Homogeneous Events:

The Domain of *have-en*, *be-ing*, and *te-iru*

1. Introduction

Since the time of the ancient Greeks, the approach to understanding tense and aspect has been very "top-down". That is, a label is attached to a linguistic form or structure and that is accepted as its "core meaning." However, problems then arise when that form is inevitably seen in a different, not completely compatible context, and we are forced to explain why a form that means "X" is being used as though it means "Y." This becomes particularly dangerous when labels from one language (that may or may not be accurate) are used in the analysis of another.

One such case is presented here. Traditionally, the *te-iru* form of the verb in Japanese has been called the "progressive." This is largely because of two facts: 1) it covers, for the most part, the same range of meanings and uses of the English progressive *be-ing*, and 2) it shares structural similarity in that it is a derived form of the verb, V-*te*, plus a form of the verb 'be,' *iru*.[1] However, as we shall see, labeling *te-iru* a "progressive" implies much more similarity than actually exists; *te-iru* also corresponds most closely to the full range of the English perfect, *have-en*. Our traditional notions have a lot of difficulty accounting for this range of meanings.

The analysis presented in this paper takes a "bottom-up" approach. That is, it examines the range of uses of all three constructions — *be-ing*, *have-en*, and *te-iru* — and characterizes each according to what structure it brings to the verb. Not only does this provide a unified account of the range of uses each has, but the complexity of grammaticality and interpretations fall naturally out of the interaction of simple rules.

The consequence of this approach is that we must alter our views of what is traditionally called "perfect" and "progressive." In an effort to loosen some of the preconceived notions of tense and aspect and how they relate to specific verb constructions, I will refrain from using labels such as "progressive" and "perfect" and instead refer to the constructions by their phonological forms. Thus the "English perfect" will be called *have-en*, the "English progressive," *be-ing* and the "Japanese progressive," *te-iru*.

Section 2 outlines the problem of *te-iru* in more detail and compares it to *be-ing* and *have-en*. Section 3 proposes the notion of "homogeneous events" to describe the domain to which these constructions belong and provides a structural account for why we see the variation amongst the forms that we do. Finally, section 4 concludes.

2. The Problem

As was mentioned above, the Japanese *te-iru* construction overlaps in meaning and function with both English *be-ing* and *have-en*. Examine the data in (1).

(1)   a.   *Kare wa*   *mo*   *hon o*   *kai-te iru*

            he Top   already   book Acc   write-Ger is

            'He has already written a book.'

       b.   *Kare wa*   *ima*   *hon o*   *kai-te iru*

            he Top   now   book Acc   write-Ger is

            'He is writing a book now.'

       c.   *Kare wa*   *hon o*   *kai-te iru*

            he Top   book Acc   write-Ger-is

            'He is writing a book.' or 'He has written a book.'

(1c) is ambiguous with regards to the English translation and is open to either a *be-ing* or *have-en* interpretation. Naturally, the sentence can be disambiguated by using adverbs as is exhibited in (1a) and (1b).
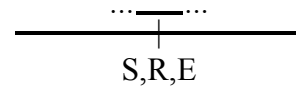
This is problematic because our current notions of *be-ing* and *have-en* intuitively divide these two forms into expressing very different things. It is not even the case within current analyses that *be-ing* and *have-en* are different ends of the same spectrum — they simply do not seem to belong to the same domain. Yet, in

Japanese, there is a single form that stands as the best translation for both in most cases. This implies that *be-ing* and *have-en* may be more alike than we realize.
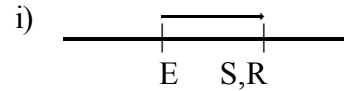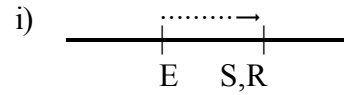
The nature of the "perfect" is controversial and there are as many explanations for its meaning and function as there are researchers examining it. However, generally accepted views of the "perfect" tend to include some notion of "completion" and "past tense" with relevance to some other reference point (Binnick (1991, 98-104, 377)). On the other hand, the "progressive" seems to have an opposite definition; it is usually interpreted to mean "incomplete" or "in progress" (Binnick (1991, 283-284)). Thus, two seemingly polar phenomena are expressed by the same form in Japanese. Furthermore, some linguists claim that *have-en* is a tense in its own right, whereas *be-ing* is typically considered aspectual. This complicates the analysis of *te-iru* even further.

Example (2), which presents Soga's (1983, 6-10) diagrams based on Reichenbach's (1947) system, provides a more concrete visual representation of the problem.
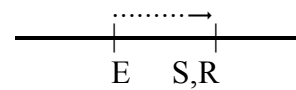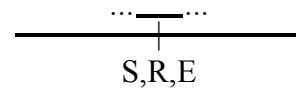
(2)	a.	I am seeing John.

$$\text{---} \quad \underset{\text{S,R,E}}{|}$$

b.	I have seen John.	i)

$$\underset{\text{E}}{|} \quad \cdots\cdots\rightarrow \quad \underset{\text{S,R}}{|}$$

i)

$$\underset{\text{E}}{|} \quad \overline{\qquad} \quad \underset{\text{S,R}}{|}$$

c.	*Kare wa syoosetu o go-satu kaite iru.*

he TOP novel ACC five-vol. write is.

'He has written five novels (so far).'

$$\underset{\text{E}}{|} \quad \cdots\cdots\rightarrow \quad \underset{\text{S,R}}{|}$$

d.	*Hon o ima kaite iru.*

book ACC   now write is.

$$\text{---} \quad \underset{\text{S,R,E}}{|}$$

'(I) am writing a book now.'

