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Abstract and Keywords

This chapter deals with meaning elements of the predicate that are mainly connected with temporal characteristics other than those, like tense, that are directly connected to the speech act. These are sometimes referred to as inner aspect, in contrast to outer aspect, which deals with temporal operators like Progressive, Perfect and Habitual. The chapter focuses in particular on the division of predicates into aspectual classes, such as states, activities, accomplishments, achievements, and semelfactives, and criteria for such classifications. There is also some discussion of the stage level/individual level distinction, and the theory introduced by the philosopher Donald Davidson that all predicates have an event argument. Most of the data are from English but there are examples from Slavonic languages and a number of other languages.

Keywords: aspectual class, inner aspect, accomplishment, achievement, activity, state, semelfactive

2.1 Introduction

THE term *aspect*, borrowed from Slavic linguistics, refers to temporal properties of predicates, other than tense, which is a deictic (a.k.a. indexical) category. This chapter deals with temporal distinctions among bare predicates, i.e. predicates consisting of a verb and its arguments. This is sometimes called inner aspect, in contrast to outer aspect, which deals with temporal operators like Progressive, Perfect, and Habitual. Other terms for aspectual class(es) found in the literature are *Aktionsart* and *actionality*.

Basic questions that arise for bare predicates include:

- Do they denote situations that are dynamic, that involve change, and can be said to happen or occur, or do they denote static situations?
- Can the duration of the situation be measured?
- Can one speak of punctual or momentary situations?

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The study of aspectual classes among theoretically oriented linguists is indebted to the work of two Oxford so-called 'ordinary language' philosophers, Ryle (1949) and Kenny (1963), and the American, Vendler (1957). In particular, Vendler's claim that verbs can be divided into four distinct classes according to the 'time schemata' which they presuppose has had a lasting influence on theoretical linguistics. The time schemata depend on two criteria which linguists would call distributional: does the verb possess 'continuous tenses', i.e. does it allow what linguists call Progressive or not, and does it allow durative adverbials like *for two hours/weeks/years*, etc. These can be regarded as two binary features, leading to Table 2.1.

Table 2.1 Aspectual classes determined by two binary distinctions				
Progres- sive	<i>for</i> -adver- bial	Aspectual class	Examples	
+	+	Activities	run, draw, push the cart	
+	_	Accomplish- ments	run a mile, draw a circle	
-	+	States	know, love	
-	-	Achievements ¹	notice, find, win, die	

⁽¹⁾ The term 'achievement' is borrowed from Ryle (1949), but Vendler's use of it is different from Ryle's.

(p. 32) Although Vendler referred to the locus of his time schemata as the verb, it is clear from the examples that at least the distinction between *activities* and *accomplishments* can be located higher up, in the verb phrase (VP) or predicate.

The Progressive criterion, for which both these classes are positive, singles out 'processes going on in time' (Vendler 1957: 144). For processes pinpointed as going on at a moment, whether this is speech time or a contextually given moment, the Progressive is mandatory in ordinary discourse. Mary pushes a cart is inappropriate as a report about Mary's occupation at speech time; ?John wrote a letter at that moment could only be interpreted as meaning that he started at that moment. Thus Progressive and simple tense are in complementary distribution for these two classes. Descriptions of states can apply both to stretches of time, as shown by their occurrence with a for-adverbial, and to moments: John likes jazz; Mary looked surprised when Bill won the race.

The *for*-adverbial distinguishes between the two classes of processes, as illustrated by (1).

(1)

a. For how long did he push the cart?

b. #For how long did he draw a circle?

It also distinguishes between *states* and *achievements*; states, like activities, occupy 'stretches of time' (extended intervals); achievements 'can be predicated only for single moments (strictly speaking)' (Vendler 1957: 146). These comparisons suggest that a more illuminating way of arranging Vendler's four classes would be as in Table 2.2.

Table 2.2 The aspectual classes in a 2×2 grid					
for-adverbial		Progressive			
		_	+		
	_	Achievements	Accomplishments		
	+	States	Activities		

(p. 33) 2.1.1 Problems with the four classes and some further questions

A few central questions have dominated the agenda for further research into inner aspect. The remainder of this chapter discusses a range of possible refinements of Vendler's insight in the light of these questions.

- As mentioned on p. 32, the distinction between activities and accomplishments is better regarded as belonging to the VP or predicate. And the fact that many verbs can appear in both suggests the possibility that we have here, in the first instance, one class, which divides into two subclasses. This will be discussed in Section 2.3.
- Many linguists have raised doubts about the Progressive criterion in relation to both states and achievements. The relevant counterexamples will be discussed in the sections dealing with these two classes.
- Is each of the four (or three) classes necessary, and taken together are they sufficient to cover the data?
- What is the temporal relationship between predicates from different aspectual classes but shared semantic fields, e.g. *learn*, *know*, *forget*, or *climb*, *reach the top*?
- Is agency relevant to aspectual classes?

2.2 States

States have some important characteristics, not mentioned by Vendler, which place them in contrast to all three of the other classes, collectively known as *dynamic*.

States do not involve any change. They are completely homogeneous; any part of a state, down to even a moment, is like any other part. That explains why states can be evaluated at a moment.

