This means that these three expressions can be considered to belong to the propositional category in these cases.

It should be noted that the so-called INTENTIONAL expression 'yoo to shita' exemplified above, is not considered to be a true intentional form, due to the verb 'shita' which follows the intentional form -YOO.[5] The form -YOO by itself expresses INTENTION, as in the following example:

28   Kyoo wa   isshookenmei benkyoo o shi-yoo.
      today TOP   hard   study ACC do-INTEN

      'I will study hard today.'

However, when the intentional form is followed by the verb SURU, it actually describes the fact that the subject was about to do something. Therefore, it no longer expresses true intention. This can be seen in the English translation of 26 ('The man ... was about to climb down ...') Therefore the expression YOO TO SHITA should not be considered a true modal expression. Rather it belongs to the propositional category.

The English counterpart 'was about to' for the Japanese 'yoo to shita' does not express the intentional element at all. Rather it is simply a description of the state immediately preceding an action. Sentence 26 can be paraphrased as follows:

29 Otoko ga Yooko no   kata   ni   tsukama-tte
    man   NOM   GEN shoulder LOC   cling-GER

    senro e   ori-kake-ta   toki kochira
    tracks ALLAT climb-be about-PERF when this side
                 down   to
    kara ekiin   ga   te o ageta.
    ABL station   NOM   hand ACC raise-PAST
         attendant

The point here is that the form YOO TO SHITA should be

differentiated from the true intentional form -YOO, which

is, in fact, a modal element.

In addition to the three forms which have been

observed so far, the following claim made by Heinämäki

(1974) should also be examined. Heinämäki has suggested

that temporal clauses do not take epistemic modals. This

is illustrated by 30 and 31:

30 *We met John before he must have tampered with the
    tapes. (Heinämäki, 1974)

31 *Let's wait until the bus may come.
    (Heinämäki, 1974)

When the temporal connective TOKI appears in contexts such

as these, the sentences are also ungrammatical, in

accordance with Heinämäki's claim.

32 *Teepu o   kaeta-ni chigainai   mae ni, Jon
    tape   ACC tamper-PERF-EPISTEMIC before John

    ni   atta.
    DAT meet-PAST

33 *Basu ga   kuru-kamoshirenai   made   machimashoo.
    bus   NOM   come-IMPER-EPISTEMIC RESTR   wait-ILLOC

In contrast, she observes that the deontic modals <u>can</u>
appear in the environment of temporal clauses.

34   We met John before he had to tamper with the tapes.
     (Heinämäki, 1974)

35   Let's wait until the bus is allowed to come.
     (Heinämäki, 1974)

Heinämäki explains the reason why the epismetic modals
cannot show up in temporal clauses as follows:

> It seems that epistemic modals cannot be used to
> give the time reference. They always refer to
> the state of knowledge at the present moment. The
> temporal clause in [30], 'He must have tampered
> with the tapes', can be paraphrased as 'For all I
> know, it must be the case that he has tampered
> with the tapes'. (1974, 2)

I suggest, however, that the truth condition proposed above
for the Japanese TOKI construction seems well justified in
the case of English temporal expressions as well. Namely,
when the clause includes a modal element, which is located
somewhere on the righthand side of the clause structure
continuum, then it is incompatible with a temporal clause.
Let us examine the difference between the epistemic and the
deontic modals with regard to their position in the clause
structure.   Consider   the   following   pair   of   Japanese
sentences:

36   Taroo wa essei   o   kai-te
          TOP essay   ACC write-GER

     shimawa-nakereba naranaka-tta-rashii.
     ASPECT 2-OBL-   PERF-EVID

     'It seems that Taroo had to finish writing his
      essay.'

37   Taroo   wa   kinoo   essei   o
         TOP   yesterday essay   ACC

    kai-te-shima-tta-ni   chigai   nai.
    write-GER-ASPECT 2-PERF-EPISTEMIC

    'Taroo must have written his essay yesterday.'

36 includes the form SHIMAWANAKEREBA NARANAI, expressing
obligation, and 37 includes the epistemic modal NI
CHIGAINAI. As these examples show, obligation is located
in the clause structure between ASPECT 2 and ASPECT 1,
therefore it has characteristics of both the propositional
and the modal categories. The epistemic modal in 37, on
the other hand, follows ASPECT 1, the PERFECTIVE -TA, and
thus it is considered to belong exclusively to the modal
part of the clause.

The contrast in the following answers to a
question which asks about the state of the subject, one
containing a deontic modal and the other an epistemic,
further supports my claim:

38   Taroo   wa   ima   dooiu   jootai   ni
         TOP   now   what   condition   LOC

    arimasu-ka.
    is-ILLOC

    'What state is Taroo in now?'

    ----Essei   o   kai-te-shimawa-nakereba   naranai
        essay   ACC   write-GER-ASPECT 2-OBL

        jootai   ni   arimasu.
        state   LOC   is-PRES

        (Lit.) 'He's in the state of having to
                finish his essay.'

39   (To the same question)

----*Essei   o   kai-te-shima-tta-
      essay   ACC   write-ASPECT 2-PERF

ni chigainai jootai ni   arimasu.
EPISTEMIC   state   LOC is-PRES

*'He is in the state of must have finished his
essay.'

The question implies that an objective state is involved.
The deontic modal in the answer in 38 is considered to
describe an objective state, and thus the sentence is
grammatical. The answer in 39 is, on the other hand,
ungrammatical. This means that the epistemic modal does
not designate an objective state, and therefore, is in
conflict with objectivity of the question.

It should be noted that obligation can involve
modal aspect as well. Consider the following:

40   Kimi   wa   kyoojuu ni   kono   hon   o
      you   TOP   today   LOC   this   book   ACC

yoma-nakereba naranai.
read-OBL

'You have to read this book today.'

40 designates the speaker's attitude towards the subject of
the sentence - an imperative attitude - which is what we
might call the modal aspect of the obligation form.

Since the obligation form also belongs to the
propositional category in certain cases, it can be
compatible with TOKI-clauses, as in the following example:

41   Taroo   wa   essei   o   kai-te-shimawa-
           TOP   essay ACC write-GER-ASPECT 2-

nakereba naranaka-tta toki   namake-te
   OBL   —ASPECT 1 when   lazy-GER

ason-de ita.
play-GER-ASPECT 2-PAST

'At the time Taroo had to finish his essay, he was
   fooling around lazily.'

In summary, the forms which are located on the
border between proposition and mood, have a variation in
compatibility with TOKI-clauses. They are illustrated
below:

```
  <---------------------------------------
     PROPOSITION                       |
              |--------------------------|------------------->
              |                      MODAL |
  _____|_____|_____
```

INTENTIONAL (-yoo to suru)   *INTENTIONAL (-yoo)

DESIDERATIVE (-tai)

POTENTIAL (-eru/-areru)

           OBLIGATION (-nakereba naranai)

                           *EPISTEMIC MODALS

                            (-ni chigai nai)

                            *EVIDENTIAL(-daroo)
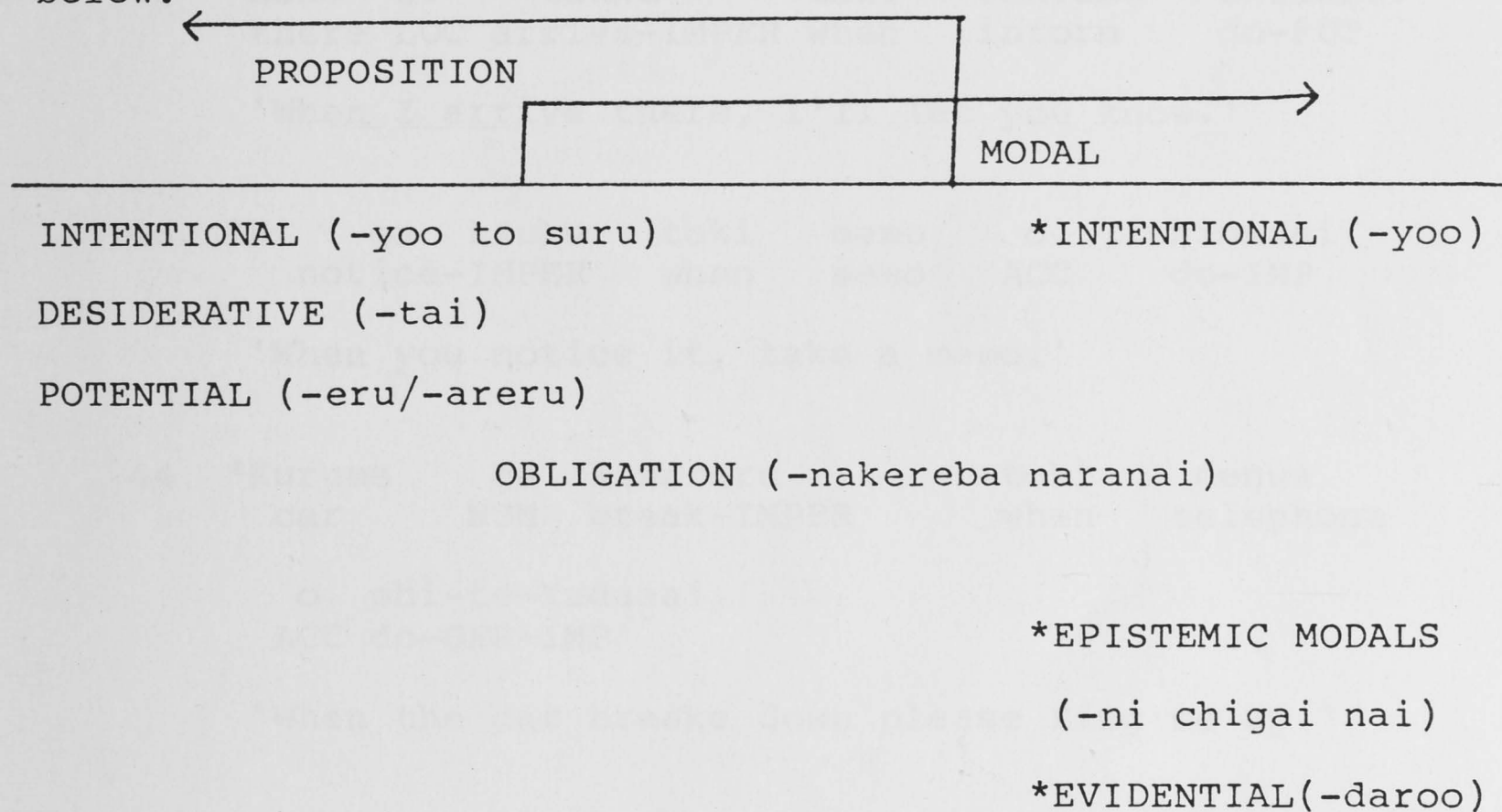
Note: * means that the form
is incompatible with
TOKI-clauses

This diagram represents a subsection of the continuum proposed by Teramura to illustrate Japanese clause structure. The arrows in the categories of PROPOSITION and MOOD represent the fact that there is no fixed borderline between these two categories, and that certain constructions may vary between being modal or propositional in meaning.

Now let us observe the following examples. Firstly, look at the following sentences:

42 *Soko ni tsuku toki renraku shimasu.
   there LOC arrive-IMPER when inform do-FUT

   'When I arrive there, I'll let you know.'

43 *Ki ga tsuku toki memo o shinasai.
   notice-IMPER when memo ACC do-IMP

   'When you notice it, take a memo.'

44 *Kuruma ga kowareru toki denwa
   car NOM break-IMPER when telephone

   o shi-te-kudasai.
   ACC do-GER-IMP

   'When the car breaks down please ring me up.'

The ungrammaticality of examples 42, 43 and 44 is related to the type of verb which shows up in each TOKI-clause. All of these verbs are nonvolitional and therefore the occurrence of the event described is outside the speaker's control. In other words, the speaker cannot foresee the exact time at which the event will occur. Thus an event designated by the -RU form of one of these verbs will not be true at the moment of the speech. In contrast, when the

-RU form is replaced by the -TA form, the sentences become grammatical. Observe the following:

45 Soko ni tsuita toki
   there LOC arrive-PERF when

   renraku shimasu.
   inform do-FUT

   'When I have arrived there I'll let you know.'

46 Ki ga tsuita toki memo o shimasu.
      notice-PERF when memo ACC do-FUT

   'When I have noticed it I'll take a memo.'

47 Kuruma ga kowareta toki denwa
      car NOM break-PERF when telephone

   o shitekudasai.
   ACC do-IMP

   'When the car has broken down please ring me up.'

The above examples show that when the speaker describes the event as having already occurred by using perfective aspect with -TA, the event described in TOKI-clause becomes psychologically real for the speaker, and thus satisfies the truth condition for TOKI-clauses.

One additional remark concerning the truth condition of TOKI-clauses with the -RU form, regarding volitional and nonvolitional verbs, is that there are some cases when nonvolitional verbs in TOKI-clauses are not ungrammatical. Consider the following:

```
48   Ame    ga    furu    toki      mukashi
     rain   NOM   rain    when      old days

     no    kizu   ga     itanda.
     GEN   scar   NOM    ache-PAST
```

'When it was going to rain, my old scar ached.'

```
49   Ame    ga    futta       toki    mukashi    no
     rain   NOM   rain-PERF   when    old days   GEN

     kizu    ga     itanda.
     scar    NOM    ache-PAST
```

'When it rained, my old scar ached.'

The grammaticality of 48 is due to the fact that the event 'to rain' is foreseeable for the speaker. The speaker can predict rain from his past experience; i.e. when his scar aches, he knows that rain is in the air. Thus the event in the TOKI-clause is true for the speaker. Thus, I would like to modify the original condition for grammatical TOKI-clauses proposed by Teramura: a TOKI-clause can be used if, and only if, the event described is actually or psychologically true.