In Soga's diagrams, a dotted line represents "the relevancy of past event E at the time of R," and a solid line represents "event E continued up to but not beyond R" (Soga (1983, 6)). The meaning of the arrow is not entirely clear, but presumably it implies a sense of direction that is present in "perfect" interpretations, but not in the "progressive." Although he gives only one diagram for (2c), it is, in fact, ambiguous. 'He is writing five novels (concurrently, right now),' is just as valid a translation, in which case the diagram in (2d) would be just as applicable.

The motivation for presenting this sort of analysis of Japanese is questionable.

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Soga even states after presenting this system for the analysis of English, "Let us see whether or not the same kind of device can be used for representing the Japanese tense system," (Soga (1983, 10)). Although Japanese can be represented by such a system, the question remains, "why should it be?" This characterization of the Japanese tense/aspect system does not demonstrate *why* the *te-iru* form should be ambiguous with respect to the range of meanings expressed by *have-en* and *be-ing*. It implies that there are two underlying universal notions that map onto two forms in English and one form in Japanese, but it does nothing to show how *te-iru* differs semantically and structurally from *be-ing* and *have-en* such that it allows such a multiple mapping. Even though there are clearly two possible interpretations of (2c) in Japanese, there is no reason to believe that those *perceptual* interpretations equate to two *linguistic* level categories.

To add to the confusion, in addition to the overlap in the interpretation of *te-iru* sentences with *have-en* and *be-ing* sentences, sometimes the best translation of a *te-iru* sentence is a state in English. Take the sentences in (3) for example.

(3)   a.   *Kare wa   sin-de iru.*

          he Top   die-Ger is

          'He is dead / has died / *is dying.'

      b.   *Bou ga   magat-te iru.*

          stick Nom   bend-Get is.

          'The stick is bent.'

It is not uncommon in Japanese to use verbs in the *te-iru* form to describe stative

characteristics of objects and people that are best translated in English as adjectives

(which are, of course, also stative in nature).

Ideally, an account of the differences between *te-iru* and *be-ing* and *have-en*

should show what each form adds to the event structure of a verb that is in turn

superimposed upon a non-discrete field of semantic space. It should also then be

clear what properties of those structures lead it to have jurisdiction over specific areas

of that semantic space and not others.

3. An Account of the Similarities and Differences

The approach taken by Soga that was illustrated above seems to be typical of the

thinking found in the literature. However, it is an approach biased by the analysis of

English. To illustrate how, I'd like to draw an analogy; consider the English verb *be*

and the Japanese verb *iru* and *aru*. Both Japanese verbs can be translated into English as 'be' in appropriate circumstances — the difference between them is that *iru* takes an animate subject and *aru* takes a inanimate subject, as shown in (4)

(4)   a.   *heya-ni*   *teeburu-ga*   *aru.*

                        room-Loc   table-Nom   is (inanimate)

                        'There is a table in the room.'

             b.   *heya-ni*   *hito-ga*   *iru.*

                        room-Loc   person-Nom   is (animate)

                        'There is a person in the room.'

No one would suggest that underlyingly, there are two representations of *be* in English; one that takes animate subjects and one that takes inanimate subjects. Yet this is the is the conclusion we come to if we apply Soga's approach — *be* is ambiguous. Clearly English speakers understand and perceive the difference between animate and inanimate but that distinction is simply not *linguistically* relevant to *be*.

In this analogy, *be-ing* and *have-en* equate to *iru* and *aru* and *te-iru* equates to *be*. It is equally incorrect to claim that there is a *linguistic* difference between "progressive" and "perfect" interpretations in Japanese because there exists one in English. This does not preclude the possibility of Japanese speakers understanding the *perceptual* distinction between different readings.

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Usually, we think of *aru*, *iru*, and *be* as belonging to the same semantic domain but that *aru* and *iru* are more constrained than *be*. This is the approach that must also be taken in analyzing the differences between *have-en*, *be-ing*, and *te-iru*.

This section argues that there is a property — "homogeneity" — shared by all of *te-iru*, *have-en*, and *be-ing* that accounts for the similarity found between these constructions. Furthermore the analysis presented characterizes the constraints on the meanings of the forms in terms of event structure, thereby accounting for how and why they differ.

3.1. *"Stative" Properties of the "Progressive" and "Perfect"*

Several linguists have noted that *be-ing* and *have-en* exhibit properties of states and have proposed any number of analyses. For example, consider the following quote taken from Binnick (1991, 184).

"It is possible to regard what the progressive expresses in English as characterizing a volitional state. In the same way that someone *is* tall, they might *be* running. Once again there is a period of time during which the individual is in the state of being running. The only real difference between this and the state of being tall is that the individual is free to stop—or continue—being running, whereas one is not free (on the same way) to

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stop—or continue—being tall."

Other authors have made stronger claims to the stative property of *be-ing*. Mufwene (1984, 35) states:

"what emerges from the [arguments] above is in particular the consistent meaning of the progressive as a stativizing aspect . . ."

Elsewhere he claims that *be-ing* can be considered "grammatical stativity" in opposition to lexical stativity. Likewise, an analysis of *be-ing* and *te-iru* proposed by Suzuki (1996), which is discussed in further detail in section 3.2.1., uses Galton's (1984) definition of "state" that includes *be-ing*.

One of the common characteristics cited about states is that they are "static," "unchanging," or "homogeneous." That is, over the interval that the state holds true, the assertion it makes does not change. This seems also to be true of verbs in the *be-ing* form, and to some degree, activities.

