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VENDLER'S VERB CLASSES AND THE ASPECTUAL CHARACTER OF JAPANESE TE-IRU

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The idea of using "time schemata" as a basis for classifying verbs is one which figures centrally in two influential studies undertaken on different sides of the Pacific at almost the same time. The one familiar to linguists of the western tradition is Zeno Vendler's now classic "Verbs and Times" (1957). Seven years previous to Vendler's study, however, there appeared a similar study in Japan authored by Haruhiko Kin-daichi entitled "A Classification of Japanese Verbs" (Kokugo Doosi no Itibunrui, 1950). The two studies bear some remarkable similarities.

Vendler bases his classification of verbs on two primary tests. The first is the ability of a verb to appear in the progressive form (e.g., John is running vs. *John is knowing where State Street is). The second is whether a verb fits better into the question frame "For how long did ...?" or into the frame "How long did it take to ...?" (e.g., *For how long did John run a mile? vs. How long did it take for John to run a mile?). These tests together yield two two-way dichotomies among verbs, for a total of four categories, which Vendler labels as follows:

- (1) (a) States: love, know, hate, want, have, etc.
- (b) Activities: run, walk, play, swim, push a cart, work, etc.
- (c) Achievements: reach the summit, recognize a person, find the treasure, win the race, spot a plane, die, etc.
- (d) Accomplishments: write a book, draw a circle, read Hamlet, run a mile, etc.

Categories (b) and (d) pair together in their ability to take the progressive form, in contrast to (a) and (c). (a) and (b), on the other hand, pair together in the naturalness they exhibit in the "For how long did ...?" frame. (c) and (d) more naturally fit into the "How long did it take to ...?" frame. Vendler points out that (b) and (d) also pair together in their ability to co-occur with adverbs such as "deliberately" and "carefully," whereas (a) and (c) do not comfortably co-occur with such adverbs.

Vendler attributes the differing behavior of accomplishments and activities to the fact that the former involve a terminal point or climax in a way that the latter do not. The accomplishment of writing a book, for instance, involves a terminal point, most obviously identifiable as the completion of the book, whereas the simple activity of running involves no such terminal point, at least in any conventionally pre-established way. Achievements, being typically instantaneous events, also involve a point in time, although this is not the terminal point of any activity or process, unlike accomplishments. Taking our cue from this distinction between achievements and accomplishments, it is possible to analyze accomplishments as being composed of an activity plus an achievement. The "climax" of accomplishments is thereby identified with the "instant" of achievements. Under this analysis, an accomplishment such as climbing a mountain is made up of an activity of climbing and an achievement of reaching the top.

Vendler notes that states also bear reference to instants of time in the sense that to say a state holds over a certain period of time entails that the state holds at every instant within that period. Thus to say that John loved Mary from time₁ to time₂ entails that at any instant between time₁ and time₂ John loved Mary. The use of the word any here indicates that states refer to instants in a non-unique fashion. Achievements, by contrast, refer to unique instants in time. Thus to say that John won a race between time₁ and time₂ is to say that the instant at which John won the race lies between time₁ and time₂.

Kindaichi's classification of Japanese verbs rests entirely on the behavior of the single affix te-iru.¹ This affix has the characteristic of expressing sometimes progressive, sometimes perfect meaning, depending on the lexical meaning of the verb to which it is attached and other contextual factors. In its progressive meaning, it corresponds to the English be-ing construction. In its perfect meaning, it corresponds to the English have-en construction, although the correspondence here is less perfect. I intentionally use the term "perfect," as opposed to "perfective," which, following Comrie (1976), I will take to refer to the representation of an event as a whole, apart from reference to its internal complexity or parts. The emphasis with the perfect is rather on a state resulting from an event, although reference to the internal complexity of the event will thereby necessarily be excluded.