3.2.1.2 Change of state

Heinämäki's claim regarding CHANGE applies also to Japanese. Consider the following:

```
50   Watashi ga   benkyoo    shi-te ita    toki     chichi
     I       NOM   study      do-PROG       when     father

     ga   kae-tte-ki-ta.
     NOM  come-GER-AUX-PAST
          back
```
'My father came back when I was studying.'

```
51  *Watashi   ga    moo benkyoo   shi-te ita   toki
     I        NOM   already study  do-PERF      when

    chichi   ga   kae-tte-ki-ta.
    father   NOM  come-GER-AUX-PAST
                  back
    'My father came back when I had already studied.'
```

The difference between 50 and 51 is that the -TE ITA form
in 50 represents progressive aspect, while the same form in
51 represents perfective aspect. The contrast in
grammaticality between these two sentences indicates that a
TOKI-clause is grammatically realized if, and only if,
there is a possibility of change in the state which the
TOKI-clause expresses. Since there is a change involved in
the progressive aspect in 50, i.e. the action will cease at
some time in the future, the sentence is grammatical.
However, there is no change involved in the situation
described in 51 and thus the TOKI-clause in this example
cannot be used. More examples of this phenomenon will be
seen in the next subsection 3.2.2.

3.2.2   The time relationship between two events

This section concerns the time relationships
between the events in a subordinate and a main clause
linked by the TOKI connective.

It should be noted before beginning that TOKI-
clauses followed by the particle WA are not considered here
for the following reasons. When the particle WA shows up
after the TOKI connective the sentence has very different

implications from sentences in which the TOKI connective appears alone. Compare the following:

```
52  *Atama   o   butsuketa   toki    2 jikan
     head   ACC  bump-PERF    when    2 hours

     kizetsu       shita.
     faint         do-PAST
```

'When I bumped my head I fainted for two hours.'

```
53   Atama   o   butsuketa   toki  wa  2 jikan
     head   ACC  bump-PERF    when      2 hours

     kizetsu   shita.
     faint     do-PAST
```

'It was when I bumped my head that I fainted for
   two hours.'

The reason for the awkwardness of 52 will be discussed later. Noteworthy is the fact that when the particle -WA follows the TOKI connective the sentence becomes perfectly natural, as in 53.

The naturalness of sentence 53 is due to the fact that the purpose of a TOKI-clause followed by particle WA is not to express a particular time relationship between the two clauses. Rather the implication of 53 is that 'It was on the occasion that I bumped my head that I became unconscious for two hours'. Since the particle WA functions as an indicator of contrast, when a TOKI-clause occurs with this particle, what Yang (1974) calls 'sister members' are implied. The sister members to the clause 'on the occasion that I bumped my head' might be 'on the occasion that I was hit by somebody' or 'on the occasion that a big stone fell on my head' or 'on the occasion that

somebody surprised me all of a sudden' etc. Among these members, it was 'on the occasion that I bumped my head' that 'I fainted for 2 hours'.

As the preceding examples show, a TOKI-clause with the particle WA should be differentiated from a TOKI-clause without it, the former not being primarily used to express time relationships between the subordinate and main clauses but a relationship of contrast with other events. In a similar way, contrast is also indicated when a TOKI-clause is stressed, and these cases, likewise, cannot be included in the generalizations made.[6]

```
54   Atama    o  butsuketa    toki'
     head    ACC bump-PERF    when

     2 jikan  kizetsu    shita.
     2 hours  faint      do-PAST
```

*'When I bumped my head I fainted for two hours.'

Note: The stress which falls on the TOKI connective
         itself, is represented by ',' in this example.

Now let us turn to the topic of this section, the relationships between the events in a subordinate and main clause joined by the temporal connective TOKI.

First of all, the structure of the type of complex sentences which will be considered in this thesis is illustrated in Table 8 on the next page.[7]

TABLE 8

	TOKI-CLAUSE	MAIN CLAUSE
	PREDICATE FORMS	PREDICATE FORMS

DYNAMIC PREDICATES

VERBS (TOKI-CLAUSE):
activities / accomplishments / achievements — -RU/-TA ... -TE IRU/-TE ITA

VERBS (MAIN CLAUSE):
activities / accomplishments / achievements — -RU/-TA ... -TE IRU -TE ITA

STATIVE PREDICATES

states (TOKI-CLAUSE): { -RU/-TA ; -TE IRU -TE ITA }

states (MAIN CLAUSE): { -RU/-TA ; -TU IRU/-TE ITA }

ADJECTIVES / NOUNS — -RU/(-TA)

Note: The -RU/-TA forms of dynamic predicates are higher on the dynamic scale than the -TE IRU/-TE ITA forms.

{ } indicates that some verbs which belong to this category do not appear in some forms. The verb IRU 'exist', for example, does not take the -TE IRU or -TE ITA form, while the verb NIRU 'resemble', on the other hand, can take these forms, as well as the -TA and -RU forms.

Although the morpho-phonemic symbols, -TA and -RU, appear with adjectives and nouns, as well as verbs, in this table, their actual shape varies.

As this Table shows, subordinate clauses precede the connective TOKI and main clauses follow them. The type of propositions which show up in the subordinate clauses and the main clauses are shown on the vertical plane in the diagram---firstly, dynamic propositions, which are classified into three groups, i.e. activities, accomplishments, and achievements, and secondly stative propositions, which include state verbs and predicate adjectives and nouns. The notion of each category of verbs in this chapter is based on the classification outlined in Chapter 2.

It is noted that verbs belong to two basic categories, i.e. dynamic and stative predicates --- activities, accomplishments, and achievements which express actions, and the state verbs which belong to the category of stative propositions. State verbs share significant semantic characteristics with the nonverbal predicates, i.e. adjectives and nouns. For example, they all refer to states which can be said to be static, rather than dynamic, at least temporarily involving no change. Therefore, state verbs are considered to be closer to the other stative predicates, at least in the semantic domain, than they are to the other types of verbs. The -TE IRU and -TE ITA forms of dynamic verbs are considered, both semantically and syntactically, to be somewhere in between the dynamic verbs and the stative categories. Since they are morphologically attached to dynamic verbs, it is only natural that they have some characteristics of the dynamic verbs. However, they share characteristics with the stative predicates

also, by virtue of the presence of the auxiliaries -IRU or -ITA, which themselves have important stative properties[8] when they appear as main verbs and, in combination with the -TE form of a dynamic verb, convey the notion of duration.

Now let us observe the time relationships between two events which are described in the subordinate and main clauses of TOKI constructions.

In order to simplify the description of the time relationships between two clauses, I plan to use the following diagrams. Each diagram representing an aspectual category has been introduced in Chapter 2, page 29. They are repeated here for your convenience:

activities   ├────────┤

accomplishments ├────────✕

achievements   ✕

states   ···────────···
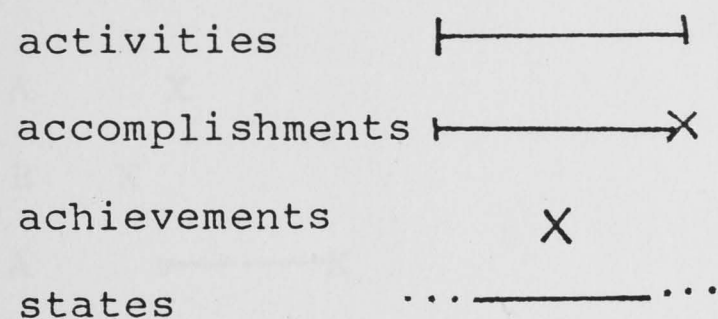
There are two basic types of time relationships which are represented by the terms SEQUENTIAL and COTEMPORAL.

Sequential occurrence is divided into two subtypes:
1. FORWARD SEQUENTIAL OCCURRENCE
2. BACKWARD SEQUENTIAL OCCURRENCE
The concept expressed by each term and the diagrams used to illustrate it are given below:
1. Forward sequential occurrence: The action of the TOKI-clause occurs before the time of the main clause event.
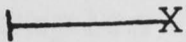
(i) A TOKI B

    A   X

    B   X

(ii) A ├────X
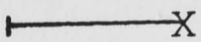
     B   X

Note: 'A' and 'B' represent the subordinate and the main clause, respectively.

2. Backward sequential occurrence: The action of TOKI-clause occurs after the time of the main clause event.

(i) A   X

    B X

(ii) A   ├────X
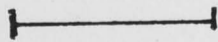
     B X

(iii) A   ├────┤
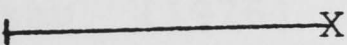
      B X

COTEMPORAL OCCURRENCE represents the time relationships in which the time intervals of the two events expressed in the subordinate and main clauses overlap with each other. Some representative examples of cotemporal occurrence are illustrated below:
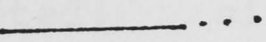
1. Cotemporal occurrence without duration

(i) A ├────┤

    B   X

(ii) A |————————X

      B   X
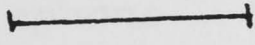
(iii) A···————————···

      B   X
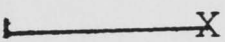
These examples above show combinations involving two clauses with different aspectual properties.
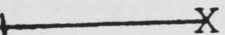
Naturally there are also combinations involving clauses with the same properties, as follows:

2. Cotemporal occurrence with duration

(i)   A |————————|

      B |————————|

(ii) A |————X

      B |————X

When two point action events occur at exactly the same time, the term SIMULTANEOUS OCCURRENCE is used to describe the time relationship involved. Simultaneous occurrence is a subtype of cotemporal occurrence.

3. Simultaneous occurrence

(i)   A   X

      B   X

(ii) A |————————X

      B   X

      Note: When an accomplishment proposition appears in the subordinate clause and the main clause event is understood to occur at the same time as the terminal point of the accomplishment, the occurrence is also considered to be simultaneous.

Nakau (1976) has suggested that the temporal connective TOKI allows three types of time relationships to be interpreted: simultaneous[9] occurrence, forward sequential occurrence, and backward sequential occurrence. Nakau cites the following examples to illustrate these three types of interpretation:

55 a Genkan   o   de-ta   toki ni [10]
     front door ACC step-PERF when
                      out
     denwa   ga   natta.
     telephone   NOM ring-PAST

   'The telephone rang right after I had stepped out
    the front door.' (Forward Sequential)

   b Genkan   o   de-ru   toki ni
     front door ACC step-IMPER when
                      out
     denwa   ga   natta.
     telephone NOM ring-PAST

(i) 'The telephone rang just before I stepped out of
      the front door.' (Backward Sequential)

(ii) 'The telephone rang just as I stepped out of the
      front door.' (Simultaneous)

Nakau states that the ambiguity of 55b provides confirming evidence for the involvement of the two aspects of meaning, i.e. simultaneous occurrence and backward sequential occurrence,[11] in the imperfective function of the -RU form in TOKI-clauses. The forward sequential occurrence of 55a is due, of course, to the perfective function of the -TA form.

However, as has already pointed out in Section 3.1, the time relationships between the two events in the

subordinate and main clauses are not dependent on the particular verbal form used (i.e. -TA and -RU).

My claim is that the time relationships are specified by the temporal-aspectual properties of the propositions which show up in TOKI-clauses. Since a proposition consists at least of a predicate (i.e. verb/ adjective/noun) and its arguments (i.e. subject/object), all these elements should be taken into consideration when the time relationship is determined.[12] In particular, when the predicate is a verb, it should be classified into one of the four groups illustrated in Table 8, Section 3.2.2, and in some cases other elements in the sentence in order to observe the temporal-aspectual properties will also have to be taken into consideration of the proposition as a whole.[13]

The remainder of this thesis concentrates primarily on subordinate and main clauses in which both predicates are verbs. The observations are based on the verb classifications and other relevant factors which have been examined in Chapter 2.

3.2.2.1 TOKI constructions with the -TA verbal form in the main clause

Firstly, let us examine dynamic propositions in which achievements in the -TA form show up in the main clause. The verbs which appear in the subordinate clause may be activities, accomplishments, or achievements.

The constructions in which achievements show up in both the subordinate and the main clause are our first concern. Compare the following sentences:

ACHIEVEMENTS WITH ACHIEVEMENTS

56   Sensee   ni   a-u   toki
       teacher   DAT   meet-IMPER when

       Taroo   mo   sasotta.
               also invite-PAST

       'When I was going to meet my teacher I invited Taroo to come, too.'

57   Taroo   wa   watashi   o mi-ta   toki
            TOP   I   ACC see-PERF when

       nikkori   waratta.
            smile-PAST

       'When Taroo saw me he smiled.'

Sentence 56 has an achievement verb in the -RU form in the subordinate clause and in the -TA form in the main clause. The time relationship of the two events in 56 is backward sequential, i.e. the event of the main clause occurs first and the subordinate clause event follows. When the -TA form of an achievement verb appears in the subordinate clauses as in 57, the time relationship is either forward sequential or simultaneous, i.e. the subordinate clause event precedes the main clause event or the two events occur at exactly the same time.[14] These time relationships are illustrated in the following diagrams:

56   A   X

        B   X

BACKWARD SEQUENTIAL

57   A   X   A   X

        B   X   B   X

FORWARD SEQUENTIAL or   SIMULTANEOUS

Next let us examine the following examples which are a combination of an accomplishment proposition in the subordinate clause and an achievement in the main clause.

ACCOMPLISHMENTS with ACHIEVEMENTS

58   Kimono   o   ki-ru   toki
      Kimono   ACC put on-IMPER when

      sode   no   ura   o   yabutta.
      sleeve GEN   lining   ACC   tear-PAST

(i)   'When I was putting my kimono on, I tore the lining of the sleeve.'

(ii) 'As I was about to put my kimono on, ...'

