Telicity in
the second
language

Roumyana Slabakova

Telicity in the Second Language

Language Acquisition & Language Disorders

Volume 26

Telicity in the Second Language
by Roumyana Slabakova

Telicity in the Second Language

Roumyana Slabakova

University of Iowa

This book is dedicated to Bistra, Kamen, Bistra, and Zlatko

Table of contents

Acknowledgements

Aspect and theories of second language acquisition

1.1   Introduction

The goal of this book is to present a detailed study of the second language acquisition (SLA) of English telicity marking by native speakers of Bulgarian, a Slavic language. A parameterized distinction between English and Slavic situation aspect is proposed, and the subtle differences between English and Slavic telic and atelic sentences are examined. Thus the book opens a new area of parameter research in SLA and studies in depth the mental representation of telicity in interlanguage. In addition to the general theoretical interest that a study of the acquisition of telicity marking evokes, the book highlights a number of specific theoretical issues.

First of all, following Verkuyl (1972, 1993) the book advances a specific view of English verb phrases (VP), according to which their aspectual meaning is compositional: a property of the verb and a property of the noun phrase (NP) object conspire to bring forward an aspectual interpretation. In Slavic VPs, on the other hand, only a property of the verbal form signals the aspectual interpretation. Thus, it is argued that a verb may contain two types of information: its idiosyncratic meaning and information about its aspectual class. The latter may be represented by a zero morpheme, licensed by the property of the object (as in English) or by an affix on the verb (as in Slavic). It is proposed that the above distinction between Slavic and English can be viewed in terms of a parameter, with two values, or settings. These are only two of the telicity parameter settings that human languages may exhibit. Other possible values are tentatively discussed in Chapter 3.

Secondly, based on the above view of verb phrases and following Hale and Keyser (1992, 1993), and Travis (1992, 1994, 1999a, b), it is proposed that the four aspectual classes of verbs (Vendler 1967), viz. accomplishments, achievements, activities, and states, can be represented in four different phrase structure templates, where distinct subevents are mapped onto different VP shells and make reference to the properties of the object. Thus, event-type distinctions

are captured at the interface of lexical semantics and syntax. It is argued that the four templates are language universals, and the parameterized distinctions between languages involve the syntactic positions of telicity markers. It is at this level that the English-Slavic contrast receives an explanation.

Third, based on the syntax-theoretical treatment of Slavic and English telicity marking, the book investigates the SLA of this parameter and focuses on the mental representation of aspectual properties of English in the interlanguage of Slavic speakers learning English. L2 learners are found to be capable of resetting the telicity parameter value to the English setting, thus successfully acquiring a property of language almost never taught in language classrooms.

The fourth issue that the book addresses is the nature of the initial hypothesis that Slavic speakers entertain regarding telicity marking. Basically, two logical possibilities offer themselves if access to UG is assumed: learners either have direct access to UG, in which case they do not demonstrate the L1 value of the parameter in their interlanguage competence (Epstein, Flynn and Martohardjono 1996; Flynn 1996) or they start out the process of acquisition by hypothesizing that aspect in the L2 is encoded in the same way as in their mother tongue (Schwartz and Sprouse 1994, 1996). The results of the experimental studies described in the book bring new evidence to bear on the theoretical choice above, supporting the latter view.

Fifth, the book studies the acquisition of a cluster of constructions, which syntactic research relates to the English value of the telicity parameter, and which have been found to co-occur in the speech of children learning English as their first language (Snyder and Stromswold 1997). The proposed cluster includes the double object construction, the verb–particle construction, and the resultative secondary predicate construction. Results indicate that every one of the above forms part of this aspect-related cluster and that, although double objects appear somewhat earlier than the other two constructions, this difference is statistically insignificant. Verb-particles, resultatives, and double objects appear some time after telicity marking has been acquired. Chapter 6 of the book discusses some possible reasons for this situation.

