The Aspectual Structure of
the English Sentence

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What have traditionally been called the "tenses of verbs" are morphological realizations of a few different, but related, semantic functions. Aspect is one of these functions; aspect is a realm of meaning which often "surfaces" in verb inflections. Yet contrary to what has hitherto been written about aspect, aspectual meanings are involved in all areas of sentence grammar. Aspect goes much deeper than verb morphology; it is a semantic category which can only be accurately described by analyzing other sentence constituents as well.

Before discussing the aspectual structure of the sentence, it is necessary first to define the word *aspect*, and to distinguish it from its usual companion, *tense*. I take *tense* as a cover term for morphemes and morphological patterns which perform the semantic function of *time reference*. Time reference can best be described as the "location" or locating of a temporal "thing" in the sequential order which we customarily call *time*. By "temporal 'thing,'" I mean any kind of event, act, activity, process, state, arising, or other temporal phenomenon which can be thought of as having a distinct identity. I must use the word "thing" in quotation marks because the moment that we characterize any temporal arising as an event, activity, or anything else, we enter the semantic domain of aspect. *Aspect*, to put it simply, is the name for the function
of discriminating the kinds of temporal "things" which may be (linguistically) "located" in the sequential order of time.

Hans Reichenbach has described time reference diagrammatically. Aspect may be further distinguished from time reference by introducing his pictorial symbolism. To represent time we use a solid line with an arrowhead at the right end:

The unbrokenness of the line represents our sense that time is perfectly continuous, and the arrowhead represents our sense that this continuum is directional.

Reichenbach defines three points on this directional continuum, only two of which we shall use for the moment. The first is the point of speech, which Reichenbach represents symbolically with an S. The second is the point of reference, the time which is "being talked about" in the given utterance. This is represented symbolically with an R. Using these two points and the directional line, one may describe the simple tenses diagrammatically. This is possible because we stipulate that the point of reference (R) is always located relative to the point of speech (S). This stipulation, built into the symbolism, seems to correspond to the semantic facts of language: we have no linguistic way of "locating" events (etc.) in time without reference to the speech act—except for overt reference to some absolute time-frame, like the calendar (e.g., on June 22). The moment of utterance is the temporal anchorage for the verb tenses of English. The simple past tense, for example, would be represented as follows:

\[ \begin{array}{c}
R \\
\hline
(1) \\
S \\
\hline
\end{array} \rightarrow \\
\text{He fainted.} \]
S represents the time at which the meaning of the sentence, *He fainted*, is communicated, and R represents the time of "his" fainting, which is "located" at a point prior to S in the temporal continuum.

Reichenbach's symbolic apparatus is admirably elegant, regarded simply as a means of describing time reference in English, but he does not discuss aspect at all, so some modifications are necessary. A single example will suffice at present. This example involves the third point on Reichenbach's line, which he calls the *point of the event*, and which he represents with an E. This additional point is needed to describe the time-reference function of the "complex tenses." Such is the case with the past perfect:

\[
\begin{array}{c}
E \\
\hline
R \quad S
\end{array}
\]

(2) He had fainted.

E represents the "event" of "his" fainting, which is understood as having occurred prior to the "time being talked about," which is, in turn, prior to the moment of speech (S). Hence this diagram represents the sequential relations of the semantic constituents of the predicate. But it is the aspectual character of the verb *faint* which makes point E seem to be an appropriate and sufficient descriptive symbol. *Fainting* is something we think of as "happening" and, furthermore, as happening at a "point" in time. The Reichenbachian apparatus is incapable of representing the temporal signification of perfects which are formed with verbs which are inherently stative:

(3) He had been there for a while.

The past-tense point of reference (R) for this sentence is obviously equivalent (given an equivalent context) to that for sentence (2) above. But the kind of temporal "thing" which is "located" relative to that
point \( R \) is rather different, and Reichenbach's "point of the event" is inadequate for its description. A tentative proposal would represent perfects using an additional, superimposed solid line:

\[ \text{"E" } \overbrace{\ldots}^{R} \text{ S} \]

(3) He had been there for a while.

I shall elaborate on this kind of proposal shortly.\(^3\)

1. Background Framework

It may be helpful to know the larger framework into which I intend the succeeding remarks about aspect to fit. I would offer the following formula for the primary semantic categories of any given utterance:

\[ F(p) \]

The reader may recognize this formula as a borrowing from John Searle, who explains that "the variable 'F' takes illocutionary force indicating devices as values and 'p' takes expressions for propositions."\(^4\) Illocutionary force is a semantic category which subsumes many of the semantic factors which have traditionally been ascribed to "mood," and also the "performative" meanings which are familiar from the work of J. L. Austin and others, including Searle. The illocutionary force of an utterance is, roughly, the pragmatic force which its speaker intends it to have. The "proposition" is the nonpragmatic "idea" advanced, normally in the form of a grammatical sentence or embedded sentence.

The relation between \( F \) and \( p \) is not meant to be one of predication, at least not in the usual logical sense. It is rather a relation of "operator" to "complement," where both are prime elements.\(^5\) Thus, when one says "I promise that I'll come," the words I promise are the explicit
manifestation of the illocutionary force of the utterance (under normal conditions), and that I'll come is the "content" of the promise. If the type of illocutionary act performed in promising may be described as commissive, the "commitment" must of necessity be to the performance of an act.\textsuperscript{6} If, on the other hand, there is a kind of illocutionary act which is aptly entitled expressive, the content "expressed" is normally a state, thus: I feel great. One cannot "express" an act: *I feel going on a walk?*

Time reference and aspect are elements of (\(\phi\)). It has been amply demonstrated that the form and content of (\(\phi\)) are strongly influenced by the nature of \(F.\)\textsuperscript{8} The same is true of time reference and aspect. The classic example concerns the distinction between the time from and including "now" and the time before "now." One simply cannot promise to come yesterday. Similarly, one cannot express a feeling one had or will have but does not now have.\textsuperscript{9} As is evident from any thorough consideration of the English verb,\textsuperscript{10} there is a fundamental semantic interplay between the illocutionary force of utterances and the tense and aspect of the propositions which belong to those utterances.

