On the fuzzy boundary between tense and aspect in Japanese

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In a footnote to his discussion of tense logic, McCawley (1993) notes that much of what he finds of interest on this topic, "though crucially involving temporal notions, has little to do with tense per se" (p. 595). He further notes that many languages lack tense systems, strictly defined, and yet manage quite well to express the full range of temporal relationships available in languages having such tense systems. McCawley’s comments point to the difficulty of defining clearly the range of temporal meaning encompassed by the category of tense, and in particular of demarcating the boundary between tense and the other domain of temporal meaning commonly referred to by the name of aspect. Tense is widely understood to refer to the means languages employ for ordering the time of occurrence of one situation with respect to another, typically the act of speech. Aspect is understood to refer to the qualitative structure, or lack of it, which a situation is seen to have in time. Yet exactly where the distinction lies between these two is not always apparent, making it sometimes difficult to identify a particular token of temporal meaning as belonging to one of these categories or the other.

This paper will examine several temporal phenomena in Japanese which appear to involve both tense and aspect in an attempt to better understand how these two realms of meaning are interconnected and whether they should in fact be treated as ultimately distinct from one another. While we will reject the view espoused in certain native traditions of Japanese grammar that the language contains no markers of tense, we will argue that the numerous areas of interaction observed between tense and aspect in the language follow as a natural consequence from the latent presence of tense relationships in the very notion of aspectual structure, and vice versa. Furthermore, we will argue that this interaction is mediated at the cognitive level by the phenomenon of change, a central organizing concept in human experience wherein notions of tense and aspect are inextricably bound to one another.

I. The traditional debate: does Japanese have tense markers?

Given the lack of a clear boundary between the domains of tense and aspect, it is perhaps no surprise that there exists a long-standing debate in traditional Japanese grammar regarding the very existence of tense in Japanese. The debate has focused in particular on what the exact distinction is in meaning that

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1 This article is due to appear in summer 2004, in Multifaceted and Interdisciplinary Linguistics & Jim McCawley’s Legacy (ed. E. Frances, S. Mufwene, R. Wheeler), Cambridge, MIT Press, 23pp.
underlies the morphological opposition between the affixes RU and TA\(^3\) lying at the heart of the Japanese temporal system. In main clauses, these affixes appear to encode a straightforward distinction between non-past and past tense, as can be seen in the present and future interpretations received by the RU forms in (1) and (2) respectively, versus the past interpretation received by the TA form in (3).

(1) *Teeburu no ue ni hon ga sansatu aru.* (RU form: present meaning)
    table GEN top LOC book NOM three exist-RU
    There are three books on the table.

(2) *(Kyoo wa) gakkoo e iku.* (RU form: future meaning)
    today TOP school LOC go-RU
    Today I'm going to school.

(3) *(Kyoo) gakkoo e itta.* (TA form: past meaning)
    today school LOC go-TA
    Today I went to school.

In subordinate contexts such as (4) and (5), however, these forms appear to behave quite differently. Contrary to its apparent non-past interpretation in (1) and (2), the RU form in (4) marks a situation which at the time of speech has already occurred in the past, and the TA form in (5), contrary to its past interpretation in (3), marks a situation which has yet to occur in the future.

(4) *Saisyo ni mensetu o ukeru gakusei ga kintyoosoo ni rooka o ittari kitari siTE-Ita.*
    first TEMP interview ACC receive-RU student NOM nervous ADV hall ACC go come
    do-PROG-TA
    The student who interviewed (lit., was to interview) first was walking nervously back and forth in the hall.

(5) *Karita mono wa kanarazu kaesite-kudasai.*
    borrow-TA things TOP without-fail return-please
    Please make sure you return things that you borrow (lit., have borrowed)

In the subordinate temporal clauses\(^4\) in (6) and (7), both the RU and TA forms are possible, with no corresponding change in the tense orientation of the event in question to the time of speech—future in the case of (6) and past in the case of (7).

(6) *Uti e kaeru/kaetta toki ni denwa site-kudasai.*
    home LOC return/return-TA time TEMP phone do-please
    Please give me a call when (at the time) you return home.

(7) *Yuube uti e kaeru/kaetta toki ni kaisya no zyoosi kara denwa ga atta.*
    last-night home LOC return/return-TA time TEMP company GEN boss from phone-call NOM atta.

\(^3\)Among verbs, the affix RU is in complementary distribution with its allomorphic variant U, the former occurring after vowel-final verb stems (e.g., tabe-ru 'eat,' oki-ru 'get up') and the later after consonant-final verb stems (e.g., ik-u 'go,' yom-u 'read'). The verbal opposition of RU versus TA is manifested in the case of adjectives by the endings I versus KATTA, and, in the case of the copula, by DA versus DATTA. For the sake of convenience, the term "RU form" will be used in this paper to include not only RU/U in verbs, but also I in adjectives, and DA in the copula. Likewise, "TA form" will be used as a cover term for TA in verbs, KATTA in adjectives, and DATTA in the copula.

\(^4\)Temporal clauses in Japanese are structurally a variety of relative clause with a head noun indicating temporal orientation, such as *toki "the time (at which)," mae "(the time) before," ato "(the time) after," etc.*
When (at the time) I returned home last night I got a call from my company boss.

This is not to say that the two forms are synonymous in these contexts. In (6), the use of RU in the subordinate clause indicates that the phone call is to occur before the addressee returns home (for example, while the addressee is still at work), while TA indicates that it is to occur at a time after the addressee has returned home. In (7), the use of RU in the subordinate clause conveys that the phone call came from the speaker's boss at a time prior to the speaker's returning home (while the speaker was not yet home), whereas the use of TA conveys that the call came at a time following the speaker's return home (when the speaker was at home). Note that this distinction is not obligatorily reflected in English—in (6), the English subordinate verb takes the non-past tense form \textit{return} regardless of the relative ordering of the main and subordinate events, and in (7) it takes the past tense form \textit{returned}, again regardless of the ordering of the events in question.

