

EVENTS, PROCESSES, AND STATES¹

ALEXANDER P. D. MOURELATOS

1. INTRODUCTION

In 1957, in an article published in the *Philosophical Review*, Zeno Vendler presented a fourfold distinction of verb types: activities, accomplishments, achievements, and states.² The Vendler scheme was intended as a refinement and systematization of a host of related distinctions that had been drawn in an informal and ad hoc manner by Ryle and others—for example, “dispositions” versus “occurrences,” “achievements versus “tasks.” The scheme can be grasped intuitively by reflecting on some of the examples Vendler cites under each category:

ACTIVITIES	ACCOMPLISHMENTS
<i>run (around, all over)</i>	<i>run a mile</i>
<i>walk (and walk)</i>	<i>paint a picture</i>
<i>swim (along, past)</i>	<i>grow up</i>
<i>push (a cart)</i>	<i>recover from illness</i>

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² This article, “Verbs and Times,” was later incorporated with revisions as Chapter 4 in *Linguistics in Philosophy* (pp. 97–121). References here will be to the latter (1967) version.

ACHIEVEMENTS	STATES
<i>recognize</i>	<i>desire</i>
<i>find</i>	<i>want</i>
<i>win (the race)</i>	<i>love</i>
<i>start/stop/resume</i>	<i>hate</i>
<i>be born/die</i>	<i>dominate</i>

ACHIEVEMENTS capture either the inception or the climax of an act; they can be dated, or they can be indefinitely placed within a temporal stretch, but they cannot in themselves OCCUR OVER OR THROUGHOUT a temporal stretch. (They do, however, "take" time, in a sense that will shortly be explicated.) In contrast, ACCOMPLISHMENTS have duration intrinsically. So in the case of accomplishments we can properly say "X V-ed" with reference to the whole of that time segment, not just with reference to a single moment—for example, *Jones wrote the letter over the lunch break*. Moreover, accomplishments are not "homogeneous." To quote Vendler (1967), "in case I wrote a letter in an hour, I did not write it, say, in the first quarter of that hour [p. 101]."

It is an essential feature of ACTIVITIES that they ARE homogeneous. If Jones is (or was or will be or has been or had been) running for half an hour, then it must be true that he is (or was, *etc.*) running for every time stretch within that period. Vendler comments: "any part of the process is of the same nature as the whole [p. 101]." Moreover, at each moment it is correct to say both *Jones is running* and *Jones has run*. Most saliently, the time stretch of activities is inherently indefinite; they involve no culmination or anticipated result.

Finally, STATES, which may endure or persist over stretches of time, differ from accomplishments and activities in that they "cannot be qualified as actions at all [p. 106]." Verbs expressing states do not have progressive forms: we cannot say—at any rate not in good English—*I am knowing* or *I am loving*. A state, as the name implies, involves no dynamics. Though it may arise, or be acquired, as a result of change, and though it may provide the potential of change, the state itself does not constitute a change.³

A similar distinction, but with three rather than four types, was later developed, independently, by Anthony Kenny and published in his 1963 book *Action, Emotion and Will*. Kenny's three categories are activities, performances, and states. The main difference from Vendler is that achievements and accomplishments are not recognized as separate

³ Vendler speaks very suggestively of states as "that puzzling category in which the role of verb melts into that of predicate, and actions fade into qualities and relations [p. 109]."

types.⁴ In Kenny's scheme, *discover*, *find*, and *convince*, which clearly are achievements in Vendler's scheme, count as performances, along with such clear Vendler-scheme accomplishments as *grow up* and *build a house* (p. 175). It is not unreasonable to integrate the two schemes by regarding Vendler accomplishments and achievements as two subspecies of the more encompassing species of Kenny performances. This integration, however, cannot be brought off without correcting one of the criteria of the typology posited by Vendler and, correspondingly, making a different correction on one of the criteria posited by Kenny.

Vendler argued (pp. 100, 102) that accomplishments together with activities form one "genus," and achievements together with states, another, because—as he thought—achievement verbs are like state verbs in not admitting the progressive. This distinction in terms of two genera fails because the grammatical criterion on which it is based fails. One can easily cite or compose well-formed sentences in which any of the verbs in the achievements list given earlier appear in the progressive, for example, *He is winning the race*. In Kenny's scheme what stands in the way of integration is Kenny's adoption of "finish/not finish V-ing" as one of the criteria for performances (p. 177). The criterion, clearly, works only for accomplishments; it does not work for achievements, and, in fact, rules out five of Kenny's own examples of performances—the three cited earlier as qualifying as Vendler achievements, plus *kill* and *decide whether*. What argues strongly for the integration of accomplishments and achievements is that both are actions that involve a product, upshot, or outcome. Moreover, there cannot be an accomplishment without a closely related end-point achievement—one cannot say *I wrote (shall write) the letter* if he cannot say *I finished (shall finish) the letter*. Significantly, both accomplishments and achievements "take" time, indeed definite time—that is, they are

⁴ Kenny points out the affinity of his own scheme with one introduced by Aristotle in *Metaph.* Θ. 1048b18–36, the famous distinction between *kinēseis* (performances) and *energeiai* (activities or states). In the linguistic literature, precursors of the Kenny–Vendler typology appear already in the nineteenth century; see Otto Jespersen (1924, pp. 272–273). Jespersen's own distinction is two-fold, "conclusive" versus "non-conclusive" (p. 273). In 1957, the year Vendler's original article appeared, a linguist, Howard Garey, presented a classification scheme for verbs under the rubrics "telic," which express "action tending towards a goal" (cf. Kenny performances), and "atelic," which express actions that "are realized as soon as they begin" (Kenny–Vendler activities). In spite of the strikingly Aristotelian terminology, Garey took no note of Book Θ of the *Metaphysics*. In Rescher and Urquhart (1971, p. 160), "processes or activities" are subdivided into "homogeneous," "majorative," "occasional," and "wholistic." The first three correspond to Kenny–Vendler activities, the fourth to Vendler's accomplishments. Bennet and Partee (1972, pp. 16–19) propose the categories "stative," "subinterval" (activities), and "nonstative, nonsubinterval" (performances).

both admissible into contexts of the form, "It took him N T s to V ," where N is a count expression and T is a unit of time. (It is tempting to say further that both accomplishments and achievements also admit adverbials of the form "in N of T ." It appears, however, that for many achievements this type of adverbial is indistinguishable in its entailments from "after N of T ." Thus *We shall start in two minutes* is indistinguishable from *We shall start after two minutes*. By contrast, *I shall run a mile in five minutes* means something quite different than *I shall run a mile after five minutes*.)