States do not *happen* or *occur*. We can answer the question *What happened?* with (2a-c), but (2d) is not a straightforward answer to the question.

(2)

- a. The children played football.
- b. The quarterback ran forward.
- c. Our team won the game.
- d. Mary knew the quarterback.

States are said, instead, to hold or obtain at a certain time.

The description of states is not confined to open class verbs; the predicates can be adjectives as in *Jane is ill* or nominal phrases, as in *Mike is a student*. In fact, adjectival predicates are more characteristic of states than verbal ones.

(p. 34) States are not confined to inner aspect; certain temporal operators create *derived* states, i.e. higher phrases that have the characteristics of states. For example, an operator denoting a Habitual occurrence rather than a single event is expressed by a Simple Present tense. *He drives to work* denotes a habit, *he is driving to work* is most typically understood as denoting an event occurring right now.

Negation of dynamic predicates can also lead to a temporal characteristic of states.

(3)

- a. They didn't send me a reply for two months
- b. #They sent me a reply for two months.

The negative sentence can be true for every moment of the two-month period; the affirmative sentence cannot.

2.2.1 Two kinds of states

Carlson (1977a,b) introduced an important distinction that cuts across the Vendler classes, a distinction between two kinds of predicates. Let us compare Jane is hungry. The first denotes a permanent property of Jane, something that goes to make her

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the individual she is; the second denotes a transient property, belonging to a stage of Jane's existence. He called these two types Individual-Level and Stage-Level Predicates. All Individual-Level Predicates are states; Stage-Level Predicates can belong to any of the Vendler classes. The distinction manifests itself in a large number of semantic differences, for example, the interpretation of the bare plural subject in (4a) versus (4b):

(4)

- a. Firemen are altruistic.
- Firemen are available.

In (4a) the subject is interpreted generically (firemen in general, all or most firemen), in (4b) it stands for 'some (particular) firemen'. Certain constructions can make sense with Stage-Level but not with Individual-Level Predicates, for example:

(5)

- There were firemen available.
- b. #There were firemen altruistic.
- c. Paul has a piano lesson on Mondays / in the local youth centre.
- d. #Paul has blue eyes on Mondays / in the local youth centre.

(p. 35) For an overview and a discussion of the literature cf. Chierchia (1995). Chierchia characterizes the distinction as attributing 'tendentially stable' versus transient properties of the entities referred to by the subject.²

2.2.2 States and the Progressive criterion

The ban on Progressive for verbs denoting states is not absolute. In particular, verbs denoting spatial configurations occur in the Present Progressive as well as in the simple form, with a systematic difference in meaning:

(6)

- a. Michelangelo's statue of David stands in the gallery.
- b. We are standing in front of Michelangelo's statue of David.
- c. The picture hangs in Room 4.
- d. During the renovations the picture is hanging in a different room.

The location denoted by the prepositional phrases is a permanent property of the referent of the subject in (6a,c), a temporary one in (6b,d).

This suggests the contrast between Individual- and Stage-Level Predicates introduced in Section 2.2.1. In this use of the Progressive something that is implicit in all uses is its central meaning, namely the temporary nature of the situation. With other verbs the distinc-

tion is less clear-cut. If one sees Mike after he has been ill one can say either *He is looking better today* or *He looks better today* (Dowty 1979: 176–7).

The distinction discussed here—Progressive for temporary states, simple tense for permanent ones—bears an obvious resemblance to the one discussed in the introduction to this chapter. Not surprisingly, I-Level Predicates totally exclude the Progressive. Chierchia (1995) argues that I-Level Predicates are inherently generic; they are licensed by the same Generic operator that is postulated for sentences like *John smokes*, *Cats chase mice*, or *Walloons speak French*.

Note that this means that the boundary between inner and outer aspect must be porous: inasmuch as I-level verbs form a lexical class they belong to inner aspect; but the Generic operator that is said to figure in their semantics also lifts them into outer aspect.

(p. 36) 2.2.3 A theoretical issue that goes beyond purely temporal properties

The philosopher (1967) introduced the idea that apart from the familiar verbal arguments like Subject, Object etc., action sentences have an additional event argument of which both the arguments and adverbial modifiers are predicated. There is an ongoing debate about whether this notion should be extended to states in general, as suggested by Higginbotham (1985) and Parsons (1985, 1990), or to only some states, or whether it should be rejected altogether. See further discussion in Maienborn's chapter in this volume.

2.3 Activities and accomplishments

It is widely accepted today that the distinction between activities and accomplishments belongs not to the verb but to the VP or predicate. This does not mean that the meaning of the verb is irrelevant. Verbs that can participate in accomplishment predicates are, with few exceptions, a subset of activity verbs, but some verbs, especially verbs of construction like *build*, are much commoner in accomplishment contexts.

We will begin by looking at the relevant properties of different classes of activity verbs.

(7)

laugh, weep, fidget, swing, buzz, purr, yodel, howl, wave, shake, stammer, shudder, tremble

The denotations of these verbs include small sets of repetitive movements within a confined space, or protracted sound, or a combination of both. Unlike states they involve change, but they lack any kind of progression towards a natural cut-off point. That is why they do not appear in accomplishment predicates.