Time reference and aspect are elemental, or primary, constituents of (\(\phi\)) because it is impossible to describe them at all accurately without taking the structure of the entire sentence into consideration. If the semantic descriptions of syntactical subjects, objects, and adverbial phrases are criterial in the determination of the aspect and the temporal reference of a sentence, then we must consider time reference and aspect as semantic categories of the entire proposition, categories which somehow subsume or govern noun phrases and adverbial phrases as parts of their semantic "constituency." Furthermore, it may be that time reference
and aspect are necessary elements of (p); it is not clear whether every utterance "has tense" and "has aspect," though certainly most do.

2. Aspect and the Structure of the Sentence

The term *aspect* acquired its first prominence among comparative linguists of the nineteenth century. They used it as a generic name for the kind of semantic functions performed by certain parts of Slavic verb morphology, and the same semantic functions were thought by many to operate in the verb systems of other languages, such as Greek and Latin. As a result, the semantic functions covered by this term have been thought to devolve upon the verb in English, and until very recently, only in the verb or verb construction have they been sought. Linguistic philosophers of the twentieth century have quite correctly pointed out that English verbs seem to fall into aspectual classes. The philosophers do not usually use the word "aspect," but their classifications of English predicates into "activities," "states," "performances," and so on, correspond to aspectual distinctions. My purpose here is to demonstrate that an exclusive focus on the verb in aspectual studies is a mistaken approach and to formulate a terminology and theoretical apparatus which is consistent with the underlying semantic structures of the "aspects."

If we look at sets of sentences like the following, aspect does indeed seem to be a category of the lexical semantics of English verbs:

(4) He fainted.
(5) He was sick.
(6) He walked.

That is, the sentences differ only in their predicates, and these are, with the exception of the verb-adjective combination *was sick*, exclusively
verbs. And the sentences do differ semantically in their aspect: (4) predicates something like a “happening” or an “event,” (5) predicates a “state,” and (6) predicates an “activity.” Or to use the linguist’s rather than the philosopher’s terminology, (4) is “punctual” or “perfective,” (5) is “stative,” and (6) is “durative” or “imperfective.” But if we compare sentences in which the verb is the same but other constituents differ, we can find many cases where aspectual distinctions are not effected by the verb:

(7) He read a book.
(8) He read books.

The first of these sentences is (without any other context or qualification) understood to denote a single complete “event” or “act.” The second, however, though the verb is the same, clearly denotes an “activity” or random “process.” The latter pair of sentences is enough by itself to show that aspect cannot be considered as an exclusively verbal domain.

2. 1

Let us assume that there are two basic elements to our temporal universe—STATE and CHANGE OF STATE. These must be understood as entirely distinct, mutually exclusive categories. STATE stands for the complete absence of change, and is the temporal category for the simple existence of qualities and objects. In this special sense of STATE, if a given STATE consists of a certain quality or conglomerate of qualities, this STATE does not change when its constituent qualities change, it disappears altogether, and a new STATE takes its place. The qualities in which the first STATE consisted are now different, so a new STATE has been born. CHANGE OF STATE is considered to be the abstract temporal “divider” between two such STATES. While STATE is distin-
guished by the complete absence of change, CHANGE OF STATE comprehends only change. It is a purely semantic category, and need not correspond to anything in the "real world." Just as it is difficult to find in the "real world" a state which does not somehow change, it is difficult to locate in the "real world" the exact instant of change from one presumably coherent state of affairs to another. STATE and CHANGE OF STATE are names for semantic categories of natural language, nothing more.

Now the end of any STATE is obviously a CHANGE of that STATE, hence we must say that such STATES as these are "endless"—any temporal delimitation of them must be external to the STATE itself. In the same spirit, STATES may be understood to have duration, while CHANGES may not. Thus a STATE may be represented in a pictorial manner as a line with indefinite ends, implying that it has duration:

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And to indicate its contrary function in the temporal continuum, CHANGE OF STATE may be pictured as a slash through the time-line:

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|------------------|-----|
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The CHANGE from any one STATE to another is then to be represented on the time-line thus:

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|------------------|-----|
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We have now established our two essential categories. They are the building blocks for all aspectual categories. Yet there is a composite category which is also somehow "basic," or at any rate so important that we dare not neglect it at this point. Clearly there is a kind of temporal phenomenon in our linguistic universe which has both change and duration; it is usually called "activity," or something similar. Inasmuch as one of our primary categories comprehends change, or abstract
conceptual "motion," and the other comprehends duration, it seems appropriate to combine them to represent "durative change."

In this diagram the solid and endless line of STATE represents the fact that we give conceptual unity and continuity to an "activity," and its superimposition on the time-line represents the fact that we give it duration in time. The innumerable slashes represent the fact that we consider "activity" to consist wholly of "motion," or change, and they are innumerable because we are often incapable of exactly specifying what "acts" the "activity" consists of, so we cannot count them. But we do know that if we could specify them, we could do so in a temporal sequence, corresponding to the duration of the STATIC component.

There is no good term for this composite semantic category. "Activity" suggests agency, but agency _per se_ is not an aspectual feature, and is certainly not present in all occurrences of this basic category. "Process" is a good term if considered as a mass noun, but the moment we add an _a_ to it, as we often feel the (stylistic) need to do, it immediately acquires a "unitary" sense implying beginning, middle, and completion. I shall arbitrarily adopt the term PROCESS to cover the composite category, but when in the following pages I say that some sentence has "process aspect" or predicates "a process," I intend none of the implications which the word has for beginnings and ends. I intend the descriptive term "process" and the feature label PROCESS both to denote only indefinite "goings-on."