In the remainder of this chapter, the concept of aspect will be briefly introduced, then the theoretical framework of the book — Universal Grammar (UG) and Second Language Acquisition (SLA) — will be presented. Three approaches to UG principles and parameters in SLA will be outlined: the No Parameter Resetting approach, the Direct Access approach and the L1 Grammar as the Initial Hypothesis approach. The predictions that each one of these approaches makes with respect to parameter resetting will be examined.

1.2 Aspectual distinctions

1.2.1 Some terminology: Telicity and boundedness

The broad topic of this book is aspect and its acquisition. Aspectuality is one of the universal concepts that sentences of human language denote. The following sentences all denote a situation that is taking place in the past.

(1) a. Claire ate an apple.
     b. Claire ate apples.
     c. Claire ate the apples.
     d. Claire ate at an apple.
     e. Claire ate cake.

Let us compare (1a) with (1b). The sentence in (1a) denotes a situation in which an event was in progress for some time, then it reached its inherent, built-in endpoint, and is now definitely over. (1b), on the other hand, denotes a situation in which the subject Claire at a point in time was engaged in an activity in progress, but the event was not finished: there is no end-point specified. What is the difference between them? The first has a singular object while the second has a plural object. Is it the plurality of the object that brings forward the different interpretation? The answer is no, because (1c), a sentence with a definite plural object has the same interpretation as sentence (1a) with a singular indefinite one. On the other hand, sentences (1d, e) also share the same interpretation with (1b) — they denote activities without inherent endpoints — but (1d) has a PP as a complement, and (1e) a mass singular noun. Let us call the first interpretation "telic" and the second — "atelic". They are in a binary relation, and all sentences in a natural language must be either telic or atelic. It is not so easy to put one's finger on what exactly brings forward the telicity or atelicity in these English sentences — it is sometimes the form of the object and sometimes the fact that the verb is intransitive. The point I would like to make is that all natural languages necessarily have to express these notions, and they encode them with different means. The telic-atelic distinction is the focus of the present study, and we will discuss it in more detail in Chapter 2.

Let us turn now to the examples in (2). The sentences in (2a) and (2c) denote one and the same telic event, involving consumption of a specified object, but in (2c) the verbal form *eating* somehow overrules the effect of the specified object and makes the whole event unfinished. On the other hand, although both situations in (2b) and (2d) are atelic, (2b) denotes a habitual

situation in the past that is discontinued, while (2d) does not entail anything about an actual endpoint of the event. The progressive aspect "looks at the situation from inside, and as such is crucially concerned with the internal structure of the situation" (Comrie 1976: 4). The perfective aspect (the simple past tense in English) "looks at the situation from outside without necessarily distinguishing any of the internal structure of the situation" (Comrie 1976: 4). The progressive and perfective (simple past) forms introduce another layer of aspectual marking, that of "boundedness." I will assume the useful terminological distinction between boundedness and telicity, following Depraetere (1995) and Smith (1997 [1991]). While telicity refers to potential, inherent endpoints, boundedness refers to actual endpoints. Smith (1997 [1991]) labels boundedness "viewpoint aspect" while telicity marking falls under "situation aspect." The two aspectual distinctions interact to produce four distinct combinations, as exemplified below.

(2)   a.   Claire ate a piece of cake.   TELIC + BOUNDED
      b.   Claire ate cake.   ATELIC + BOUNDED
      c.   Claire was eating a piece of cake.   TELIC + UNBOUNDED
      d.   Claire was eating cake.   ATELIC + UNBOUNDED

In sum, it is pertinent to distinguish between the semantic properties of (a)telicity (situation aspect, discussed at length in Chapter 2) and (un)boundedness (viewpoint aspect). Only the former semantic distinction, but not the latter, is the focus of the present study. In what follows, when using the term "aspect" I will only be referring to situation aspect, or telicity.

     What English marks with a simple past verbal form and a specified object, is marked in Slavic languages with perfective prefixes, or preverbs (PV), on the verbal form. The examples in (3) are from Bulgarian.