The distinctions worked out by Vendler and Kenny are conceptual tools of great usefulness in the philosophy of action, the philosophy of mind, in ontology generally, as well as in linguistics, and even in the history of philosophy—notably the study of Aristotle. But just because they are so very useful it is important for us to realize that they could, and indeed should, be conceived more broadly—in a wider linguistic context, and in a wider ontological context.

2. VERB ASPECT

A significant advance in Kenny's (1963) analysis is that it introduced a table of "tense-implications" and nine supplementary linguistic criteria—involving permissible adverbial phrases, paraphrase possibilities, and transformations of mood or voice—for the purpose of grouping verbs under the three types (pp. 174–179, 182–186). This very advance, however, points up a crucial limitation, one that equally as much limits the purview of Vendler's analysis.⁵ At the time they published their respective schemes, neither Vendler nor Kenny realized that the distinctions they sought to articulate had long been studied by linguists under the heading of "verb aspect."⁶ This linguistic phenomenon, a common heritage of Indo-European languages but also pervasively important in many languages outside the Indo-European family, was first correctly understood by the grammarians of Slavic languages. In Russian, for example, verbs articulate themselves in what are known as "imperfective versus perfective aspectual pairs." Thus, corresponding to the two English verbs *treat* and *cure*, Russian has a single verb in two aspectual forms—*lečit'*, imperfective, conveying the activity sense of *treat*, and *vylečit'*, perfective,

⁵ And, needless to say, the work of Ryle, and that of others who drew informal ad hoc distinctions, in the spirit of Oxford post-World War II analysis.

⁶ There is now a comprehensive, introductory treatment of this topic, Comrie (1976). Linguists had no difficulty recognizing that the work of Vendler and Kenny was an attempt to deal with aspect distinctions in English; see Dowty (1972, Chapter 2, especially pp. 27–30), Verkuyl (1971, pp. 5, 8n., 93, 157n.); Comrie (1976, pp. 41–51).

carrying the achievement sense of *cure*. Correlatively, whereas the same English verb form, for example, *sang*, can have the sense of activity in one context, the sense of accomplishment in another, Russian requires that the two senses be shown as distinct through use of the aspectual marker: thus *pel* for the activity context (*He sang for hours*), but *spel* for the accomplishment context (*He sang the International*). Greek, too, both Ancient and Modern, shows aspectual distinctions sharply. In Plato's *Ion* 530A, Socrates asks: "ἡγωνίζου [imperfective preterite] τι ἡμῖν; καὶ πῶς τι ἡγωνίσω [same verb, perfective preterite]" "And did you compete [activity]? And how did you succeed [achievement]?"⁷

Aspectual distinctions, without being so overtly and perspicuously marked as they are in the Slavic languages or in Greek, are also found in English.⁸ Here is an especially suggestive example, from actual television script: "I can't wait to see what he's been doing [activity, imperfective] when he's done it [accomplishment, perfective]."⁹ Standard examples are *John was reading* (activity, imperfective) *when I entered* (achievement, perfective), and the contrast between *I saw the accused stab* (accomplishment, perfective) *the victim* and *I saw the accused stabbing* (activity, imperfective) *the victim*.

The terminology of "perfective" versus "imperfective" is not yet standard in English, though it appears to be gaining currency.¹⁰ It is adequate for our purposes here, but we must guard against confusing perfective ASPECT with the perfect TENSES (present perfect, pluperfect). The function of the latter is not to provide a categorization of the type of action, in the way suggested by the preceding examples; it is rather to encode the "phase" of time reference, specifically, to mark a certain action, occurrence, or situation¹¹ as temporally prior and relevant to a given reference point.¹² The simple perfect in English is often, but not always, perfective. (*He has arrived* and *He has been to Australia*, are both perfective, whereas *He has lived here all his life* is imperfective.)

⁷ For Russian, see Unbegaun (1957, pp. 206–209), Ward (1965); for Ancient Greek, see Schwyzler (1950, pp. 248–269); and for Modern Greek, see Householder, Kazazis, and Koutsoudas (1964, pp. 104–105).

⁸ See Allen (1966, Chapter 8), Hirtle (1967); Joos (1968, Chapter 5), Verkuyl (1971), Dowty (1972), Scheffer (1975), Comrie (1976, pp. 16–40, 124–125).

⁹ Broadcast by KRO, April 17, 1972; quoted from Scheffer (1975, p. 42).

¹⁰ It is employed by Hirtle (1967), by Dowty (1972), in part by Scheffer (1975), and by Comrie (1976).

¹¹ For the meaning I attach to "situation," see Section 3.

¹² See Reichenbach (1947, pp. 288–298), Comrie (1976, pp. 12, 52–64). For "phase" as the appropriate concept to subsume the distinctive functions of perfect forms, see Joos (1968, pp. 138–146), Cattell (1969, pp. 120–123). It is unfortunate that Comrie adhered to a traditional (and misleading) classification of the perfect as an aspect.

The relevance of verb aspect to the questions of verb typology that were studied by Vendler and Kenny must now be obvious. Many of the distinctions will be misdescribed if it is thought that they arise mainly from the semantics of individual verbs, when in fact they involve fundamental linguistic categories reflected partly at the lexical level and partly—in the case of Indo-European languages, pervasively—at the morphological and syntactic level.¹³ Here are three cases in point of how the failure to diagnose distinctions as ones of aspect either raises problems for the accounts offered by Vendler and Kenny or has the effect of leaving the accounts misleadingly incomplete.