Similarly, some have observed the stative properties of *have-en*, albeit less frequently, and with less conviction. The analysis of *have-en* tends to center much more on a comparison with English *-ed* ("past tense") than with *be-ing*, although Binnick (1991, 268) states:

"At least some readings of the perfect would seem therefore to require treatment as referring to a state resulting from a previous event."

Comrie (1976, 56) characterizes this interpretation of *have-en* as the "perfect of result," stating:

"In the perfect of result, a present state is referred to as being the result of some past situation."

He continues to distinguish between several interpretations of the perfect, including, the "experiential perfect," the "perfect of persistent situation," and the "perfect of recent past." Although there are differences in *have-en* in these usages, Comrie focuses on their differences and ignores their similarities. In all cases he maintains that the concept of "current relevance" (or relevance with respect to another defined point in the case of other tensed forms) is embodied in the perfect. It is possible, thus, to think of *have-en* as defining an interval between an action (typically) in the past and the moment of speech. The assertion made by the sentence holds true, unchanging, for every point within that interval (and beyond) — a very state-like property. It may be that the different interpretations of *have-en* are the result of its interaction with other properties of the sentence like the structure of the verb in question, adverbs, and the context in which the statement was made.

3.2. *Homogeneous Events*

The previous sections describe at least one similarity that spans *be-ing* and *have-en*;

both have state-like properties. Based partly on work by Galton (1984) and Suzuki

(1996), I propose a domain of homogeneous events that accounts for the similarities

between a diverse range of forms without compromising currently held

classifications.

Section 3.2.1. below describes Galton's work and how Suzuki applied it to *te-iru*

and *be-ing*. Section 3.2.2. suggests a modification of Galton's concept of "state" and

defines the domain of "homogeneous events." Sections 3.2.3.-6. show how, once we

analyze *be-ing, have-en,* and *te-iru* as being forms expressing the same domain, their

various readings can be simply accounted for in terms of event structure.

3.2.1. *Suzuki and Galton*

Galton (1984) proposes a definition of "state" that is quite different from the

traditional sense and is meant to include *be-ing*. A state, according to Galton, can be

any situation that is evaluated with respect to only a single moment in time and is

homogeneous (i.e. unchanging) over time. Examine the sentences in (5).

(5)   a.   Jane was swimming at midday.

          b.   Jane had a swim at midday.

Although an interval is strongly implied by the homogeneous property of the

situation, Galton would claim, it is possible to invent scenarios (strange as they may

be) in which Jane was only in the water precisely at midday, and yet (5a) remains true. (5b) on the other hand can only be understood as having occurred over a heterogeneous interval that implicitly includes more than just being in the water. *Had a swim* also includes going to the pool, changing clothes, diving, resting, etc. Thus *be-ing* utterances are similar to states in this respect.

This definition of "state" was adopted by Suzuki (1996) in his comparison of *be-ing* and *te-iru*. Suzuki argues that the difference between *be-ing* and *te-iru* is that, although both describe states, *be-ing* must describe a "dynamic state" whereas this constraint does not hold for *te-iru*. He defines "dynamic state" as "states which require effort from inside or outside to continue . . . they are continually subject to a new input of energy," (Suzuki (1996, 273)). This claim is problematic in that it is quite simple to present counterexamples in English. "I am sitting" describes a state in which no effort is required to maintain. Indeed, it requires effort to cease the state.

Additionally, Suzuki adopts an internal model of the verb proposed by Galton (1984) that is also problematic. In Galton's view, events are merely concatenated states and only the configurations exhibited in (6) are possible.

(6)

| a. | initial state | state of change | final state |

| b. | initial state | final state |

(Suzuki, 1996:267)

These event structures are contrasted with Vendler's (1967) Aristotelian categories in (7).

(7)

Vendler	**Galton**
State	State
Accomplishment	3 state event (6a)
Activity	2 state event (6b)
Achievement	2 state event (6b)

Although this system may correspond with some of our intuitions about processes and verbs — that there is invariably a state that exists before and after something has occurred and that there may or may not be an interval of change between them (punctual vs. durative events) — it cannot account for many of the reasons why Vendler originally proposed these categories.

Perhaps most seriously, Suzuki uses Comrie's (1976) argument for the distinction between accomplishments and activities to defend (6) and presents the examples in (8) and (9).

(8)   a. John is running.

        b. John has run.

(9)   a. John is making a chair.

        b. John has made a chair.

(8b) is entailed in the meaning of (8a) whereas (9b) is not entailed in the meaning of

(9a). Suzuki claims this fact falls naturally from the event structures in (6) since (8a)

is describing a final state, whereas (9a) describes a state of change. He does not

however extend the diagnostic to achievements, such as those in (10).

(10)   a. John is reaching the top of the mountain.

        b. John has reached the top of the mountain.

The contrastive illustration in (7) clearly shows that Galton and Suzuki categorize

activities and achievements together as far as event structure. Thus we would expect

them to behave similarly in similar constructions; we would expect (10a) to entail

(10b), but this is not the case.

Despite these problems, the approach that Galton and Suzuki take is valuable.

By suggesting that states and progressive share properties, it lessens the linguist's

burden of explaining why, cross-linguistically, the same objective reality is expressed

by what seem to be, at least superficially, very different linguistic constructions.

Perhaps Suzuki and Galton's primary shortcoming was in not following their

definition of "state" to its logical conclusion — the inclusion of the *have-en* in their system.

3.2.2. *Galton's "State" as "Homogeneous Event"*

Although Galton and Suzuki's approach of extending the definition of "state" to include *be-ing* has some explanatory benefits, it also ignores the differences that cannot be denied to exist between the forms. *Is tall* is a copular construction and *is running* is a periphrastic verb construction, to cite the most obvious example. This problem is even more prevalent if, as is suggested, we include *have-en* in the same category. What is required is a higher-level classification that characterizes the similarities of the forms described above, but does not conflate them into exactly the same phenomenon.