59   Kimono   o   ki-ta   toki
      Kimono   ACC   put on-PERF   when
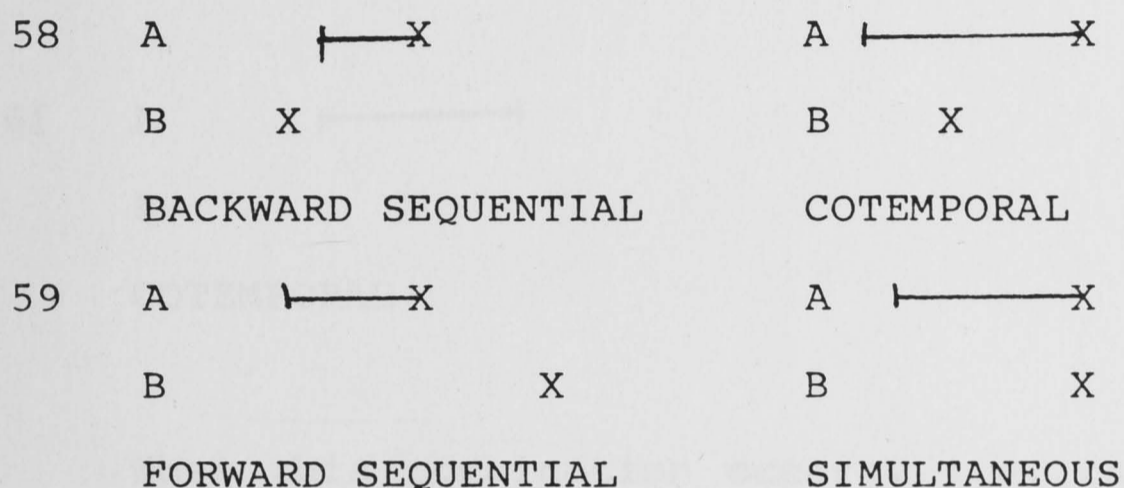
      sode   no   ura   o   yabutta.
      sleeve   GEN   lining   ACC   tear-PAST

(i)   'Just as I put my kimono on, I tore the lining of the sleeve.'

(ii) 'After I had put my kimono on, ...'

The -RU form of the subordinate clause in 58 indicates that the subordinate clause event is not completed when the main clause event takes place. Therefore the interpretation is

either backward sequential or cotemporal. The -TA form in 59 indicates that the subordinate clause event is completed before, or at the same time as, the main clause event occurs; i.e. the interpretation is either forward sequential or simultaneous. Each time relationship can be shown diagramatically as follows:

58   A   ⊢——X   A ⊢————————X

     B   X   B   X

     BACKWARD SEQUENTIAL   COTEMPORAL

59   A ⊢————X   A ⊢————X

     B   X   B   X

     FORWARD SEQUENTIAL   SIMULTANEOUS

Now let us turn to the case in which activities appear in the subordinate clause.

ACTIVITIES WITH ACHIEVEMENTS

60   Taroo   wa   nak-u   toki
   TOP   cry-IMPER   when

     kao   o   shikameta.
     face   ACC   frown-PAST

     'When Taroo was going to cry he frowned.'

61   Heya   no   sooji   o   shi-ta   toki
     room   GEN   clean   ACC   do-PERF   when

     50 sento   o   mitsuketa.
     50 cents   ACC   find-PAST

     'When I was cleaning my room I found a 50 cent
        coin.'

When the -RU form shows up on the subordinate clause verb, the time relationship is backward sequential and when the -TA form appears the occurrence is cotemporal. Observe the following diagrams:

60   A   ├─────────┤

     B   X

     BACKWARD SEQUENTIAL

61   A   ├───────┤

     B   X

     COTEMPORAL
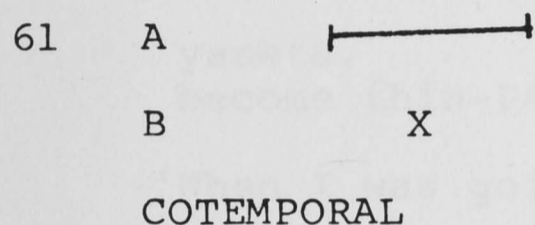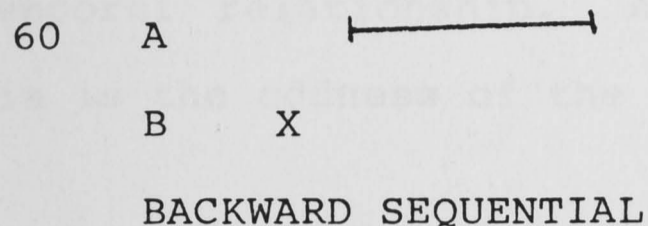
When this combination occurs, i.e. the -TA form of an activity verb in the subordinate clause and of an achievement in the main clause, a forward sequential interpretation is not possible due to the aspectual properties of verbs of this type. That is, activities do not clearly include terminal point. It should be noted here that both achievements and accomplishments, on the other hand, include the notion of clear change in the state of the subject which is described by each verb. The achievement verb 'tsuita' (arrived), for example, includes a point of change from the state of 'not having arrived yet' to the state 'having already arrived'. The accomplishment verb 'kimono o kita' ('put on a kimono') also includes the change from the state of 'not wearing' to the state 'wearing'. However, activities include no such change. Activities refer to the action itself. There

being no clear terminal point in activity propositions, the -TA form never has a perfective interpretation.

Notice above that the -RU form of an activity predicate in the subordinate clause does not indicate a cotemporal relationship. A good example to confirm this claim is the oddness of the following sentence:

62   Toreeningu   o   su-ru   toki   10 kiro
      training   ACC do-IMPER   when   10 kg

      yaseta.
      become thin-PAST

      'When I was going to train I lost 10 kg.'

The oddness of sentence 62 seems to stem from the conflict between the interpretation of the time relationship represented by the -RU form in the subordinate clause and the pragmatic meaning involved. That is, the -RU form of an activity predicate has a backward sequential interpretation only, and therefore 62 implies that 'I lost 10kg and then I did the training'; on the other hand, pragmatically speaking, this would be an extremely unexpected sequence of events, and hence the oddness of the sentence.

When the desired implication is that 'during the training I lost 10kg', the -RU form of an activity in the subordinate clause is not suitable. The preceding observation provides confirming evidence for the claim that the -RU form of activities in TOKI-clauses designates the backward sequential interpretation only.

The time relationships observed above with respect to this method of verb classification are summarised in the

following table. The table refers only to cases where the main clause proposition is an achievement.

TABLE 9

SUBORDINATE CLAUSE

tense form of the subordinate clause / verbs in subordinate clause	-RU form	-TA form
achievements	sequential (backward)	sequential (forward) simultaneous
accomplishments	sequential (backward) co-temporal	sequential (forward) simultaneous
activities	sequential (backward)	cotemporal

It should be clear from Table 9 that the difference in the temporal-aspectual properties of verbs results in different interpretations of the time relationships between two clauses joined by the connective TOKI, even if the verbs in the subordinate clauses all take the -TA form, for example. When the subordinate clause verbs are achievements or accomplishments in the -TA form, they serve to represent forward sequential relationships or simultaneous relationships, whereas subordinate clauses with activities in the -TA form have a cotemporal relationship with the main clause.

The preceding observations, thus, suggest that the perfective/imperfective interpretations of the -TA/-RU

forms, which have been advocated in previous studies of aspect as the crucial features in determining the time relationships between clauses linked by the TOKI connective, are not, in fact, the only variables involved. As I have clearly demonstrated, the temporal-aspectual properties of the propositions concerned must also be considered.

In the previous chapter I dwelt to a considerable extent on accomplishment propositions, and the question of what factors determine their degree of telicity. Some accomplishment propositions were found to be fully telic, while others were somewhat lower on the telicity scale, focussing more on the process, or ACTIVITY, involved rather than on the end point.

In the discussion that follows, it will be shown that whether or not the terminal point of an accomplishment proposition is clearly included in the meaning of a clause in the -TA form determines whether a cotemporal interpretation is possible. Only those accomplishments which have a strong focus on the process involved will allow this interpretation, which is typical of activity propositions in the -TA form. (Please see the diagram of the telicity scale in Chapter 2, page 35.)

Compare the sentences in each of the following pairs:

63 a Osake   o   yooishita   toki   denwa
     osake   ACC   prepare-PERF when   telephone

     ga   kaka-tte-ki-ta.
     NOM   ring-GER-AUX-PAST

(i)   'Just as I finished preparing the sake I received
       a phone call.'

(ii) 'After I had prepared the sake, ...'

   b Osake   no   yooi   o   shita   toki
     osake   GEN   preparation ACC   do-PERF   when

     denwa   ga   kaka-tte-ki-ta.
     telephone   NOM   ring-GER-AUX-PAST

(i)   'Just as I finished preparing the sake I received
       a phone call.'

(ii) 'After I had prepared the sake, ...'

(iii) 'When I was preparing the sake, ...'

It is clear that 63a represents either a forward sequential
or simultaneous occurrence of the two events. The
observations concerning accomplishment propositions
summarised in TABLE 9 in this chapter are well illustrated
by this example. However, 63b is interpreted by many
native speakers as also indicating a cotemporal occurrence,
i.e. it implies that the telephone rang during preparation
of the sake. The time relationships are illustrated below:

63a A |————————X   A|——X

     B   X   B   X

     SIMULTANEOUS   FORWARD SEQUENTIAL

63b A |————X   A |————X   A |——————————x

     B   X   B   X   B   X

     SIMULTANEOUS   FORWARD   COTEMPORAL
                     SEQUENTIAL
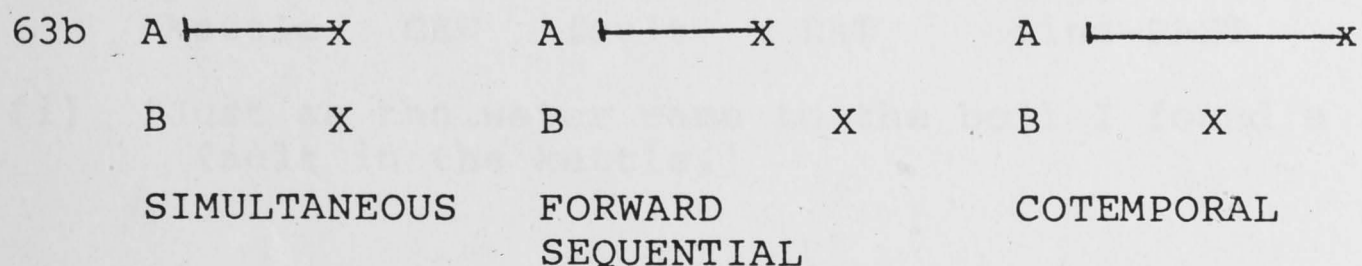
The task with which we are faced now is to examine the reason why there is a contrast in the interpretation of the time relationships in 63a and 63b. It is noted, firstly, that the Sino-Japanese digraph verb 'yooisuru' in 63a has the properties of an accomplishment, as already observed in Chapter 2. The verb phrase 'yooi o suru' in 63b is also an accomplishment. However, as discussion concerning Sino-Japanese verbs in Chapter 2 (summarized in Diagram 2) shows, the telicity of this predicate is lower than that of the verb 'yooisuru'.

Therefore, when the verb phrase 'yooi o suru' appears in a TOKI-clause, it has properties closer to those of an atelic proposition such as with activity verbs. Thus, the cotemporal interpretation can be explained, this being a natural interpretation of activity predicates in this context. The same observation can be made concerning other Sino-Japanese verbs which are accomplishments themselves but can also appear in the construction NOUN NO DIGRAPH O SHITA. For example: shuunoo suru 'to store'/setchaku suru 'to tag one thing to another'/saidan suru 'to cut' etc.

The conclusions drawn from the observation of examples 63a and 63b seems to be equally applicable in the case of the following pairs:

64a Oyu   ga   waita   toki
     hot water   NOM   boil-PERF   when

     yakan   no   kekkan   ni   ki ga tsuita.
     kettle   GEN   fault   DAT   find-PAST

(i) 'Just as the water came to the boil I found a
     fault in the kettle.'

    (ii) 'When the water had boiled, ...'

    b Oyu   o   wakashita   toki   yakan
       hot water   ACC   boil-PERF   when   kettle

       no   kekkan   ni   ki ga tsuita.
       GEN   fault   DAT   find-PAST

    (i)   'Just as I brought the water to the boil, I found
           a fault in the kettle.'

    (ii) 'When I was boiling the water,....'

The verbs in 64a and 64b are pairing verbs, which exist widely in the Japanese verbal system. The verb in 64a is an intransitive verb and the verb in 64b is transitive. The time relationships are forward sequential or simultaneous in 64a and in addition to these two, cotemporal in 64b. Now recall from Diagram 2 in Chapter 2, that the telicity of the intransitive member of the pair, 'oyu ga waita', is the higher of the two, this proposition being fully telic. Thus, the time relationships are as expected for an accomplishment proposition. However, in Diagram 2, 'oyu o waskashita' is shown as low on the telicity scale, and therefore closer to the atelic propositions, allowing the cotemporal interpretation mentioned above. The time relationships can be illustrated as follows:

   64a A ⊢————X   A ⊢————X

        B   X   B   X

        SIMULTANEOUS   FORWARD
                                  SEQUENTIAL

64b   A ├─────X   A ├────X   A ├─────────X

      B   X   B   X   B   X

      SIMULTANEOUS   FORWARD   COTEMPORAL
                        SEQUENTIAL
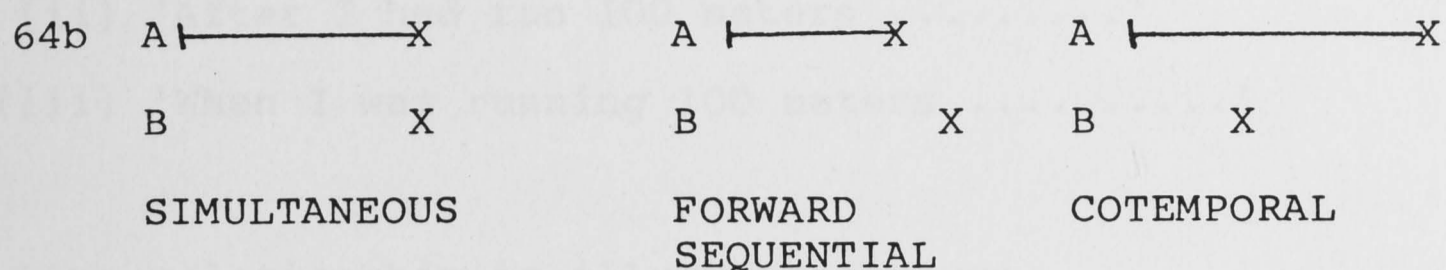
The preceding observations can also be made concerning pairing verbs which have similar properties to the verbs in example 64. For example:

naoru (Vint.) 'to recover' VS naosu (Vt.) 'to cure'/

kawaku (Vint.) 'to dry' VS kawakasu (Vt.) 'to dry'/

tatsu (Vint.) 'to stand' VS tateru (Vt.) 'to build' etc.