2. 2

There are a few conventional tests for aspect.¹⁴ Predicates which fit
reasonably into the formula *It took X time to*…… or which can reasonably be modified by *in X time* have been called “accomplishments,” “achievements,” “performances,” “acts,” “events,” and so on. Most importantly: any time a proposition may occur grammatically and non-anomalously in these contexts, it represents the completion of something involving change:

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It took him four hours to paint the house.
He painted the house in four hours.
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It is this quality of completion which caused linguists to use the term “perfective” to describe the aspect of verbs (and verb inflections or derivations) which seemed to have the same quality. A verb like *finish* is “perfective” in this sense; *finish* easily occurs in the above contexts:

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It took him four hours to finish.
He finished in four hours.
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This is not at all the case with a verb like *tremble*:

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*It took him four hours to tremble.
*He trembled in four hours.
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Nor is it the case with a verb like *be*:

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*It took him four hours to be sick.
*He was sick in four hours.16
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The temporal phenomenon which is normally represented by *tremble* would be described by linguistic philosophers as an “activity,” and that which is normally represented by *be* as a “state.”

“States” have been shown to be incompatible with the progressive construction:

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*He is being sick.
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Neither “activities” nor perfective predicates are incompatible with it,
however:

He is trembling.
He is finishing.

*Be + -ing is thus only compatible with predicates which comprehend some kind of CHANGE.

A few prepositions, on the other hand, draw the line between predicates which have duration and those which do not, with or without CHANGE. Hence these prepositions are compatible with predicates which represent STATES or PROCESSES, and not with those which represent simple CHANGE (i.e., perfective predicates):

  He was sick for 2 hours.
  He trembled for 2 hours.
  *He finished for 2 hours.
  He was sick until 2 o’clock.
  He trembled until 2 o’clock.
  *He finished until 2 o’clock.

*For phrases delimit the duration covered by the temporal phenomenon signified by the predicate. Therefore they are only compatible with predicates which admit of a durative interpretation. *Until phrases (or clauses) specify the end point of a duration, so they too are only compatible with predicates which admit of a durative interpretation. *Until may be contrasted with by, which marks the end point of a duration during which some single CHANGE must be completed—a semantic “deadline” as it were:

  *He was sick by 2 o’clock.\textsuperscript{17}
  *He trembled by 2 o’clock.
  He finished by 2 o’clock.
Non-native speakers of English often confuse *by* and *until*, and it is ignorance of this distinction that causes the confusion. I have by no means presented the spectrum of aspectual tests which have been used, but these are sufficient for our present purposes.

3. Aspectual Features of Verbs

In applying these tests to sentences, we are heading in two directions at once: we are testing and more accurately defining the old notion that aspect has something to do with verbs, and we are extending the range of relevant phenomena into other parts of sentence grammar. Consider the predicates of the following sentences:

(9) Satan is among the Reprobate.

(10) Satan fainted.

(11) Satan wept.

(12) His tears fell incessant.\(^\text{18}\)

Intuitively, we would describe the temporal phenomenon predicated in (9) as a state, that which is predicated in (10) as a single event, and both (11) and (12) seem to predicate activities. These intuitive differences seem to be effected by the semantic structures of the lexical verbs themselves. For (10) and (11) differ only in the verb, and yet one predicates an event and the other an activity. If either *fainted* or *wept* were substituted into (9), they would change its aspectual denotation to an event sense and an activity sense, respectively. Moreover, *be* has long been considered essentially stative, and the prepositional phrase which follows *is* we will temporarily consider irrelevant with respect to the aspect of the proposition.

Thus in each of (9), (10) and (11), it is the semantic structure of the
lexical verb which is responsible for the aspect of the proposition. This is not the case with (12), however. Sentences (11) and (12) seem to have equivalent aspects, in that both of them predicate indefinite and continuous ongoingness—an aspect which would seem on intuitive grounds to be appropriately pictured by our PROCESS diagram:

But if it is the aspectual qualities of verbs we are concerned with, we must assure ourselves that the verbs of (11) and (12) consistently denote PROCESS. In other environments, the lexical verb fall seems to change its aspectual denotation. Fall is used above in the predication of an activity (PROCESS), but it can also be used in the predication of a single event (CHANGE):

(13) A tear fell.

Weep, however, cannot be used in the predication of a single CHANGE. The way to demonstrate this is by checking its compatibility with in X time. Fall is compatible with this formula; weep is not:

(14) The tear fell in 5 seconds.

(15) Satan wept in 5 seconds.

Sentence (15) can only be an acceptable sentence if we interpret it not as predicating a single activity (as weep does in (11)), but as meaning something like “Satan started weeping after 5 seconds.” Otherwise, (15) is not acceptable. We have discovered a context which requires that we distinguish fall and weep as aspectual types of lexical verbs. The aspectual synonymy of (11) and (12) will have to be accounted for in some other way. It could easily have something to do with the other constituents of (12), and we shall soon see that it does.

Fall must also be distinguished from faint, for we have now discovered
that both can be used in the predication of single CHANGES:

(10) Satan fainted.

(13) A tear fell.

These two verbs can be distinguished by using any one of our tests for duration, for it is on this factor that they differ. As we saw above, for phrases are only compatible with predicates denoting STATES or PROCESSES:

(16) *Satan fainted for hours.

(17) Satan fell for hours.

This kind of test shows us that faint can never be used to predicate a continuous process, but fall can. Sentence (16) cannot be a good sentence unless it is interpreted to mean that “Satan fainted” repeatedly within the extent specified by the for phrase. It is thus not a continuous process. Sentence (17), however, is taken naturally to mean that “Satan fell” continually, that is, “without hitting bottom.” This distinction between continuous and repetitive PROCESS is one which we shall find again and again. In (16), a sentence constituent outside the lexical verb has “imposed” duration on the predicate. For hours, by specifying the extent of the duration, forces us as hearers to interpret faint duratively. This is only mentally possible by multiplying putative “fainting” indefinitely, thus “filling up” the duration. Such a mental adjustment conforms to the proposed conceptual structure for PROCESS, in which duration is “spanned” by indefinitely many CHANGES:

The fact that (16) can only be interpreted repetitively (“iteratively,” in the traditional terminology) shows us that the lexical verb faint somehow
"contains" the single CHANGE which it predicates in a sentence like (10)—Satan fainted. Fall, by contrast, may participate in the predication of continuous PROCESS, so it does not contain the same kind of discrete CHANGE in its semantic description.