I, thus, propose the category "homogeneous event" that subsumes the classical notions of state, progressive, and perfect. It is similar to Galton's "state": a perspective of a homogeneous situation, existing over an interval, taken with respect to a single reference point in that interval.

The "reference point" harkens back to Reichenbach's (1947) system and can be thought of similarly. In the least marked case, the "reference point" coincides with the speech event and for simplicity's sake, this is the case that will be examined

through the remainder of this argument.

3.2.3. *Internal Event Structure*

This paper accepts Vendler's (1967) Aristotelian categories of state, accomplishment, activity, and achievement, although other classifications for Japanese verbs are more prevalent in the literature. Most Japanese classification systems are based on Kindaichi (1950) and are functionally very similar to Vendler's[2]. Thus, since the approach presented does not hinge critically on the structure of verb categories, Vendler's categories are assumed to be universal for the purpose of this analysis, while recognizing that further study needs to be carried out in this area. It is, however, necessary to elaborate on how exactly the differences between these categories are to be characterized and represented.

There is a general consensus that event structure consists of different "phases." Freed (1976) proposes a system that accounts for a great number of phenomena, particularly the distribution of periphrastic constructions using words like *finish*, *stop*, *begin*, and *start*. Her conception, as diagramed in Binnick (1991, 196) appears in (11).

(11)

onset	nucleus			coda
	initial	middle	final	

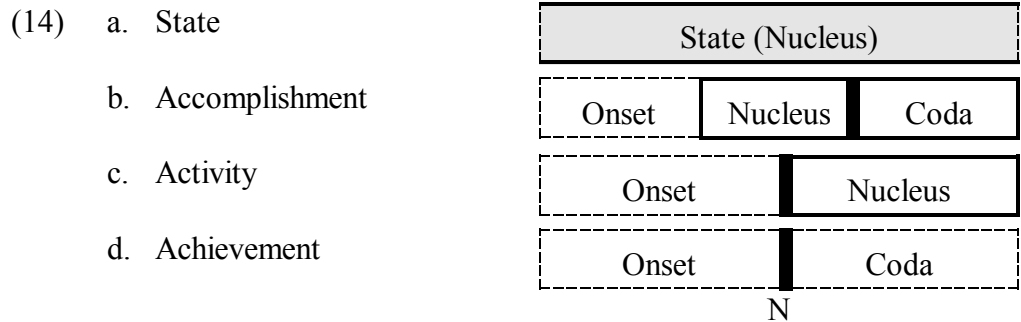inception   termination   culmination
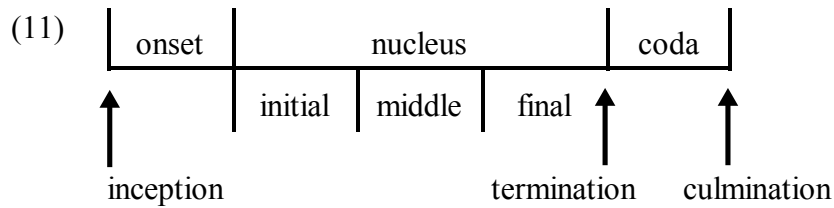
The coda phase accounts for why *finish* cannot be used with certain classes of verbs; only those that have a coda phase are acceptable. Thus, while (12b) — an accomplishment — is a possible sentence, (12a and c) — a state and an activity, respectively — are not.

(12)   a. *John finished wanting a puppy.

           b. John finished painting the picture.

           c. *John finished walking.

However, all the verbs above can use *stop*.

(13)   a. John stopped wanting a puppy.

           b. John stopped painting the picture.

           c. John stopped walking.

Finish is associated with the coda phase whereas stop is instead associated with the termination of the nucleus. Based on these facts, it is possible to characterize the Aristotelian categories according to this model as in (14). (The nucleus sub-phases are not particularly relevant to this discussion and have been omitted.)

(14) a. State

     b. Accomplishment

     c. Activity

     d. Achievement

State (Nucleus)		
Onset	Nucleus	Coda
Onset		Nucleus
Onset		Coda

N

In this diagram, vertical and horizontal lines should be understood as different entities; horizontal lines indicate intervals, vertical lines demarcate transition points. The heavy black lines indicate where the category assigns salience to the event structure — i.e. the verb inherently assigns importance to that point. Dotted lines indicate aspects of the phase that are optional and the shading reflects the fact that states are inherently homogeneous.

Note that Freed does not characterize states as having a nucleus; however, to simplify the functional analysis presented, I will refer to it as such, recognizing that there may be a difference that is more relevant to other arguments. Furthermore, Freed does not claim that achievements may have onsets and codas; however, based on subsequent observations made in other languages (cf. Botne, 1983), and to account for "gradual achievements," the possibility has been included.

It is additionally important to note that depending on the verb or the context, onsets and codas may be points or intervals. For simplicity and convenience, they

will be consistently portrayed as intervals. On the other hand, only the nuclei of achievements should be understood to be punctual — a single point. Notice that if we strip the above diagram of its labels and line types, it is identical to the system proposed by Galton depicted in (6) above and is thus compatible with the majority of Galton's arguments and claims.

Further evidence for these internal structures comes from the "on-going" reporter-like use of the "present tense"; particularly with regards to the placement of emphasis on transition points.

(15)   Sports Reporter: "He catches the ball and runs....and.... he reaches the line!"