The two aspectual meanings of te-iru described above conveniently provide Kindaichi with two of his verb classes. Two other verb classes are then distinguished which respectively cannot and must take te-iru. The four classes are as follows:

- (2) (a) Stative verbs: do not take te-iru
 Eigo ga dekiru.
 "(I) can speak English."³
 (also mieru "can see," kikoeru "can hear," aru "be," and existential and potential verbs in general)
- (b) Continuative verbs: take a progressive reading with te-iru
 Kodomotati wa kooen de asonde-iru (te-iru form of asobu)
 "The children are playing in the park."
 (also oyogu "swim," hasiru "run," kaku "write," etc.)
- (c) Instantaneous verbs: take a perfect reading with te-iru
 Kare wa sinde-iru (te-iru form of sinu).
 "He is dead (in the state of having died)."
 (also kimaru "be decided," kireru "be cut," (denki ga tuku "(the lights) go on," and many intransitive verbs))
- (d) "Type 4" verbs: must take te-iru and are then stative
 Yama ga sobiete-iru.
 "The mountain towers above."
 Miti ga magatte-iru.
 "The road bends."

"Instantaneous" verbs typically take only a perfect reading--the example given in (2c) cannot mean "He is dying." "Continuative" verbs are not as rigid in their class membership, as we shall see shortly. Verbs in both of these classes have non-past forms which normally take

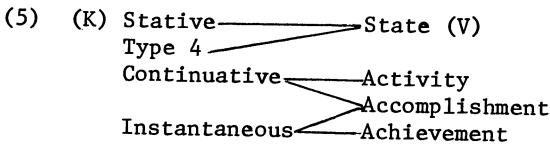
a future interpretation:

- (3) Omae wa sinu.
 "You're going to die."
 (4) Ima tegami o kaku kara (sizuka ni site-kudasai).
 "I'm going to write a letter now (so please be quiet)."

Stative verbs, by contrast, have non-past forms which take a present interpretation (see the example in (2a)).

"Type 4" verbs and stative verbs share the property of lacking any opposition in sentence-final position between te-iru forms and non-te-iru forms, since in the one case te-iru forms are obligatory and in the other case disallowed. If, as I shall argue, it is a basic function of te-iru to change a non-stative form into a stative form, the failure of stative verbs to co-occur with te-iru can be explained in terms of the unnecessary redundancy that would otherwise result. The "Type 4" category has a fairly small membership. Some of its members originate in the instantaneous class after their te-iru forms have lost reference to any event giving rise to a state and have come to simply indicate the state itself. Thus, certain uses of magatte-iru (from magaru "bend") do not entail any event of becoming bent (e.g., Miti ga magatte-iru "The road bends"), while other uses at least allow the possibility of such an event having occurred (e.g., Kugi ga magatte-iru "The nail is bent"). For those verbs which belong exclusively to the "Type 4" class, however, (e.g., sugurete-iru "excel," nite-iru "resemble," sobiete-iru "tower," etc.) it will be sufficient for our purposes to treat these together with stative verbs in an overarching stative category.

Certain similarities, even in terminology, are immediately apparent between the classifications of Vendler and Kindaichi. Kindaichi's stative and Type 4 verbs correspond to Vendler's states. Continuative verbs bear an intuitive resemblance to activities and instantaneous verbs to achievements, reflecting the fact that achievements indeed typically occur instantaneously. The one odd category is the accomplishment category, which straddles the continuative and instantaneous categories, but does not correspond in toto to one or the other. The cross-relationships here can be schematized as in (5):



Despite this general correlation in category types, however, it is not the case that a lexical item in one language will necessarily translate into a lexical item of an equivalent category in the other. A classic example of this is Japanese siru, whose closest lexical equivalent in English is know, but which requires the te-iru form sitte-iru to express the stative sense of English know. The reason for this is that although know is a stative verb in English, siru

fits into the instantaneous category in Japanese, literally meaning "come to know." "Knowing" is therefore expressed as "being in the state of having come to know." The same is true for English have and Japanese motu "acquire, hold," which requires the form motte-iru for the stative sense of "have."

Certain expressions which Kindaichi lists in the continuative category are capable of taking a perfect interpretation in certain contexts. Hon o yomu "read a book" and syoosetu o kaku "write a novel" are such examples. In the following sentences (taken from Kindaichi), these expressions appear in a te-iru form with a clearly perfect reading

- (6) (Ano hito no hon no yomikata no hayai no ni wa odoraita, ima yomihazimeta to omottara) moo yonde-iru (from yomu "read" "I was amazed at the speed of his reading. You think he's just started reading a book and) he's already finished."
 (7) Ano hito wa takusan no syoosetu o kaite-iru (from kaku "write" "He has written many novels."