By contrast the verbs *eat*, *knit*, *cook*, and many others can (but need not) be used with an object to denote a process leading to a cut-off point, Similarly verbs of motion like *run*,

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sail, and fly can occur with a nominal denoting a goal that functions as a cut-off point for the process they denote.

2.3.1 Aspectual composition

This term, due to Verkuyl (1972), denotes the way in which constituents of the verb phrase other than the verb determine the distinction between activities and accomplishments (Garey 1957, Verkuyl 1972). The following pairs of sentences exhibit a variety of verbs that occur in both aspectual classes; the distinguishing criterion consists of (p. 37) how duration is expressed. The length of activities is expressed by *for*-adverbials; for accomplishments Vendler mentions an adverbial headed by the preposition *in*, as in *He did it in five minutes*.

(8)

- a. Sam ate porridge / peanuts for half an hour.
- b. Sam ate two bowls of porridge / a packet of peanuts / the porridge in half an hour.

(9)

- a. Jim ran along the canal / towards the bridge for twenty minutes.
- b. Jim ran to the bridge in twenty minutes.

(10)

- a. They widened the road for two months.
- b. They widened the road three metres in two months.

See Garey (1957), Dowty (1979), and especially Verkuyl (1972), who constructed a model in terms of semantically motivated syntactic features of both the verb and the relevant nominal arguments.³ In the literature states and activities are often called aspect, while accomplishments are called telic.

In (8) it is the nature of the direct object that determines the distinction. In the (8a) sentences the direct object NPs, *porridge*, a mass noun and *peanuts*, a bare plural NP, are not specified for quantity; they give no information about the amounts of the denotees of the nouns. In (8b) the amount is spelt out by a numeral, the indefinite article (creating a singular NP), or the definite article, provided that in the context it refers to a particular amount of porridge.⁴

In (9) the distinction hinges on the length of the path traversed; in (9a) it is left vague; in (9b) it is potentially exact: the endpoint is determined by the goal argument to the bridge, the starting point being contextually given (Arsenijević 2006).

(p. 38) In (10) it is the absence versus presence of the measure phrase *three metres* that distinguishes between the two eventualities.

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2.3.2 Main criteria distinguishing accomplishments

a) The telos

For Vendler what characterizes an accomplishment is that it has a set or inherent terminal point, or climax. Similarly, the philologist Garey (likewise in 1957) speaks of 'an action tending towards a goal', which he terms **telos** (from the Ancient Greek noun *telos*, meaning 'an end accomplished') for verbs (or constructions) denoting such an action. Another common expression in the literature is 'bound', and accomplishments are said to be bounded. According to Comrie (1976: 44) the situation described by a telic sentence 'has built into it a terminal point'; when this point is reached the situation automatically terminates. What is clear from descriptions like 'inherent' or 'built in' is that for these authors the telos must be implicitly there right from the beginning. The endpoint belongs to the situation as a whole. When it is reached, the accomplishment doesn't just stop; it finishes. Recent scholars follow Parsons (1990) in using the term 'culmination'; when the telos is reached, the accomplishment is said to 'culminate'.

b) Result State and Noniterativity

When an accomplishment has culminated, it is followed by a result state (Dowty 1979). The accomplishment in (8b) culminates when the last mouthful of porridge or peanuts has been swallowed. In (9b) Jim's arrival at the bridge marks the culmination, the result state being his location at the bridge. In (10b) the end of the work is the beginning of the state of the road being three metres wider than it was before. Dowty (1979) points out that the result criterion as it stands does not distinguish accomplishments from activities. When someone runs, his location is constantly changing; and so is the amount of porridge or the number of peanuts left according to (8b), and the width of the road according to (10a). He draws a terminological distinction between definite result states for culminated accomplishments, and indefinite ones for activities and, implicitly, for accomplishments before culmination.

When an accomplishment has culminated it cannot be immediately repeated. This is most obvious for the example in (9b): Jim cannot repeat his walk to the bridge unless he has meanwhile left the bridge.⁵

c) The Subinterval Property—Homogeneity and Cumulativity

(p. 39) Activities, like states, have the subinterval property (Bennett and Partee 1972); if an activity sentence like Sam ate porridge is true for an interval I it is true for every subinterval of I, subject to a proviso that does not apply to states: depending on context, the interval has to be sufficiently large, and may also permit pauses (Dowty 1979, Landman and Rothstein 2010). An accomplishment sentence like Sam ate three bowls of porridge does not have this property. No proper subinterval of the event reported in the sentence can be described by the same sentence. An alternative way of putting this criterion is to say that activities are homogeneous and accomplishments are not homogeneous.

Activities are also cumulative (Krifka 1998). Two related activities of the same kind (typically, but not exclusively, temporally adjacent), e.g. two activities of reading letters, can be summed into one activity of that kind. But two accomplishments of the same kind, e.g. reading three letters, cannot be summed into one accomplishment of reading three letters.⁶

This criterion is a central feature of the mereological approach to telicity, which will be discussed in Section 2.3.3.

d) Accomplishments Entail Activities

(11)

- a. Sam ate two bowls of porridge \rightarrow Sam ate porridge.
- b. Jim ran to the bridge \rightarrow Jim ran towards the bridge, Jim ran.
- c. They widened the bridge three metres \rightarrow They widened the bridge.