2.1. Semantic Multivalence of State Verbs

Vendler, (1967, pp. 111–112) classifies *know* as a state, but then has no way to explain how in *And then suddenly I knew!* it can have the “insight sense,” which is the sense of an achievement. Kenny does not discuss divergent uses for his examples of state verbs. But it is not difficult to imagine cases where a Kenny state verb, for example *understand*, would be more appropriately classified as a Kenny performance; for example, *Once Lisa understood (grasped) what Henry's intentions were, she lost all interest in him* or *Please understand (get the point) that I am only trying to help you!* There is, of course, no aberrance of English idiom in either case. The special affinity of *know* or of *understand* for state contexts is beyond doubt; but, given the possibilities of semantic transposition provided by the aspectual system, these two verbs, or others that are semantically similar, can function quite aptly in a performance context—or, for that matter, in an activity context: *I'm understanding more about quantum mechanics as each day goes by* (cf. Comrie, 1976, pp. 36ff.). This sort of semantic multivalence constitutes enough of a pattern to make it quite wrong for us to talk in terms of exceptional or catachrestic uses of certain verbs.¹⁴ Accordingly, some linguists, when they operate in the territory of phenomena explored by Vendler and Kenny, speak not of types of verbs but of types or categories of verb predication.¹⁵

¹³ See Comrie (1976, pp. 6–11). Without taking note of the linguistic literature specifically on the topic of verb aspect, Timothy C. Potts, in a symposium discussion of Kenny's work was first to point out that in Kenny's table of “tense implications” temporal tense distinctions (present versus past)—in fact play no role, the crucial contrasts being between the two underlying “operators,” “continuous” versus “perfective” (Potts, 1975).

¹⁴ This multivalence is, in fact, the rule rather than the exception. See Joos (1968, pp. 114–17), Hirtle (1967, pp. 69–84), Scheffer (1975, pp. 61–75).

¹⁵ The approach is sometimes promoted as a corrective to Garey's (1957) misplaced emphasis on verb types: See Allen (1966, p. 198), Leech (1969, p. 135).

2.2. Performance–Activity Transpositions

My second point I draw from Vendler's account alone. It will have been noticed that in his scheme *run* forms an activity predication in some contexts, a performance predication in others. He discusses the distinction as follows:

But even if it is true that a runner *has run* a mile in four minutes, it cannot be true that he *has run* a mile in any period which is a real part of that time, although it remains true that he WAS RUNNING, or that he WAS engaged in RUNNING a mile, during any substretch of these four minutes [p. 101; my italics and small capitals].

In the phrases marked here in italics the verb is in an accomplishment predication, as marked by the adverbial *in four minutes*, which is one of Vendler's tests for accomplishments. In the phrases marked by small capitals, the verb is in activity predication, as marked by the adverbial phrase *during any substretch . . .*, which expresses the homogeneity condition, the prime test for activities. It might seem at first blush that the distinction hinges on the presence of a verb object in the one case and its absence or suppression in the other. (As Vendler's punctuation indicates, what corresponds to the objectless phrase “was running” is the whole phrase “was engaged in running a mile,” which is what I mean in saying that the object is here suppressed.) But this difference in fact plays no role. Vendler's point would hold even had he written simply: “. . . it remains true that he WAS RUNNING a mile during any substretch. . . .” The generic activity of running can be further differentiated into a species (one among indefinitely many) of running-a-mile without losing its character as an activity. In other words, regardless as to whether a mile is or fails to be run, any substretch of running-a-mile activity divides homogeneously into substretches of the same. There is, after all, a qualitative distinction between the activity of running a mile and the activity of running the hundred-meter dash or the marathon.

We need not assume, of course, that the distinction the two contexts make clear must also be marked in the verb itself or in the verb's arguments (subject, object). In the example at hand, however, the distinction is marked, morphologically: by the use of simple forms in the phrases printed in italics (perfective aspect) and use of progressive forms (imperfective aspect) in the phrases printed in small capitals.¹⁶

¹⁶ It is instructive to consider how the distinction would show in Indo-European languages that are even more strongly marked for aspect than English is. In the case of the runner, in Greek the forms in italics would appear in perfective [aorist] aspect as *edramen*; the forms in small capitals would even require a different verb root, *etrechen*, which is the imperfective suppletive of *edramen*. In Russian the forms would be the perfective *pobežal* and the imperfective *bežal*, respectively.

2.3 Aspect in Inferences with Tenses

My third case in point involves a passage in Kenny (1963, p. 174). To show the logical importance of his scheme of verb types he makes this observation:

It is sometimes said by logicians that if a proposition is true now, then the corresponding past-tensed proposition will be true in the future; e.g., if "Mr. McMillan is Prime Minister" is true now, then Mr. McMillan was Prime Minister will be true in the future. This rule as it stands does not apply to performance-verbs. A man may be walking to the Rose and Crown, and yet never walk there, perhaps because he is run over on the way.

The observation is valid enough. Yet the right thing to do with the logicians' rule is not list types of verbs for which it does not hold, but to adhere more carefully to the rule's terms. The crucial words are "corresponding past-tensed." What the unnamed logicians had obviously taken for granted was that the aspect of the verb is to remain unaltered in the transposition from present to past tense.¹⁷ In Kenny's example of the walk to the Rose and Crown, the first occurrence of the verb is in imperfective, the second in perfective aspect.¹⁸ The contrast is easily missed because English *-ing* is not only part of the marker of the imperfective aspect but often simply a neutral participial or gerundial ending. In the example at hand, to keep parity of aspect we have two options:

1. Perfective aspect throughout: If it is true now that he has this very moment walked to the Rose and Crown, it will be true in the future that he did walk, or had walked, to the Rose and Crown.¹⁹

¹⁷ Kenny (1963, p. 174) comes close to seeing this ("we might say that the past tense which corresponds to 'is knitting' is 'was knitting' rather than 'knitted'") but abandons the approach in the belief that it leads to a differently formulated but equivalent exception to the logicians' rule (cf. Note 19).