In example 65 when the quantifier '100 meters' is interpreted as indicating the situation in which the runner started running and went on running up to '100 meters', then the quantifier, as expected, serves to delimit the process, and the proposition is an accomplishment. In this case the time relationship between the two clauses is simultaneous or forward sequential. However, as was pointed out in Chapter 2, in some cases quantifiers function as indicators of a process. When the quantifier is interpreted as indicating the mere duration of the process, and does not really refer to the terminal point at all, then the relationship is cotemporal. Observe the following:

65   Kooen   o   100 meetoru   hashitta   toki
     park   ACC   100 meters   run-PERF   when

     ashi   ni   itami   o   kanjita.
     leg   LOC   pain   ACC   feel-PAST

(i) 'Just as I finished running 100 meters through the
      park, I felt a pain in my leg.'

(ii) 'After I had run 100 meters ....'

(iii) 'When I was running 100 meters ....'

The time relationship is illustrated thus:

```
65   A ┝━━━━━X    A ┝━━━━X    A ┝━━━━━X
     B      X    B      X    B      X
     SIMULTANEOUS   FORWARD        COTEMPORAL
                    SEQUENTIAL
```
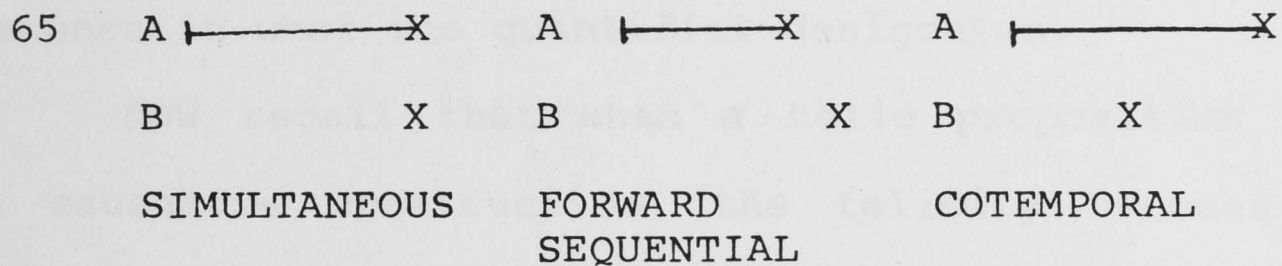
When 65 is compared to 66, in which an object with a quantifier shows up in the TOKI-clause, 66 is interpreted as a forward sequential or simultaneous occurrence. However, it is not interpreted as cotemporal occurrence because the quantifier designates the process from the start of reading the first book to the completion of the third one.

66	Taroo	ga	hon	o	3 satsu	yonda	toki
		NOM	book	ACC	3-CL	read-PERF	when

	teiden	ga	okita.
	blackout	NOM	occur-PAST

(i) 'Just as Taroo finished reading three books there was a blackout.'

(ii) 'After Taroo had read three books ....'

The diagrams of the time relationships which can be inferred from Sentence 66 are as follows:

```
66   A ┝━━━━━X           A ┝━━━━━X
     B      X           B           X
     SIMULTANEOUS        FORWARD SEQUENTIAL
```
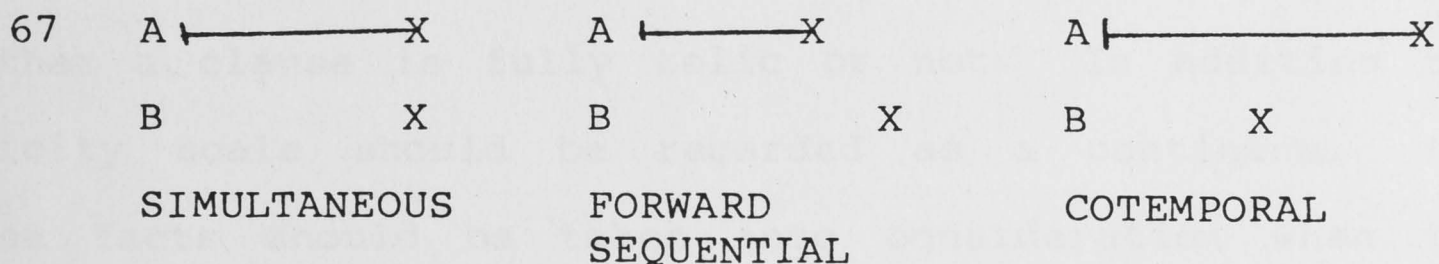
An interesting point is that both subordinate clauses in the previous two examples take a quantifier, i.e. '100 meters' and 'three', respectively, which might be expected to make the telicity increase to the same extent. However, the telicity of 65 is lower than that of 66 because of the difference in what the quantifier designates.

Now recall that when a telic proposition appears in a causative construction, the telicity becomes lower. Compare the preceding example 66 with the following:

67   Taroo   ni   hon   o   3 satsu   yoma-seta
                    DAT   book   ACC   3-CL   read-CAUS

          toki   teiden   ga   okita.
          when   blackout   NOM   occur-PAST

(i)   'Just as I finished making Taroo read three books there was a blackout.'

(ii) 'After I had made Taroo read three books ......'

(iii) 'When I was making Taroo read three books .....'

In 67, the cotemporal interpretation is possible. Thus, the time relationships are as follows:

67   A├────────X   A├──────X   A├─────────────X

        B   X   B   X   B   X

     SIMULTANEOUS   FORWARD   COTEMPORAL
                         SEQUENTIAL

The cotemporality of example 67 is due to the fact that the clause which designates the highest telicity of the scale is embedded in the clause which has an agentive subject ('I') and an activity verb ('saseru') ('make'). Since the subject of the matrix clause undergoes no change, and the verb is an activity, the telicity is low. Therefore 67 can be interpreted as a cotemporal occurrence. (Please see the tree diagram in Chapter 2, page 41.)

The following conclusions can, therefore, be drawn from the preceding observations: Even if the verb phrase itself designates accomplishment characteristics such as in examples 63b, 64b and 65 according to the classification of verbs in Chapter 2, the proposition which includes this verb phrase can still be interpreted as an atelic proposition. The proposition may be very close to the telic/atelic border and vary between these two interpretations. Once again it is clear that two distinct parameters --- the degree of change in the subject and the clarity of a terminal point --- are relevant to the question of time relationships in TOKI-clauses.

These parameters function together to determine whether a clause is fully telic or not. In addition the telicity scale should be regarded as a continuum. All these facts should be taken into consideration when the time relationships of TOKI constructions are observed.

Finally, in the last part of this subsection, some other combinations of verbs which are ungrammatical in TOKI constructions are examined. Consider the following sentences:

68   *Taroo   wa   geta   o   nuida
             TOP   geta   ACC   take off-PERF

      toki   aga-tte-ki-ta.
      when   come up-GER-AUX-PAST

      'When Taroo had taken off his geta, he came over
      here.'

69   *Atama   o   butsuketa   toki
       head   ACC   bump-PERF   when

      2 jikan   kizetsu   shita.
      2 hours   faint   do-PAST

      'When I bumped my head I fainted for two hours.'

70   *Hanako   wa   kusuri   o
              TOP   medicine   ACC

      nonda   toki   kaoiro   ga
      take-PERF   when   face colour   NOM

      kawa-tte-i-tta.
      change-GER-AUX-PAST

      'When Hanako had taken the medicine her face
      gradually turned pale.'

The subordinate clause verb in 68 has an accomplishment verb 'nuida' ('took off'). Those in 69 and 70 have achievement verbs: 'butsuketa' ('bumped') and 'nonda'[15] ('drank'), respectively. The main clause verb is an accomplishment ('agattekita' ('came up')) in 68 and an activity ('2 jikan kizetsushita' ('fainted for two hours')) in 69. The main clause verb in 70 'kawatteitta' ('went on changing') describes the process of a change of state by virtue of the use of the auxiliary 'itta' ('went') with the verb 'kawaru' ('change').

As the preceding examples show, the main clause in each of these sentences does not designate an instantaneous

occurrence, but rather a process which takes place over a period of time. Also, in all cases the process described in the main clause starts at the same point, i.e. simultaneously with or immediately after the completion of the subordinate clause event. That is, a forward sequential relationship is involved. The time relationship of each sentence is illustrated below:

68 A   ├──────X
                              --- bad
    B   ├──────X

69 A X
                    ----bad
    B   ├──────┤

70 A X
                    ----bad
    B   ├──────→
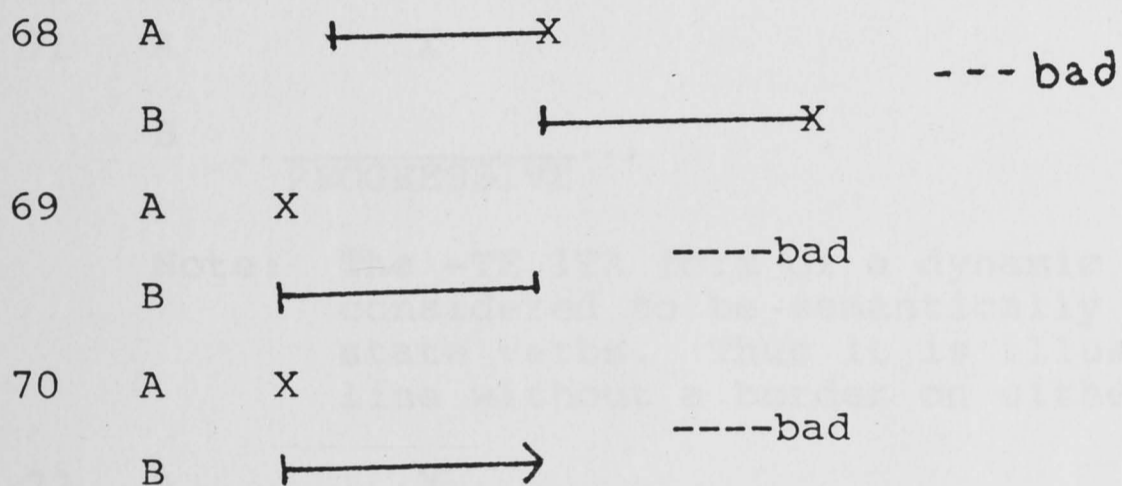
Note: The arrow in 70 represents a process of change.

When the subordinate and main clauses have time relationships such as those illustrated by the diagrams above, the sentences are invariably ungrammatical.

On the other hand, it should be noted that in cases where a durative event, which is represented by the main clause, is understood to have already begun before the completion of the subordinate clause event, the sentence is grammatical. Observe the following examples and the diagrams of their time relationships:

71 Doroboo ga   tonari   no   heya
    thief   NOM   next   GEN   room

    ni   haitta   toki   watashi   wa
    LOC   go in-PERF   when   I   TOP

    benkyoo   shi-te ita.
    study   do-PROG

    'When the thief entered the next room I was studying.'

72   Mooichido   sono   bokujoo   o
      again   the   farm   ACC

      otozureta   toki   koushi   ga
      visit-PERF   when   calf   NOM

      3 too   umare-te ita.
      3-CL   be born-PERF.

      'When I revisited the farm there were three new-
      born calves.'

      (Lit.) '... three calves had been born.'

71   A   X

      B   ·· ‾‾‾‾‾‾‾‾‾‾ ··
            PROGRESSIVE

Note: The -TE ITA form of a dynamic verb is
       considered to be semantically similar to
       state verbs. Thus it is illustrated as a
       line without a border on either side.

72   A   X

      B   X————————————
      OCCURRENCE   RESULT
      OF THE EVENT

From the preceding observations, it can be seen
that when the main clause represents a process which is
expressed by an activity or an accomplishment predicate,
starting from a certain point of time which is specified by
either an achievement or an accomplishment in the -TA form
of the subordinate clause, then a TOKI construction is
impossible. However if the main clause event has already
started prior to the occurrence of the subordinate clause
event, then a TOKI construction is grammatical.

It should also be noted that when an activity
appears in the subordinate clause, it is compatible with a
main clause which also designates a process. The time
relationship is cotemporal.