The same event can be described by either sentence, the accomplishment clearly being more informative.

e) Entailments between Simple Tense and Progressive Sentences

An activity sentence with a verb in the Present Progressive entails a corresponding one with the Simple Past:

(12)

Jim is reading \rightarrow Jim read / has read.

For an accomplishment sentence there is no such entailment:

(13)

Jim is reading your article → Jim read / has read your article.

The failure of the entailment from the Present Progressive to the Simple Past (or Present Perfect) is what Dowty (1979) calls the 'imperfective paradox', which was to have an important consequence for his influential analysis of the English Progressive.

Dowty's analysis of the Progressive, which implies that the Progressive operator in (13) applies to a base predicate that is already an accomplishment. A number of scholars have argued that the Progressive operator has scope over a base predicate that is an activity (Bennett and Partee 1972, Vlach 1981, Mittwoch 1988, Parsons 1990, Kratzer 2004). In that case, the failure of the entailment would be explained by the fact that the entailing and entailed sentences differ in telicity, [+telic] being conditional on perfective aspect (the Simple Past tense in English).

f) Specifying the Length of Activities and Accomplishments

The choice between *for*- and *in*-adverbials is a matter of distribution, and has been used in the literature as the main criterion for the distinction between the two aspectual classes. *For*-adverbials (as well as *from ... to/until*-adverbials) measure an activity event (strictly speaking its temporal trace) directly; *in*-adverbials, a.k.a. interval adverbials (Krifka 1989, 1998), or container adverbials (Mittwoch 2010), measure the smallest interval that will hold the accomplishment event, so that the shorter the interval the quicker the event. An alternative way of measuring the length of an accomplishment event, also mentioned by Vendler, is the *take*-constructions, as in *It took Sam thirty minutes to eat three bowls of porridge*.

The inability of accomplishments to be measured directly seems to be connected to their boundedness. Tenny (1987: 190) states that there can be at most one delimited (= bounded) phrase associated with a VP.⁷

The addition of a *for*-adverbial to an activity predicate causes it to be bounded. The resulting predicate is no longer homogeneous. If Jack and Jill walked for two hours, then for no proper part of that two-hour interval can the sentence *They walked for two hours* be true.

g) Conflicts between the Last Criterion and Two Semantic Criteria

A predicate can be bounded by a measure phrase without having a predetermined endpoint. If Jack and Jill walked five kilometres they may or may not have planned the length of their walk in advance (Declerck 1979, Mittwoch 1988, 2013). Only if they did, can one speak of a process leading up to the end of the walk, and pick out a moment from that process to say *When I met Jack and Jill they were walking five kilometres*.

For predicates where world knowledge rules out prior planning or foreknowledge, as in *The level of the lake rose two metres (in one month)*, or *The refugee population doubled (in a year)* there cannot be a process foreshadowing the end result (p. 41) before this result has been reached. Pustejovsky (1991) and Mittwoch (2013) regard such predicates as bounded activities. Depraetere (1995) draws a distinction between (un)boundedness and (a)telicity, reserving the latter term for bounded predicates with a predetermined telos.

2.3.3 Formal semantics: Krifka's (1989, 1998) mereological treatment, with input from Dowty (1991) on incremental themes

Krifka's mereological approach was inspired by logicians' interest in the semantics of mass nouns and bare plurals, and the realization that there is a parallelism between the predicate and the nominal domains: mass nouns and bare plurals, like atelic predicates, are homogeneous and cumulative; quantized nominal phrases are like telic predicates, inasmuch as no proper part of, for example, three apples is equivalent to three apples. And the same applies to singular count nouns (with the indefinite article): half a loaf is not a loaf, but a slice of bread is still bread.

Another way of putting this is to say that singular count NPs are atomic, nonquantized NPs are nonatomic. Similarly, telic events are atomic, atelic ones are not atomic. Conversely, singular count NPs refer to entities that, as their name indicates, can be counted, e.g. *three loaves*, in contrast to mass NPs, as in *#three breads*. Analogously, telic predicates refer to events that can be counted, e.g. *I cycled to the station twice today*, versus the atelic *I cycled twice today*, which needs presupposed context to make sense (Mourelatos 1978).

These analogies led to the further realization that if Mary ate three apples in ten minutes there is a homomorphism between the temporal interval and the change in the amount of apple involved. The further challenge was to relate object parts and event parts to each other. Krifka (1989) developed an algebraic structure that creates a mapping between objects and events. In his example predicate *drink a glass of wine*, Mapping to Object means that every part of a drinking of a glass of wine corresponds to a part of the content of the glass of wine; Mapping to Event proceeds in the reverse direction.

That paper addresses telic VPs like *eat two bowls of porridge*, *build a house*, or *mow the lawn*, where the object is traditionally known as a theme argument. Following Dowty (1991) it came to be called 'incremental theme', and that term is still used for this kind of predicate. However, the term is somewhat misleading, since Dowty in the same paper extends its application to arguments other than objects. In particular he discusses predicates with verbs of motion, like *drive from New York to Chicago*, where the homomorphism is with a path, although this path is not even fully spelt out in the predicate. Nevertheless he regards incremental PATH as a thematic argument of the verb. Krifka (1998) extends his previous work by incorporating verbs of motion and incremental paths.