¹⁸ In Ancient Greek a counterpart to Kenny's sentence would be "Ἐξεστὶ αὐτὸν βαίνειν (imperfective, present-stem infinitive) ἀλλὰ μὴ βῆναι (perfective, aorist-stem infinitive). In Russian one would say something of the order: He may *idti* (imperfective infinitive) but not *doiti* (perfective infinitive, derived from *idti* by addition of the perfectivizing prefix *do-*).

¹⁹ The reader might protest that in (1) the action is viewed as already having taken place, and that the antecedent fails to qualify as a present tense proposition. Now the misconception that the English present perfect is intrinsically a "past" tense has often been exposed. To draw only on authors previously cited in this chapter, see Reichenbach (1947, pp. 289–290, 295), Joos (1968, p. 144), Leech (1969, pp. 152–158), Potts (1965, pp. 71, 77), Comrie (1976, pp. 52ff., 106–108). In any event, a variant of (1) with the simple present in the antecedent and the simple past in the consequent is also possible if *walks* is construed as "reportive" use (cf. *And there you have it, Ladies and Gentlemen, he walks to the Rose and Crown*, spoken by an on-the-scene radio or television reporter, seconds after the subject has crossed the pub's threshold). On this perfective use of the simple present, see Leech (1969, p. 139); cf. Scheffer (1975, p. 77). This is the only nonfrequentative use of the simple present, and (pace Kenny 1963, p. 174) what corresponds to it for all verbs is the simple past.

2. Imperfective aspect throughout: If it is true now that he is walking, or has been walking, to the Rose and Crown, it will be true in the future that he was walking, or had been walking, to the Rose and Crown.

2.4 Six Determinants of Verb Predication

The critique offered in my three cases in point might lead to certain misunderstandings, which I hasten to forestall. The function of aspect is not limited to providing assignment to one or another of the categories activity–performance (accomplishment/achievement)–state. One of the major functions that lies outside the Kenny–Vendler typology is the encoding of patterns of frequency or habituation. This is characteristically true of the imperfective aspect: Consider French *j' écrivais* (imperfective) *souvent* 'I wrote frequently'; or Russian *ja begal* (imperfective) 'I used to run.' A wide variety of other points of information, also unrelated to the Kenny–Vendler typology, may be encoded through aspect—for example, endeavor, serialization, spatial distribution, temporary or contingent state. Moreover, even in those cases where the predication is classifiable under one or another of the Kenny–Vendler categories, the verb's aspectual marking does not by itself specify the relevant category. In all cases a total of six factors are involved: (a) the verb's inherent meaning; (b) the nature of the verb's arguments, that is, of the subject and of the object(s), if any; (c) adverbials, if any; (d) aspect; (e) tense as phase (e.g., the perfect); (f) tense as time reference to past, present, or future. An account of how these factors interact with one another to determine the resulting verb predication lies outside the scope of this chapter. On the basis merely of the list just cited, my critique so far of the Kenny–Vendler approach can be put as follows. Kenny and Vendler sought to classify verb types by noticing selections and restrictions that factors (b), (c), and (e) together with (f) exercise on candidate verbs. What they did not notice is the heavy role played by factor (d). They also did not realize that factors (b) through (f) work selections and restrictions on one another as well as on the candidate verbs.

3. THE ONTOLOGICAL TRICHOTOMY

Even without expanding our horizon so as to take in the linguistic phenomenon of verb aspect, it is not difficult to realize that there are verbs and verb uses that are classifiable neither as activities nor as performances, but that may not be classifiable as states either. This is a second

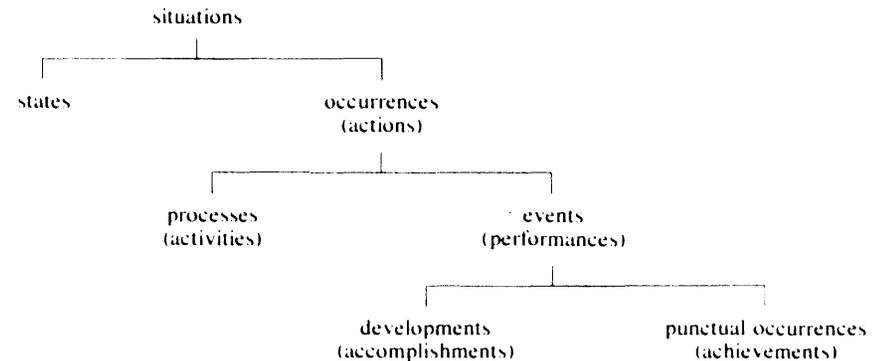
respect in which the Kenny–Vendler typology is too narrowly conceived. Philosophical interest in distinctions between verbs arose from discussions in the philosophy of mind and the philosophy of action. Yet the trichotomy activity–performance–state obviously falls under an ontological trichotomy of wider scope, namely, process–event–state. Vendler and Kenny were doubtless aware of this wider ontological context, but they failed to appreciate how its existence renders their respective typologies incomplete.²⁰

In Vendler's account the incompleteness shows up in a counterintuitive analysis of *see*. He observes, first, in agreement with Ryle, that there is "no question that seeing can be an achievement," and speaks of a "spotting" sense of seeing" (p. 113). He then recognizes that in *I saw him run (cross the street)*, seeing cannot be an achievement, for it "must have a sense that admits a period of time" (p. 115). He then reasons that, as it cannot be an activity, nor an accomplishment—not a "process," as he puts it—the *saw* of *I saw him run* must refer to a state. This diagnosis hardly accords with our intuitions. There is no difficulty in paraphrasing *He was running* as *He was engaged in the activity of running*. But would we really be tempted to paraphrase *I saw him run* as *I was in a state of visual awareness of him running*? Besides, we could easily supply a context for *I saw him run* that would make it appropriate for this sentence to be an answer to the question *What happened next?*—a question that could not envisage a state predication as one of its possible answers. It is certainly significant that, in languages with a sharp perfective–imperfective distinction in the past tense (French, Greek, Russian), a perfective form in the main verb would be required to translate the sentences *I saw him run* and *I saw him cross the street*. So the force of *I saw* in these two sentences is not to convey the state of the subject but to record A SIGHTING OF A SEEING, however protracted, as an occurrence, as an individuated something that took place. The correct category for the *saw* of Vendler's sentence is EVENT. The notion of "event" I have invoked here will become precise in the concluding section of this chapter. Meanwhile, relying still on intuitions, I should point out that event is the right classification for the focal referent not only of sentences similar to *I saw him*