When the predicate occurring in such subordinate contexts is stative, the interpretation received by the RU form is one where the subordinate situation occurs simultaneously with the time of the main event. This is so, once again, even when the main clause imposes a past tense context, as in (8).

\begin{itemize}
  \item \begin{align*}
  (8) & \text{Tonari ni \textit{iru} hito wa Tanaka-san datta.} \\
  & \text{alongside LOC exist-RU person TOP Tanaka COP-TA}
  \end{align*}
  \text{The person who was next to me was Tanaka.}
\end{itemize}

The temporal interpretation of RU and TA in such subordinate contexts furnishes the principal argument for advocates of the aspectual interpretation of these affixes. Since TA is capable of marking a future situation in contexts such as (5) and (6), and RU a past situation in contexts such as (4), (7), and (8), the reasoning goes, the temporal function of these affixes cannot be that of expressing tense. Based on the assumption that all temporal meaning that is not tense must be aspect, the conclusion is drawn that these affixes are fundamentally aspectual in function, and that the apparent tense meanings exhibited by them in main clauses such as in (1)-(3) are derivative of an underlying aspectual function. Specifically, TA is seen in this view to mark a situation that is "complete" (\textit{kanryoo}) and RU a situation that is "non-complete" (\textit{mi-kanryoo}). Other types of evidence adduced to support this view include main-clause uses of TA such as (9)-(10), where the apparent focus of the utterance is on a present situation rather than a past event.

\begin{itemize}
  \item \begin{align*}
  (9) & \text{Aa, \textit{tukareta}! Sibaraku \textit{yasumoo}.} \\
  & \text{INTJ become-tired-TA for-a-while rest-VOL}
  \end{align*}
  \text{Oh, I'm tired (lit., became tired/have become tired). Let's rest a while.}
\end{itemize}

\begin{itemize}
  \item \begin{align*}
  (10) & \text{Tadaima sanzi ni \textit{narimasita}.} \\
  & \text{now 3:00 DAT become-TA}
  \end{align*}
  \text{It is (lit., became/has become) now 3:00.}
\end{itemize}
A further piece of evidence in support of this view is provided by various anomalous "modal" uses of TA, such as (11), where it conveys an urgent imperative, and (12), where it serves to highlight the immediacy of an event of discovering a lost or hidden item. In neither case does TA apparently mark a situation that is past relative to the time of speech.

(11) **Moo hatizi da yo. Saa, okita, okita!**
Already 8:00 COP SP INTJ get-up-TA get-up-TA
It's already 8:00. Get up, get up!

(12) (Looking for a lost item in a drawer) **A! Koko ni atta!**
INTJ here LOC exist-TA
Oh, here it is!

The behavior of RU and TA in the subordinate and other contexts illustrated in (4)-(12) clearly departs from that of non-past (present and future) and past tense forms in English. This in itself, however, is insufficient grounds for abandoning the view that they are fundamentally tense markers. What these data do call into question is defining tense in terms of relative ordering with respect to the time of speech.

Viewing tense in more basic terms as a linguistic device for ordering the time of occurrence of one situation with respect to another, while leaving open the question of what particular point in time is taken as a reference for the ordering, allows a notion of relative tense which is fully adequate to account for the behavior of RU and TA seen in these examples. Specifically, the reference point adopted in Japanese for tense forms in subordinate contexts such as (4)-(8) may seen to be time of occurrence of the situation or event of the main clause. Thus the use of RU in (4) indicates that the time of the interview is non-past (more specifically, future) with respect to the past time of the event of walking up and down the hall, and

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5The fact that the English counterpart corresponding to each of the predicates in (9)-(12) is a non-past form is likely also a factor motivating this analysis: since the Japanese TA form is used to convey what is manifestly a present situation (manifestly, that is, based on the tense form used in English), the Japanese form must express something other than tense.

6A relative tense analysis of subordinate RU and TA has been adopted in various guises in works such as Soga (1983) and Ogihara (1999).

7Even in subordinate contexts, cases can be found where RU and TA are interpreted as markers of absolute tense, taking as their reference the time of speech. A full discussion of the conditions that license an absolute, rather than relative, tense reading in such contexts is not within the scope of this paper, but one factor that may be pointed out as playing a role is the degree of subordination involved. Clauses marked by the conjunction **kara** "because," for example, exhibit a lower degree of subordination, tending more toward a coordinating function than the clearly subordinating function of **toki** "when" as seen in (6)-(7). Tense forms in **kara** clauses therefore have the potential of being interpreted in the same way as main clause tense forms, i.e., as marking absolute tense. Note how in the following example, the RU predicate in the **kara** clause allows either an absolute tense reading (where my mother's coming is still future at the time of speech) or a relative tense reading (where her coming is future with respect to the main clause event, but past with respect to the time of speech).

(i) **Haha ga kuru kara heya o katazukete-oita.**
mother NOM come-RU because room ACC clean-leave-TA
Because my mother is/was coming, I cleaned up my room.
the use of TA in (5) indicates that the time of the act of borrowing is past relative to the future time of the returning of the item. Subordinate TA in (6) and subordinate RU in (7) and (8) can be treated similarly.

While exhibiting apparently different behavior in main clause and subordinate clause contexts, therefore, RU and TA in fact impose ordering relationships in a consistent fashion in all contexts, the apparent differences due not to the nature of the ordering but to the reference point to which the ordering is anchored. The parallel functions of absolute and relative tense encoded by RU and TA can be summarized as in (13), where "<" indicates "occurs at a time earlier than" and "≤" indicates "occurs at a time earlier than or simultaneous with."