2.3.4 (p. 42) So-called degree achievements

The third example of verbs that appear in atelic and telic predicates in Section 2.3.1 contained the verb *widen*. This verb, derived from a gradable adjective, means 'make' or 'cause to be wider' (Abusch 1986, Kearns 2007); the verbs inherit the scale.⁸ According to Hay et al. (1999), 'these predicates introduce a measure of the amount to which an argument of the verb changes with respect to the gradable property introduced by the adjectival base'. They call this measure the 'difference value'. Verbs that are similarly derived from, or related to, a gradable adjective include *lengthen*, *cool*, *heat*, *ripen*. Most of the verbs also appear as both transitives and intransitives, though the arguments with which the two versions appear may differ, e.g. *lengthen a coat*, but *the shadows/#coat lengthened*.

The verbs mentioned so far are related to open-scale adjectives, i.e. adjectives that do not lexicalize a maximal or minimal degree, and the same applies to the verbs. Verbs related to closed-scale adjectives include *straighten*, *flatten*, *empty*, and *darken*. For these verbs a paraphrase would seem to require the positive form of the adjective rather than the comparative, i.e. *become straight* for the intransitive version, or *make straight* for the transitive. The maximal or minimal degree ending the scales of these verbs can be thought of

as a bound; the verb on its own is sufficient to make the predicate telic: *the room emptied in ten minutes*. Both the adjectives and the verbs are characterized by the fact that they can be modified by adverbs like *completely, half*, etc., which denote whether, or to what extent, the bound has been reached.

However, the distinction as presented in the previous paragraph is oversimplified; degree achievements are notorious for their variable telicity. The verbs inherit the vaqueness of the adjectives from which they are derived, and this leaves ample room for inferences based on context. Thus verbs derived from open-scale adjectives, which one might expect to enter only atelic predicates, can occur without a measure phrase with in-adverbials: The soup cooled in five minutes, as well as for five minutes; I lengthened the coat in half an hour. In the first example the appropriate degree on the downward scale of coolness is contextually determined for soup—it would be lower for beer; similarly for the second example on the upward scale of length appropriate according to fashion, taste, and the intended wearer. On the other hand there is much discussion in the literature on whether a process described by a verb that is derived from a closed-scale adjective must reach the natural bound of its meaning in order for the predicate to be telic, for example, whether They darkened the room must mean that the room became pitch dark or whether here too a contextually salient degree of darkness would be sufficient. Several scholars go further, arguing that the telic interpretation of such a sentence is the preferred one by default: since it entails the atelic reading it is more informative.

(p. 43) On the other hand, it has been claimed that verbs derived from closed-scale adjectives are compatible with explicit denials that the maximum degree of the scale has been reached: *The sky darkened in an hour but it wasn't completely dark* (Kearns 2007, (38a); see also Rappaport Hovav 2008, Kennedy and Levin 2008). Kearns draws a distinction between maximal value on the scale of a closed-scale verb and a contextually sensitive standard value. Fleischhauer (2013) provides support for this distinction based on co-occurrence with German *sehr* 'very (much)'. There is by now a considerable literature on the subject. For a critical overview see Kennedy and Levin (2008), as well as their proposal to overcome the problem posed by the variable telicity of degree achievements.

2.3.5 Unifying the three types of (a)telicity

Krifka analysed incremental theme predicates as in (8) as a mapping between events and objects; as the event of Sam's meal unfolds in time the amount of porridge/peanuts, the denotee of the incremental theme argument, diminishes. Hay et al. (1999) suggest that it is not the object itself that is involved but rather a spatial property of the object, its volume or area or extent, depending on the verb of which it is an argument. Such a property is scalar, like the path property in (9) and what they called the 'difference value' for degree achievements, as in (10). One might add to the list a few verbs that are inherently scalar and are therefore restricted to accomplishments, as in the following examples: The price doubled/tripled/ ... in/#for twelve months, or She crossed the road in/#for thirty seconds.

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Piñón (2008) is sympathetic to this approach and offers an analysis that incorporates degrees of incremental theme verbs and degree achievement verbs in an event semantics.

2.3.6 Appendix to Section 2.3

This appendix presents a bird's-eye view of telicity in languages other than English.

Russian

There are two relevant morphological differences between Russian and English: a) Russian, like most other Slavic languages, does not have articles; b) Russian verbs have an aspectual distinction between [±Perfective]. For most verbs Imperfective is morphologically unmarked, and Perfective is marked by the addition of a prefix. The absence of articles means that in the case of incremental arguments expressed by mass or plural nominals telicity cannot depend on aspectual composition; the distinction between *eat bread* and *eat the bread* or between *eat apples* and *eat the apples*, where the definite article contextually implies a specific quantity, cannot be a feature of the VP. But this distinction is at least partly located on the verb:

(p. 44) (14)

- a. *Ivan jel xleb*Ivan was eating bread.sg.acc

 'Ivan was eating (the) bread.'
- b. *Ivan s-jel xleb*Ivan ate^P the bread

(15)

- a. *Ivan jel jabloki*Ivan was eating^I apples.pl.acc
- b. *Ivan s-jel jabloki*Ivan ate^P the apples

The Perfective verbs, prefixed by s-, entail culmination; all the bread or all the apples were eaten. As indicated by the bracketed article in the gloss for (14a), if the object is a singular count noun, it makes no difference whether the object is indefinite or definite; in both cases Perfective entails culmination just as for English both would be telic.