Regarding (7), Kindaichi (1955) says, "The continuative meaning of kaku is being ignored in its usage here. In cases like this kaku is being temporarily used as an instantaneous verb." Because of a rigid insistence on a one-to-one correspondence between perfect meaning and the instantaneity feature, Kindaichi was forced to classify verb phrases like syoosetu o kaku "write a novel" and hon o yomu "read a book" sometimes in the continuative and sometimes in the instantaneous category.

Under a literal conception of "instantaneous," Kindaichi's treatment of these verb phrases is grossly counterintuitive. Note that they fit quite comfortably, however, under Vendler's "accomplishment" rubric. Characteristic of accomplishments, reading a book and writing a novel are activities culminating in a terminal point. If, as earlier, we identify the terminal point in these cases as itself an achievement, we have a rationale for explaining the parallel behavior of accomplishments and achievements in allowing a perfect reading with te-iru. At the same time, accomplishments include an activity as part of their meaning which is itself capable of a progressive reading with te-iru. For these reasons, accomplishments exhibit an affinity to both continuative (activity) verbs and instantaneous (achievement) verbs.

The line of demarcation between garden-variety activities and accomplishments cannot be drawn on a lexical-item-by-lexical-item basis. There are few activities that cannot, in some context, be associated with a goal of some sort, and correspondingly few progressive te-iru constructions that have no perfect te-iru counterparts. Thus syokuzi o site-iru can mean either "be eating dinner" or "have eaten dinner", denki o tukete-iru either "be turning the lights on" or "have turned the lights on" (also "keep the lights turned on"), and so forth. Adverbs and other particles will, of course, sway the balance in favor of one reading or the other--moo "already," sude ni "already," and tokku ni "long ago" will favor the perfect reading, while ima "now," and ...tokoro da "in the process of ..." will favor the progressive reading--but the readings in question are not attributable solely to co-occurring adverbs, as they are distinguishable even in adverbless constructions. Even so non-teleological an activity as okuru "live

(a daily life)" is susceptible of two readings with te-iru, as illustrated in the following two examples:

- (8) (a) Siawase na mainiti o okutte-iru.
 "(I am) living happily day by day."
 (b) Kare wa hukoo na syoonen zidai o okutte-iru.
 "He has had/is having an unhappy childhood."

About the only example of a "pure" activity I have been able to find is iki o site-iru "be breathing," for which I have yet to encounter a context requiring a perfect interpretation.

Adverbs were mentioned as one grammatical feature influencing whether a te-iru construction is given a progressive or perfect interpretation where either would otherwise be possible. In the case of motion verbs such as iku "go," kuru "come," kaeru "return," and noboru "climb," the choice of locative marker is another such grammatical feature. With the goal locative marker ni, the te-iru form of these verbs can only be given a perfect interpretation whereby the subject has reached the indicated goal:

- (9) (a) Kare wa Tookyoo ni itte-iru.
 "He has gone to (is in) Tokyo."
 (b) Kare wa yama ni nobotte-iru.
 "He has climbed (is on) the mountain."

Since the vast majority of te-iru usages of these verbs involves this perfect reading, one may be tempted to assign the accomplishment "reach" meaning to the lexical content of the verbs themselves. This would be unwarranted, however, since progressive readings do become possible with the same verbs if the path locative o (homophonous with the direct object marker) is used instead of ni:

- (10) (a) Kare wa kono miti o itte-iru (kara hasireba oituku desyoo)
 "He is going along this road (so if you run you should catch up to him)."
 (b) Yama o nobotte-iru (uti ni pikkeru o otosite-simatta).
 "While climbing the mountain (I dropped my pickax)."

