Structuring Events

A Study in the Semantics of Lexical Aspect

Susan Rothstein
Structuring Events
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This book grew out of two unanswered questions and one observation that I was left with when I was finishing writing *Predicates and their Subjects* (Rothstein 2001a). First, I knew that I had argued for a syntactic analysis of resultative predication, and for a mechanism for interpreting that structure, but that I had said nothing about what it meant, and, in any case, my theory of predication did not deal very elegantly with the question of intransitive resultatives such as *sing the baby asleep*. Secondly, while developing an analysis of progressives of *be* + AP in the last chapter of the book, I had begun by making the general assumption that achievements did not occur in the progressive — although there are, of course, exceptions. However, when I looked more closely at the data, I saw that there were so many exceptions that a general assertion that achievements did not occur in the progressive just could not be maintained. So what was going on with progressive achievements still had to be made clear.

The observation, which I had written about but not explored in any depth, was that there existed homogeneous count nominals such as *fence*, *wall* and *lawn*. At the time, the summer of 1997, I had no idea that the three issues would come together in what would turn out to be a theory of lexical aspect.

I began thinking about progressive achievements in the fall of 1997, and gave a number of talks at which I began to develop the idea that the progressive operator applied to a VP headed by an achievement forces a type shift in the VP and results in an accomplishment into which the meaning of the achievement is incorporated. The fact that my work on aspect grew from there into this book is due to various circumstances and people who I want to thank here. Ewald Lang, Catherine Fabricius-Hansen and Claudia Maienborn invited me to speak on secondary predication at the Oslo Conference on Adjuncts which they organized in the fall of 1999, and this forced me to sit down and think about resultatives, and how resultatives can be analyzed as triggering a type-shifting operation from activities into derived accomplishments. My friend Paula Pranka-Neimitz, who had written her dissertation together with me at MIT, sat me down at her kitchen table one morning when I was visiting her in Germany in February 2000 (while her boys were entertaining my daughter) and asked me what I was working on, and by the time I had finished explaining
it to her, the parallelism between type-shifting from achievements to accomplishments and from activities to accomplishments had become clear. Then Fred Landman pointed out in the question period, when I presented the results on resultatives at the Tel Aviv Department colloquium in the spring of 2000, that the incremental structures I was using to try and constrain the distribution of resultative predicates were very similar to those I was using to restrict the distribution of progressive achievements. From there, the step to working on a theory of accomplishments and incrementality, and then onward to lexical classes, was obvious. It was not until later, when I came to think in detail about the relation between lexical classes and telicity, that I began to distinguish between singular and atomic events, and then the relevance of the comparison with the homogeneous count predicates allowed me to pull the whole thing together. This is also probably the place to acknowledge my intellectual debt to a number of published works which helped me enormously in understanding what lexical aspect is. Outstanding among these are David Dowty’s book *Word Meaning and Montague Grammar* (1979), Manfred Krifka’s papers on telicity (especially his 1992 and 1998 papers), Fred Landman’s 1992 paper on the progressive, and Hans Kamp’s two papers on the logic of events (1979a and b). The influence of these last two on this book is less obvious because in the end I deleted a long discussion of foundational issues from the last chapter, to be written up (I hope) and published separately. But the effect on my thinking was no less important because of that.