73 Hon   o   yonda   toki   30 pun
    book   ACC   read-PERF when   30 minutes
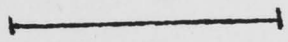
    inemuri   o shita.
    sleep-PAST

    'While I was reading I fell asleep for 30 minutes.'
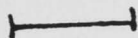
74 Eigo   no   hon   o
    English GEN   book   ACC
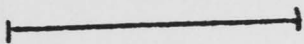
    yonda   toki   yomu   supiido   ga
    read-PERF when   reading speed   ACC
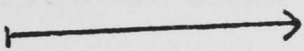
    dandan   hayaku   natta.
    gradually fast   become-PAST

    'When I read some books in English, my reading
    speed gradually improved.'

```
73   A   ├──────────────┤

     B        ├──────┤

74   A   ├──────────────┤

     B   ├──────────────────→
```

In summary, the preceding observations show that
the combination of the temporal-aspectual properties of
verbs or verb phrases in subordinate and main clauses
determine the grammaticality of a sentence with the TOKI
connective. It is clear that the examination of TOKI-
clauses, particularly in the light of the temporal-aspectual
properties of verbs or verb phrases, explains the
ungrammaticality of certain sentences, which is not
adequately explained by Toyota's treatment, cited above in
Section 3.1.

3.2.2.2 TOKI constructions with the -RU verbal form in the
         main clause

TOKI constructions in which the -RU form appears
in the main clause differ from the ones which have the -TA
form in the main clause in the following way: When the
verb in the main clause is in the -TA form, the two events
expressed in a TOKI construction are generally understood
to have already occurred, prior to the time of the speech
event. The time relationships of the occurrence of the two
events is explicitly shown in this context. However, they are
not always immediately apparent when the nonpast tense form
is used. Therefore, TOKI constructions with the -RU form
in the main clause show different characteristics from the
constructions with the -TA form in the main clause.

Firstly, let us observe various combinations of
dynamic verbs in these TOKI constructions.

75   Sensei   ni   au   toki Taroo mo   sasou
     teacher   DAT   meet-IMPER when   also invite-FUT

         (Cl=-RU form of an achievement [16],
          Relationship=backward sequential)

     'When I am going to meet my teacher I'll invite
     Taroo, too.'

76   Taroo wa   watashi o   mita   toki nikkori warau [17]
          TOP   I   ACC see-PERF when   smile-FUT

         (Cl=-Ta form of an achievement,
          Relationship=forward sequential or
          simultaneous)

     'When Taroo sees me he will smile at me.'

77 Kimono o   kiru   toki iki ga kurushiku
    Kimono ACC put on-IMPER when   suffocate

    naru.[18]
    become-FUT.

        (Cl=-RU form of an accomplishment,
        Relationship=backward sequential or
        cotemporal)

    (i) 'When I'm putting my kimono on, I suffocate.'

    (ii) 'When I'm about to put my kimono on ....'

78 Kimono o   kita   toki iki ga kurushiku
    Kimono ACC put on-PERF   when   suffocate

    naru.
    become-FUT.

        (Cl=TA form of an accomplishment,
        Relationship=forward sequential or
        simultaneous)

    (i) 'When I have put my kimono on, I suffocate.'

    (ii) 'Just as I finish putting my kimono on ....'

79 Taroo wa   naku   toki kao o   shikameru.
          TOP cry-IMPER   when face ACC frown-FUT

        (Cl=-RU form of an activity,
        Relationship=backward sequential)

    'When Taroo is about to cry, he frowns.'

80 Yubiwa   o   tansu   no   ushiro ni   otoshi-te
    ring   ACC wardrobe GEN   behind LOC drop-GER

    torenai.   Dakara...
    pick up-POT-NEG   so

    'She has dropped her ring behind the wardrobe and
    she cannot pick it up. So...'

    Oosooji   o   shita   toki   totteageru.[19]
    cleaning ACC do-PERF   when   pick up-GER-give-FUT

        (Cl=-TA form of an activity,
        Relationship=cotemporal)

    I'll pick it up for her when I do the cleaning.'

It can be seen that the time relationships in each of the preceding examples are the same as those which have already been illustrated in Section 3.2.2.1.

However, consider sentences like 81, 82 and 83 below, for which the explanation given above for the interpretation of the -RU form in subordinate clauses cannot be applied.

81   Sono hon   wa kondo   a-u   toki
      the book TOP next   see-IMPER when

      kaeshitekudasai.
      get back-IMP

      'Please return the book to me next time we see each other.'

82   Kondo   umarekawa-ru   toki   watashi wa
      next   be reborn-IMPER   when   I   TOP

      kanri   ni   naru.
      public servant   LOC   become-FUT

      (Kosaka, Saigo no nihonhei)

      'When I am reborn I will be a public servant.'

83   Kondo   uchi   e   irassharu   toki
      next   my house ALLAT   come-IMPER when

      kaeshitekudasai.
      get back-IMP

      'When you come to my place next time please return it to me.'

The verbs which show up in the subordinate clauses of these examples are achievements in 81 and 82 and an accomplishment in 83. TABLE 9 in section 3.2.2.1 shows that the -RU verbal form of achievements and accomplishments in the subordinate clause results in a backward sequential time relationship. However, when the pragmatic temporal relationship between two events is considered, in each of

the examples above the main clause event could not possibly take place until the subordinate clause event has occurred i.e. only the forward sequential interpretation is possible. Take 81, for example. The book can only be returned to the owner after the meeting has taken place.

This type of situation can be observed widely when the main clause verb is in the -RU form. The resulting interpretation, the forward sequential interpretation, is, in fact, the interpretation we would get if the subordinate clause verb were in the -TA form. Thus each of the meanings expressed by the sentences above could equally well be conveyed with a -TA form verb. The following conclusion can be drawn: When the order of the occurrence of the two events is clear from the context, the difference between the verbal forms -RU and -TA is neutralized.

However, when it is possible for the main clause event to occur either before or after the subordinate clause event, then the appropriate verbal .form should be used.

Thirdly, there is another characteristic of the combination of the -RU form in both the subordinate and main clauses. Observe the following:

84a Uchi   e   kuru   toki kuruma
    my house ALLAT come-IMPER when car

    de kuru.
    INS come-FUT

    (C1=accomplishment)

    'When he comes to my place he comes by car.'

84b *Uchi   e   ki-ta   toki kuruma
     my house ALLAT come-PERF when car

     de   kuru.
     INS come-FUT
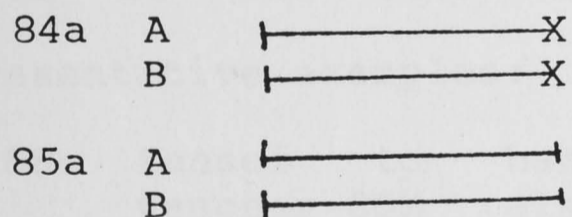

85a Kao   o   ara-u   toki goshigoshi
     face ACC wash-IMPER when vigorously

     kosuranaidekudasai.
     rub-NEG-IMP.

     (Cl=activity)

     'When you wash your face please don't rub
     vigorously.'

85b *Kao   o   ara-tta   toki goshigoshi
      face   ACC wash-PERF when vigorously

     kosuranaidekudasai.
     rub-NEG-IMP

84a and 85a both designate a cotemporal relationship as

illustrated below:

    84a A ├──────────X
         B ├──────────X

    85a A ├──────────┤
         B ├──────────┤

When the -TA form shows up in the subordinate clause, these

sentences are ungrammatical. In Sentence 84 the verbs in

subordinate and main clauses belong to the same verbal

category as that of accomplishments in this case and both

clauses share a single subject. The main clause can be

interpreted as indicating the manner in which the action of

the subordinate clause is to be performed.[20] Therefore

84 can be paraphrased as follows, with exactly the same

verb in both clauses, and a manner adverb modifying the

main clause.

86   (Uchi   e   kuru   toki) kuruma de
      my house ALLAT come-IMPER when   car   INS

      uchi   e   kuru.
      my house ALLAT come-FUT

      '(When he comes to my place) he comes to my place
      by car.'

The same observation can be made for 85 which, likewise,

can be paraphrased as follows:

87   (Kao   o   arau   toki) goshigoshi
      face   ACC   wash-IMPER when   vigorously

      kosuranaide   arattekudasai.
      rub-NEG-IMP-GER wash-IMP

      '(When you wash your face) please wash your face
      without rubbing vigorously.'

It seems, then, that as the main clauses of the

preceding examples show the semantic characteristics of

manner adverbials, they are interchangeable with a -TE

gerund construction, which often functions to indicate the

manner of the main clause. Consider the following

representative examples:

88a   Sensei   to   hanasu   toki keigo
      teacher COM   talk-IMPER   when honorific expressions

      o   tsukau.
      ACC use-FUT

      'When I talk to my teacher I use honorific
      expressions.'

88b   Keigo   o   tsuka-tte sensei
      honorific expressions ACC   use-GER   teacher

      to   hanasu.
      COM   talk-FUT

      'I   talk   to   my   teacher,   using   honorific
      expressions.'

89a   Nihonryoori   o   taberu   toki   hashi
       Japanese dishes ACC eat-IMPER when   chopsticks

       o   tsukau.
       ACC   use-HABIT

       'When I eat Japanese dishes I use chopsticks.'

89b   Hashi   o   tsuka-tte   nihonryoori   o
       chopsticks ACC   use-GER   Japanese dishes ACC

       taberu.
       eat-HABIT.

       'I eat Japanese dishes, using chopsticks.'

88 and 89 show a cotemporal relationship between their subordinate and main clauses.

The preceding observations show that the combination of -RU verbal forms in both the subordinate and the main clause, when the clauses share a single subject and have verbs belonging to the same category, results in a sentence in which the main clause describes the manner of the subordinate clause.

3.2.2.3   TOKI constructions with the -TE IRU verbal form in the subordinate clause.

When the durative form, -TE IRU, shows up in the main clause, whether it designates progressive or perfective aspect is not relevant to the grammaticality of the TOKI construction. However, when the subordinate clause verbs is in the -TE IRU form there is a contrast in grammaticality, depending on the interpretation allotted to the -TE IRU form. Observe the following examples:

90 Watashi ga   benkyoo shi-te iru toki chichi
    I   NOM study   do-PROG   when father

    ga   kaettekita.
    NOM come back-AUX-PAST

    'When I was studying my father came home.'

91 *Watashi ga   moo   benkyoo shi-te iru toki
     I   NOM   already study   do-PERF   when

    chichi ga   kaettekita.
    father NOM come-AUX-PAST

    *'When I had already studied my father came home.'

The contrast between the grammaticality of these two
preceding examples would seem to indicate that the
progressive -TE IRU is compatible with the TOKI connective,
while the perfective -TE IRU is not. However, this
hypothesis is not supported by the following grammatical
example in which the subordinate clause designates
perfective aspect.

92 Yama   ga   mie-te iru   toki shashin
    mountain NOM come into view-PERF when picture

    o   totta. 21
    ACC take-PAST

    'When the mountain had come into view I took a
    picture of it.'

The contrast in the grammaticality of 90 and 91, 92 seems
to stem from the fact that the -TE IRU form in 91 indicates
a resulting state which cannot be changed. That is, having
studied something ('moo benkyoo shiteiru') one cannot alter
the fact that one has had that experience. The -TE IRU
forms in 90 and 92, on the other hand, designate states
which can be changed. This element in the conditions for
the grammatical occurrence of TOKI constructions has

already been mentioned briefly in Section 3.1. Example 92

supports the claim that one of the conditions for TOKI

clauses to be realized is that they should include some

possibility of a change in the state of the subject.

We have been observing cases in which dynamic

predicates in the -TE IRU form appear in TOKI

constructions. Now, let us examine stative predicates in

TOKI constructions with respect to whether or not there

must be a possibility of change in the subject.

```
93   Oosutoraria   ni    ita     toki   oosutorariaeigo
     Australia      LOC   be-PAST when   Australian English

     o     oboeta.
     ACC   learn-PAST

     'When  I   was   in   Australia   I   picked   up   some
     Australian English.'
```

```
94   *Oosutoraria   ni    iru     toki   oosutorariaeigo
      Australia      LOC   be-U.T. when   Australian English

      o     oboeru.
      ACC   learn-FUT

      *'When  I   am   in   Australia   I   will   pick   up   some
      Australian English.'
```

The contrast in grammaticality between 93 and 94 is due to

the fact that in 93 the main verb in the -TA form shows

that the events of both clauses occurred in the past.

Therefore the sentence is understood to indicate that the

speaker is no longer in Australia. Thus, the state

described in the subordinate clause of 93 is considered to

include some change in it. In contrast, when a similar

situation is described in the nonpast tense as in 94, the

subordinate clause state does not clearly express a

change. By contrast, when the subordinate clause has a

dynamic predicate in the -TE IRU form it designates some change in the state of the subject, even when the sentence is marked for future tense. Thus, a sentence of this kind will be acceptable. Compare 93 with the following:

95   Hon   o   yon-de iru[22] toki memo o   toru.
       book ACC read-PROG   when memo ACC take-FUT

'While I am reading the book I'll take a memo.'

Whether a subordinate clause predicate in the -TE IRU form involves the possibility of a change or not can be tested by examining its compatibility with the verb 'yamesaseta' ('made...stop').

96   Taroo ga hon o yon-de iru no o   yame-sase-ta.
          NOM book ACC read-PROG COMP ACC stop-CAUS-PAST

'I made Taroo stop reading.'

97   *Taroo ga nagai aida Oosutoraria ni   iru
          NOM   long   time   Australia LOC be-U.T.

       no o   yame-sase-ta.
     COMP ACC stop-CAUS-PAST

     *'I made Taroo stop being in Australia for a long time.'

As the preceding test shows, if the state is changeable, it is compatible with the verb 'yamesaseta', as in 96. However, if the state is not changeable, it is not compatible with this predicate, as in 97.

In the case of other stative predicates, for example adjectival predicates, the condition for the grammatical occurrence of a TOKI-clause is the same as for the verbal stative predicates above. That is, the state described must be understood to be a temporary one, which

allows the possibility of some change. Consider the following:

98   Kono hana   wa   suguni   iro   ga   aka
       this flower TOP   quickly colour NOM red

       kara   shiro ni   kawaru.
       ABL   white DAT change

       'The colour of this flower quickly changes from red to white.'