(13) Absolute tense: relates time of main clause event (Tme) to time of speech (Ts).
   Non-past (RU):  Ts≤Tme (see examples (1), (2))
   Past (TA):  Tme<Ts (see example (3))

Relative tense: relates time of subordinate event (Tse) to time of main clause event (Tme)
   Subordinate non-past (RU): Tme<Tse (see examples (4), (6), (7), (8))
   Subordinate past (TA):  Tse<Tme (see examples (5), (6), (7))

In the case of so-called non-tense functions of RU and TA in main clause contexts such as (9) and (10), care is required to distinguish between a present state and a prior event leading up to that state. While the English predicates appearing in these examples are statives, the corresponding Japanese predicates tu-kareru "become tired" and naru "become" are in fact eventive, indicating a change in state. In order for the state in question to be seen as obtaining at the moment of speech, the event that results in that state will necessarily have occurred prior to the moment of speech, an ordering relationship which falls precisely under the domain of tense marking.

Neither are the main clause uses of TA in (11) and (12), while perhaps anomalous, necessarily lacking in tense function. The sense of urgency expressed by the imperative-like use of TA in (11) can be seen to arise from a modal shift in the perspective of the speaker to an idealized possible world wherein the event in question has already occurred, and the sense of discovery in (12) may be seen as arising from the simple past function of TA to mark a stative situation obtaining prior to the moment of speech. Specifically, the item discovered is seen in such cases to have been in a state of existing at a particular location prior to the time it is discovered to be in that location just prior to the moment of speech.

None of the uses of RU and TA considered above thus requires a non-tense analysis. But even if not required, might not such an analysis at least be possible? Could not these uses of RU and TA, for example, be seen to express a distinction between a situation that is respectively non-complete versus complete, as in certain traditional viewpoints? One critical flaw with the latter analysis has been pointed out in Suzuki (1976), who notes that TA occurs without any difficulty on stative as well as eventive main clause
predicates, but to speak of a stative situation as being "complete" borders on incoherence. In what sense, for example, is the state of the empty lot existing said to be "complete" in an example such as (14)?

(14) *Tiisai toki sundeita ie no tonari ni akiti ga atta.*
small time live-PROG-TA house GEN alongside LOC empty-lot NOM exist-TA

Next to the house I lived in when I was small was an empty lot.

The aspectual analysis is also not able to account for uses of the TA form to mark stative situations that occur over an interval of time extending from a point of time in the past up to and (crucially) including the time of speech. Example (15)\(^9\) is fully natural even in a context where the chair still exists at the location in question at the time of speech, and where the stative situation has not therefore been terminated or "completed" in any coherent sense.

(15) *Sono isu wa kinoo kara zutto soko ni atta yo.*
that chair TOP yesterday from all-the-time there LOC exist-TA SP

That chair has been there since yesterday.

Even granted that, ignoring cases like (14) and (15), it is possible in many cases for a past situation to be treated as a "completed" situation, is the notion of completeness itself truly devoid of any tense meaning, given the basic notion of ordering we have seen to be central to tense? The notion of completeness in fact seems to involve an implicit ordering between the prior termination of a state of affairs and some point in time following that termination. An apparently aspectual category may therefore involve inherent reference to a tense category, which confronts us once again with the question of whether it is indeed possible to draw a clear distinction between tense and aspect in such cases. The answer to this question, and a possible explanation, will be offered in what follows.

II. Phenomena of interaction between tense and aspect in Japanese

As we have seen above, tense is, understood in its broadest sense, a linguistic means for ordering one situation in time with respect to another. Tense is therefore an inherently relational notion which necessarily involves reference to a plurality of situations. It goes without saying that for such a relationship to obtain, it must be possible for the situations in question to be treated as distinct from one another. Aspect, by contrast, is defined as the particular qualitative structure, or lack of it, which a singular situation is seen to have in time\(^10\). Conceived of in this way, aspect may be seen to encompass situations which lack any

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\(^8\)This is in essence what is proposed in Soga (1983) for such imperative-like uses of TA.

\(^9\) This example is a modified version of an example due to Nakatani (2002), to which I owe this observation.

\(^10\) Smith (1997) draws the helpful distinction between situation aspect and viewpoint aspect—the former referring to temporal qualities which are inherent to a situation (such as the Vendlerian qualities of activity, state, and achievement) and the latter to different options for viewing one and the same situation, such as the option of viewing it as a complete whole with endpoints (perfective viewpoint), or viewing only part of it without reference to endpoints (imperfective viewpoint). Whether a matter of inherent meaning or of
internal structure (punctual situations) or lack any complexity in internal structure (stative situations), as well as those having a more complex internal structure.

To the extent, however, that temporal structure of any kind is realized on a unidimensional timeline, there will necessarily arise ordering relationships, either internally among constituent elements making up the structure, or, in the case of a situation conceived without internal structure (such as punctual situations), between the situation itself and regions of the timeline external to the situation. Relationships of tense are, in that sense, latent within the very notion of aspect. The particular ordering relationships possible either among elements internal to a situation or between the situation itself and elements external to the situation will naturally vary depending on the particular aspectual structure involved, and differences in aspectual structure can therefore be expected to impose constraints on the particular tense interpretation associated with a particular situation. Conversely, if the situations or elements ordered in a tense relationship lose their distinct character and come to be seen as constituents of a more encompassing structure, they may come to aggregately define temporal structures which are aspectual in character. Tense and aspect may in this way be seen to mutually encroach on the meaning territory of one another. Some concrete illustrations of this from Japanese will be taken up in the following.

A. Tense interpretations of non-past RU

Consider first the conditions under which the non-past marker RU receives either a future or literal present interpretation, noted in connection with examples (1)-(2), repeated here for convenience.

(1) Teeburu no ue ni hon ga sansatu aru (RU form: present meaning)
   table GEN top LOC book NOM three exist-RU
   There are three books on the table.

(2) (Kyoo wa) gakkoo e iku (RU form: future meaning)
   today TOP school LOC go-RU
   Today I'm going to school.