However the Imperfective forms do not necessarily indicate nonculmination. The Progressive gloss given in (14a) and (15a) is only one of the possible English equivalents. There are restrictions on the use of Perfective in sentences that from an English point of view would be telic. The Perfective is not used in negative and interrogative sentences. And it

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is incompatible with pluractional contexts. Thus (14a) could also mean 'Ivan used to eat bread.'

(16)

Ivan inogda jabloko *s-jel / jel Ivan sometimes apple.sg.acc. ate P ate I 'Ivan sometimes ate an (the) apple.'

(17)

Lena tri raza *vyšla / vyxodila zamuž Lena three times leave leave married woman 'Lena got married three times.' (Kagan 2010, (8), (11))

Hence there is only a partial overlap between telicity and Russian aspect.

Filip (2008) characterizes what she calls the intersection of telicity in Germanic languages and Perfectivity in Slavic languages in terms of a shared Maximalization operator; 'Telic predicates denote events that are maximal in terms of ... a scale'. In Slavic languages it is the choice of a Perfective verb that indicates a maximal event, constraining the interpretation of the verb's arguments.

Kagan (2010) proposes that Russian aspect in the verbal domain corresponds to number in the nominal domain. Perfective verbs, analogously to singular nouns, denote atomic events. Imperfective is the default aspect that encompasses both atomic and (p. 45) nonatomic events, just as plural has been claimed to be the default number. But where both aspects are possible, Perfective is the preferred option because it is more informative.

'Nonculminating accomplishments'

Both English and Russian, using different strategies, have predicates expressing what Vendler called accomplishments, predicates that entail that scalar processes have reached their predetermined end. Sentences like *He ate an apple but didn't finish it* are felt to be contradictory. In many languages what looks like a translation equivalent of the English sentence—but obviously is not an exact one—is unproblematic. Of the following examples (18) is in Hindi, (19) in Mandarin, and (20) in Japanese:

(18)

Mãe ne aaj apnaa kek khaayaa aur baakii kal

I.ERG today my cake eat.pfv and remaining tomorrow

khaayaauugaa
eat.fut (Singh 1998, (3))

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However in addition to simple (one-word) verbs Hindi also has compound verbs; if the simple verb *khaayaa* is replaced by the compound verb *khaa liye* ('eat take'), the sequel would make the sentence contradictory.

```
a. wŏ kai le mén
I open PFV door

b. wŏ kai kai le mén
I open open PFV door (Talmy 1991, (27a,b))
```

(19a) is compatible with a denial of the door becoming open, (19b) is not.

(20)

```
sentakumono-o kawakasita kedo kawakanakatta
laundry.ACC dried but didn't dry
'I dried the laundry (but) it didn't dry' (Tsujimura 2003, (21))
```

Tsujimura explains that in pairs of lexically related intransitive and transitive (causative) forms the transitive form does not entail that the expected result expressed by the intransitive verb is achieved.

In all three cases in the absence of cancellation the predication would normally be understood as leading to the expected culmination. Thus telicity as presented in this section is by no means universal. What is more likely to be universal is the telicity of expressions corresponding to *all*, *every*, *whole*, *finish*. See Travis' chapter in this volume for more on nonculminating accomplishments.

(p. 46) 2.4 Achievements

2.4.1 Doubts about achievements

Vendler introduced his achievement class in connection with the Progressive test, and in some ways seems to have given this test preference over the 'time stretch' criterion, since he does not mention achievements in connection with accomplishments. In fact, since achievements by definition have no parts, they are telic like accomplishments. They also share with accomplishments the property of resulting in states, and the related property of being noniterable. An event of John's reaching the top cannot seamlessly be followed by an event of the same kind. Unlike the verbs that figured in the previous section, which can occur in both telic and atelic predicates, achievement verbs only give rise to telic predicates. Vendler does not explicitly mention another feature that achievements share with states, namely that both can apply at a moment.

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But is Vendler's achievement class really a viable and necessary aspectual category? Many scholars have expressed doubts. Following Ryle (1949), Mourelatos (1978) classifies them together with accomplishments, as 'events', alias 'performances'; similarly Bach (1981), Parsons (1985), Verkuyl (1989) deny the linguistic validity of punctuality altogether, and therefore do not recognize achievements even as a subcategory of accomplishments.