Although all of the verbs are marked the same with regards to tense, the transitional points that they emphasize provide very different interpretations of what is occurring. *Catches* and *reaches* (both of which have a coda phase) are not said until the actions they describe are completed. When the reporter uses those words, they are referring to the end point of the action. By contrast, *run* (an activity without a coda) indicates that the beginning of the activity; the player has started running and it is understood that he continues to run. This is reflected in (14) by which point is emphasized.

When each of these structures is introduced into discourse, immediately a reference point is added. In the least marked cases, this is the speech moment,

"now." Of course, in the case of more complex utterances, that reference point may index other events. As we shall see below, one of the crucial tasks of tense and aspect is the placement of that reference point with respect to the rest of the structure.

3.2.4. *Be-ing*

Within this framework, verb inflections like *be-ing* bring meaning to the event by altering and adding to the structure inherent in the meaning of the verb. As with many areas of perception, information that is "new" or that changes existing information is most salient. When *be-ing* is used, it places the reference point before the end point of the nucleus of the event structure and imposes homogeneity on the event. Additionally, it adds a start and end point to the structure. Thus the structural contribution of *be-ing* is depicted in (16).
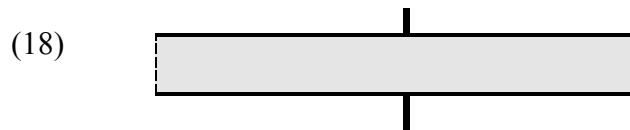
(16)   *be-ing* structure:
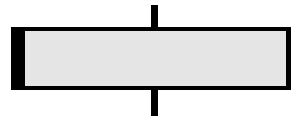
In very few cases is this structure compatible with states because typically it adds little new information; the reference point of a state in the "simple present" is already placed within the nucleus and the event is already homogeneous and *be-ing* is simply redundant and superfluous. Additionally, the new information it can provide — start

and end points — is often incompatible with the meaning of the verb (for example "is tall" in which one cannot voluntarily start or end "being tall". It is illuminating, however, to examine the cases in which it *is* possible to combine a state and *be-ing*. Consider the sentences in (17) for example.

(17)   a. John is a jerk.

       b. Mary loves John.

       c. Mary knows that John is a jerk.

       d. I want a salad.

       e. I live in Bloomington.

Collectively, the examples in (17) have the structure in (18); recall that a point is added representing (in this case) the speech moment..

(18)

This is nearly identical to the structure of *be-ing,* itself, shown in (16), with the exception of start and end points. It is understood that states begin and end at *some* point, coinciding with the birth or death of the subject if necessary; however, in most cases those points are so far beyond the time scale relevant to the context, they don't exist for all intents and purposes.

The progressive, on the other hand, forces start and end points to exist within the context surrounding the event. The sentences in (19) show the same states above combined with *be-ing*.

(19) a. John is being a jerk.

b. *Mary is loving John.

c. *Mary is knowing that John is a jerk.

d. ?I am wanting a salad.

e. I am living in Bloomington.

(19a and e) are acceptable because where one lives and how one behaves is under volitional control; hence one can potentially force the interpretation of an end point. However, note that both (19a and e) have a temporary connotation; it is clear in (19a) that the speaker knows that John isn't always a jerk and implies that he hasn't been in the past and may not be in the future. Comparing (17e) and (19e), the latter implies that the speaker expects not to be living in Bloomington in the future, or at the very least that they don't want to be living in Bloomington.[3] Since the only new (and consequently salient) structural information added to these states by *be-ing*, is "boundedness," the temporary interpretation naturally falls out from the system.

Similarly, in the dialects of English in which (19d) is acceptable, the speaker conveys the impression of fickleness. This, too, can be thought of as a kind of

temporary interpretation. (19b and c) are ungrammatical because they are not under volitional control and it is expected that those states will continue past the foreseeable future. Thus an unresolvable conflict is created between the structures of the verb and *be-ing* that results in ungrammaticality.

The data in (20) show examples of the Aristotelian categories and the structures resulting from their use with *be-ing*.

(20)   a.   John is painting a picture.

O	N	C

b.   Mary is running.

O	N

c.   I am falling asleep.

O	⇐N
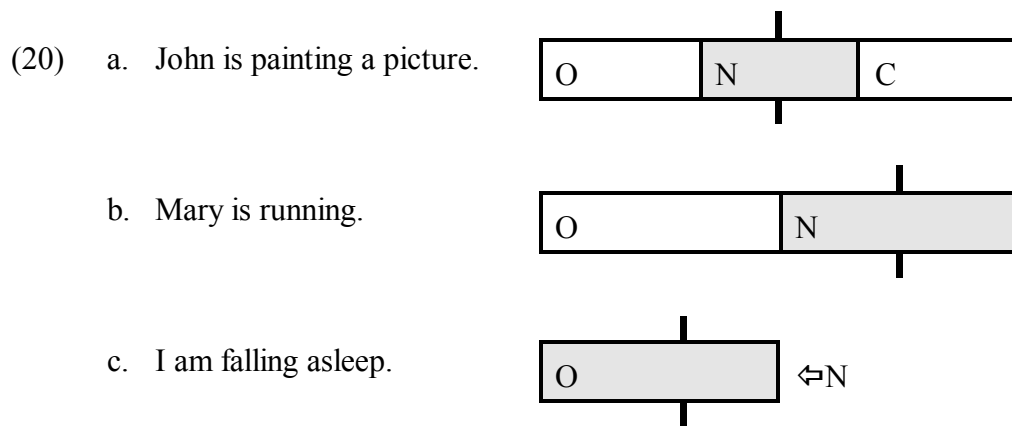
The new / most salient information added to the structure by *be-ing* is homogeneity and the positioning of the reference point before the end point of the nucleus. Thus, there is no particular "temporary"connotation since the addition of start / end points is redundant and not relevant to the interpretation. Note also, that since achievements are punctual and the start and end point of the nucleus are conflated into a single point, placing the reference point before the end point results in it being places in the

onset, not in the nucleus. This corresponds perfectly to the interpretation of achievements with *be-ing*.