As seen in these examples, the unmarked tense interpretation for RU is literal present with stative predicates and future for non-stative, event predicates. The crucial property distinguishing these two groups of predicates is the homogeneous character of states, often described in terms of the subinterval property. States are seen to obtain over intervals of time in such a way that the state in question can be predicated of any arbitrary subinterval of the larger interval, no matter how small, down to a single moment within the interval. States therefore have the property of being able to be predicated either of intervals or points in time, as seen in the following.
a. The book was on the table between 2:00 and 4:00.
b. The book was on the table at 2:15.11

As the time of speech is merely a special case of a momentary time frame, no difficulty arises in predicating a state of the moment of speech, resulting in the literal present interpretation with non-past stative predicates, as in (1) above.

The situation is quite different in the case of non-homogeneous situations expressed by event predicates. Such predicates involve aspectual structures of varying complexity, but are characterized minimally by the presence of a change of state as part of that aspectual structure. In the case of the predicate iku "go" in (2) above, the relevant change is from a state of not being at a specified location to a state of being at that location12. In general, the aspectual structure of such change-in-state predicates can be rendered as follows, where \(^Q\) and Q represent the non-existence and existence, respectively, of a state Q on a time line, mediated by a unique interval \(X\) representing the occurrence of the change-event itself.

\[
\begin{array}{c}
\neg Q \\
------------------- \\
\quad \text{(X)} \\
------------------- \\
\quad Q
\end{array}
\]

In the idealized situation, the interval \(X\) can be seen to shrink to the size of an instantaneous moment without extension in time. Such a momentary treatment may indeed be adequate for change-events such as sinu "die," tuku "arrive," and (denki ga) kieru "(the lights) go out." The change expressed in predicates such as hutoru "get fat," sameru "cool down," and tukareru "get tired," by contrast, are better treated as occurring over intervals of time. I leave aside here the question of where to locate the upper and lower bounds of such intervals, some of the complexities of which are discussed for English in Dowty (1979).

The necessity of a future tense interpretation for change-of-state predicates becomes clear when we consider the difficulty of associating \(X\) with the moment of speech13. In the case that \(X\) consists of an interval, it cannot by definition be seen to obtain at a moment. Even when \(X\) is seen to consist in a moment, it is existentially impossible to guarantee a perfect overlap between that moment and the moment of speech, at least to the extent that the utterance is intended to be descriptive of an event in the outside world and not, for example, a performative speech act where the event is "created" by the utterance itself. It is impossible, that is, to time the speech act in such a way that it coincides perfectly with a moment up to

11 Note that even in the case where a state is predicated of a moment, the state is not understood to obtain uniquely at that moment, but also to obtain at other moments forming an interval surrounding the moment in question.
12 Note that Japanese iku, unlike English go, must be treated as a change-of-state predicate belonging in the category of achievement, rather than activity, verbs (in the sense of Vendler). It does not, for example, allow of progressive formation.
which Q does not obtain and immediately following which Q obtains in the real world, for any given state Q. Whether (X) is an interval or a moment, then, it must be seen as disjoint from the moment of speech: one must precede the other, thus excluding a literal present interpretation. Given that the meaning of the non-past form excludes the possibility of (X) preceding the time of speech, which is expressed by the past form, a non-past change-of-state predicate must by default receive a future interpretation.

B. Nascent tense in the aspectual structure of TE-I(ru)

The example just considered illustrates how aspectual structure places constraints on ordering relationships between a situation expressed in a linguistic form and elements external to the situation, in this case the moment of speech. Aspectual structure may also be seen to impose ordering relationships on elements wholly internal to a situation expressed by a given linguistic form. An example of this can be seen in the various interpretations associated with the verb affix TE-I(ru)\(^\text{14}\) in Japanese. Beginning with the pioneering work of Kindaichi (1950), a considerable body of descriptive and theoretical literature has been devoted to the treatment of this affix\(^\text{15}\), particularly with regard to the question of how to account for what appear to be two quite different meanings it expresses—those of progressive and resulting state. These are illustrated in (18) and (19).

(18) *Kodomotati wa rooka o hasitTE-Iru.*
   *children* TOP hall ACC run-PROG-RU
   The children are running in the hall.

(19) *Kodomotati wa gakkoo ni itTE-Iru.*
   *children* TOP school LOC go-RES-RU
   The children have gone to school (are at school). (N.B., not "are going to school")

The approach presented in Jacobsen (1992), a modified form of which I will adopt here, treats these apparently different meanings as resulting from an interaction between the aspectual structure inherent to a predicate and a basic invariant meaning in TE-I(ru), which is to impose a homogeneous interval from within which a situation is viewed. This homogeneous meaning is defined in terms of the subinterval property considered earlier, so that when a predicate is attached to TE-I(ru), the resulting form may be considered to be a variety of stative predicate. The particular way in which the homogeneous interval is real-

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13 For the sake of simplicity, I limit my focus here to cases of singular occurrence, ignoring habitual or generic readings.
14 The designation TE-I(ru) represents the union of the so-called TE-form of a verb (the form into which a verb is converted in order to allow the attachment of certain auxiliary verbs) followed by the auxiliary verb I(ru) derived from an independent verb meaning "to exist." TE-I cannot occur morpheme-finally, but must be followed by either of the RU or TA affixes discussed earlier. E.g. *Taberu* "eat" \(\rightarrow\) *TabeTE-Iru* "is eating."
15 Some representative works in English on the analysis of TE-I(ru) include Soga (1983), Jacobsen (1992), Ogihara (1999), and Shirai (2000). For those unfamiliar with Japanese, an accessible introduction to the
ized will be dictated in each case by the particular aspectual structure borne by a predicate type, as schematized in (20) for the classic Vendler categories of situation aspect. Recall from (17) that Q and ^Q represent the presence and non-presence, respectively of a state Q, and (X) represents either a point or interval of change mediating between the non-presence and presence of a state.