Fall can be used in the predication of either a continuous process or a single event, which is true of neither faint nor weep. And we already showed that the latter two are aspectually distinct. These three, then, represent distinct aspectual classes of lexical verbs. Along with state verbs, we shall take them to represent the complete spectrum of aspectual classes of verbs in English. If we mark verbs like be with a feature STATE corresponding to the semantic category, verbs like faint seem to call for an aspectual marking which corresponds to the category CHANGE OF STATE. But in order to distinguish verbs like faint, which always predicate complete, single CHANGES (or multiples thereof), from verbs like fall, we must mark the former as verbs of DEFINITE CHANGE. Verbs like fall, though they always predicate change, are in every case dependent on their semantic environment for the further distinction between a single CHANGE and a PROCESS reading. They are therefore best marked as verbs of INDEFINITE CHANGE.

Sentences which contain verbs like weep always predicate PROCESS; they must be marked accordingly. As observed above, PROCESS consists of the interaction of STATE and CHANGE OF STATE—we symbolized this interaction with an indefinite repetition of slashes through a solid line. Inasmuch as sentences (11) and (12) are equivalent in aspect, the activity of weeping can be considered to consist of an indefinite repetition of "tear-falls:"

(11) Satan wept.
His tears fell incessant.

I do not mean this in a literal way, of course. Nonetheless, a "tear-fall" is a discrete CHANGE OF STATE, as indicated by (13)—A *tear fell*. Therefore the aspect of (12), and with it the aspect of (11), is conceptually equivalent to an indefinite repetition of single CHANGES OF STATE.

This conceptual schema is appealing, but it is difficult to determine whether *weep* as it occurs in sentences like (11) actually conveys the sense of innumerable discrete CHANGES. We know that "activity" somehow "consists" of "acts," but how it does is a mysterious matter. *Breathe* seems naturally to break down into indefinitely many "breaths," but verbs like *wait* and *weep* are not so easily decomposed. Such verbs may force us to allow for a distinction between verbs of continuous PROCESS and verbs of repetitive PROCESS. Indeed, considered in the light of a parallel but non-lexical distinction between PROCESS predications with verbs of INDEFINITE CHANGE and PROCESS predications with verbs of DEFINITE CHANGE, as outlined above (*Satan fell for hours* vs. *Satan fainted for hours*), such a distinction may turn out to be quite useful. PROCESS is a highly abstract feature; the "decomposability" of certain verbs may finally be a result of arbitrary historical facts, as are in evidence in the surface forms *breathe* and *breath*.

We have, then, four basic lexical feature markings:

- *be* 
  STATE verbs
- *weep* 
  PROCESS verbs
- *fall* 
  verbs of INDEFINITE CHANGE
- *faint* 
  verbs of DEFINITE CHANGE
4. The Aspectual Status of Noun Phrases

It is clear from the sentences above containing *fall* that aspect involves more than the lexical verb. It is clear, furthermore, that the semantic structure of a noun phrase can be the decisive element in the aspectual denotation of a sentence:

(18) He moved a box into the room.
(19) He moved boxes into the room.

Sentence (18) can only be understood as a single CHANGE; (19) can only be understood as a repetitive PROCESS. Yet the only difference between them is in the number of the direct object noun phrase. The distinction can be confirmed by applying the conventional tests:

(18') *He moved a box into the room for hours.
(19') He moved boxes into the room for hours.
(18'') It took him hours to move a box into the room.
(19'') *It took him hours to move boxes into the room.

The semantic structure of noun phrases is thus relevant to the determination of the aspect of sentences. But this is not the case with every noun phrase. Consider the following sentences:

(20) He had a box in his garage.
(21) He had boxes in his garage.

Sentence (20) predicates a state, and altering the number of the direct object noun phrase does not change this fact, as (21) shows. It remains, then, to determine which noun phrases are aspectually relevant, and why.

Following H. J. Verkuyl, I assume that every verb of CHANGE has a semantic axis change. For verbs of motion (*move, go, enter, walk, fall*, etc.), the axis is spatial. For verbs of construction (*make, build,*)
*knit, write, etc.*), the axis is the coming into existence of the entity constructed. For verbs of destruction (*eat, drink, destroy, etc.*), the axis is the going out of existence of the entity destroyed. For verbs of performance (*play, perform, say, hear, read, etc.*—not to be confused with "performative verbs"), the axis of change is the time axis itself, onto which abstract, linearly-structured units like symphonies and plays may be mapped. Other verbs have different axes of change (consider verbs of change in color, like *darken*, or verbs of change in shape or texture like *break*). The axis of change allows us to linearize the change inherent to all verbs of CHANGE and thereby to compare them systematically.

It is an inherent part of such a semantic framework that for every sentence predicking a CHANGE, there is an entity which undergoes the CHANGE. Clearly, the entity which undergoes the CHANGE signified by the verb can be either the subject or the direct object:

He moved it.

It moved.

Let us call the entity which undergoes CHANGE the *object of change.*

In every case, the semantic structure of the object of change is aspectually relevant. Altering the semantic structure of the direct object in (20) and (21) has no effect on the aspect of the sentence; the direct object of a STATE verb cannot be an object of change, since no CHANGE is predicated in such sentences:

(20) He had a box in his garage.
(21) He had boxes in his garage.
(22) He had the measles.
(23) They had the measles.
The same is true for the subjects of STATE verbs, as (22) and (23) show.