A class of examples where the accomplishment sense does not arise from any isolatable grammatical feature, but is part of the semantics of the construction as a whole, are activities which give rise to some change in the subject. Okuda (1978) goes so far as to say that change in the subject is the primary lexical feature responsible for a perfect aspectual interpretation of te-iru. Clothing verbs are a particularly clear examples of this, involving as they do a change in the physical appearance of the subject. The te-iru forms of kiru "put on (the body)," haku "put on (the feet or legs)," kaburu "put on (the head)," and tukeru "attach" can thus be used to express either the meaning "be in the process of putting something on" or "have put something on," normally rendered in English as "is wearing":

- (11) (a) Taroo wa yoohuku o kite-iru.
 "Taroo is wearing a suit."
 (b) Taroo wa tonari no heya de yoohuku o kite-iru.
 "Taroo is putting on a suit in the next room."
 (c) Boosi ni hane o tukete-iru (ano hito wa dare desu ka)
 "(Who is that person) with a feather in his hat (lit.
 who has stuck a feather in his hat)?"

The change does not necessarily have to be one in physical appearance alone. Drinking alcohol, for instance, produces a change in one's mental state, which accounts for the perfect interpretation given to the te-iru form of sake o nomu "drink sake" in the following example

- (13) Sake o nonde-iru hito ni karamareta.
 "I got tangled up with a drunk (a person who had drunk sake)"

The following example likewise involves a change in mental state, without any necessary accompanying change in physical appearance:

- (14) Yoku zyunbi-site-iru hito ni totte wa (kanari yasasii sik datta).
 "For those who had prepared well (it was quite an easy test)"

The examples considered in the last paragraph are accomplishments where the culminating point--i.e., the achievement--corresponds to a change of some kind. We would then expect there to be "pure" achievements where a change is expressed without reference to any activity leading up to the change. Many intransitive verbs in Japanese seem to have exactly this aspectual character. Kindaichi (1950) was the first to point out that in morphological transitive/intransitive pairs the transitive member is often given a progressive reading with te-i while the intransitive member is given a perfect reading:

- (15) (a) Denkikoo wa densen o kitte-iru (transitive).
 "The electrician is cutting the wires."
 (b) Densen ga kirete-iru (intransitive).
 "The wires are cut (have been cut)."

This is not, of course, a property of intransitives in general--only of those not involving agentive activity, which I have in an earlier paper (1979) referred to as "nondynamic intransitives." The subject of a nondynamic intransitive construction is a patient undergoing a change of some sort, but having no control over the event bringing about the change. Nondynamic constructions thereby omit reference to any activity leading up to the achievement (i.e., the change), leaving only a "pure" achievement interpretation.

We have so far uncritically accepted the identification of achievements with instants of time, a viewpoint explicitly espoused by Vendler and implicitly accepted in Kindaichi's "instantaneous" nomenclature. Yet a number of verbs fitting into Kindaichi's "instantaneous" category due to their behavior with te-iru turn out, upon

closer inspection, not to be truly instantaneous. Fujii (1966) points out that while expressions such as hutotte-iru "be fat," tukarete-iru "be tired," and sinde-iru "be dead" have the resultative perfect meaning characteristic of instantaneous verbs, the corresponding bare forms hutoru "become fat," tukareru "become tired," and sinu "die" hardly represent instantaneous events. Yoshikawa (1973), in defense of Kindaichi, argues that while an event may not itself be instantaneous, it may nevertheless include an imaginary instant previous to which a certain state exists and subsequent to which a different state exists. Thus, while otiru "fall" is not itself an instantaneous event, there is an instant previous to which an object is not on the ground and subsequent to which it is, providing the instantaneous feature necessary to the perfect interpretation of otite-iru "be on the ground." Yet even this explanation will not do for cases like hutoru "become fat" and tukareru "become tired," which contain no unique instant marking the change from one state to another.

The same difficulty arises in attempting to pinpoint the achievement that differentiates an activity from an accomplishment in examples such as (13) and (14). Although some change is necessary to distinguish the simple activity of drinking from the result that that drinking brings about, it would be arbitrary to assign that change to any single instant in the drinking process, since the result is brought about gradually. Even with such clear-cut accomplishments as writing a book, where it may be possible to identify an instant corresponding to the completion of the book, it is not clear that the result associated with the accomplishment should be attributed to any single instant at which the book changes from a state of non-existence to existence.