(20) States:  

\[
\begin{array}{c}
\text{Activities:} \\
\text{Change-of-state predicates (achievements):} \\
\text{Accomplishments:}
\end{array}
\begin{array}{c}
\wedge Q \\
\wedge Q \\
\wedge (X) \\
\wedge Q
\end{array}
\]

States, first of all, are inherently homogeneous in character to begin with and therefore do not allow the attachment of TE-I(ru) (the ability to impose a homogeneous interval on a situation presupposes that the situation is not homogeneous to begin with), as illustrated in (21).

(21) *Teeburu no ue ni hon ga sansatu atTE-Iru. (compare (1))

\[
\begin{array}{c}
\text{table} \\
\text{GEN} \\
\text{top} \\
\text{LOC} \\
\text{book} \\
\text{NOM} \\
\text{three} \\
\text{exist-PROG-RU}
\end{array}
\]

*Three books are being on the table.

Activities, represented by predicates such as hasiru "run," asobu "play," and hataraku "work," are defined in terms of the repetition of a subroutine of bodily movements (each subroutine represented as a single ~ in the schema in (20)), which, taken alone, is internally non-homogeneous. In the activity of running, for example, the subroutine consists of a cycle beginning with one foot on the ground and extending through the interval of time during which that foot is in the air until it is on the ground again. Activities are therefore not purely homogeneous, but the multiple repetition of an unchanging subroutine over an extended interval nevertheless imparts to that interval a "quasi-homogeneous" character represented as ~~~~ in (20). The subinterval property may be seen to hold of this interval in that any arbitrary subdivision will yield an interval with a uniformly similar quality to that resulting from any other subdivision, at least insofar as the divisions are not made too small--smaller, that is, than the size of a single constituent subroutine.

Activities are therefore not homogeneous in the pure sense applicable to states, for which the subinterval property holds down to arbitrarily small intervals and even instants of time. Nevertheless, this quasi-homogeneous character of activities licenses an interpretation by which the homogeneous interval introduced by TE-I(ru) may be seen to coincide with the interval over which an activity occurs, resulting in the progressive interpretation seen in (18), repeated here for convenience.

(18) Kodomotati wa rooka o hasiTE-Iru.

\[
\begin{array}{c}
\text{children} \\
\text{TOP} \\
\text{hall} \\
\text{ACC} \\
\text{run-PROG-RU}
\end{array}
\]

The children are running in the hall.

linguistic issues surrounding the treatment of this affix may be found in Chapter 6, Section 4 (Aspectual Properties of Verbs) in Tsujimura (1996).

16 The schematization I adopt here is a slightly modified form of that used in Shirai (2000).
With achievements, by contrast, the unique point/interval of (X) constituting the change of state conflicts with the character of a homogeneous interval required by TE-I(ru), and the interval in question must therefore be interpreted as disjoint from (X) itself. The interval is consequently seen to coincide with the state that follows from the occurrence of (X), indicated by Q in (20), so that a resulting-state (perfect) interpretation obtains. This is illustrated in (22) for the instantaneous achievement predicate *kieru* "go out, become extinguished."

(22) *Denki ga kieTE-Iru.*

lights NOM go-out-RES-RU
The lights are out (lit., are in the state of having gone out).

Example (19), repeated here, also involves an achievement predicate indicating a unique change-of-state, although, as noted in the previous section, the predicate *iku* "go" is unlike its English counterpart in focusing on the point of arrival at a destination, not the process leading up to the arrival.

(19) *Kodomotati wa gakkoo ni itTE-Iru.*

children TOP school LOC go-RES-RU
The children have gone to school (are at school). (N.B., not "are going to school")

The fourth category in (20) is that of accomplishments, represented by examples such as *syooaseto o kaku* "write a novel." These may be construed as having a composite meaning structure, consisting both of an activity and an achievement corresponding to the culmination of the activity. Not surprisingly, then, accomplishments are capable of either a progressive or a resulting state interpretation, depending on which component—the activity leading up to the achievement or the achievement itself—is highlighted. (23a) is a case where the interval defined by TE-I(ru) is seen as coterminous with the activity leading up to an achievement, resulting in a progressive interpretation, in contrast to (23b), where the interval in question is the state resulting from the achievement (represented by Q in the schema of (20)).

(23) a. *Murakami Haruki wa atarasii syooaseto o kaiTE-Iru.*
Murakami Haruki TOP new novel ACC write-PROG-RU
Murakami Haruki is writing a new novel.

b. *Murakami Haruki wa syooaseto o takusan kaiTE-Iru.*
Murakami Haruki TOP novel ACC many write-RES-RU
Murakami Haruki has written many novels.

The incompatibility of the aspectual character of the interval introduced by TE-I(ru) with the aspectual structure of achievements is thus resolved by means of ordering (X) (the moment or interval of the

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17 Technically speaking, the requirement of homogeneity could equally be met by construing the interval in question to coincide with the interval prior to the occurrence of (X), in a way analogous to the future-like interpretation of English –*ing* with achievement predicates (E.g., *The runner is (just) reaching the goal line*). Such an interpretation does not, however, obtain in Japanese, where the interval in question can only be associated with the state following, not preceding, (X). The reason for this has to do with an independent feature of the meaning of TE-I(ru), pointed out in Soga (1983), namely that the interval it represents is always associated with a state of affairs that is "realized." The predicate to which TE-I(ru) is attached must,
change-event constituting the achievement) prior to that interval, which is effectively to introduce a nascent tense relationship. Although this ordering does not in itself involve the moment of speech, the non-past RU affix on TE-I(ru) will link the interval in question to the moment of speech in a literal present interpretation, as it is associated with a state-like homogeneous situation. The result is a past-of-a-present relationship as in (23b) above. When the RU affix is replaced by TA in TE-I(ta) constructions such as (24), the homogeneous interval is shifted to a reference time prior to the moment of speech, resulting in a past-of-a-past tense relationship.

(24) Gakkoo ni tuita toki, Tanaka-sensei wa (moo) kaetTE-Ita.
When I arrived at the school, Prof. Tanaka had (already) left.