However, note the achievement example in (21).

(21) a. *John is finding his book.

(21) must be ungrammatical because *find*, unlike *fall asleep*, is an achievement that lacks an onset, that is, it is a punctual event, and thus there is no interval for the reference point to be placed in, causing an unresolvable conflict with the structure of *be-ing*. Again, the interpretations and grammaticality judgements of various combinations are predicted and fall naturally out from the system.

3.2.5. *Have-en*

Similarly we can characterize *have-en* according to the structure it adds to that of the verb. *Have-en* places the reference point *after* the most salient point in the structure and creates a homogeneous interval between them. Visually it appears as in (22).


(22) *have-en* structure:

Applied to states, this predicts a range of possible interpretations.

(23)   a. Mary has been a doctor before / for 20 years.

        b. I have lived in Bloomington before / all my life.

        c. Mary has known John *before / all her life.

States are inherently homogeneous, so, therefore, there is no inherent emphasis on particular points as with other events since each point is identical. This gives rise to a couple of interpretations: 1) *have-en* optionally attaches to either the end point or the start point, 2) *have-en* attaches to the start point by default and depending on context, the reference point may fall either before or after the end point. Based solely on this data, it is impossible to distinguish between the two; however, based on interactions of *have-en* with activities, and on the facts of Japanese that we have yet to see, for reasons of parsimony, I adopt the latter interpretation — that *have-en* attaches to a start point.

In (23a and b) then, *before* forces an experiential interpretation (Comrie (1976, 58), in which the state has ceased being true (but the fact that the state once existed persists). This corresponds to the reference point being placed after the end point of the state. However, adding a *for* or *since* phrase results in a persistent situation reading (Comrie (1976, 60) that corresponds to the reference point being placed before the end point. The structures of these possible interpretations are exhibited in (24a and b), respectively.

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(24) a.

⇐Start	⇐End

b.

⇐Start	End⇨
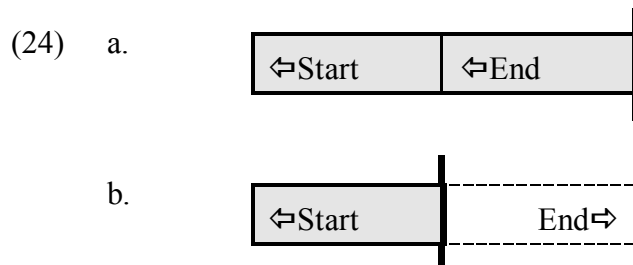
By contrast, states like *know* in (23c) that lack a volitional end point have experiential interpretations such as (24b) only in extremely marked circumstances.
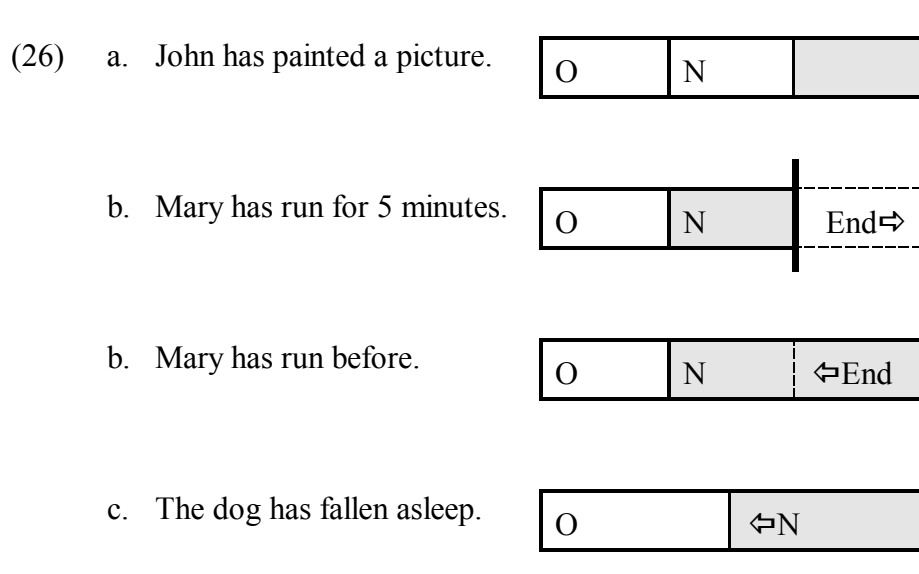
Looking at these interpretation from a slightly different perspective, it is the case that only when the reference point falls within the nucleus of the event is it possible to measure the interval created by *have-en*. This predicts the distribution of interpretations exhibited by the other categories illustrated in (25).

(25) a. John has painted the picture (*for 3 days).

b. John has painted a picture (*for 3 days).

c. Mary has run (for 5 minutes).

d. The dog has fallen asleep (*for 5 minutes).

Persistent situation readings of (25a, b and d) are impossible since the emphasized points to which *have-en* is attached are end points. Consequently, the reference point must always be placed after the end of the nucleus. On the other hand, the activity in (25c) behaves like a state in that both interpretations are possible. This is

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predicted because, as with states, *have-en* is attracted to a start point and it is possible for the reference point to be placed before or after the end point of the nucleus.