As will be evident shortly, the object of change must be a "definite quantity" for any CHANGE to be single, to be felt as an "event." But the CHANGE itself must also be specified as a DEFINITE CHANGE, a complete CHANGE. The nature of the CHANGE depends on the axis of change for the given verb; we may exemplify what is meant by "complete CHANGE" with a verb of motion:

It moved to Y.
He moved it to Y.

In both of these sentences, "it" is understood to have undergone a complete change of location, from some presupposed original location to the location specified as "Y." The axis of change is equivalent to the spatial line along which the distance between the original location and the location "Y" lies. Within the same scheme, any movement which does not reach "Y" is not a complete CHANGE:

It moved toward Y for hours.

The end point which we are calling "Y" is thus the point, the reaching or crossing of which, constitutes a complete CHANGE. Move is a verb of INDEFINITE CHANGE and therefore requires some sort of extra specification of the point of completion in order to predicate a complete CHANGE. Verbs of DEFINITE CHANGE, however, do not require an external specification of this kind. Enter, for example, is a verb of motion which does not:

(24) He entered the house.
(25') He went into the house.
(25'') He came into the house.
Sentences (25') and (25'') are two possible paraphrases of (24), depending on the perspective taken by the speaker or hearer of (24). All three convey the idea of a complete CHANGE of "his" location from outside to inside "the house." In (25') and (25''), the fact that a point of completion has been crossed is indicated by the prepositional phrase with into—it represents, as it were, the mental "threshold" of the CHANGE. The verb enter is a verb of DEFINITE CHANGE because it incorporates this point of completion covertly, in its own semantic structure as a lexical verb.

Now let us consider different kinds of noun phrases. Consider the following set of sentences, in which the noun phrases containing box represent the object of change:

(26) He moved a box into the house.
(27) He moved boxes into the house.
(28) He moved six boxes into the house.

I have said that in order for a sentence to predicate an "event," a definite quantity must undergo a complete CHANGE. The point of completion for the movements predicated in these sentences is represented by the prepositional phrase, into the house. So in each case, according to what we have established, a DEFINITE CHANGE is predicated, though the lexical verb is a verb of INDEFINITE CHANGE. In (26), the object of change is represented by the noun phrase a box. A box, because it is singular, represents a "definite quantity," And (26) as a whole accordingly predicates a single, complete "event." Sentence (27), however, predicates an "activity," because the quantity represented by the direct object is indefinite. Indefinite plurals in the object of change force a reading of indefinite repetition, that is, of PROCESS. Notice
that (28) also generates a repetition, corresponding to the plurality of its
direct object, but it is a repetition which is definitely delimited by the
definite number of the object of change—*six*. Sentence (28) thus predi-
cates a single, complete “event” in the same way that (26) does. The
two are equivalent in aspect, as can be shown by one of the conventional
tests:

(26') It took him an hour to move a box into the house.
(27') *It took him an hour to move boxes into the house.
(28') It took him an hour to move six boxes into the house.

Hence, if the object of change is a definite amount, whether this amount
is singular or plural, the CHANGE predicated by the sentence is single
and complete. Indefinite plurals fail to satisfy this requirement and con-
sequently force a PROCESS interpretation.

Mass nouns, inasmuch as they are uncountable, force a PROCESS
interpretation too. The distinction between mass nouns and count nouns
closely parallels the distinction between INDEFINITE and DEFINITE
CHANGE, or between activities and acts, or processes and events. Count
nouns represent discrete units, and mass nouns are undifferentiated. *Box*
is a count noun, *luggage* a mass noun. When we represent the object
of change with a mass noun, the CHANGE is left incomplete:

(26) He moved a box into the house.
(29) He moved luggage into the house.

The conventional tests once more confirm the difference in aspects:

(26'') *He moved a box into the house for hours.
(29') He moved luggage into the house for hours.

We had best be careful how we mean the phrase “definite quantity,”
as a semantic criterion for aspect. *Some* is usually considered a marker
for indefiniteness, and yet *some* can effect the predication of a complete CHANGE:

(30) He moved some boxes into the house.
(30') *He moved some boxes into the house for hours.
(30'') It took him hours to move some boxes into the house.

The aspect of (30) is clearly that of a single, completed CHANGE, and the tests confirm this, as in (30') and (30''). Thus *some*, though it does not specify the amount of the quantity represented by the noun it modifies, certainly specifies that the noun it modifies represents a quantity with *definite*, though unspecified, bounds. It has the same aspectual effect as a word which specifies the exact amount, like *six*. This fact neatly corresponds to the usual translation of the historical ancestor of *some*: Old English *sum* is usually translated as "a certain;" the aspect of (30) would be the same if we changed *some* to *a certain number of*.

Definite quantity, in the sense we intend, also seems to be entailed by any definite reference. Any kind of noun, whether singular, plural or mass, will effect the predication of an "event" if preceded by *the*:

(31) He moved the box into the house.
(32) He moved the boxes into the house.
(33) He moved the luggage into the house.

Each of these sentences predicates a single, complete CHANGE; a definite quantity is moved across the threshold in each case. The intuitive evidence should be sufficient, but the tests confirm it:

(31') *He moved the box into the house for hours.
(32') *He moved the boxes into the house for hours.
(33') *He moved the luggage into the house for hours.
(31'') It took him hours to move the box into the house.
(32′′) It took him hours to move the boxes into the house.

(33′′) It took him hours to move the luggage into the house.

The same aspectual effect results from any other kind of definite reference. Consider for example the use of a proper noun in the object of change:

(34) He moved Grandma into the house (*for hours).

It seems that definite reference presupposes that the entity referred to is a discrete amount, with "definite" bounds as well as "definite" identity.23

For a sentence to predicate a single, complete CHANGE, then, the object of change must be a definite quantity. A definite quantity may be represented in surface form by a definite noun phrase, a singular indefinite noun phrase, or a noun phrase with a word specifying a definite amount, whether a number word or a word like some. Indefinite plurals and indefinite mass nouns are indefinite in quantity.

These conditions hold whether the object of change is in the subject position or the object position:

(35) *A tree fell for hours.