This variety of TE-I(ru) construction (the resultative/perfect variety) thus exhibits characteristics of the English present perfect and its past counterpart, the pluperfect. The range of tense interpretations of this construction is, however, broader than that of the English perfect. It allows, on the one hand, an exclusive focus on the resulting state, to the extent that the achievement event giving rise to the state is ignored, giving rise to a tense interpretation parallel to the English simple present. As seen in (25), this construction is even licensed in cases where no prior achievement event (here, an event of the road "coming to be curved") can conceivably have taken place in the real world.

(25) Kono hen de miti ga magatTE-Iru.
The road curves (lit., is in a state of having become curved) in this area.

On the other hand, this construction licenses the use of temporal adverbs directly referring to the prior achievement event, in a fashion which can be rendered in English only as a simple past.

(26) Kisinyaa-si wa 1950nen ni Haabaado-daigaku o sotugyoo siiTE-Iru.
Kissinger graduated from Harvard in 1950.

TE-I(ru) constructions of the resultative type thus exhibit a variety of tense-like functions deriving from a basic past-of-a-present meaning structure similar to the English perfect, although broader in the range of tense interpretations allowed than in the latter. The perfect in English and other European languages has of course itself long been the focus of debate for its quasi-tense, quasi-aspectual character.

Whether a primarily tense analysis or a primarily aspectual analysis of this form is adopted seems to de-
They depend on whether the component temporal elements of the perfect are seen to constitute distinct situations in themselves, and therefore conceived of as mutually ordered in a tense relationship, or together constituting a singular situation with a complex inner structure. The classic treatment of the former variety is that of Reichenbach (1947), who treats the perfect on a parallel level with basic tenses such as the present and past, by varying the order of three temporal primitives -- time of speech (Ts), time of event (Te), and time of reference (Tr), as in (27).

\[
\begin{align*}
(27) \text{a. Ken is at home.} & \quad T_s = T_r = T_e \\
\text{b. Ken left home.} & \quad T_e = T_r < T_s \\
\text{c. Ken has left home.} & \quad T_e < T_r = T_s \\
\text{d. Ken had left home when I called.} & \quad T_e < T_r < T_s
\end{align*}
\]

Of the four patterns above, the resultative use of TE-I(ru) can be seen to correspond most closely to \(T_e < T_r = T_s\), where the reference point \(T_r\) is provided by the interval established by TE-I(ru) (which in turn is seen to overlap with the time of speech, given the semantics of RU), and \(T_e\) is identified with the time of occurrence of the change-of-state event (the achievement event). The fact that this construction also overlaps to some extent with a simple past interpretation representable as \(T_e = T_r < T_s\), as in (26) earlier, nevertheless underlines the ease with which a shift in time of reference obtains and is reminiscent of the famous historical shift which the perfect construction has undergone in certain Romance and Germanic languages from a past-with-present-relevance interpretation to a simple past interpretation (e.g., French \(\text{Il a lu le livre}\), German \(\text{Er hat das buch gelesen}\), etc.). What would be analyzed in the Reichenbach framework as a shift in reference point away from the moment of speech might in this case equally be seen as a shift toward viewing the prior event as an event less unified with, and more distinct from, the time of speech. The result is a shift toward a stronger tense-like, and correspondingly less aspect-like character, in this construction, even while maintaining the same fundamental ordering relationships between the time of event and time of speech.

C. Nascent aspect in the tense structure of TA

A mirror image of this shift, one where a tense-like function shifts to an aspect-like function, can be seen in the TA affix. We noted earlier that, while all uses of TA may be seen to share a common tense function of ordering an event prior to some point of reference (most commonly the time of speech in main-clause contexts), certain uses of TA appear to highlight a state resulting from a past event more prominently than the past event itself. Examples of this were given in (9) and (10) (repeated here).

(9) \text{Aa, tukareta! Sibaraku yasumoo.} \\
\text{INTJ become-tired-TA for-a-while rest-VOL}

\[^{20}\text{McCawley's (1993) treatment of tense, for example, devotes considerable space to this construction.}\]
Oh, I'm tired (lit., became tired/have become tired). Let's rest a while.

(10) **Tadaima sanzi ni narimasita.**
    now 3:00 DAT become-TA
    It is (lit., became/has become) now 3:00.

These can, in Reichenbach's terms, be seen to represent the ordering \( Te < Tr = Ts \), a departure from the more basic \( Te = Tr < Ts \) pattern seen in standard main-clause uses of TA as in (3) (repeated here).

(3) **(Kyo) gakkoo eitta.** (TA form: past meaning)
    today school LOC go-TA
    Today I went to school.

The examples in (9) and (10) therefore overlap in their basic temporal character with the resultative use of TE-I(ru), and, although not synonymous, constructions similar in meaning to those in (9) and (10) can in fact be constructed with TE-I(ru) as well.

(28) **Kodomo ga takareTE-Iru.** Sorosoro nekaseyoo.
    children NOM become-tired-RES-RU about-now put-to-bed-VOL
    The children are tired (lit., are in a state of having become tired). It's about time we put them to bed.

(29) **Sanzi ni natTE-Iru.**
    3:00 DAT become-RES-RU
    It is (lit., is in a state of having become) 3:00.

In order to license the usage of TA illustrated in (9) and (10), two conditions must be met. The first is that the predicate constitute a change-event associated with a subsequent resulting state (indicated by \( Q \) in (20)). This is of course the same requirement that licenses the resultative use of TE-I(ru) as in (28) and (29). The second requirement, not shared by the corresponding TE-I(ru) construction, is that the change-event must be seen to have occurred with some immediacy to the time of speech. This feature of immediacy is reflected, among other ways, in the fact that predicates expressing the onset of a mental or emotional state can be used in this way with TA only with first-person subjects, as in (9). The attribution of the same mental or emotional state to a third person requires a more distant, objective form of expression such as made possible by the corresponding TE-I(ru) construction, as in (28). The more aspect-like, less tense-like quality that is ascribed in much of the literature to this use of TA may be seen to arise from this sense of immediacy, as it binds the change-event closely to a present state in a way that facilitates viewing the two components as together comprising a singular situation, unlike the clearer distinction made between the two in the more standard tense-like functions of TA.