Considerations such as these suggest that our conception of achievement should be broadened to include intervals larger than instants. This entails adopting a notion of interval of change such as that found in recent literature on "interval semantics." Dowty (1979), for instance, formalizes this notion in terms of the semantic operator BECOME: BECOME(Q) is true for some state Q and some interval J if and only if (a) Q is false at the lower bound of J, (b) Q is true at the upper bound of J, and (c) there is no smaller interval for which (a) and (b) are true. The final clause of this definition insures that the interval at which BECOME(Q) is true is a unique interval. Depending on the particular type of change involved, this unique interval could become indefinitely small, approaching true instants in the limiting case.

Taking the presence of this semantic BECOME operator to be the defining feature of achievements and, by extension of our compositional analysis, of accomplishments still leaves certain difficulties. In the case of "degree-achievements" such as hutoru "become fat" and tukareru "become tired," it may be as difficult to determine a unique interval of change as it would be to pinpoint a unique instant of change. In the case of accomplishments, it is difficult to neatly distinguish the activity from the achievement-interval. In writing a book, for instance, the interval over which the book comes into existence encompasses the entire period of activity. This is a problem, however, only if we insist on strictly segregating the activity from the achievement in time--the problem vanishes if we admit the possibility of the two occurring concurrently. The problem posed by degree-

achievements, on the other hand, is inherent in either the instant approach or the interval approach and provides no grounds for choosing between the two. See Dowty (1979) for a treatment of change with vague" predicates such as cool (applicable also to fat and tired) here the vagueness is successively resolved in the direction of increasingly higher thresholds defining the property in question.

I turn now to the question of why languages such as Japanese should give unified morphological expression to the aspectual categories progressive and perfect. To native speakers of English and other standard European languages, this may appear to be a puzzling combination, but Japanese speakers are often equally puzzled that anyone should see more than one meaning in the various uses of te-iru considered in this paper. Consider first those uses of te-iru which Iidaichi explicitly labeled as "stative"--in particular, expressions of the "Type 4" category and expressions originating in the "instantaneous" category that have shifted from a perfect to a simple stative meaning. It is a general characteristic of states that they can be predicated either of instants of time or intervals of time:

- (16) (a) Sono toki ano mise wa aite-ita (past te-iru form of aku "open")
 "The store was open at that time."
 (b) Ano mise wa 8-zi kara 12-zi made aite-iru.
 "The store is open from 8:00 until noon."

Regarding cases where a state is predicated of an interval, Vendler and others have pointed out that the state must also be true of every (any) instant constituting that interval. Thus (16b) entails that at any particular instant between 8:00 and noon the store is open.

Suppose now that for the sake of greater generality we speak not of instants constituting an interval but of subintervals contained within an interval (subintervals which nevertheless approach instants in size as they become smaller and smaller). Suppose also that we make it a truth condition for te-iru that any event or state of affairs represented by a predicate in te-iru form be true for a (specified or non-specified) interval just in case the event or state of affairs is true for every (any) subinterval contained within that interval (hereafter the "te-iru interval"). This truth condition admits not only states, but also activities, since activities are likewise true over an interval just in case they are true over every (any) subinterval within that interval. (17), for example, entails that for every (any) subinterval between 4:00 and 5:00, Taroo swam during that subinterval:

- (17) Taroo wa kinoo 4-zi kara 5-zi made puuru de oyoide-ita.⁵
 "Taroo was swimming yesterday between 4:00 and 5:00."

Strictly speaking, this observation holds only for idealized homogeneous activities which are rare, if they exist at all, in the real world. Most real-world activities cannot be predicated of intervals smaller than that required to go through a minimal sequence of motions necessary to define the activity (e.g., the time required to lift one foot off the ground and set it down again in walking). Limitations of

space, however, do not allow a discussion of real-world complications here, and I must limit my observations to ideal activities.