The book begins with a critical overview of Vendler classes and some of the most central concepts in theories of aspect, including quantization, cumulativity, stages, telicity and atelicity. Chapters 2 and 3 provide in-depth case studies of two constructions which make use of operations of lexical shift. Chapter 2 discusses progressive achievements, where the progressive applied to an achievement-headed VP shifts the VP from an achievement predicate to an accomplishment whose culmination is in the denotation of the achievement. Chapter 3 analyzes resultative predicates which can appear with activity verbs, and trigger a shift from an activity to an accomplishment reading. I argue that both constructions provide evidence that there are such things as “accomplishment structures,” and chapter 4 provides an account of what an accomplishment is. I argue against Krifka’s claim that what is special about an accomplishment is that it has an “incremental” or gradual relation with its theme, and I show that what characterizes an accomplishment is that it consists of an activity which is incrementally related to a gradual change of state, and give a precise characterization of what incrementality is. In chapter 5, I show how the theory of incrementality allows us to explain how the derived accomplishments analyzed in chapters 2 and 3 work. Chapters 6 and 7 analyze telicity. I show that while lexical aspect is a property of verbal heads, telicity and atelicity are properties of VPs. We see that a theory of telicity based on Krifka’s notions of quantization and cumulativity does not work. Instead, I argue that the distinction between telic and atelic VPs is based on a distinction between atomic sets (sets where a unique criterion for individuating atoms is given) and singular
but non-atomic sets, which turn out to be homogeneous. Chapter 8 pulls together the issues in the book, presenting a general theory of lexical aspect, in which aspectual classes constrain the way in which events can be individuated.

Various parts of the book have been presented at conferences and seminars, and I would like to thank the audiences for very helpful comments (and in many cases the organizers for forcing me to give the talks). The progressive paper was presented at the seminar of the Formal Semantics Group at the Jerusalem Institute for Advanced Studies in the fall of 1997, the Tel Aviv Department colloquium in the spring of 1998, the 14th annual meeting of the Israel Association for Theoretical Linguistics held in Be’er Sheva in June of 1998, the Bergamo Conference on Tense and Aspect also in June 1998, and at the Workshop on Aspect at the University of Tübingen in the fall of 1998. I am particularly grateful to Andrea Bonomi for comments on the version presented at the Bergamo conference which made me think much more carefully about issues in the semantics of accomplishments. An earlier version of chapter 2 of this book, based on these talks, has been accepted for publication in a volume edited by Jim Higginbotham, Fabio Pianesi, and Alessandra Giorgi. The talk on which chapter 3 is based was originally presented at the Oslo Conference on Adjuncts in the fall of 1999, at the Tel Aviv Department Colloquium and at the 16th annual meeting of the Israel Association for Theoretical Linguistics at Tel Aviv in 2000. A very early version of chapter 3 appeared in E. Lang, C. Fabricius-Hansen, and C. Maienborn (eds.), *Papers from the Oslo Conference on Adjuncts* (ZAS Papers in Linguistics 17), and a revised version of this appears in the *Handbook on Adjuncts*, with the same editors (2003). Manfred Krifka’s comments on versions of these papers were most helpful.

Parts of chapters 4 and 5, containing the theory of accomplishments, were presented in a workshop on predication at ZAS in Berlin and at the Paris conference on Tense and Aspect, both in the fall of 2000, at a colloquium at ZAS in February 2001, at an ISF-sponsored workshop on Aspect in Be’er Sheva in June of 2001, and at the Trondheim seminar on Predication in the fall of 2001. A very early version of part of chapter 4 appears as “What are Incremental Themes?” in G. Jaeger, A. Strigin, C. Wilder, and N. Zhang (eds.), *Papers on Predicative Constructions* (ZAS Papers in Linguistics 22). A paper related to some of this material will appear as “Derived Accomplishments and Lexical Aspect” in J. Gueron and J. Lacarmee, *The Syntax of Time*, to be published by MIT Press. I presented much of this material at a course I taught at the LOT winter school in Leiden in January 2002. I spent the academic year 2001–2 on sabbatical as a guest of the Institute of Linguistics at Utrecht (UiL–OTS), and I thank my colleagues there for their hospitality. During that year, I presented what turned into chapter 8 at UiL–OTS, at the University of Paris VII, at the University of Groningen, and at the University of Stuttgart.