(25a and b) exhibit the contrast between the "perfect of result" and the "experiential" (Comrie (1976, 56-60)). The differences in interpretation here rely simply on the use of the article and thus were provided to point out that the difference between these readings is not likely structural, but instead based on other factors. Structural diagrams of (25b-d) appear below in (26).

(26) a. John has painted a picture.

O	N	

b. Mary has run for 5 minutes.

O	N	End⇨

b. Mary has run before.

O	N	⇦End

c. The dog has fallen asleep.
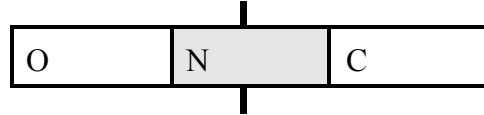
O	⇦N

Of course, the use of *be-ing* and *have-en* are not mutually exclusive. *Have-en* can be overlaid on *be-ing*. The *be-ing* composite structures above are repeated below in (27)
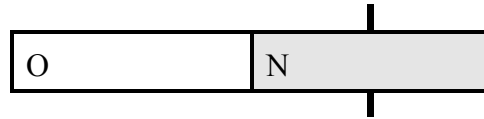
(27)

    a. I am living in Bloomington.
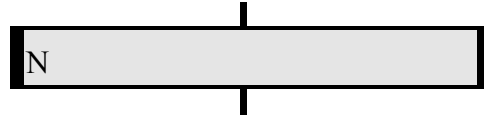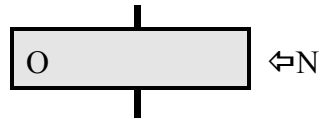
    b. John is painting a picture.

   c. Mary is running.

    d. I am falling asleep.

However, remember that the application of *be-ing* overrides most of the salient aspects of the structure that the verb supplies, leaving the reference point as primary. Also remember that it is the same reference point that is manipulated by *be-ing* and *have-en* and consequently they must be co-indexed. Thus when *have-en* is superimposed it does so at the reference point positioned by *be-ing*, resulting in the structures shown in (28).

(28) a. I have been living in Bloomington for 2 years.

b. John has been painting a picture all day.

c. Mary has been running since 12:00.

d. *I have been falling asleep for 20 minutes.

As we would expect, the persistent situation interpretation is now possible for (28b) because the reference point now falls within the nucleus. The structures of (28a and c) differ very little from their corresponding *have-en* structures seen above except for the fact that an experiential interpretation is no longer possible since *be-ing* by definition places the reference point before the end point of the nucleus. (28a) also retains a vestige of "temporariness" that is lacking in the *have-en* form alone — again this is predicted by the model because the boundedness contributed by *be-ing* is still prevalent. Finally, (28d) remains ungrammatical because, having a punctual nucleus, it is impossible for the reference point to fall within it.

3.2.6. *Te-iru*

Finally we turn to Japanese and *te-iru*. As with *have-en* and *be-ing*, *te-iru* can be characterized by its contribution to event structure. *Te-iru* places the reference point after the start point of the nucleus and imposes homogeneity on the interval it describes. The visual representation is identical to *have-en* and is shown in (29) below.

(29)   *te-iru* structure:
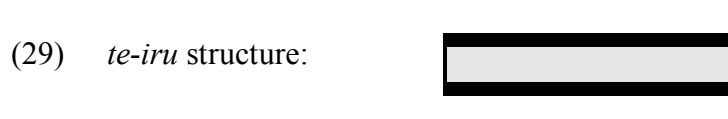
Some examples of Japanese verbs in the *te-iru* form follow in (31).

(30)   a.   **umi-ga   mie-te iru*.

             sea-Nom   is visible-Ger is.

             'The sea is visible.' / 'You can see the sea.'

    b.   *hon-o   yon-de iru*.

             book-Acc   read-Ger-is.

             '(I) am reading / have read / have been reading the book."

c. *kooen-o   arui-te iru.*

   park-Acc   walk-Ger-is.

   '(I) am waking / have walked / have been walking in the park.'

d. *inu-ga   sin-de iru.*

   dog-Nom   die-Ger-is.

   'The dog *is dying / has died / *has been dying / is dead.

Japanese stative verbs are more restricted in their use with *te-iru* than is English with statives and *be-ing*. This fact is predicted by the model; whereas *be-ing* imposes a set interval with required start and end points as well as placing the reference point and imposing homogeneity, *te-iru* does not. *Te-iru*, therefore, does not add anything to the structure and would be redundant, accounting for why it is almost never used with states. Tsujimura (ms, 3), however, points out an example when *te-iru* is acceptable:
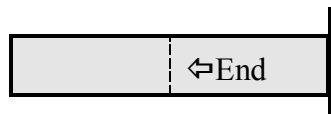
(31)   *Taroo-ga   kyoo-no   tesusto-ga yoku   dekite-iru.*

        Taro-Nom   today-Gen test-Nom   well   is being competent

        'Taro did well in today's test.'

Within the model presented, the sentence in (31) would have a structure as in (32).

(32)

⇦End

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Because the interval over which Taro was competent ended and the reference point is placed after that end point by context, *te-iru* is acceptable because it *does* provide new information.

With *have-en*'s interaction with states and activities, we saw that the reference point could be placed in two different positions relative to the end point of the nucleus. In Japanese, the same possibility exists not only with states and activities, but also with accomplishments, since *te-iru* is always attached to a start point. The two structures possible for both activities and achievements are diagrammed in (33).

(33) a.

| O	N	End⇨

b.