In contrast to activities, achievements radically fail to meet our truth condition for te-iru: an achievement by definition cannot hold over every subinterval of a given interval. It in fact holds over at most one interval--the unique BECOME interval defined earlier. When te-iru is attached to an achievement verb, therefore, the only alternative is for the achievement to hold at some interval or instant outside of the te-iru interval. Whether this is prior to or posterior to the te-iru interval depends on whether or not there is an activity associated with the achievement that is itself capable of receiving a progressive interpretation with te-iru. Where there is such an activity, and where that activity receives the progressive interpretation, the achievement will necessarily take place after the progressive te-iru interval. This accounts for one reading--the progressive reading--of accomplishments such as hon o kaite-iru "be writing a book." The achievement, corresponding to the book's coming into existence, has yet to occur at some unspecified point in the future. The other reading ("have written a book") is the reading accomplishments share with "pure" achievements. "Pure" achievements can only receive the interpretation whereby the achievement occurs prior to the te-iru interval--i.e., the perfect interpretation--because they are not associated with any activity capable of a progressive interpretation. This is the case with the te-iru form of nondynamic intransitive verbs, such as Densen ga kirete-iru "The lines are (have been) cut." In the absence of any possibility of the te-iru interval here representing a progressive interval, it represents rather a stative interval resulting from the achievement-event.

Since activities and states both lack reference to any change of state, they have ended up looking very much alike in our analysis. Nevertheless, there are some important features distinguishing them, of which I will mention two in conclusion.

One difference is that while states can be said to hold for single instants of time, activities seem to require reference to more than one instant of time. The sentence John was running yesterday at 3:15, while on the surface predicating an activity of a single instant, implies that there was a larger stretch of time encompassing the instant referred to during which John ran. (The facts here are essentially the same for Japanese). It is not clear to me whether this means that an activity literally cannot be asserted of an instant or simply that it requires knowledge of instants of time outside any given instant to be able to assert that an activity holds at that instant. Insofar as te-iru is concerned, we are able to avoid this problem by dealing not with instants per se, but with intervals of time approaching instants in size.

A second difference lies in the observation made by Vendler that activities can, and states cannot, co-occur with volitional predicates such as "carefully" and "deliberately." Activities, in other words, require an element of volition or self-control on the part of the subject in a way that states do not. I have argued elsewhere (1979) that for Japanese verbs to take a progressive reading, they must belong

to a class of "dynamic" predicates which includes self-controllable human activities as well as natural phenomena seen as acting under their own power. The observed difference in behavior between transitive and intransitive verbs with te-iru can be attributed to this dynamic feature: transitive expressions typically involve volitional activity on the part of the subject, whereas most intransitive expressions represent a change in the subject brought about independently of any volition on the part of the subject. Transitive expressions therefore allow, and intransitive expressions often do not allow, progressive readings with te-iru. The "dynamic" requirement for progressive meaning is a more severe one for Japanese than English. English allows simple non-volitional processes to take progressive form, as in The laundry is drying, whereas in Japanese such simple processes cannot take progressive form: the formal te-iru counterpart to The laundry is drying (Sentakumono ga kawaite-iru) can only mean "The laundry has dried."

Without denying that such differences do exist between states and activities, however, I hope to have shown that states and activities exhibit aspectual similarities in their interaction with the affix te-iru. More basically, I hope to have contributed toward an integrated account of the progressive, perfect, and stative uses of te-iru by clarifying the aspectual categories required to properly classify verb constructions in Japanese and illustrating the semantic interaction between these categories and a semantically unified te-iru.

FOOTNOTES

1. The te part of te-iru represents the gerund (te-form) of the verb, to which the auxiliary iru is attached.

2. The Japanese names Kindaichi gives to the four classes are zyootai doosi, keizoku doosi, syunkan doosi, and daiyonsyu doosi.

3. Due to considerations of space, I have been forced to omit literal glosses of Japanese example sentences in this paper. While I regret any inconvenience this may cause to the reader, the task of comprehension should be somewhat alleviated for the reader unfamiliar with Japanese by underlines and other notational devices I have used to focus attention on the particular verb form I am concerned with in each example.

4. Wallace Chafe has brought it to my attention that northern Iroquois possesses a verb affix which, like Japanese te-iru, alternately expresses perfect and progressive meaning. In Chafe (1980) he sets up a lexical feature of "consequentiality" to which he attributes perfective (my perfect) meaning with this affix. The choice of this feature seems to reflect an intuition consonant with the Vendlerian accomplishment analysis I have pursued in this paper.

5. Japanese progressive forms, like their English counterparts, imply (conversationally implicate?) that the activity encompasses an interval larger than the interval specified by the tense of the verb and/or co-occurring adverbs. My analysis of "te-iru intervals" applies pari passu to these larger encompassing intervals.

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