       Dakara hana   no   iro   ga   akai
        so   flower GEN colour NOM red-U.T.

       toki shashin o   totta.
       when picture ACC take-PAST

       'So I took a picture of it when it was red.'

99   *Yama   ga takai   toki shashin o
       mountain NOM high-U.T. when picture ACC

       totta.
       take-PAST

       *'I took a picture of the mountain when it was high.'

99 is ungrammatical, because the subordinate clause state is not interpretable as a changeable state in any ordinary context.

Consider, further, the following examples in which nominal predicates appear in the subordinate clause:

100 Taroo ga kodomo no   toki   sewa o shita.
          NOM child COP-U.T. when   take care-PAST

       'I took care of Taroo when he was a child.'

101 *Taroo ga roojin   no   toki   sewa o shita.
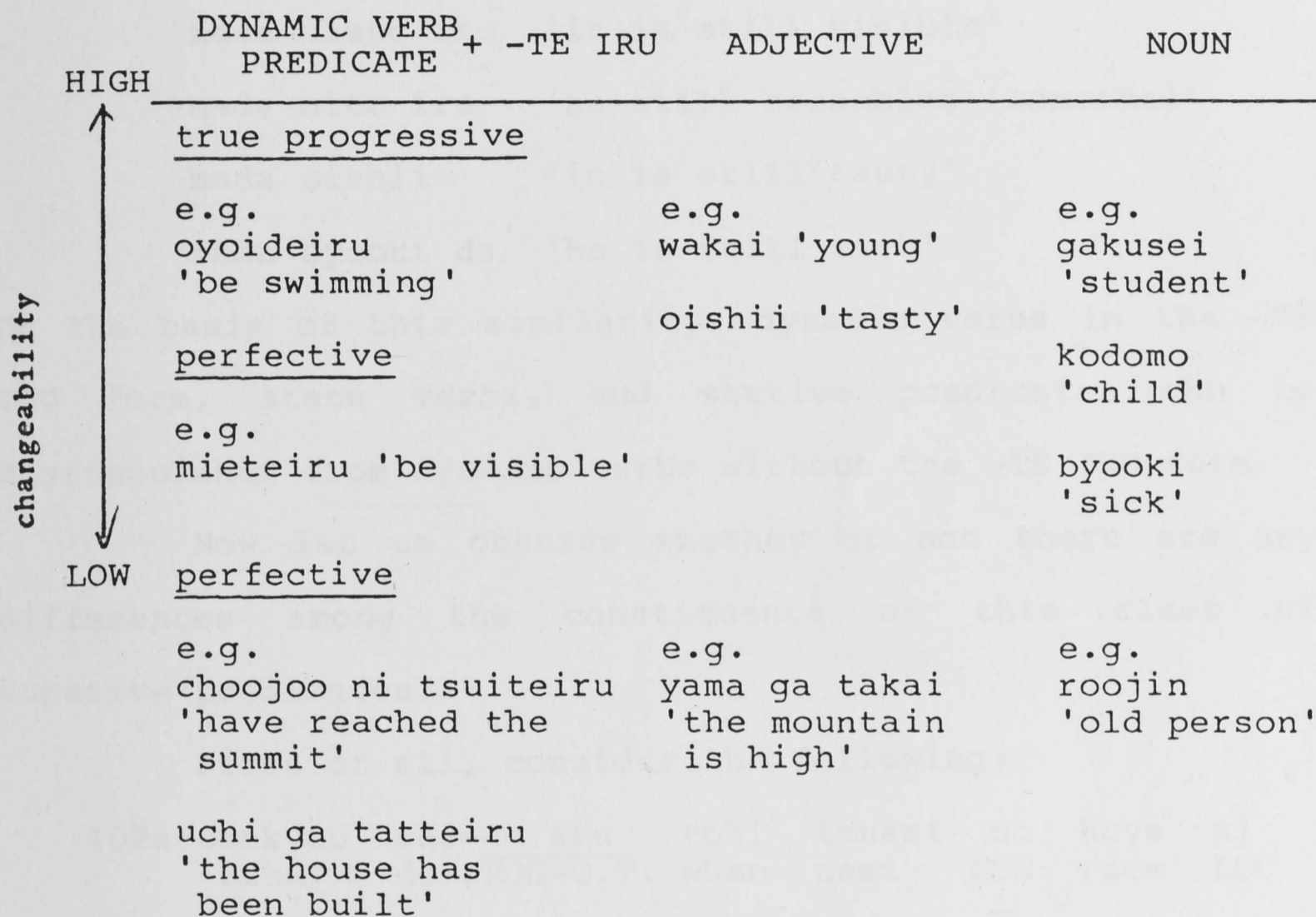   NOM old man COP-U.T. when take care-PAST

       *'I took care of Taroo when he was an old man.'

In 101 'roojin' denotes the final stage in human temporal development and no further change can be expected in this life. Therefore, this noun is not compatible with a TOKI-clause.

To sum up the preceding observations, both dynamic predicates and stative predicates are categorised into two groups in terms of the degree of change involved.

This is shown diagrammatically below:

Diagram 4

DYNAMIC VERB PREDICATE + -TE IRU	ADJECTIVE	NOUN

HIGH

true progressive

e.g.
oyoideiru
'be swimming'

e.g.
wakai 'young'

oishii 'tasty'

e.g.
gakusei
'student'

perfective

e.g.
mieteiru 'be visible'

kodomo
'child'

byooki
'sick'

LOW   perfective

e.g.
choojoo ni tsuiteiru
'have reached the
summit'

e.g.
yama ga takai
'the mountain
is high'

e.g.
roojin
'old person'

uchi ga tatteiru
'the house has
been built'

changeability

Time relationships of the preceding examples are all interpreted as cotemporal. They can be illustrated as follows:

A   ...——————...

B   X
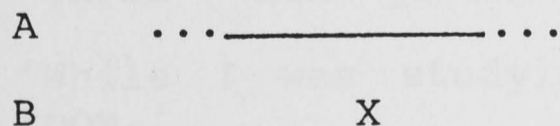
When state verbs and the -TE IRU forms of dynamic verbs are compared to the nonverbal stative predicates (i.e. adjectives and nouns), the following similarities in the semantic domain can be observed: All predicates of

this type involve duration of one kind or another. The
fact that the word 'mada' ('still') is compatible with all
these types of predicate can be used as evidence for this
claim.[23]

>mada oyoide iru 'he is still swimming'
>
>mada miete iru 'it is still visible'
>
>mada nite iru   'he still resembles (someone)'
>
>mada oishii   'it is still tasty'
>
>mada byooki da 'he is still sick'

On the basis of this similarity, dynamic verbs in the -TE
IRU form, state verbs, and stative predicates can be
distinguished from dynamic verbs without the -TE IRU form.

Now let us observe whether or not there are any
differences among the constituents of this class of
durative predicates.

First of all, consider the following:

102a Benkyoo shi-te iru   toki tonari no   heya ni
     study   do-PROG-U.T. when next   GEN room LOC

     doroboo ga haitta.
     thief   NOM go-PAST

102b Benkyoo shi-te ita   toki tonari no   heya ni
     study   do-PROG-PAST when next   GEN room LOC

     doroboo ga haitta.
     thief   NOM go-PAST

     'While I was studying, a thief entered the next
     room.'

103a Oosutoraria ni iru   toki oosutorariaeigo
     Australia   LOC be-U.T. when Australian English

     o   oboeta.
     ACC learn-PAST

103b Oosutoraria ni ita   toki oosutorariaeigo
     Australia LOC be-PAST when Australian English

     o oboeta.
     ACC learn-PAST

     'When I was in Australia, I picked up some
     Australian English.'

104a Tanaka-san wa wakai   toki iroiro
     Mr Tanaka TOP young-U.T. when much

     kurooshita.
     have a hard time-PAST.

     'Mr Tanaka had a lot of hard time when he was
     young.'

104b ?Tanaka-san wa wakaka-tta toki iroiro
     Mr Tanaka TOP young-PAST when much

     kurooshita.
     have a hard time-PAST.

105a Watashi ga futatsu ka mittsu no   toki
     I   NOM 2   or 3   COP-U.T. when

     kazoku wa Oosutoraria e   watatta.
     family TOP Australia ALLAT go-PAST

     'When I was two or three years old, my family went
     to Australia.'

105b ?Watashi ga futatsu ka mittsu da-tta   toki
     I   NOM 2   or 3   COP-PAST when

     kazoku wa Oosutoraria e   watatta.
     family TOP Australia ALLAT go-PAST

The preceding examples show that when verbs in TOKI-clauses
are in the past tense, i.e. the -TE ITA form in 102 and the
-TA form in 103, the sentences are just as natural as when
the verbs are unmarked for tense. There is no difference
between them in terms of the time relationships implied.
They indicate cotemporal occurrences in all cases. In
contrast, when nonverbal stative predicates in the past
tense show up in the TOKI-clause, this indication of tense
seems to be redundant in any ordinary context. In this

case the unmarked form is more usual. Compare 104a and 105a with 104b and 105b, respectively. This contrast indicates that the tense of the nonverbal stative predicates in subordinate clauses is dominated more completely by the main clause tense than state verbs or the -TE IRU forms of dynamic verbs in subordinate clauses. In other words, TOKI-clauses with nonverbal predicates are less independent of the main clause than TOKI-clauses with verbal predicates.

Since the subordinate clause tense in TOKI constructions is determined by the main clause tense, it is not necessary for TOKI-clauses to show tense independently. However, as a subordinate clause with a nonverbal stative predicate indicates tense rather than aspect (Teramura, 1971), the tense relation of this type of subordinate clause to the main clause must be UNMARKED. Thus the -RU form of a nonverbal stative predicate in the subordinate clause is not considered to indicate tense. Rather it serves only to designate that the subordinate clause tense is under the scope of that of the superordinate.

In contrast, a subordinate clause with a verbal stative predicate can be marked for tense independently of the main clause. The -RU form is considered to be an unmarked tense. When this form appears, as with the non-verbal stative predicates, the subordinate clause tense is simply under the scope of that of the main clause. However, unlike the nonverbal stative predicates, verbal stative predicates can also appear in the -TA form in a TOKI-clause.

This form is clearly not marking aspect, as can be seen from the translations above. Rather it seems to serve as a marker of agreement with the main clause tense. These verbal stative predicates differ from their nonverbal counterparts in that they are not sufficiently independent of the main clause for this distinct marking of tense to constitute a redundancy. This point is one of the characteristics of this group which distinguishes it from adjectival and nominal predicates. At the same time it differs from the nonstative verbs in that the -RU and -TA forms indicate not aspect, but unmarked tense and agreement for past tense, respectively.

Their meanings are illustrated below:

(verbal stative predicate + -TE IRU   TOKI ....) -TA

                                 unmarked tense

(verbal stative predicate + -TE ITA)   TOKI (.... -TA)

                                   past tense

                                   agreement marker

It should be noted that in simple sentences the -RU and -TA forms of these verbal stative predicates simply indicate the opposition of present and past tense.

The preceding examinations reveal that state verbs and the -TE IRU form of dynamic verbs share with the dynamic predicates the characteristic that they can appear in the -TA form in subordinate clauses. In contrast, the nonverbal stative predicates are always in the unmarked form in subordinate clauses.

It should be noted, however, that even though all types of verb can appear in the -TA form in subordinate

clauses, there is a difference, as mentioned above, between the ordinary dynamic predicates and the group of dynamic predicates in the -TE IRU forms and state verbs: The -TA and -RU forms of dynamic predicates in subordinate clauses clearly show aspectual opposition. However, this cannot be said for these forms of stative verbals in subordinate clauses. Compare the following:

106a Hon   o   yon-de iru   toki memo o   toru.
     book ACC   read-PROG-U.T. when memo ACC take-HABIT

     'When I am reading the book, I always take notes.'

106b *Hon   o   yon-de ita   toki memo o   toru.
     book   ACC   read-PROG-PAST when memo Acc take-HABIT

     'When I was reading, I always take notes.'

80   Yubiwa   o   tansu   no ushiro ni
     ring   ACC   wardrobe GEN behind LOC

     otoshi-te   torenai.   Dakara ...
     drop-GER   pick up-POT-NEG so

     'She has dropped her ring behind the wardrobe and she cannot pick it up. So ...

     Oosooji   o   shi-ta toki totteageru.
     cleaning ACC do-PERF when pick up-GER-give-FUT

     'I'll pick it up for her when I do the cleaning.'

Dynamic verbs can take the -TA form in the subordinate clause, even when the tense of the sentence is clearly marked as future. The -TA form in this case indicates perfective aspect. (Please see 80.) However, the ungrammaticality of 106b reveals that -TA on a stative verbal form (yon-de ita) does not indicate aspect. Clearly its only interpretation is as a marker of past tense, rendering the combination of these two clauses unacceptable.

This characteristic of stative verbal forms is shared with adjectival and nominal predicates.

Consider the following:

107a Hana   no   iro   ga   <u>akai</u>   toki   shashin
     flower GEN   colour NOM   red-U.T. when   picture

     o   toru.
     ACC   take-FUT

'When the flower is red, I'll take a picture of it.'

107b *Hana   no   iro   ga   <u>akaka-tta</u>   toki   shashin
      flower GEN   colour NOM   red-PAST   when   picture

     o   toru.
     ACC   take-FUT

'When the flower was red, I'll take a picture of it.'

The ungrammaticality of 107b is due to the logical conflict which is caused by the difference in tense between the subordinate and main clauses. The subordinate clause indicates past tense and the main clause indicates future tense. The oddness of 106 can be attributed to the same case.

In summary, the following conclusions can be drawn: State verbs and the -TE IRU form of dynamic verbs are on the borderline in a continuum between dynamic predicates and stative predicates. Therefore, they share some characteristics with the dynamic predicates in that they can be marked as independent entities with the -TA form in subordinate clauses. At the same time characteristics are shared with the stative predicates. Firstly, the -TA and -RU forms of these predicates function to indicate tense rather than aspect. Secondly, in the semantic domain, they serve to designate DURATION in the same way as adjectives and nouns.