O	N	⇦End
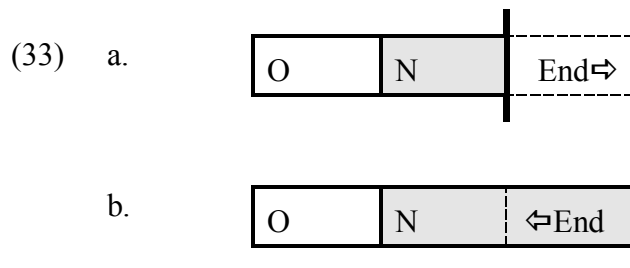
As with English, the placement of the reference point with respect to the end point is determined by context and other cues like adverbs. (33a) is most similar to the structure of *be-ing* — the reference point is within the nucleus — and so would be translated with a verb in the *be-ing* form in English. (33b), on the other hand, is more similar to *have-en* and would, thus, be translated using that verb form.

This predicts that Japanese accomplishments and achievements behave similarly;

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indeed, Kindaichi's (1950) classification of Japanese verbs that was based primarily on the verbs' usage with *te-iru* conflates the two categories (Tsujimura (1996, 314-15)).

Finally, the *be-ing* translations of (30d) are excluded as possible interpretations because, as can been seen in (34), the reference point can never be placed before the end point of the nucleus. Since the nuclei of achievements are punctual, the start point and end point are simultaneous and *te-iru* places the reference point after both.

(34)

O	⇦N
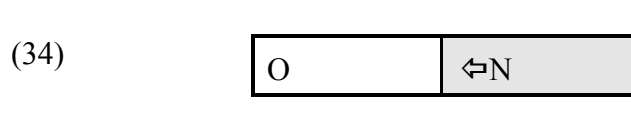
4. Conclusion

This paper argues that there exists a semantic domain of "homogeneous events" that includes states and *be-ing*, *have-en*, and *te-iru* inflected verbs. This accounts for the similarity that allows *te-iru* to be translated by a variety of very distinct forms in English and vice versa. The meanings of each form were distilled from their ranges of usage and simply defined in terms of event structure. The complexity of interpretations possible using these forms was shown to be a natural product of the interaction between the inherent structure of verbs and the structure contributed by

the verb inflection.   Furthermore, the resultant structures of these interactions accurately predict the grammaticality and ungrammaticality of the data.

Many predictions are implicit in this analysis. For example, this analysis implies that in translation, forms may vary somewhat arbitrarily within the domain of homogeneous events, but that a homogenous event in one language would not be translated as a non-homogeneous event in another. This seems to be borne out in Japanese and English; however, it would be elucidating to test this hypothesis with a great many more languages. This would also test the implicit assumption that homogeneous events are a universal phenomenon.

This paper was constrained to an analysis of homogeneous events without much speculation on the nature of non-homogeneous events, although their existence is implied. The nature of "heterogeneous events" is an interesting avenue for further study.

The "bottom-up" approach advocated here has more power to describe cross-linguistic variation of similar forms and is generalizable to other phenomena. It places emphasis on examining the common features of a range of uses of a form and determining a meaning from that examination. Not only does this provide a simpler characterization, it also helps avoid influences from the analyses of other languages and persistent notions ingrained by centuries of linguistic thought.

Notes

1. *iru* is the non-past form of the verb and the form that will most often be referred to in this paper. Additionally, *-te* sometimes undergoes a phonological transformation to *-de*, depending on environment.

2. The primary difference is another proposed category of state-like verbs in Japanese that are called simply, "Type 4" (Tsujimura (1996, 314)). These verbs are exceptional in that they *must* be used only in the *te-iru* form. However, the fact that such verbs *also* appear to exist in English (but are usually deemed adjectival constructions) seems to be ignored — *to be outstanding* is an example. The nature of these verbs in either language is not clearly understood and they seem to necessitate a reworking of Aristotelian categories, but do not preclude their universiality.

3. Mufwene (1984) provides a detailed discussion of this phenomenon.

Reference

Binnick, Robert (1991) *Time and the Verb*, Cambridge University Press, Cambridge.

Botne, Robert (1983) "On the Notion 'Inchoative Verb' in Kinyarwanda," in F. Jouannet (ed.), *Le Kinyarwanda, Langue Bantu du Rwanda: Études Linguistiques*, pp. 149-178.

Comrie, Bernard (1976) *Aspect*, Cambridge University Press, Cambridge.

Freed, Alice (1976) *The Semantics of English Aspectual Complementation,* Ph.D. dissertation, University of Pennsylvania.

Galton, Antony (1984) *The Logic of Aspect*, Clarendon, Oxford.

Kindaichi, Haruhiko (1950) "Kokugo Dooshi no Ichibunrui" [Classification of Japanese Verbs], *Gengo Kenkyuu* 15, 48-63.

Mufwene, Salikoko (1984) *Stativity and the Progressive*, Indiana University Linguistics Club, Bloomington.

Ogihara, Toshiyuki (1998) "The Ambiguity of the -te iru Form in Japanese," *Journal of East Asian Linguistics* 7(2), pp. 87-120.

Reichenbach, Hans (1947) *Elements of Symbolic Logic*, Collier-Macmillan, New York.

Soga, Matsuo (1983) *Tense and Aspect in Modern Colloquial Japanese*, University of British Columbia Press, Vancouver.

Suzuki, Takashi (1996) "The Progressive in English and Japanese," *Language Sciences* 18, No. 1-2, pp. 265-275.

Tsujimura, Natsuko (1996) *Introduction to Japanese Linguistics*, Blackwell, Cambridge.

Tsujimura, Natsuko (ms.) "Typology of Stativity in Japanese."

Vendler, Zeno (1967) *Linguistics and Philosophy*, Cornell University Press, Ithaca.