²⁰ Vendler (1967, p. 108) takes note of a distinction in the physical realm between states and what we might noncommittally call "changes": *to be hard* or *to be yellow* versus *to harden* or *to yellow*. He even employs the term "process" with reference to the latter two; yet he quickly glosses the term as "activity or accomplishment." At one point he expresses hopeful confidence that "all verbs can be analyzed in terms of these four schemata [p. 107]." Kenny (1963) in spite of the subject matter limitation implied by the title and theme of his book, does not limit his survey to states that are properly of agents but includes such physical or neutral states as *exist*, *be able*, *be blue*, *be taller than* (p. 175).

run, that could not be classed as referring to performances, but also of all sentences referring to performances. Event is simply the topic-neutral category. If there is a performance A, there is also an event A, but not vice versa. Performances are those events that are instances of human (or personal, or quasi-personal) agency.

Tracing this line of thought further, it appears that purely natural events can be differentiated into: (a) topic-neutral DEVELOPMENTS, the counterpart of Vendler's accomplishments; and (b) topic-neutral PUNCTUAL OCCURRENCES (i.e., various starts, resumptions, split-second events, stoppings, and climaxes), the counterpart of Vendler's achievements. The topic-neutral counterpart of state needs no separate name; it is quite obviously STATE in the widest and quite familiar sense, the one employed by physicists or physiologists when they speak of "the solid state," or of a "metabolic state." PROCESS, a term ready to hand, is the topic-neutral counterpart of activity. (We need, however, to be on guard against possible confusion, as some authors, especially philosophers in the context of discussion of mind–body identity, have used "process" as the counterpart of "accomplishment.") If we now adopt an intermediate generic term, OCCURRENCES will be the topic-neutral counterpart of actions; and if we may coin a term for the encompassing genus, SITUATIONS will comprise occurrences and states. The generalized trichotomy appears embedded in a scheme of nested binary contrasts:



Here are examples of verb predications that refer to purely physical situations:

STATE: *The air smells of jasmine.*

PROCESS: *It's snowing.*

DEVELOPMENT: *The sun went down.*

PUNCTUAL OCCURRENCE: *The cable snapped. He blinked. The pebble hit the water.*

Of special interest are, of course, sensory occurrences. Intimately related to the realm of agency, they do not in themselves constitute actions. But, just as there can be visual or auditory states (e.g., *I see dimly; I hear you well*), so there can be visual or auditory processes (*I'm seeing a bright light; I'm hearing buzzing sounds*), visual or auditory developments (Vendler's example, *I saw him cross the street; I heard him sing a serenade*) and visual or auditory punctual occurrences (*I caught a glimpse of him as he was crossing the threshold*, cf. Vendler's "'spotting' sense of seeing"; *I heard him cough*).²¹

The existence of this wider ontological context is implicitly recognized in the literature of linguistics, where distinctions have been couched in the topic-neutral terms of "process versus state (or 'status' or 'stative') predication,"²² or of "event versus state predication."²³ What has not been brought out clearly by linguists is that these distinction pairs, together with a third one—process versus event predication²⁴—constitute the sort of system I have outlined and diagrammed here. In this respect, in spite of limitations I have discussed, the Kenny–Vendler typology is especially valuable; for it certainly envisages a single scheme rather than a set of ad hoc distinctions.²⁵

4. ASPECT AND THE MASS–COUNT DISTINCTION

Even wider theoretical vistas have opened up in recent years as linguists search out the logical or formal-semantic sources of verb types and

²¹ See Comrie (1976, p. 35). A certain curious disparity between sensory and other natural developments was pointed out to me by Zeno Vendler in the form of a rejoinder to my critique of his diagnosis of *I saw him run*. We can say, Vendler pointed out, *The sun went down in ten minutes* (also *quickly, slowly, etc.*). But we find it strained to say *I saw him in three seconds cross the street*, though we can say *I saw him cross the street in three seconds*. Now it should be noticed that we could, in a suitable context, say *My seeing him cross the street took (all of) three seconds*. Similarly, though we cannot say *I heard Beethoven's Ninth in one-and-a-half hours*, we could say *It took me an hour and a half to hear Beethoven's Fifth* (cf. Vendler's *He saw Carmen last night*, pp. 120–121). What makes the "in *N* of *T*" adverbial inadmissible in all these cases is the implication that seeing or hearing, which are PASSIVE developments that necessarily must reflect the duration of the object occurrence they capture, could somehow be sped up or slowed down. For the same reason it is odd to use "in *N* of *T*" with reference to what would clearly qualify as cases of passive accomplishment (e.g., *I videotaped Carmen off the TV in three hours, I tape-recorded Beethoven's Ninth off the FM radio in one and a half hours*).

²² Joos (1968, pp. 116–117). But Joos's "process" is a generic term, corresponding to my "occurrence."

²³ Leech (1969, pp. 134–137). The vocabulary of events–processes–states is also employed by Comrie (1976, pp. 13, 48–51, and *passim*).

²⁴ This distinction roughly corresponds to Garey's "atelic" versus "telic" and Allen's "unbounded" versus "bounded" (see Notes 4, 8).