(36) Trees fell for hours.

(37) *He felled a tree for hours.

(38) He felled trees for hours.

The surface verb fell is taken here to be appropriately paraphrased as "make fall," so that the CHANGE which is predicated of the trees in (37) and (38) is the same as is predicated of them in (35) and (36). And in both sets of sentences, where the object of change is indefinite in quantity, it is compatible with for hours. Where the object of change is of definite quantity, as in (35) and (37), the aspect of the proposition
is perfective and therefore incompatible with such specification.

The same conditions hold for other types of CHANGE. *Make*, for instance, is a verb of construction; its axis of change is the coming into existence of the entity constructed. Such verbs are always verbs of DEFINITE CHANGE, since the coming-into-existence of anything is necessarily a complete CHANGE. But an indefinite mass noun in the noun phrase representing the object of change will generate indefinite repetition, and with it a PROCESS interpretation:

\[
\begin{align*}
(39) & \quad *\text{He made a pie for hours.} \\
(40) & \quad \text{He made pies for hours.} \\
(41) & \quad \text{He made pie for hours.}
\end{align*}
\]

*Pie* is a good test case, for it can be either mass or count. The sentences differ only in the number and definiteness of the objects, and the conditions on the object of change apply here as above.

The situation is the same with verbs of destruction. They are verbs of DEFINITE CHANGE for which the axis of change is the going out of existence of the entity destroyed. *Eat* is an example, though not usually thought of as a verb of "destruction:"

\[
\begin{align*}
(42) & \quad *\text{He ate a pie for hours.} \\
(43) & \quad \text{He ate pies for hours.} \\
(44) & \quad \text{He ate pie for hours.}
\end{align*}
\]

With indefinite masses and indefinite plurals, the object of change is not a discrete unit and so can never in its entirety cross the point of completion on the axis of change. Insofar as the object of the CHANGE is indefinite in extent, the duration of the CHANGE is necessarily indefinite no matter what the CHANGE consists of. Consider finally verbs of performance:
(45) *He played the sonata for hours.
(46) He played sonatas for hours.
(47) He played music for hours.

Sentence (45) is not ungrammatical, nor anomalous. But it is only interpreted to mean that "he" played the same "sonata" repeatedly, to fill up the duration of _for hours_. In (46) the same repetition consists of the playing of _different_ "sonatas." And in (47) there is no division of the mass of music at all. In all three cases, the temporal phenomenon predicated is an indefinitely-long activity, as it must be if it can be, given the presence of the durative phrase, _for hours_. Without this phrase, the aspectual difference effected by the different noun phrases is readily apparent:

(48) He played the sonata.
(49) He played sonatas.
(50) He played music.

Verbs of performance get their name from verbs like _play_ and _perform_, which involve the mapping of an "abstract linearly-structured object" onto the time axis. If the object is unitary, then a single DEFINITE CHANGE is predicated; if it is of indefinite quantity, then a PROCESS reading results, as with other types of CHANGE.

The semantic structure of the object of change is always criterial in the determination of aspect, but there are also cases where the semantic structure of a noun phrase is aspectually criterial, although the noun phrase in question does not represent the object of change. Take _enter_, for example:

(51) *He entered the house for hours.
(52) He entered houses for hours.
It is clear that the object of the change in location in (52) is not the "houses," but rather "He." Yet the indefiniteness of houses seems to be the factor which forces a PROCESS interpretation. Whatever semantic status we assign to the direct objects of verbs like enter, the reason for the direct object's aspecual relevance is easily understood: the multiplication of "houses" multiplies indefinitely the number of points of completion which must be crossed on the axis of change.

Since the point of completion is part of the predication in (52), the CHANGE is necessarily DEFINITE. When the point of completion is indefinitely "multiplied," the PROCESS which results is correspondingly repetitive. This is not the case when no point of completion is present in the predication. Thus when we modify move, a verb of INDEFINITE CHANGE, by for hours, the result is a continuous PROCESS rather than a repetitive one, unless the point of completion is present in the form of a preposition or adverb like into, out of, over, etc. The same repetitive kind of PROCESS results when the object of change is a count noun, in sentences with verbs of construction, destruction or performance. Playing sonatas is a repetitive PROCESS; playing music is not. Making pies and eating them are repetitive PROCESSES, but making pie and eating it are not.

5. The Aspecual Status of Prepositions

"Adverbial particles" like up and out in verb-particle combinations like get up and stretch out have long been thought of as aspecual particles. But as we have seen, regular prepositions (which cannot be postponed like out in He stretched it out27) also have aspecual importance. Into, for example, is always perfective. That is, the split second that
we hear a speaker say "into," we know that there is a semantic point of completion with respect to some CHANGE—regardless of the semantic structure of the object of the preposition. This is not the case with its near-synonym, in. We can say both He went into the house and He went in the house, and the aspectual import is in both cases that of a DEFINITE CHANGE of location. But with verbs of PROCESS, the difference in prepositions is critical: He walked into the forest (*for hours); He walked in the forest (for hours). Moreover, in is compatible with STATE verbs; into is not; He was in the forest; *He was into the forest. Thus we may tentatively class some prepositions as aspectually durative and others as perfective.

The situation is much the same for prepositions with temporal objects. Temporal nouns (much like spatial nouns) may represent either extents or points of time, and the prepositions which can govern them may be sorted into those which are durative and those which are perfective. Both for and in, for example, must be followed by nouns representing extents of time—units or masses of non-calendric time, of time considered as a quantity, not as an absolute sequential order. As we have seen, for phrases are compatible with STATE predicates or PROCESS predicates, but not with predicates of DEFINITE CHANGE. For has therefore been called a "marker for duration." In stands in aspectual contradistinction to for. In phrases are compatible with predicates of DEFINITE CHANGE, but not with predicates denoting STATES or PROCESSES. It could reasonably be called a perfective preposition.