Various people commented on parts of the manuscript, and I would like to thank them. In particular, I’d like to thank Hana Filip for discussions and comments on chapters 1 and 4, and Hans Kamp for discussions of the material in chapters 6–8. While I was at Utrecht, I enjoyed conversations with Kriszta.
Sendroi and Anna Mlynarczyk. At Bar-Ilan, I have learned much about aspect from my students, especially Pavel Braginsky, Anna Anikaev, Dafna Yitchaki, and Irena Shpinel, and from my colleagues Yael Greenberg and Gabi Danon, all of whom met early in the morning (too early) to discuss aspect. Anita Mittwoch, Sally McConnell-Ginet, my colleagues Joel Walters and Jonathan Fine, and my brother Joe Rothstein were all valiant in supplying judgements, usually via email. Fred Landman has discussed many of the issues in this book with me and commented on various drafts in various forms, and his insight and comments have been invaluable.

References to my daughter Dafna in the examples, and the surrounding discussion, should not just be taken as cuteness. Accompanying a child in the early years of her life when she is learning and acquiring all sorts of skills (such as walking, reading, and skipping) provides a unique opportunity to look in “slow-motion” at what an event actually does consist of and what kind of events normally fall in the denotations of common lexical predicates. Taking the time to look at what these events actually comprise turned out to have a considerable effect on how I began to think about what event individuation and event classification actually are. So in a very real way Dafna has accompanied this book since its inception, and although I have never really understood what it means to say that an academic book is “for” someone (after all, I wrote it because I wanted to), there is nonetheless a sense in which this book is for her, with love.

S. R.
Chapter 1

Verb Classes and Aspectual Classification

1.1 Introduction

This book is about lexical aspect. Aspect traditionally concerns itself with what Comrie (1976) calls “different ways of viewing the internal temporal constituency of a situation” (pp. 3, 5). The intuition behind this definition is that while tense relates the temporal location of a situation or “eventuality” to some other temporal reference point such as the time of utterance, aspect is concerned with the structural properties of the event itself. Within the study of aspect, linguists make a distinction between grammatical and lexical aspect. Some people take this to be a formal distinction between aspctual properties expressed by a grammatical category and/or characterized by a particular inflectional morphology (for example the French imparfait or the passé simple), and aspectual distinctions which are lexicalized or characterized by derivational morphology or which are not characterized morphologically at all. However, the distinction I am interested in here is not formal but semantic, and is more or less the distinction formulated by Smith (1991) as a distinction between situation aspect and viewpoint aspect (see also Filip 1993, 2000, and the discussion on the distinction between “telic” and “perfective” in Bertinetto 2001). Lexical aspect, sometimes called “Aktionsart” and corresponding to Smith’s situation aspect, covers distinctions between properties of event-types denoted by verbal expressions, which linguists have tried to capture by classifying verbs into verb classes. Grammatical aspect, in particular the contrast between perfective and imperfective, concerns the distinction in perspective on events, or Smith’s “viewpoint aspect.” (1) shows a contrast in lexical aspect between a state and an accomplishment, while (2) shows a contrast between an imperfective and perfective use of the verb built (where the imperfective can be naturally replaced by the progressive):

(1)a. Mary loved John very much. (state)
    b. Mary built a house. (accomplishment)

(2)a. He lived in a hotel while he built/was building the house. (imperfective)
    b. He built the house and then sold it for profit. (perfective)
This book is concerned with lexical aspect and the properties we can ascribe to event types in the denotations of particular lexical items. I assume that the events in the denotation of *build a house* have essentially the same properties whether the expression is used imperfectively or perfectly, and that it therefore makes sense to ask what these properties are. The interaction of lexical aspect and grammatical aspect is an important and fascinating question (see, for example, Smith 1991), but it is beyond the scope of this book.