The main target of this unease about achievements is Vendler's claim that they do not permit the Progressive. Well-known counterexamples include He is dying, and They are reaching the top, for which the nonprogressive predicates express the culmination. However, the verbs in question do not occur under the aspectual verbs begin, continue, stop, finish, or the aspectual adverb still, all of which presuppose that the predicate to which they apply denotes a protracted event: #They finished reaching the top, #The patient is still dying (Mittwoch 1991). A related argument against achievements as a separate aspectual class concerns in-adverbials, as in They reached the top in three hours, where, as pointed out by Vendler, the adverbial denotes preliminary stages, such as the length of the climb or perhaps the time since the climbers left their hotel. This use of *in*-adverbials is also found with states, e.g. He was back in/within ten minutes, The meal was ready in half an hour, with accomplishments, e.g. He wrote the report in two weeks, which is ambiguous according to whether the actual writing of the report took two weeks, or the two weeks are counted from the point at which he undertook to write the report. We also find it with activities in the Progressive: In/within two weeks the boy was playing football again. In all these examples in could be replaced by after. A fundamental distinction between achievements and accomplishments is supported by the incompatibility of achievements with adverbs like partly, partially, and half (Piñón 1997, Rappaport Hovav 2008). For many further observations on the difference between accomplishments and achievements in the scope of the Progressive, see Rothstein (2004).

(p. 47) Rothstein proposes that Progressive achievements are derived by a type shifting operation which raises the achievement meaning of the verb into an accomplishment meaning, so that, if the process runs its natural course, it culminates at a point where the achievement sentence is true.⁹

2.4.2 What is meant by saying that achievements apply to 'single moments of time'?

Following Dowty (1979), Rothstein (2004, 2008a) regards achievements as changes in which the last instant of a previous change is followed by the first instant of a new state, e.g. for the verb *die*, the last instance of being alive to the first instance of being dead. Similarly Beavers (2008b) and Rappaport Hovav (2008), who characterize achievements as nongradable or two-point scales. ¹⁰ In contrast to these authors Krifka (1998: 230) speaks of an instantaneous change: 'For example *Mary arrived in London* describes an instantaneous change of Mary's position from not being in London to being in London, or perhaps the final part of this change.'

Like Vendler and Krifka, Piñón (1997) regards achievements as instantaneous, but unlike Krifka and the other authors mentioned above, he does not regard them as changes; like the philosopher Anscombe (1964) he believes that changes require more time than an instant. The solution he proposes to this problem is that, though achievements are not changes themselves, they 'presuppose changes in their immediate vicinity'. They serve as beginnings and endings of extended situations, so that 'they are in time without taking up time'. Reaching the top ends an event of climbing and begins a state of being at the top; suddenly noticing a new picture on the wall is the beginning of a state of being aware of the picture. Just as we saw in the phenomenon of Progressive achievements that many achievement verbs can denote the process of which the culmination is described by their regular use, so there are achievement uses of state verbs denoting the beginning of the state, as in *Suddenly I knew/realized/remembered...* We also find examples of achievement-state relations in the other direction, as between *wake (up)* and *be awake*.

Piñón develops a two-sorted ontology for event semantics, where extended situations are happenings, and punctual ones are boundary happenings.

(p. 48) 2.5 Semelfactives

The term *semelfactive* stands for a class of dynamic situations of very short duration, conceptualized as instantaneous. Examples of semelfactive verbs are *cough*, *knock*, *flash*, and *kick* (Comrie 1976: 43, Smith 1991: 30). As with achievements, an event of giving a single cough cannot be described by a verb in the Progressive or a predicate modified with a *for*-adverbial. They differ from achievements inasmuch as they have neither preliminary nor resultant stages, and can therefore be iterated (Beavers 2008b). Both Progressive and *for*-adverbials are indicators of iteration, e.g. *He is kicking me*, *The light flashed for half an hour*.

Vendler seems to have been unaware of this class of verbs, and they clearly cannot be accommodated in a two-feature scheme. Smith (1991) suggests an additional feature of telicity, applying to the three dynamic aspectual classes, which groups activities and semelfactives together as minus that feature, accomplishments and achievements as plus. Rothstein (2004, 2008b) analyses semelfactives as a special type of activities. Whereas, following Dowty (1979), she regards ordinary activities like running as consisting of a set of minimal events that are seamlessly connected, a series of semelfactive events has interruptions, like a dotted line. Both a single cough and an iteration of coughs are activities in her view: a single cough is a minimal natural atomic event; an iteration is a set of such events whose members are closely connected.

2.6 Aspectual classes and agentivity

Vendler explicitly based his classification on 'time schemata' alone. But, as pointed out by Verkuyl (1993), some of Vendler's tests for the state and achievement classes are in fact tests for agentivity. Thus 'the question *What are you doing* can be answered by *I am run-*

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ning (or writing, working, and so on) but not by *I am knowing* (or *loving, recognizing*, and so on)' (Vendler 1957: 144). Dowty (1979: 55ff), based on work done in the heyday of Generative Semantics, discusses a battery of the same or similar tests, and like Vendler concludes that states fail them. In the table on page 184 of his book every entry of an aspectual class is divided into two, under the headings nonagentive and agentive. Today most linguists do not find agentivity relevant for research on aspect, though it remains true that with few exceptions states and achievements are nonagentive.