Notice particularly that this kind of aspectual signification is, possibly, the principal reason for the existence of these two prepositions (in their temporal use). For the mere fact that their objects represent quantita-
tive extents of time would in many cases be enough by itself to make their semantic function clear, as is evident in sentences like *He lived forty years*. In the latter sentence, we know that the phrase *forty years* is meant to denote the temporal extent of “his” life, because that is the only function that it could perform. In other cases the semantic function of such a noun phrase is not so obvious, and a preposition is needed. But we have *two* prepositions to serve as semantic labels for such phrases. The distinction between them is purely aspectual. *He moved for forty years* means that “he” continuously changed his location during the entire extent of forty years, but *He moved in forty years* must mean that it took him an extent of forty years to accomplish a “move.”

*For* and *in* may be compared to *until* and *by*. The objects of *until* and *by* must represent *points* rather than extents of time, calendric loci on some absolute sequential scale—*e.g.*, *January, 2 o’clock, yesterday* (such noun phrases are instances of time reference as defined earlier). The same aspectual distinction exists between them as between *for* and *in*. *Until* is compatible only with STATE predicates or PROCESS predicates, and *by* is compatible only with predicates of DEFINITE CHANGE. Thus *He moved until 2 o’clock* must mean that “he” continually changed his location and stopped doing so at 2 o’clock; but *He moved by 2 o’clock* must mean that “he” accomplished a single discrete “move” sometime before 2 o’clock. *Before* seems to be the aspectually unmarked preposition for the same time-reference function. Thus we can say either *He was at home before 2 o’clock* or *He entered the house before 2 o’clock.*

There is no space here to go into further depth regarding the aspec-
tual functions of prepositions, but I think the direction is clear. Nor is there room to discuss the aspektual functions of adverbs, but if they may reasonably be considered as one-word semantic equivalents to adverbial prepositional phrases, we can expect a similar array.

6. Conclusion

It should be clear now that no significant progress will be made in the semantics of time unless the scope of investigation is broadened to take into account the whole structure of the sentence. As a final way of demonstrating the pervasiveness of aspektual categories, I can toss a hint in the direction of nouns and adjectives.

Nouns (the lexical descriptions of nouns, as opposed to noun phrases as discussed in section 4) are the least likely place to seek aspektual distinctions, at first glance. We tend to think of verbs as "action words" and of nouns as "thing words." And so they are, in a sense. But the semantic "thinghood" of nouns need not mean that they cannot be distinguished among themselves as "things" with different temporal dispositions. Compare for example the two nouns party and car. The aspect of We had a car yesterday differs completely from the aspect of We had a party yesterday. The first sentence predicates a state, and implies that "we" do not have a car "today." The second sentence clearly predicates an event. Note that the latter is compatible with the progressive, while the former is not: We were having a party yesterday vs. "We were having a car yesterday. Yet the only overt difference between the two is in the direct object noun. The aspektual distinction must correspond to a difference in the lexical markings of the two nouns. Parties are "things" that "take time;" cars are not—they are "just
there.\superscript{30}

Similar distinctions may turn out to be necessary for adjectives. Compare the adjectives well and healthy. The temporal implications are altogether different in Are you well? and Are you healthy? The first might be asked by a concerned friend who heard that the addressee had a bad cold; the second could be a question on a job application (though admittedly too simple and direct for job application language). Well means "in a good state of health," but the temporal scope of the state's application is restricted. Healthy also means "in a good state of health," but its temporal scope is extended indefinitely. The one is a temporary state, the other permanent. The two kinds of states might be labelled, respectively, temporally specific and temporally generic. Such an opposition has been shown to operate in other areas of English aspectual semantics.\superscript{31}

There is much more to aspect than has previously been suspected. It is a semantic dimension which cuts across the boundary between lexemes and syntactic groupings. It is a necessary consideration in the semantic description of all lexical classes, and at the sentence level it is a composite involving every kind of sentence constituent. Furthermore, aspect seems to be a productive inroad for the general study of semantic structures in English.

\textit{\textlt{Notes}}

1 To my knowledge, there are two studies which have significantly ventured beyond verb morphology in the treatment of aspect. One is H. J. Verkuyl's \textit{On the Compositional Nature of the Aspects} (Dordrecht: D. Reidel, 1972), which has greatly influenced the present account. The other is the linguistic chapter of my Ph. D. dissertation (Univ. of California, Berkeley, 1976), of which this article
is a partial revision.


5 Thus each such relation, between different kinds of F's and different kinds of p's, is unique. (E.g.: only imperative utterances have imperative illocutionary force—F₁, let us say—and F₁ only takes certain kinds of propositions as complements.) These stipulations about the relations of F and (p) are mine, not Searle's.

6 An activity can be promised also; apparently any temporal "thing" which is agentive can be the content of a promise. Let us provisionally assume that being good, etc., are activities rather than states. Cf. note 16 below.

7 I feel like going on a walk is not a counter-example. Like converts the semantic constituent of which it is the "head" (like going on a walk) to a state, as is evident from its use as a verb—I like X—and its use after be—It's like X. I borrow the terms commissive and expressible from a tentative taxonomy of illocutionary acts adumbrated by Searle in lectures during the spring of 1974—I do not know if he still uses them.

8 See e.g. Julian Boyd and J. P. Thorne, "The Semantics of Modal Verbs" (Journal of Linguistics, 5 (1969), 57-74), and a host of recent articles.

9 I will feel great and I felt great cannot be truly expressible in their illocutionary force; the one is normally a prediction, perhaps, and the other a statement or assertion.

10 See Taylor (op. cit.), Chapter II, for a beginning.


12 E.g.: G. N. M. Anscombe, "Before and After" (Philosophical Review, 73 (1964), 3-24); Anthony B. Kenny, "States, Performances, Activities" in Action, Emotion
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14 Regarding these tests, Wallace Chafe (Meaning and the Structure of Language, Chicago: Univ. of Chicago Press, 1970, p. 99) cautions,

Such rules of thumb are presented as rough, practical guides, not as “discovery procedures.” They are not necessarily always accurate, nor do they necessarily provide unfailing criteria for decisions in doubtful cases. In general, there is no reason to think that a particular semantic fact will be mirrored with 100 percent consistency by some other fact.