This distinction between two types of TA, corresponding respectively in temporal shape to \( Te < Tr = Ts \) and \( Te = Tr < Ts \), manifests itself in a variety of grammatical phenomena in Japanese, two of which will be considered here. The first is in differing possible negative responses to questions involving the two types of TA, illustrated in the following:
(30) a. **Yuube no "Ryoori no Tetuzin" mita? Iie, minakatta.**  
Last-night GEN Ryoori-no-tetuzin see-TA no see-NEG-TA  
Did you watch last night's "Ryoori no Tetuzin" [a TV program]? No, I didn't.

b. **Nimotu todoita? Iie, mada todoite Inai.**  
Baggage arrive-TA no yet arrive-RES-NEG-RU  
Did the luggage arrive? No, it didn't (hasn't) yet.

In (30a), the temporal frame within which the event in question (watching a program that aired on TV) is seen to have either occurred or not is restricted to an interval of time in the past which is disjoint from the present moment, an interpretation forced by the presence of **yuube** "last night". This is the "standard" tense-like use of TA of the **Te=Tr<Ts** variety, and the corresponding negative answer takes the form of a simple past negation -nakatta. The TA form in (30b), by contrast, is of the more aspect-like **Te<Tr=Ts** variety and marks a question whose focus is on a present circumstance rather than on a past event, albeit a present circumstance which is brought about by a past event. This is directly reflected in the shape of the corresponding negative response, which is a negation formed on a TE-I(ru) construction. The negative response is a denial, in other words, of the existence of a currently existing state. Although both types of TA involve the same ordering relationship between a prior event and a situation obtaining at the time of speech, whether this is construed more as a relationship of tense or more as an aspectual structure is correlated, here again, with the degree to which the two are viewed as either disjoint or bound together in a singular situation.

A second manifestation of the distinction between these two types of TA is seen in contexts of adnominal (relative clause) modification. We noted earlier that TA appearing in subordinate contexts is normally given a relative past interpretation, whereby the subordinate event is seen to occur prior to a temporal point of reference established by the main clause event. A markedly different interpretation arises in subordinate contexts, however, between the TA form of change-of-state predicates licensing the aspect-like **Te<Tr=Ts** interpretation in main clauses and the TA form associated with the standard tense-like **Te=Tr<Ts** interpretation in main clauses, such as that of state and activity predicates. Keeping in mind that the role of the time of speech (Ts) in main clause contexts is replaced in subordinate contexts by the time of occurrence of the main clause event (Tem), prior to which the time of occurrence of the subordinate event (Tes) is ordered21, the **Te<Tr=Ts** and **Te=Tr<Ts** main clause patterns may be reformulated in subor-

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21 Although the time of occurrence of the main clause event (Tem) acts in this way as a reference point governing the tense of the subordinate predicate, this should, strictly speaking, be distinguished from the time of reference (Tr) in Reichenbach's framework. Reichenbach's Tr was designed to distinguish between simple and complex tenses, but not to function as a reference point for relative tenses. Two types of reference point must therefore be distinguished in the subordinate contexts here: Tem, which serves as the anchor for the tense of the subordinate predicate, and Tr, which is seen to alternate between Tem and Tes in the two interpretations of TA considered here, parallel to the way it alternates between Te and Ts in the main-clause contexts considered in Reichenbach's analysis.
dinate contexts as Tes<Tr=Tem and Tes=Tr<Tem, respectively. Some examples of the former are given in (31) and of the latter in (32).

(31) Change-of-state (achievement) predicates: Te<Tr=Ts (in subordinate contexts Tes<Tr=Tem)
   a. *Tukareta kao* “a tired face”
      become-tired-TA face
   b. *Nureta kooto* “a wet court”
      become-wet-TA court
   c. *Aita mado* “an open window”
      become-open-TA window
   d. *Ana ga aita bubun* "the part with a hole open(ed) in it"
      hole NOM become-open-TA part
   e. *Sugureta nooryoku* “outstanding ability”
      become-outstanding-TA ability
   f. *Arihureta gensyoo* "a commonplace phenomenon"
      become-commonplace-TA phenomenon

(32) Activity or state predicates: Te=Tr<Ts (in subordinate contexts Tem=Tr<Tes)
   a. *Hataraita hito* "people who worked"
      work-TA people
   b. *Oyoida gakusei* "students who swam"
      swim-TA students
   c. *(Sakki made) atta okane* "money that was there (until just a little while ago)"
      little-while-ago until exist-TA money
   d. *(Kodomo no toki) dekita gengo* "languages that I knew as a child"
      child GEN time be-able-TA languages

Although the constructions in both (31) and (32) are tokens of a sentential clause (consisting in most of these examples of a predicate alone) modifying a head noun, and thus structurally identical, there is a marked difference in the "eventive" character of the subordinate event in the two cases. The TA-marked predicates in (31) do not characterize their head noun in terms of a prior event that has taken place, but merely in terms of a property corresponding to the state that, in main clause contexts, would be understood to result from the event in question. This is directly reflected in the adjectival character of the corresponding English glosses. While the property attributed in some of these cases is likely to have in fact arisen from a prior occurrence of a change-event such as "becoming tired" or "becoming wet" in the case of (31a) and (31b), the occurrence of this event is defocused, making it possible for this type of construction to be used even when no such event in fact occurred or could possibly have occurred. (31d), for example,

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22 For the sake of simplicity, only tokens of the adnominal predicate and head noun are given here. In a full sentence, these will of course be incorporated into a main clause structure where the final predicate provides the reference point to which the relative past reading of the subordinate TA is anchored. For example, (32a) might appear in a sentence such as the following.