²⁵ This is also a virtue of the approach by Bennett and Partee.

verb aspect. Of several approaches taken,²⁶ I turn here to one that seems particularly attractive for the reason that it treats aspectual phenomena as manifestations of the play of categories so fundamental as to span the distinction between verbs and nouns. It has been suggested by several authors that a distinction between count terms (which include, but are not limited to, what philosophers call "sortal terms" or terms that "divide their reference") and mass terms is in some way involved in determining the category of the verb predication.²⁷ Let me first briefly review the count versus mass distinction as it obtains in its familiar environment, the nominal system.²⁸

Nouns such as *squirrel, equation, and snowflake* are count terms. Such terms have plural forms that involve no switch of meaning from the singular form; they take cardinal numerals, as well as the indefinite article; they can be governed by the phrase that is the informal equivalent of the existential quantifier, *there is at least one*; they can be used with the adjectives *many, several, few, each, and every*. Nouns such as *wine, snow, and hunger* are mass terms. They generally do not have plural forms, or if they do there is a meaning shift—wines are TYPES of wine. None of the other adjectives cited as admissible with count terms are admissible with mass terms—except, again, with meaning shifts. Adjectives that go naturally with mass terms are *much, little, too much, too little, enough, and the like*. There are also ambiguous terms, such as *lamb* (*Mary was given a lamb* versus *Mary had lamb for dinner*) or *noise* (*There's too much noise in the hall* versus *I heard a noise*). Moreover, there are terms that have the syntax of mass terms even though the ultimate referents are discrete objects that would in themselves be referred to through the use of count terms. An example would be *furniture*: we can say *much furniture, little furniture*; we cannot say *three furnitures* or *many furnitures*; yet the entities referred to are tables, chairs, and the like, entities that have a definite number.²⁹

²⁶ See Comrie (1976, pp. 129–133). A number of studies, including Bennett and Partee (1972), favor an approach that utilizes concepts of tense logic and Montague grammar in their analysis of aspect.

²⁷ These authors include Allen (1966, pp. 192–204), Verkuyl (1971, pp. 54–61), Dowty (1972, pp. 29ff., 48ff.), Leech (1969, pp. 125–126, 134–137), Bolinger (1975, p. 147, cf. Table 6–2, pp. 152–153), Gabbay and Moravcsik (1973, p. 523), Taylor (1977, pp. 199–220, especially p. 210 ff.).

²⁸ See Jespersen (1924, pp. 188–201), Strawson (1959, pp. 168–172, 202–209), Quine (1960, pp. 90–95), Wallace (1965), Chappell (1970–1971).

²⁹ There are also two further complications. Many count terms also qualify as sortals, that is, as terms that provide a PRINCIPLE OF CRITERION of count, identification, and reidentification, whereas some, such as *thing, red thing, or quality*, fail to do so. Correspondingly, many mass terms qualify as "stuff" terms (see Chappell [1970–1971, pp. 72–73]), whereas some, such as *hunger* or *wisdom*, do not.

In exploring analogues of these distinctions in the realm of verbs, linguists have focused mainly on the object of the verb, as it often seems that the object lends its character to the predication as a whole. Thus in *He played a Mozart sonata*, where the object is a count term, we have an event predication, more precisely an accomplishment; but in *He played a little Mozart*, where the object is a mass phrase, we have a process predication, in particular an activity.³⁰

This is right so far as it goes. But there is an even more fundamental sense in which the predication can be said to have the feature count or the feature mass. Corresponding to an event predication there is a nominalization equivalent in which the original verb appears as a gerund or deverbative noun (suffixes typically *-ion*, *-ment*, *-al*, *-ure*) that governs an existential construction of the verb *to be*. If the number of occurrences is specified by an adverb in the original version, the number appears as a cardinal numeral modifying the gerund in the nominalized version. If the number is not specified, the existential construction has the characteristic import of the existential quantifier, "There is *at least one*. . . ." ³¹ Here are examples of the two transcriptions.

1. *Vesuvius erupted three times*. ↔ *There were three eruptions of Vesuvius*.
2. *Mary capsized the boat*. ↔ *There was a capsizing of the boat by Mary*.

The event predication has the count feature in either of the two senses made clear by these transcriptions: Either the occurrences are explicitly counted, or, if they are not, the occurrences are nevertheless implicitly under the governance of terms that presuppose that the occurrences are countable (*a* or *at least one*). To remind us of this feature, let me refer to the existential constructions in the two transcriptions as "count-quantified."

It appears that count-quantified transcriptions are possible and fairly idiomatic in the case of every predication that would otherwise—by Kenny–Vendler and related criteria—qualify as an event predication. Now, if we should find that nominalization transcriptions work quite differently in the case of process predication or state predication, we would perhaps have a simple and abstract criterion for drawing distinctions of predication category. Before we can proceed to this, however, we need to become clear about certain subsidiary distinctions, failure to observe

³⁰ See also Leech (1969, p. 137), on the phenomenon of "semantic concord."

³¹ My formulation here is inspired by the work of Davidson (1967, pp. 81–95; 1969, pp. 216–234). Davidson's transcriptions constitute a certain program for semantics and metaphysics. My own argument here is not dependent on that program.

which would tend to muddy the application of the criterion we envisage.

Adverbials such as *twice* or *five times*, which might be called **CARDINAL COUNT ADVERBIALS**, are to be distinguished from adverbials such as *twice a year*, *five times a week*, *often*, *seldom*, or *always*, which are called **FREQUENCY ADVERBIALS**.³² Of course, if *three times* is shown in context to be elliptical for *three times in a recurrent period* (e.g., week, year, month), it functions as a frequency, not as a cardinal count, adverbial. Moreover, certain adverbials are ambiguous: *many times* may be an indefinite cardinal count, or it may be a measure of frequency.

Another important distinction is between the **OCCASION** of a situation and the **SITUATION** itself.³³ The distinction can be illustrated with examples of the four types of situations discussed in the preceding section—the occasion phrase is indicated by the use of boldface:

1. *Tom loved Mary* (state) **when he was a teenager**.
2. *He swam* (activity) **on Thanksgiving**.
3. *He crossed the street* (accomplishment) **upon seeing her**.
4. *He reached the summit* (achievement) **on three different expeditions**.