This is illustrated in the following Table:

TABLE 10

characteristics predicates	both -TA and -RU are possible	shows aspect	shows tense
dynamic predicates	+	+	-
-TE IRU forms of dynamic predicates state verbs	+	-	+
stative predicates	-	-	+

3.2.2.4 TOKI constructions with -TE IRU/-TE ITA verbal
forms in both the subordinate and the main clause

The time relationships which are designated by the
combination of the -TE IRU or - TE ITA forms in both
clauses of a TOKI construction are cotemporal, with one
exception. This exception involves the combination of -TE
ITA in the subordinate clause and -TE IRU in the main
clause. This combination is incompatible in some cases due
to the conflict between past tense in the subordinate
clause and present tense in the main clause.

One interesting point about this combination is
that when the two clauses have a single subject the
acceptability is lower than when two clauses have different
subjects. Observe the following:

108 Watashi   ga   hon   o   yon-de iru toki Taroo
    I   NOM book ACC read-PROG   when

    wa   terebi o   mi-te ita.
    TOP T.V.   ACC watch-PROG-PAST

    'When I was reading Taroo was watching T.V.'

109 ?Watashi wa   hon   o   yon-de iru toki
    I   TOP book ACC read-PROG   when

    terebi o   mi-te ita.
    T.V.   ACC watch-PROG-PAST

    'When I was reading I was watching T.V.'

109 becomes natural when the TOKI construction is replaced
by the -NAGARA construction, which serves to indicate two
concurrent actions performed by one subject.

110 Watashi wa   hon   o   yomi-nagara   terebi
    I   TOP book ACC read-NAGARA   T.V.

    o   mi-te ita.
    ACC watch-PROG-PAST.

    'I was watching T.V. while reading.'

Example 109 has an activity in both the subordinate and
main clauses. In this case a TOKI construction is not
acceptable. However, when propositions other than
activities show up in either the subordinate or main clause
the -TE IRU or -TE ITA form designates an aspectual
category other than the progressive, and the sentences are
acceptable. Observe the following:

111 Watashi wa   Oosutoraria ni   sun-de iru toki
    I   TOP Australia   LOC live-STAT   when

    zutto   eigo   o   benkyoo shi-te ita.
    all time English ACC study-PROG-PAST.

    'When I lived in Australia I was studying English
    all the time.'

112 Imooto   wa chichi no sekkyoo o
     younger sister TOP father GEN scolding ACC

     kii-te iru   toki zutto   unadare-te ita.
     listen to-PROG   when all time hang her head-PERF-
                                                     PAST

     'While my younger sister was listening to her
     father scolding at her she hung her head
     throughout.'

In 111 the subordinate clause verb in the -TE IRU form
represents a state, while the main clause verb is an
activity. 112 consists of an activity in the subordinate
clause and a state, resulting from an inchoative action, in
the main clause.

NOTES TO CHAPTER 3

[1]I will use the form -RU to stand for any nonpast tense, even though the actual morphological form varies.

[2]ASPECT should not be confused with a similar concept -- RELATIVE TENSE. Like ASPECT, RELATIVE TENSE also has no relevance to the moment of speech. However, while aspect refers to the internal temporal constituency of an event, relative tense refers to the time of its occurrence in relation to some time specified elsewhere in the utterance.

[3]Heinämäki (1974) also claims that temporal clauses in English are presupposed to be true.

[4]There is a difference in the syntactic properties of the categories of ASPECT 3 and ASPECT 2. ASPECT 3 follows the -I continuative form of verbs (Kuno's term, 1973) and ASPECT 2 follows the -TE gerundive form. Anthony Alfonso (personal communication) pointed out that the ASPECT 3 category can precede the causative suffix. It thus seems that this category belongs before the causative, though after the passive, in the clause structure.

[5]I will use the form -YOO to stand for the INTENTIONAL, although only verbs whose stem ends in a vowel take the -YOO form. The other group of verbs whose stem ends in a consonant take the -OO form to designate intention.

[6]The TOKI connective followed by the particle NI is considered to indicate almost the same function as TOKI without this particle. Some difference between them, however, can be observed in the following example:

```
Isha     go   kaketsuketa  toki sono  otoko    wa
doctor NOM    come-PERF    when the    man      TOP

moo          shin-de ita.
already      die-PERF
```

'When the doctor came, the man had already died.'

```
*Isha    ga  kaketsuketa  tokini sono  otoko  wa   moo
 doctor NOM  come-PERF    when   the    man    TOP already

 shin-de ita.
 die-PERF
```

When the subordinate clause verb which specifies the terminal point of an action or event is in the -TA form, and the main clause verb takes the -TE ITA form, the TOKI connective cannot be used with the particle NI. In a personal conversation Hideo Teramura suggested that the connective TOKI in this construction is interchangeable with the connective TO, shown in the following example:

```
Isha    ga   kaketsukeru   to  sono  otoko  wa      moo
doctor NOM   come-IMPER    when the    man    TOP    already

shin-de ita.
die-PERF
```

'When the doctor came, the man had already died.'

The preceding TOKI construction seems to be on the borderline between constructions which include some specification of time relationships and those which do not.

[7]I owe to Teramura (1971) the idea of classifying predicates along a continuum, from dynamic to stative, as shown in the diagram. However, I have modified his original diagram slightly. In my diagram verbs are

classified into four groups, and the negative form of
verbs, NAI, is not included. Teramura considers that verbs
in the negative form designate state and, hence, a certain
degree of duration is expressed. Therefore, this form
shares some semantic and syntactic properties with stative
predicates. Thus, he places the verbs in the negative form
close to the stative predicates on the scale shown.
However, I suggest that verbs in the negative form do not
exhibit uniform characteristics. The aspectual properties
of the verbs concerned seem to be relevant to this point.
For this reason I have not included the negative form of
verbs in my modification of Teramura's original diagram.
Some observations concerning the negative will be made in
Chapter 4. However, explication in detail must be left
aside for further study.

[8]The verb IRU as a main verb designates present
tense, as in the following example:

     Ima Taroo   wa   uchi   ni   iru.
     now   TOP home LOC be-PRES

     'Taroo is at home now.'

Similarly, the nonverbal stative predicates in the non-
past form represent present tense:

     Taroo   wa   mada   chiisai.
              TOP   still   small-PRES

     'Taroo is still small.'

     Taroo   wa   mada gakusei   da.
              TOP   still student   COP-PRES

     'Taroo is still a student.'

[9]Nakau's term 'simultaneous' has a different meaning to the use of the term in this thesis, as mentioned before.

[10]As mentioned before, TOKI-clauses followed by a particle (other than NI) are not discussed in this thesis. This example is quoted as it was in Nakau's thesis.

[11]When English WHEN constructions are compared to Japanese TOKI constructions, there is no interpretation of this type in the former. WHEN constructions allow two types of interpretation, namely simultaneous occurrence and forward sequential occurrence. Consider the following examples (Palmer, 1974):

> When I saw him, he ran away. (forward *sequential*)

> When I saw him, he was running. (simultaneous *in Nakau's terminology*)

[12]Nakau classifies verbs into two groups - ACTIVE VERBS (e.g. hashiru 'run', yomu 'read') and STATIVE VERBS (e.g. dekiru 'be able to', iru/aru 'exist'). However, this classification seems to be insufficient to explain the time relationships involved in TOKI clauses. Compare examples 10, 12 with 13, 14. The verbs which show up in each example are all ACTIVE VERBS in Nakau's classification. However, the former examples show sequential occurrence, and the latter, cotemporal occurrence.

[13]This section mainly concerns verb phrases. However, the subject is also relevant in determining the telicity of the clause. The following example, in which the subject of a TOKI-clause takes a quantifier, illustrates this fact:

```
Kyaku    ga    10 nin    kita       toki
guests   NOM   10 CL     come-PERF  when

paatii   ga    hajimatta.
party    NOM    begin-PAST
```

'When there were ten people the party began.'

[14]If the speaker wishes to express the simultaneity of two events more clearly, a different form, 'to dooji ni', is used.

```
Taroo    wa    watashi   o    miru        to dooji  ni
         TOP    I         ACC  see-IMPER   at the same time

nikkori waratta.
 smile-PAST
```

'Taroo smiled at me at the same time as he saw me.'

[15]'Kusuri o nomu' is considered to be either an achievement or an accomplishment. If it takes a certain time to take some medicine, for example, then the accomplishment interpretation is possible.

[16]'Cl' represents the subordinate clause. 'Cl=achievements' means that the subordinate clause is an achievement proposition.

[17]This sentence might be used as a stage direction.

[18]This example and the others here are interpretable as indicating habitual events.

[19]The perfective form -TA occurs widely in Japanese complex sentences even if the tense of the main clause is not past. This -TA form is used when the speaker subjectively considers the event described by the verb as occurring prior to the occurrence of the main clause event, regardless of whether or not this event has been actually realized at the time of the utterance. Examples can be easily found. Consider the following:

```
Kusuri   o   non-da        hoo     ga   iidesu   yo.
medicine ACC take-PERF COMP NOM good    ILLOC
```

'You had better take some medicine.'

```
Hikooki       ga    ririku   shi-ta    tokoro    o
airplane      NOM   take off do-PERF   COMP      ACC

shashin    ni    toru.
picture    DAT   take-FUT
```

'When the airplane has taken off I'll take a
   picture of it.

[20]Morita (1971) calls this relation between
subordinate and main clauses 'heikoo kankei' ('the parallel
relation').

[21]Jacobsen suggests that this verb with the
suffix -TE IRU represents perfective aspect in this
context, because the verb 'mieru' is not an agent verb when
it takes the inanimate subject 'yama'. Please see Chapter
2, Section 2.1.1.

[22]The -TE IRU form is realized as -DE IRU after
a voiced consonant.

[23]This test, to show the element common to all
these types of verbs, was suggested by Mieko Ohso (personal
communication).

CHAPTER FOUR

CONCLUDING REMARKS

4.1   Summary

This thesis has attempted to explicate the semantics of TOKI constructions, in the light of the aspectual properties of propositions.

The temporal connective TOKI has a wide range of uses. The order of the occurrence of two events linked by temporal connectives other than TOKI is obvious. Two clauses linked by the connective ATO indicate forward sequential occurrence, while those linked with MAE are interpreted as having a backward sequential relationship. Clauses joined with the connectives AIDA and UCHI have a cotemporal relationship. Compared to the constructions with these connectives, TOKI constructions are vague in a sense that both sequential relationship and cotemporal relationship can be designated.

The fact that TOKI constructions show these two kinds of time relationships was pointed out in Josephs (1972). However, Josephs makes no attempt to explain the reason for these phenomena.

The major work dealing with aspect in subordinate clauses is by Teramura (1971, 1982), and the successors of this work are Nakau (1976) and Narita (1982). Teramura (1971) suggests that TOKI constructions designate two kinds

of time relationships between two clauses with dynamic verbs, namely backward sequential and forward sequential. The reason for these different interpretations is, according to Teramura, related to the verb forms -TA and -RU in the subordinate clauses. When the -TA form appears in the subordinate clause, the time relationship is forward sequential, and when the -RU form appears, the relationship is backwardsequential. Through a consideration of counterexamples to this claim in Chapter 3, I argued that the aspectual properties of subordinate clause propositions as a whole is relevant to determining the time relationships between the subordinate and main clauses. It should be emphasized that the aspect of the clause is not always determined by the verb alone. Rather the proposition as a whole must be taken into consideration in many cases.

Therefore the following factors are all relevant in specifying the aspect of a clause:

1. the inherent aspectual properties of the verb, i.e. whether the verb on its own is telic (e.g. yooisuru 'prepare') or atelic (benkyoosuru 'study').

2. the aspectual properties of the verb in combination with other elements in the clause, i.e. whether the proposition as a whole is telic (e.g. hon o ni-satsu yomu 'read two books') or atelic (hon o yomu 'read books'). Many constituents which show up in the proposition (e.g. subject, object, and adverbs) may all be relevant in determining aspect.

Chapter 2 was devoted to a consideration of various factors which are relevant in determining the aspect of a clause. An analysis based on Vendler's classification of verbs with some modification, was applied to dynamic predicates. Jacobsen's analysis was also applied in the observation of the aspectual properties of clauses. I concluded that both the Vendlerian concept of verb classification, and Jacobsen's concept of a change in the state of the subject, are indispensable in determining the aspect of a clause, and neither one can be ignored. In order to clarify this point I attempted to illustrate the relationship among the factors which are relevant to aspect, in two diagrams showing a scale of telicity. The aspect of a clause is determined by both the parameters on the scale.

Chater 2 is also concerned with inherent aspectual properties of verbs. In it we looked at native verbs, Sino-Japanese verbs and English-Japanese Verbs. In the examination of pairing verbs, particularly with respect to accomplishment propositions, it was claimed that the transitive verbs function to indicate the process more clearly than the terminal point, and the intransitive verbs, on the other hand, function to indicate the terminal point more clearly than the process. Yoshikawa (1981) stated that intransitive verbs and transitive verbs of this type should be classified into instantaneous verbs and durative verbs, respectively. I attempted to clarify this difference more explicitly in the light of the inherent aspectual properties of verbs, applying some syntactic

tests (for example, the compatibility of the clause with the verb OWARU ('finish'), etc.).

With regard to Sino-Japanese digraph verbs, it was observed that there is a slight difference in the degree of telicity if the structure 'digraph + SURU' is changed into 'digraph+particle O+SURU'. When native speakers of Japanese were asked about the time relationships between two events described in the subordinate and main clauses of sentences with these constructions, there was some variation in the interpretations offered. Initially it seemed difficult to set up rules to determine time relationships between the clauses in cases like this. However, the variation is considered to be natural when the following fact is taken into consideration: When the parameters which determine aspect are located close to each other on the scale (as with the concrete and abstract nouns which appear in these pairs), it is difficult for native speakers to make a clear distinction between them. Therefore they interpret the time relationships on the basis of sometimes one parameter, sometimes another.