(i) *Kanozyo wa tukareta kao o siTE-Ita.*
   She had a tired face (Lit., she had a face which had become tired) (=She looked tired).

23 The verb *dekiru* in Japanese is homophonous for two senses: a stative sense of "be able to" and an achievement sense of "become completed". Compare (32d) to *Yoku dekita sigoto* "a job well done", where the verb is used in its achievement sense and the resulting adnominal construction therefore fits into the class of constructions in (31).

24 In his treatment of TA expressions in noun-modifying contexts such as (31) and (32), Kinsui (1994) posits a derivation whereby predicates with a composite semantic structure consisting of an event component and a resulting state component—predicates which correspond in aspectual terms to achievement or accom-
could be used to characterize a piece of sheet metal which was manufactured from the start with a hole in it. (31e) and (31f) are tokens of this construction where an originating event for the property in question cannot even be conceptualized—"the TA form has in effect become frozen in an adjective-like function.

The situations denoted by the TA-marked predicates in (32), by contrast, fully retain their status as events. The difference between (31) and (32) is overtly reflected in two forms of grammatical behavior. First, the TA form of the predicates in (31) can typically be replaced by TE-I(ru) with little or no change in meaning: *nureta kooto and nureTE-Iru kooto are both possible for "a wet court." Such is not the case with the predicates in (32), where replacing the TA form with TE-I(ru) would result in an aspectually different meaning: *hataraiTE-Iru hito, for example, would mean "people who are working," not "people who worked." Secondly, the TA predicates in (32) allow the co-occurrence of a temporal adverb making reference to the time of the event in question, but those in (31) do not. Thus, kinoo hataraita hito "people who worked yesterday" is beyond reproach, whereas *kinoo tukareta kao "a face that became tired yesterday" cannot be construed in any natural way. The TA forms in (32) thus exemplify once again the characteristic feature of TA in its tense-like function, that of viewing the two situations ordered in time as distinct situations, in contrast to the forms in (31), where the distinction has been weakened or lost.

III. Conclusion

The varying temporal interpretations associated with the Japanese affixes RU, TA, and TE-I(ru) do not, as we have seen, admit of a neat dichotomy between tense and aspectual meaning, but reveal upon examination a fundamental interconnection between the two. This is, we have argued, a natural consequence of the inherent presence of temporal ordering—the defining characteristic of tense—within temporal structure—the defining characteristic of aspect—and, conversely, of the inherent possibility of temporally ordered elements being viewed, given the right conditions, as collectively bound together in a singular encompassing structure. Whether a collection of temporal elements is viewed as being individually distinct or as constituting parts of a larger whole is not itself a determination that admits of a strict dichotomy. As a result, tense meaning often appears to shade into aspectual meaning and vice versa, as in the case of simple accomplishment predicates—may have their event component excised from the meaning structure under certain conditions, leaving behind a purely state component with an adjective-like character such as in (32). Contexts of noun modification are seen by Kinsui to lend themselves particularly well to this derivation, as they tend to highlight the head noun as an entity bearing a property of some sort, and properties are typically stative in character. In terms of the argument put forth in the present paper, this derivation may be seen as having the effect of removing one of two distinct elements necessary for a tense-like interpretation of temporal ordering, thereby yielding a singular temporal structure of the sort associated with a more aspectual-like interpretation.
past versus present perfect meaning in English or of corresponding differences in interpretation seen in the
affix TA in Japanese. Reichenbach's "time of reference," and the shifts it is seen to undergo between Te
and Ts, may in fact be seen as an index of the degree to which situations associated with these temporal
primitives are viewed as either distinct or bound together.

While the boundary between tense and aspect is thus a fuzzy one, it is nevertheless possible to
categorize specific linguistic forms in terms of which of the two functions of temporally ordering distinct
elements or binding erstwhile distinct elements into a singular structure is relatively more primary. Viewed
from that perspective, RU and TA clearly tend to the former, tense-like function, much as they may also
exhibit aspect-like properties in some uses, while TE-I(ru) tends to the latter, aspect-like function, much as
it may also impose a temporal order among the elements internal to the aspectual structure it conveys.
Japanese cannot therefore be seen as formally lacking either tense or aspect markers, but our discussion has
suggested ways in which it may be possible for both tense and aspect meaning to be fully expressible even
in languages that lack formal expression of one or the other of these, such as Chinese, which lacks formal
marking of tense.

Central to many of the interactions we have observed in this paper between tense and aspect has
been the mediating role of the change-of-state event, the event we take to define the Vendlerian category of
achievement predicates. On a cognitive level, the occurrence of change may be seen to be bound up with
the very concept of time, as an awareness of the flow of time is predicated on the ability to perceive change
in the phenomenal world. The existence of a unique interval or moment of time bridging two distinct states
(as schematized in (17)) highlights in a particularly salient way a sequential relationship between these
states, inherently tying together considerations of temporal order and temporal structure. When brought to
the context of actual utterance, furthermore, a basic incompatibility arises in identifying the moment or
interval of change with the moment of speech, forcing a disjoint, and therefore sequential, relationship be-
tween the two. Change thus provides us with a key to account for interactions of tense and aspect on many
levels, pointing to a deeply-rooted link between these two realms of meaning in human cognition and ex-
erience and reinforcing the inherent connection between the two that we have seen to exist on a purely
notional level.

Key to Grammatical Abbreviations

ACC accusative case marker
ADV adverbial marker

25 The predicates sugureru "be(come) outstanding" andarihureru "be(come) commonplace" are tokens of
Kindaichi's "Type 4" category of verbs referred to earlier in Footnote 17. These verbs cannot be used in
main clause position without TE-I(ru) attached to them.
COP copula
DAT dative case marker
GEN genitive case marker
INTJ interjection
LOC locative case marker
NEG negation morpheme
NOM nominative case marker
PROG progressive (aspect) morpheme
RES resultative (aspect) morpheme
SP sentence-final particle
TEMP temporal marker
TOP topic marker
VOL volitional morpheme

References