In speaking of an event, we could use a cardinal count adverbial with reference either to the event itself (events themselves) or to the occasion(s). Thus we may count the moments or intervals of time in association with which the event occurs (events occur); or we may count, for example, the eruptions, or capsizings, or crossings of the street, or arrivals to the summit. It is, of course, theoretically possible to establish a mathematically tight correspondence between occasion(s) and event(s): Thus, corresponding to a single punctual occurrence (achievement) there is a single point in time, and, corresponding to a development, a certain interval the start and end of which coincide, respectively, with the start and end of the development. But adverbials that count associated occasions never—so far as I can tell—envisage this sort of exact fit between occasion and event. Typically the occasion is a wider frame, specified more or less arbitrarily, by reference to accompanying circumstances—as is the case with the occasion phrases used in (1)–(4). This standard looseness of fit has the effect of allowing double readings for many sentences. Thus *He knocked on the door three times* may mean that there was one knock on the door on three different occasions, or it may mean that there were three knocks on one single occasion (the example is from Leech, 1969, p. 125). What is noteworthy about such cases of double reading is that, even if the cardinal count adverbial is assigned to the occasion, another cardinal count adver-

³² See Leech (1969, pp. 123–129), Bennett and Partee (1972, pp. 26–34), Palmer and Blandford (1969, p. 238).

³³ See Leech (1969, pp. 125–126)—the distinction drawn with reference to events only.

bial, namely, *once*, is implied as assigned directly to the event. It will shortly emerge that it is only in the case of event predication that cardinal count adverbials can be used with reference to the situation (i.e., to the event itself) as distinct (explicitly or implicitly) from the occasion.

Let us now attempt to apply the nominalization transcription in the cases of process predication and of state predication. Consider first two examples of process (activity) predication—one example with the predication category marked primarily through lexical means, and one with it marked through imperfective aspect (progressive):

John pushed the cart for hours.

Jones was painting the Nativity.

The transcriptions are, respectively,

For hours there was pushing of the cart by John.

There was painting of the Nativity by Jones.

What strikes one immediately is the absence of the indefinite article. The pushing and the painting in these contexts do not have the terminus or closure that would allow us to speak of *a* pushing or *a* painting—we are not told that the cart was pushed some place, or that the Nativity did get painted. The parallel with simple nouns for these transcriptions is not in sentences of the form *There is at least one K*; rather, it is in sentences of the same form as *There is snow on the roof*, or *There is gold in this mountain*.³⁴ And just as we can amplify or supplement the latter two examples with expressions such as *little*, *much*, *enough*, and the like, we can use these same expressions to amplify or supplement the nominalization transcriptions of our two examples of process predication.

The last observation already suggests that cardinal numerals are not admissible in nominalization transcriptions of process predications. If there cannot be *a painting* or *a pushing*, in the sense required by the context of our examples, there could not be two, three, or more. I shall accordingly refer to these transcriptions as “mass-quantified.” We should expect as a corollary that cardinal count adverbials are generally not admissible with

³⁴ Davidson does not appear to have noticed the infelicity of his formula, “There exists a V-ing event,” in the case of processes or activities. It was, however, indirectly noticed by Lemmon (1967, pp. 101–102). Lemmon pointed out that *Jones was slowly buttering the toast* differs in its entailments from *Jones slowly buttered the toast* in ways that Davidson’s analysis fails to capture. At any rate, it is significant that of all the examples Davidson uses in his articles none are cases of process predication. Even the one possible exception, *Sebastian strolled through the streets of Bologna at 2:00 A.M.* (1969, pp. 218–219), is glossed by Davidson as an accomplishment—“Sebastian took a stroll” (1969, p. 219; my italics).

process predications (in their normal, nontranscribed form), and that, in the exceptional cases where they are admitted, the reference is not to the situation itself. Certainly we get nonsense if we attach a cardinal count adverbial to our first example: **He pushed the cart twice for hours*. Even more striking is what happens if the example sentence is simply *He pushed the cart*. This sentence could, doubtless, without any other adverbial, have the import of a process predication in a suitable context. Adding, however, the cardinal count adverbial *three times* suffices to transform this prima facie process predication into an event predication. Thus *He pushed the cart three times* has to be construed as elliptical for some performance predication—as the context might implicitly specify—for example, *He pushed the cart three times out of his way*, or *He pushed the cart over the hill three times*, or *He started pushing the cart three times*. In any of these cases there were, in the relevant sense, three completed pushings of the cart. Similarly with the example used in making the distinction between situation and occasion: *He swam three times on Thanksgiving* cannot fail to have the implication that he took three swims, that three swims were completed—regardless as to whether the context does or does not indicate the actual distance covered in each of these swims.

Consider now the example in which the predication category is marked solely through imperfective aspect: *Jones was painting the Nativity twice* is, on the face of it, odd and badly in need of interpretation. Assuming that Jones has already painted the Nativity once, the use of the progressive precludes that we can speak of more than one (completed act of) painting. So, if the sentence has any meaning, the adverbial phrase ranges over two occasions of painting, not over two paintings. Thus the meaning may be “He was **again** (or **for the second time**) painting the Nativity.” On this interpretation there may not have been even one painting of the Nativity by Jones: There may simply have been two occasions on each of which it was true that *Jones was painting the Nativity*. Doubtless other, more ingenious, interpretations are possible—for example, that Jones was an actor and the two paintings were staged events being viewed prospectively in the past, or that by some rigging device Jones was producing simultaneously two copies of the Nativity. But I trust it is clear that the upshot of these interpretations will be either that *twice* ranges over occasions, or that the use of the progressive was nonaspectual, or that the duality is one of associated objects, not of occurrences. Curiously, it does not appear to have been noticed in the literature that nonartificial, idiomatic uses of the form “*S is (was, will be, has been, etc.) V-ing N times*” are extremely rare. Examples that come to mind are the auctioneer’s

Going once, going twice, or the strain from the Santa Claus song, *He's making a list, he's checking it twice*.³⁵ Clearly, in neither of these cases do the cardinal count adverbials count the occurrences represented by the verb. In the auctioneer's case what is counted is the auctioneer's calls, not the "goings"; in the Santa Claus case, the meaning is "he's double-checking," or "he's checking for the second time" (an ordinal count of the occasions).