(3)   a.   Bistra jad-e   parče torta
           Bistra eat-PAST piece cake
           'Bistra ate at a piece of cake (but the piece is not finished).'
      b.   Bistra iz-jad-e   parče torta.
           Bistra PV-eat-PAST piece cake
           'Bistra ate a piece of cake (and there is nothing left).'

The literature on Slavic aspect is divided on the issue of whether Slavic perfective preverbs fall in the domain of viewpoint or situation aspect. Most researchers (Comrie 1976; Dahl 1985; Kučera 1983, among others) agree that Slavic aspectual preverbs mark specific ways of presenting the situation as a process,

a telic event, or a state. But it is also true that the vast majority of research on Slavic aspect does not necessarily refer to the two levels of aspect marking. Thus, we can only conjecture on how most researchers would solve the viewpoint versus situation aspect issue. Among the ones who do have a clear position, Smith (1997 [1991]) (see Chapter 10 written with Gilbert Rappaport) claims that perfective preverbs encode viewpoint aspect. Brecht (1984), Piñon (1993), de Swart and Verkuyl (1999), and Verkuyl (1999), however, convincingly argue that Slavic preverbs' contribution to the overall aspectual makeup of the sentence is at the VP (or situation aspect) level. Brecht (1984:12) explicitly relates preverbs to telicity marking. In this book, I follow Brecht, Piñon, de Swart and Verkuyl, and Verkuyl. I will present more arguments for this choice in Chapter 3.

1.2.2   Why study aspect?

As we have seen, in one way or another, all languages mark aspectual distinctions. Traditional descriptive linguistics divided languages into those that "grammaticalize" aspect (e.g., Slavic languages) and those that express aspect lexically (e.g., English). This generalization, however, has no explanatory power. What is more, it does not even capture the facts. All languages have a lexical and a grammatical component of aspect marking. For example, English uses specific nominal phrases as one of the ways to encode telicity, while Bulgarian uses perfective preverbs for the same purpose. Both markers are obviously different, but equally "grammatical." In the encoding of situation aspect, semantic universals come into play with lexical semantics and the syntax-semantics interface. Semantic universals are reflected in the form of features like (a)telicity and (un)boundedness. Parametric differences between languages are captured on the level of functional categories and the relative distribution of semantic features into these functional categories.

If we accept the minimalist claim that all diversity between languages is expressed in functional categories (Chomsky 1993, 1995), then it is conceivable to assume a functional category AspectP in which the various ways languages encode situation aspect will be reflected. Variation will be captured adequately and elegantly. In studying aspect as a semantic universal and the aspectual differences among languages of the world, an important area of human language with its compositional properties and structure-dependence is coming to light. What seems like a great number of unrelated ways languages use to encode aspect is subsumed under a few independently motivated mechanisms

or modules of grammar. In what follows, examples of semantic universals and parametric differences will be discussed.

1.3   Theoretical framework

The book is couched in the theoretical framework of SLA variously labelled "Universal Grammar (UG) in SLA" or a "Parameter-setting Approach to SLA" (see Chapters 3 and 4 in Ritchie and Bhatia 1996). Chomsky's Universal Grammar is the most explicit theory of the human language capacity that has been advanced so far. UG is "the system of principles, conditions, and rules that are elements or properties of all human languages … the essence of human language" (Chomsky 1975: 29). UG is assumed to be a genetic endowment: human beings are born with the innate predisposition to acquire language, regardless of what language they encounter: Greek, Dutch, or Igbo. "Universal Grammar may be thought of as some system of principles, common to the species and available to each individual prior to experience" (Chomsky 1981b: 38). Of course, it will be unreasonable to suppose that some individuals are born with the structure of Greek in their head while others are born with the structure of Igbo. Human beings are able to acquire any human language, but only based on the input they receive from their immediate linguistic environment.

   This brings us to the question of how exactly languages are acquired. It has been argued that the input children receive underdetermines the actual grammar acquired. Let us consider an example from Harbert (1995: 184), where co-indexation means that both nominals refer to the same entity. These facts have been recognized as early as Chomsky (1973).