For states the main exceptions are the verbs of position *stand*, *sit*, and *lie*, which can be agentive, as in *Go and stand in the corner!*, or *What he did was sit/lie on the floor during the national anthem*, as well as *wear* and *wait*. For achievements the most obvious exceptions are the aspectual verbs *start*, *stop*, *finish*, as well as *leave* and *?arrive*, all of which can be agentive with subjects denoting human beings.

(p. 49) Predicates consisting of the copula followed by an adjectival or nominal phrase are always stative. But when the subject of the predicate phrase denotes a person the copula can be in the progressive form with a resulting change in meaning and aspect: *Pam was being polite / brave / extra careful / sarcastic / the responsible adult.* Here the predicates denote an activity, a temporally restricted deliberate behaviour on the part of the person denoted by the subject.

The sentence We met in the park at four o'clock can denote an accidental or a planned, i.e. agentive, encounter, and in both cases an achievement. In We / the committee met for two hours the subject is agentive, the aspect (Stage-level) stative. The two roads meet at the entrance to the village is (Individual-level) stative with a nonagentive subject.

In the following pair of examples the temporal adverbials highlight the connection between agency and aspect:

(21)

- a. The teacher explained the problem for/in an hour.
- b. The result of the experiment explained the problem instantly.

In (21b), an achievement, *explain* has its basic causative meaning 'make clear', 'account for'. In (21a) this meaning is present but backgrounded; the teacher tried but may not have succeeded; what is foregrounded is an act of communication by the teacher, with the *in*-adverbial perhaps suggesting thoroughness.¹¹

2.7 Concluding remarks

Looking back to the middle of the last century we can say that Vendler's four-part distinction has proved remarkably resilient in spite of the discovery of data that it cannot account for as it stands. At the end of Section 2.3.2 we dealt with predicates that look like accomplishments but lack a predetermined telos. Two further types of predicates that are

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problematic for the distinction between activities and accomplishments are mentioned in footnotes 4 and 5. Semelfactives have been regarded as a fifth aspectual class, loosely attached to Vendler's scheme by an additional feature, which groups them with activities; alternately, they have been accommodated directly under activities. Finally one could argue that the distinction between Individual-level and Stage-level Predicates is so fundamental that they are distinct classes with the former being a bridge between inner and outer aspect.

Notes:

- (1) 'Suppose we take an individual, Jake, and look at him as being composed of a set of Jake stages, or temporarily bounded portions of Jake's existence. There is more to Jake, however, than a set of stages. There is whatever it is that ties all these stages together to make them stages of the same thing. Let us call this whatever-it-is the individual Jake' (Carlson 1977b: 448).
- (2) This terminology is not entirely satisfactory. On the one hand, all predicate NPs pattern with S-Level Predicates according to the relevant tests, e.g. *There were three boys ill/running/injured/#minors*; on the other, being a minor or a baby seems to be a transient property. The same applies to the adjective *young*. Unlike the acceptable predicates, however, being a minor or young is not repeatable.
- (3) The verbal feature [±ADD TO] distinguishes between stative and dynamic verbs; the nominal feature [±SQA] (specified quantity) applies only to dynamic predicates, where it distinguishes between activities (minus) and accomplishments (plus). In the pair of sentences in (8) the object noun phrases in (8a) would be minus for this feature, those in (8b) would be plus.
- (4) Not all direct objects can give rise to accomplishments. Thus Vendler classified *push* the cart as an activity (though *push* the cart to the station would be an accomplishment like (9b) above).

Many verbs can vacillate between activity and accomplishment predications:

((i))

The doctor examined the patient for / in an hour.

((ii))

Dick cleaned the flat for / in two hours.

((iii))

Liz cooked the rice for / in 20 minutes.

In (i) the *in*-adverbial implies a definite set of questions or procedures making up the examination.

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- In (ii) the activity version focuses on what Dick was occupied with, the accomplishment version on the result.
- In (iii) the activity version says how long the rice was on the burner, the accomplishment version how long it took to reach the required degree of softness.
- (5) These criteria do not apply to accomplishment predicates headed by performance verbs like *recite*, *sing*, *play*, also *copy*. There is no obvious result state following Mary's playing of the Kreutzer Sonata, and nothing to stop her from starting to play it again the moment she has finished.
- (6) These examples work well for 'exactly' quantifiers. They are problematic for vague quantifiers like *some letters*, at least three letters (Zucchi and White 2001, Rothstein 2004, 2008a).
- (7) Krifka (1998) illustrates this with:

((i))

- a. a hundred grams of wool
- five hundred metres of wool
- c. *a hundred grams of five hundred metres of wool
- (8) For the origin of term 'degree achievement' see Dowty (1979: 88). Today it is generally agreed that the term is a misnomer, but it has stuck for want of a better alternative.
- (9) Rothstein follows Vendler in regarding accomplishment as a category of the verb. Type shifting for syntactic categories was introduced in Partee (1987).
- (10) Rappaport Hovav argues for the reality of an aspectual class of achievements on the grounds that for multipoint scales, i.e. accomplishments, change along the entire scale is, in her view, only inferred by implicature and can be hedged, as in *I mowed the lawn but not all of it*, whereas with two-point scales, it is an entailment, and cannot be hedged: *John died (#but not completely)*.
- (11) The example is adapted from ter Meulen (2014).

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