How do the nominalization transcriptions work in the case of state predication? Count-quantified transcriptions do not seem to work at all. We cannot transform *John hates liars* into **There is a hating by John of liars*; nor can we transform *Helen dominates her husband* into **There is a dominating by Helen of her husband*. Correspondingly, cardinal count adverbials do not occur in contexts of state predication—unless they refer purely to the occasions of the state rather than the state itself. *John hated liars three times in his life* is acceptable provided it is stages or junctures of John's life that are being counted. Moreover, if an occasion phrase is already supplied, the use of a cardinal count adverbial in collocation with a prima facie state predication has the effect of transforming the latter into an event predication. Thus *John loved her last summer* is most naturally construed as synonymous with *John was in love with her last summer*. But *John loved her three times last summer* must mean either that John fell in love with her three times last summer or that John made love to her three times last summer.

Mass-quantified transcriptions are, however, possible for state predications. To be more precise, state predications admit of such transcriptions typically through use not of the gerund but of specially associated deverbative nouns. Thus we can say *There is hate by John of liars*, *There is dominance of her husband by Helen*, *There is love of her by John*. This avoidance of the gerund forms in the transcription of state predications gives us another intuitive handle on the distinction between states and processes. In syntactical terms, however, the transcription does not differentiate between process and state predications. Both are mass-quantified, both accept expressions such as *much*, *little*, *enough*. This is not a disappointing result, as there is a well-known tendency of states to meld with processes and vice versa—I *doubt the truth of this assertion* could mean "I question the truth of this assertion," and vice versa. This is reflected in the affinity of state predication for the imperfective aspect in the case of languages like Greek or Russian that have a sharply marked perfective-imperfective distinction.

³⁵ I am indebted to Steve Strange for this example.

What the device of nominalization transcription enables us to determine is that all and only event predications are equivalent to count-quantified existential constructions. As a corollary, all and only event predications include, or can admit, or imply cardinal count adverbials that refer to the situation itself, as distinct from associated occasions. Thus, in *He crossed himself three times*, the cardinal count adverbial is included; in *He crossed himself*, the adverbial *three times* is admissible; in *Vesuvius erupted*, the adverbial *at least once* is implied; in the ambiguous *He knocked on the door three times*, either the adverb *once* or the adverbial *three times* is implied as referring to a knock or knocks, as distinct from the associated occasions or occasion of knocking.

A strong tie between event predication and cardinal count adverbials shows up in Greek—both Ancient and Modern.³⁶ Perfective forms (in Ancient Greek aorist forms, in Modern Greek the entire perfective system, which includes aorist, perfective future, and perfect) are employed almost exclusively³⁷ to express event predication. Even though the converse is not true—not all event predications are expressed in Greek through perfective forms—it is nevertheless true that cardinal count adverbials are used preponderately with perfective forms.³⁸

If count-quantified transcriptions, or the co-occurrence of cardinal count adverbials that refer not merely to the associated occasion, provide a simple criterion of event predication, we could correspondingly say, in ontological terms, that events are those situations that can be directly or intrinsically counted. But there is reason to think that in ontology we could go further. For it would seem that events are not merely countable but also fall under SORTS³⁹ that provide a PRINCIPLE of count: The questions *How many capsizings of the boat were there yesterday?* and *How many times did the boat capsize?* envisage determinate answers. Events thus occupy relatively to other situations a position analogous to the one objects or things or substances occupy relatively to stuffs and properties or qualities. This analogy was already noticed by Allen⁴⁰ and has most recently been explored by Barry Taylor.⁴¹ A substance is not homogeneous

³⁶ For Ancient Greek, see Armstrong (this volume).

³⁷ The only exception being the so-called "gnomic aorist" of Ancient Greek, which, however, involves a quite special and isolated semantic effect.

³⁸ This is the truth, I believe, that underlies the half-truth of traditional Greek grammar, that the aorist is "punctual"—a doctrine that ignores uses of the aorist with reference to developments (accomplishments) as distinct from punctual occurrences (achievements).

³⁹ See Note 29.

⁴⁰ See Notes 8, 27.

⁴¹ See Note 27.

—or, to us the more precise term used by the ancients, homoeomerous, “like-parted.” A clock is not made up of clocks. Correspondingly an event *E* is not made up of *E*-events: the capsizing of a boat is not made up of boat-capsizings. Stuffs are homoeomerous: If *X* is gold, then all parts of *X* are gold. Processes are homoeomerous in the corresponding sense explicated at the opening of this chapter à propos of Vendler’s activities. Moreover, just as we can collect and thus individuate stuffs into such extrinsic containers as bottles or lumps or measures, we can correspondingly collect and individuate activities into stretches, phases, stages, and the like. The two systems converge in their third component: In the case of states, as Vendler (1967) so aptly put it, “the role of verb melts into that of predicate, and actions fade into qualities and relations [p. 109].”

There are—notoriously—complications. Few, if any, stuffs are homoeomerous through and through. With many the homoeomery breaks down even before we reach fine grain—for example, fruit cake. What is remarkable for our purposes is that these complications have counterparts in the domain of situations. If snowing or pushing a cart are paradigms of homoeomerous process, thundering, giggling, or talking may count as paradigms of anhomoeomerous process (Taylor, 1977, p. 212). Moreover, again in linguistic terms, even some of the complications involving mass words are reflected in the language of situations. Thus the duality of *many lambs* versus *much lamb* has its counterpart in the option we have to say: *There were many killings, there were many deaths*; or, with greater pathos, *There was much killing, there was much dying*.

More analogues of complications—even analogues of complications involved in *furniture*, the hybrid mass word mentioned earlier in this section—spring to our notice if we look fully into the role of verb aspect (see Dressler, 1968, pp. 56–95). By way of suggesting the richness and relevance of this body of evidence, let me simply point out that, whereas English has no simple verb predications that correspond to the count-quantified and mass-quantified transcriptions given at the end of the preceding paragraph, Greek does have the equivalent non-nominalized verb predications, namely, ἀπέκτανον, ἀπέθανον (perfective aspect) versus ἀπέκτεινον, ἀπέθνησκον (imperfective aspect, cf. Xenophon *Hellenica* 4.3.19).

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