I agree, but I should add that the work presented in this paper is done under the supposition that if we discover the real meaning function of a given morpheme, we shall be able to predict when it will occur and to explain any “deviations” in terms of its meaning function.

15 I am assuming here that a complete proposition can be extended by a phrase or incorporated into another proposition. Thus a proposition may have one kind of aspect and the sentence in which it is embedded another, or the aspect of a proposition may be modified by an “extension.”

16 Sometimes combinations like He was sick in X time are acceptable, but it should be noted that they are equivalent to combinations like He got sick in X time, in which the verb is overtly perfective (cf. It took him X time to get sick vs. *It took him X time to be sick). I would contend that predicates with be acquire a perfective interpretation in such cases because of the presence of a phrase like in X time, which forces such an interpretation. The same is true, mutatis mutandis, for such sentences as He is being good. He is being good does have a process interpretation; *He is being tall does not. Cf. section 6 and note 30.

17 The same thing applies here as in note 16. A sentence like He knew his verbs by 2 o’clock is acceptable because it admits of a perfective interpretation, though know is a stative verb. The by phrase forces a perfective interpretation. *He
was sick by 2 o’clock is not acceptable because it does not admit of such an interpretation—that is, unless it reports the “accomplishment” of a prediction.

18 These sentences, and a few of the remaining example sentences, have been taken from the writings of William Blake. For exact references, see the appropriate pages in Taylor, op. cit.

19 Wait has the same aspecual distribution as verbs like breathe, but it may never be reduced to an internal series of specifiable acts. A sentence like He waited for two hours seems to have been formulated expressly for the purpose of saying that “he” very “actively” did nothing in particular for two hours, until some expected event did or did not occur. The verb may be significantly paraphrased, “to spend time (at anything or nothing) while in expectation.” (Cf. sense 3 in The Shorter Oxford English Dictionary s. v.) “to continue in expectation of.”


21 Note, however, that the simple past tense itself seems to suffice, when no other specification of completion is present. It moved predicates a single complete “movement.” We must say of such sentences that they presuppose “Y,” the point of completion, just as sentences like It moved to Y presuppose an “X,” a starting point.

22 Some verbs of DEFINITE CHANGE may be marked as such because they require the presence of a goal or end point. Give, e.g., even when there is no recipient specified, presupposes the existence of a definite recipient for any particular act of giving something. (Give may be not unreasonably considered as an abstract CHANGE of LOCATION from one entity’s having the object of change to another’s having it: in this interpretation, the recipient is the point of completion.)


25 Sentence (52) is acceptable if interpreted from a perspective outside the “houses.” Earlier we established two possible paraphrases for enter: go into and come into. In the case of (52), only the perspective of the former is acceptable. If we posit MOVE INTO as an underlying structure for enter, this ambiguity is preserved; and we have one underlying element which corresponds to the INDEFINITE CHANGE of location and one which corresponds to the point of completion—together they make enter a verb of DEFINITE CHANGE.
Admittedly, *for hours* forces a PROCESS reading in (52); but if there were no *for hours* in the sentence, the indefiniteness of *houses*, on its own power, would still force a PROCESS interpretation.


28 Note in this regard that the object of *into* must be definitely quantified, must be a unit. We cannot say *He dove into water*; we must say *He dove into the water*, thus presupposing a particular body of water. Whatever follows *into* must be an enclosure; we cannot make it an indefinite mass: *He went into enclosed space, He went into enclosure*. However we can say, idiomatically, *He went into hiding.* (Is "hiding" a definite, conventionalized "place"?)

29 I take the terms *calendric* and *non-calendric* from Charles J. Fillmore, “Time” (a lecture in a series delivered in the summer of 1971). So far I have only discovered two examples of mass nouns for time which follow *for* or *in*, and they are rather idiomatic: *forever* and *in time.*

30 *Have a party* is not an isolated idiom; this kind of combination is now quite productive. A vast number of "temporal" objects may follow *have*—food items and masses, recreation units and masses (*have a ball, have fun*), babies, and so on. Many linguists have sought to account for this use of *have* by positing *have*<sub>1</sub> and *have*<sub>2</sub> and saying that the two have different aspects, as well as other semantic differences. This complicates the grammar unnecessarily. It is enough to distinguish the semantic types of the noun objects, and then to rely on general principles of generation, interpretation and aspectual modification to change the aspect of the proposition accordingly. For the relation of a "possessor" to his *party* is the same, *mutatis mutandis*, as that of a "possessor" to his *car*. The type of noun effects the difference. *Party* could conceivably be called temporally *specific*, in opposition to a temporally *generic* noun *car*. Such an opposition is needed elsewhere as well; see note 31.

Some would point to the ambiguity of *She had a baby* as support for two *have*<sub>s</sub>. Certainly, with only this sentence in front of us, the ambiguity (a state reading vs. an event reading) seems better accounted for by positing two homophonic *have*<sub>s</sub>. But this is only the case if one assumes that aspect resides in the verb. Quite to the contrary, the event reading of such a sentence is effected not by the verb, but by the combination of verb and object, as evidenced when linguists cite this problem to each other: "What about *have a baby*, or *have a beer*?" they say.
The ambiguity rests rather with the object noun: babies can be interpreted as physical objects or as experiences, and the same is true of other ambiguous combinations—have a ball, have a hamburger, etc. Nouns like party, blast, and fun, however, cannot represent physical (or enduring) objects; hence they cannot be ambiguous in combination with have.

31 See Chafe, op. cit., pp. 175-77, regarding the present progressive and the simple present as an opposition of "limited duration" (I am here calling the same meaning "temporally specific") vs. generic. Cf. Taylor, op. cit., pp. 31-34.