Chapter 3 was devoted to a consideration of TOKI constructions. Firstly, it was observed that a TOKI-clause is grammatically realized if, and only if, a propositional, rather than a modal predicate is used. TOKI-clauses are not compatible with modal constituents. Secondly, TOKI constructions in which various kinds of predicates, primarily verbs, but also adjectives and nouns, appear, were examined.

It was shown that the time relationships between subordinate and main clauses are determined by the aspect designated in the subordinate clause. I attempted to explain the ungrammaticality of some TOKI constructions which were not clearly accounted for by Toyota (1977), on the basis of the observation of Chapter 2. It was observed that when the main clause tense is nonpast, the difference between the aspectual properties of propositions is neutralized in some cases. Whether the subjects of the subordinate and main clauses are identical or not is relevant to semantics of TOKI constructions which take -TE IRU form of verbs in both subordinate and main clauses. When the subjects are identical, the TOKI constructions of this type are interchangeable with NAGARA constructions. I divided predicates into three major categories: 1) dynamic predicates, 2) dynamic predicates with the -TE IRU form and state verbs, 3) nonverbal stative predicates. The criteria I used referred to the degree of dependency of the subordinate clause on its main clause and to whether or not the -TA and -RU forms in the subordinate clause designate tense. It was observed that dynamic predicates with the -TE IRU form and state verbs share some characteristics with the ordinary dynamic predicates and others with the class of predicate adjectives and nouns.

4.2   For further study

The constructions with other temporal connectives other than TOKI would also be understood more clearly if

examined along the lines that I have utilized here in the study of TOKI constructions. When two clauses are linked by the connectives AIDA or UCHI, the time relationships are always cotemporal. These constructions should be compared with those TOKI constructions which exhibit a cotemporal relationship between the clauses.

In this section, I would like to briefly cite some contrasts among TOKI, AIDA, and UCHI constructions, which could fruitfully be explored in further study. Compare the following examples:

```
1a    Hirugohan    o      tabeteiru          toki
      lunch        ACC    eat-PROG-U.T.      when

      totsuzen             jishin    ga     atta.
      all of a sudden  earthquake NOM      be-PAST
```

'When I was eating lunch, all of a sudden there was an earth tremor.'

```
 b   *Hirugohan    o      tabeteiru          aida ni
      lunch        ACC    eat-PROG-U.T.      while

      totsuzen          jishin        ga     atta.
      all of a sudden  earthquake    NOM    be-PAST
```

'While I was eating lunch, all of a sudden there was
    an earth tremor.'

As the adverb 'totsuzen' ('all of a sudden') shows, the occurrence of the main clause event is out of the control of the speaker. The TOKI connective is compatible with a subordinate clause which expresses a happening of this kind, though the AIDA connective is not.

However, when such an event is described with quantifiers which show the number of occurrences of the

event, then the AIDA construction is perfectly natural.
Observe the following:

2a   Hirugohan   o   tabeteiru   toki
      lunch   ACC   eat-PROG-U.T.   when

     jishin   ga   ikkai   atta.
     earth quake   NOM   one-CL   be-PAST

     'When I was eating lunch, there was a single earth
       tremor.'

2b   Hirugohan   o   tabeteiru   aida ni
      lunch   ACC   eat-PROG-U.T.   while

     jishin   ga   ikkai   atta.
     earthquake   NOM   one-CL   be-PAST

     'While I was eating lunch, there was a single earth
       tremor.'

The preceding contrast seems to be related to the semantics
of connective AIDA, which includes clear boundaries on the
time interval in which the event is understood to occur.

When state verbs show up in the subordinate clause
and dynamic verbs in the main clause, the following
contrast can be observed:

3a   *Oosutoraria   ni   iru   toki
      Australia   LOC   be-U.T.   when

     oosutorariaeigo   o   benkyoosuru.
     Australian English   ACC   study-FUT

     'When I am in Australia, I'll study Australia
       English.'

b   Oosutoraria   ni   iru   aida   ni
     Australia   LOC   be-U.T.   while

     oosutorariaeigo   o   benkyoosuru.
     Australian English   ACC   study-FUT

     'While I am in Australia, I'll study Australian
       English.'

c   Oosutoraria   ni   iru   uchi ni
    Australia   LOC   be-U.T.   while

    oosutorariaeigo   o   benkyoosuru.
    Australian English   ACC   study-FUT

    'While I am in Australia, I'll study Australian
      English (because I cannot study it once I leave
      Australia).'

It is pointed out by Backhouse and Quackenbush (1979) that

the connectives AIDA and UCHI are semantically different in

the following way:

> AIDA serves to provide a temporal location
> of events. UCHI, on the other hand, does
> not provide purely temporal information. It
> has additional nontemporal overtones in
> which 'expectation' can be postulated as the
> underlying common denominator.

Therefore the above example with the connective UCHI has

the implication shown in the bracketed portion of the

English translation. The clarification of the contrast in

the grammaticality among the examples above (3a, 3b and 3c)

must be left for further study.

Another contrast among TOKI, AIDA and UCHI

constructions can be seen when accomplishments in the

negative form appear in the subordinate clause. Consider

these examples given the following situation.

> There was a notice that there would be a
> blackout tonight. I decided to do a reading
> assignment before it began. But ...

4a *Sono   hon   o   saigo   made
     the   book   ACC last   LOC

     yomanai   toki   teiden   ga   okita.
     read-NEG when   blackout NOM occur-PAST

   *'There was a blackout when I had not finished
     reading the book.'

b *Sono   hon   o saigo   made   yomanai
      the   book ACC last   LOC   read-NEG

   aida ni   teiden   ga okita.
   while   blackout   NOM occur-PAST

   'There was a blackout before I had finished
    reading the book.'
    (Lit.) '... while I had not finished....'

c Sono   hon   o saigo   made yomanai
      the   book ACC   last LOC read-NEG

   uchi ni   teiden   ga   okita.
   while   blackout   NOM   occur-PAST

   'There was a blackout before I had finished
    reading the book.'
    (Lit.) '... while I had not finished ...'

As the preceding examples show, there is a contrast in
grammaticality in constructions with these temporal
connectives. This point should be examined further, paying
particular attention to the relation between the aspectual
properties of clauses and negation.

Besides the problems noted above, the following
topics, which have already been mentioned in this thesis,
should also be investigated further:

1.   The semantics of -TE and -NAGARA constructions
     which are interchangeable with some types of TOKI
     constructions.

2.   The semantics of nouns which do not appear as
     ~~semantics~~ direct objects for Sino-Japanese digraph
     verbs.

5   *Tenisu   o renshuushita.
     tennis   ACC practice-PAST

    'I practiced tennis.'

6   Kanji   o   renshuushita.
    characters ACC   practice-PAST

    'I practiced my characters.'

3. The incompatibility of a quantifier (like hanbun 'half'/hotondo 'almost') followed by the particle NO with Sino-Japanese digraph verbs.

4. The contrast in grammaticality between nouns, which constitute true objects, and those which are traversal objects or sources, in the construction 'noun + particle NO + digraph + particle O + SURU'. For example:

7   Osake   no   yooi   o   shita.
    Osake   GEN   preparation   ACC do-PAST

    'I prepared some sake.'

8   *Sono densha wa   eki   no   tsuuka   o
    the   train   TOP   station GEN   pass   ACC

    shita.
    do-PAST

    'The train passed the station.'

9   *Daigaku   no   sotsugyoo   o   shita.
    university   GEN graduation ACC do-PAST

    'I graduated from university.'

When the Sino-Japanese digraphs are used as verbs, i.e. in the form of 'Sino-Japanese digraph + SURU', and the nouns in the preceding examples themselves take the particle O, then all constructions are natural, regardless of whether the accusative case designates a true object (7), traversal object (8), or source (9).

It is hoped that the result of this work will provide a background for the further study of aspect in dependent clauses.

GLOSSARY
KEY TO GRAMMATICAL ABBREVIATIONS

ABL ablative case (KARA)

ACC accusative case (O)

ALLAT allative case (E)

AUX auxiliary (-IKU)

CAUS causative affix (-SASE)

CL classifier (NIN, SATSU)

COM comitative case (TO)

COMP sentential complimentizer
        (NO, KOTO, TOKORO)

COND conditional affix
        (-EBA, -TARA)

COP copula (DA)

DAT dative case (NI)

DES desiderative affix (-TAI)

E.P. exclamation particle
        (YO)

EPISTEMIC epistemic modal
        morpheme
        (-NI CHIGAI NAI)

EVID evidential morpheme
        (-RASHII, -SOO)

FUT future tense affix (-RU
        of nonstative predicate)

GEN genitive case (NO)

GER gerund affix (-TE)

HABIT habitual (-RU of stative
        and nonstative predicate)

ILLOC illocutionary force
        (KA, NE)

IMP imperative form

IMPER imperfective affix (-RU)

INF infinitive form

INS instrumental case (DE)

INTEN intentional affix (-YOO)

INTER iterative affix (-TE IRU)

LOC locative case (NI, DE)

NEG negative morpheme (NAI)

NOM nominative case (GA)

OBL obligation affix
        (-NAKEREBA NARANAI)

PASS passive affix (-RARE)

PERF perfective affix (-TA,
        -TE IRU)

POT potential affix (-ARE, -RE)

PRES present tense affix (-TE
IRU) (-RU of stative predicate)

PROG progressive affix (-TE
                IRU)

PAST past tense affix (-TA)

RESTR restrictive case (MADE)

STAT stative affix (-TE IRU)

TOP topic marker (WA)

U.T. unmarked tense affix
        (-RU of adjectives and nouns)

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CORRIGENDA

Page 4, lines 2-5

Josephs (1972), referring to this type of time relationship, named it as 'summational'. However, there cannot be found in his study detailed explanations of the rules which determine the time relationships between the two clauses in case such as this.

Page 31, TABLE 5

Hopper and Thompson (1980) list these four and the other six parameters of transitivity in their cross-linguistic study of transitivity and discourse. In their framework, the degree to which these are or are not fulfilled results in higher or lower degrees of transitivity. Each component of transitivity, according to Hopper and Thompson, involves a different facet of the effectiveness or intensity with which the action is transferred from one participant to another. Taking 'affectedness of object' which is one of these parameters, for example, Hopper and Thompson say an action is transferred more affectively in 'I drank up the milk' than 'I drank some milk'. Hopper and Thompson suggest these components are taken together and they allow clauses to be charactarized as more or less transitive: the more features a clause has in the 'high' column in the scale, the more transitive it is.

Page 43, TABLE 6

Besides three groups of the Sino-Japanese verbs in TABLE 6 (i.e. activities, accomplishments and achievements) there is one more group of verbs. That is a group of state verbs such as 'sonzai-shita'. Therefore this group has to be put in TABLE 6.

Page 49, final sentence

That is, in the case of accomplishments and achievements, the aspect of such clauses is determined at the morphological level of the verb. And in the case of activities and states, the aspect is determined also at the level of morphology when these verbs appear in the clauses by themselves, i.e. without any other relevant elements which overrule the aspectual properties.

Page 128, line 10-
page 129, line 7

Teramura (1971) says a subordinate
clause with a nonverbal stative predicate
indicates tense rather than aspect. He
also says a verbal stative predicate
indicates tense in a TOKI clause because
of its stative features. As the examples
102 a,b and 103 a,b show, verbal stative
predicates can appear in the -RU form
and the -TA form in a TOKI-clause.
The -RU form of verbal stative predicates
is considered to be an UNMARKED tense.
When this form appears the subordinate
clause tense is simply under the scope
of that of the main clause. On the
other hand, when the -TA form appears in
a subordinate clause, this form seems
to function as an apparent marker of
tense. That is, when a subordinate clause
with verbal stative predicates appears
in the -RU form, the tense relationship
of the subordinate clause to the main
clause must be unmarked or totally
dependent. On the other hand, when the
-TA form of verbal stative predicates
appears in a subordinate clause, the
clause can be marked for tense
independently of the main clause.

In contrast, a subordinate clause with
a nonverbal stative predicate tends to
take the -RU form. This fact shows that
the tense relation of this type of
subordinate clause to the main clause
is unmarked and the tense of a subordinate
clause is depend on that of the main clause.

Teramura deals with verbal stative and
nonverbal stative predicates in one group
from the point of the view that these predi-
cates in a subordinate clause indicate
tense rather than aspect. However, as
mentioned above, the verbal stative
predicates differ from the nonverbal
stative predicates in that they are
independent (although not sufficiently)
of the main clause for the distinct
marking of tense.

Page 147, lines 25-27   The TOKI connective is compatible
with a subordinate clause which
expresses a happening of this type,
i.e. the happening which is described with
the   adverbs such as 'totsuzen',
'ikinari'('all of sudden'), 'kyuuni'
('suddenly'), 'fuini'('unexpectedly') etc.

REFERENCES   The works listed with asterisks in this
references are not referred to in the
thesis. However, they are listed there
because they are indirectly related
to the theme of this thesis or they
provide fundamental ideas from which
this thesis has obtained some insightful
implications.

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EXPLANATORY NOTES

The procedures for testing the acceptability of constructed
examples is as the follows: the number of the native speakers
of Japanese as the informants are 30. There are following
three degrees of acceptability of the sentences:

    'good'

    'doubtful' or 'O.K. but I do not say so'

    'no good at all'

When the test of each sentence results in 100% 'no good'
the asterisk is put in the head of the sentence.

When there are some informants who mark 'doubtful' category
and others mark 'no good', then the question mark is
attached.