A number of questions stand at the center of the study of lexical aspect. First are aspectual properties, properties of linguistic expressions or of events “in the real world.” Aristotle’s original discussion of the aspectual distinction between “kinesis” (movements) and “energia” (actualities), both in the *Metaphysics* 1048 and in the *Nicomadean Ethics* 1074, naturally reads as a characterization of kinds of actions, rather than expressions. He contrasts actions which are complete in themselves (energia) and classified as atelic, such as seeing and thinking and being happy (roughly what we call states and activities), and actions which are inherently incomplete and which are directed towards an end, such as building a house or learning a poem, which we call accomplishments and classify as telic. Much recent linguistic work has stressed that aspectual distinctions are distinctions between linguistic expressions and are not properties of events in themselves. Thus Krifka (1998) writes:

> it is misleading to think that a particular event can be called “telic” or “atelic”. For examples, one and the same event of running can be described by *running* (i.e. by an atelic predicate, or by *running a mile* (i.e. a telic, or delimited, predicate). Hence the distinction between telicity and atelicity should not be one in the nature of the object described, but in the description applied to the object. (p. 207)

While linguists have continued to talk as if aspectual properties are properties of entities “out there” in the world (see, for example, Bach 1981, 1986, and Parsons 1990, chapter 3), the idea that aspectual properties are properties of event descriptions, or of events under a particular description, is supported by the theory of fine-grained event individuation argued for in Parsons (1990) and Landman (2000). They argue that events are only individuable under particular descriptions, and do not have any inherent atomic structure themselves (see also Partee 1999 and Filip 1993). On the other hand, a strong argument in favour of a theory in which events themselves have properties comes from Kamp (1979a,b), who argues that *change* is a primitive concept, and that the distinction between static events and events of change is a primitive distinction in any theory. That a particular collection of real world “happenings” can be described by both telic and non-telic expressions is undeniable, and I shall assume that lexical aspect deals with properties of linguistic expressions. However, we will come back to the challenge of Kamp’s theory in chapter 8, where we will discuss what the basis of aspectual classification is.
A separate but related issue concerns the nature of lexical aspectual classifications. Vendler (1957, 1967) showed that a classification into states, activities, achievements and accomplishments is very useful in terms of predicting the linguistic behavior of verbal predicates, and it is this classification which has become most influential over the last 35 years. But are lexical classes just accidental generalizations over properties of lexical items, or are they constraints on possible meanings, and if the latter, where do they come from?

A third set of issues concerns the relation between the telic/atelic distinction and the classification of predicates into lexical aspectual classes, and the related issue of at what syntactic “level” the classifications should apply. Intuitively, states and activities are atelic, as they do not involve changes of state, whereas achievements and accomplishments are telic. Does this mean that verb classes just subdivide the telic/atelic groups one stage further? And is it verbs or Verb Phrases which should be so categorized anyway? It was Verkuyl (1972) who pointed out that accomplishment verbs such as build differ in telicity depending on the properties of their direct objects. Build normally heads a telic VP, but it heads an atelic VP when it has a bare plural or mass nominal as a direct object. “Telic” build can be modified by in a time, while “atelic” build is naturally modified by for a time. If a verb is an activity, the properties of the direct object do not affect the telicity of the VP:

(3)a. Mary built two houses *for an hour/in an hour.
   b. Mary built houses for a week/*in a week.

(4)a. John pushed the cart for an hour/*in an hour.
   b. John pushed carts for an hour/*in an hour.

Some (e.g., Dowty 1979) have taken the data in (3) to mean that it is really VPs that should be classified as accomplishments or activities. This position is strengthened by the contrast between (4) and (5), where push also heads a telic VP:

(5) John pushed the cart a mile/to the edge of the park in an hour/*for an hour.

Verkuyl himself has argued (Verkuyl 1972, 1993) that the data in (3–5) shows that it is minimally VPs which should be classified as telic and atelic, and that there is good evidence that telicity is really a property of sentences. This is because of sentences such as (6), where the properties of the subject nominal determine the telicity of the sentence:

(6)a. John discovered the secret room in a few weeks.
   b. Children have been discovering that secret room for generations.

Verkuyl claims, more strongly, that classification into Vendlerian verb classes is linguistically irrelevant, and that the only relevant question is how the