(4)   a.   They$_i$ helped each other$_i$/*them$_i$].
      b.   They$_i$ expected [me to help *each other$_i$/them$_i$]

The reciprocal pronoun *each other* can refer to the subject *they* in the sentence in (4a) while the object pronoun *them* cannot refer back to the subject (to be grammatical, it must refer to an unmentioned third party). But the same pronoun can refer to the matrix subject *they* in the sentence in (4b), while now the reciprocal pronoun is ungrammatical if it denotes the matrix subject. Both examples contain the same verb followed by the same object: *help each other/ help them.* Such puzzles of structure-dependency (the reciprocal and the pronoun are in complementary distribution: where the reciprocal can be co-indexed with the subject, a pronoun cannot be, and vice versa) are explained by

Chomskian generative grammar, but are not taught explicitly to English native speakers. At the same time, we can reliably expect an English native speaker to recognize the properties of the examples in (4) even if she has never encountered these sentences before. We can also expect non-native speakers of English to recognize the same properties even though this is not likely to be part of their formal tuition. The fact that language is acquired even though the input underdetermines the grammar is the main argument for the existence of UG.

1.3.1   Semantic universals

Principles of UG are properties or elements of the structure of all languages without exception. A universal property of language that will be discussed in this book is the set of event types described by verbs. Event types are based on ontological universals, or the different ways human consciousness perceives states and events. Ontological knowledge is our everyday knowledge of the kinds of things that exist in the world and how those things are related to each other. Philosophers and semanticists have discussed event types at length and some of the literature on the topic as well as the most influential classification of Vendler (1967) will be introduced and discussed in Chapter 2 of the book. For the time being, we can view all verbs in human languages as reflecting either a state or an event. A "state" is defined as a stable condition of some entity for a period of time, where no change obtains from Time 1 to Time 2. A prototypical example of a state is *being white* as in (5).

(5)   The kitchen walls were white.

"Events", on the other hand, are dynamic conditions, where some change (or changes) obtains from Time 1 to Time 2. A first type of event is a process exemplified in (6). It is also known as an activity (Vendler 1967).

(6)   John was walking in the park.

If we were observing John from an imaginary vantage point in the air, we would see John in different locations at Time 1 and at a subsequent Time 2. Speakers of every human language, encountering the equivalent of (6) in their language, will understand that an action in progress is denoted. An activity is an event whose final and initial points are entirely arbitrary, and are outside the speaker's focus of attention.

A second type of event is a finished process, a situation that took some time in unfolding and reached its inherent final point. This event type is known as an accomplishment.

(7)   Sylvia knitted five sweaters.

The example in (7) refers to a process of that type, which necessarily went on for an unspecified amount of time, but is now over.

   A third type of event is in some way similar to the second one, but differs from it in one dimension: it doesn't take time. With this type, the change is over as soon as it has begun. The sentence in (8) is an often-cited example of this event type, an achievement:

(8)   Sebastian found a wallet in the street.

The above event types, deliberately described informally, are conceptual universals, hence semantic universals of human language. In other words, there are no human languages lacking these event types. On the other hand, a made-up event type like "doing something exactly three times in a row", to my knowledge, is not attested in human languages. Language universals specify properties pertaining to all languages, and at the same time they rule out grammars that do not conform to these fundamental properties.

1.3.2   Parameters

While principles represent abstract properties of language common to all languages without exception, parameters are abstract principles that exhibit different values, or settings, across different languages. Variation is in-built in parameters. The metaphor that is often used is the image of a switch box with two or more possible positions. The switch is turned to one or another position according to the input that is heard. Acquiring the English grammar, for example, means acquiring a finite number of parameter values. In second language acquisition, parameter values constrain the number of hypotheses that need to be considered if the L1 value is not adequate in capturing the L2 input.

   Ideally, a parameter is not responsible for variation in one construction only. An obligatory epiphenomenon of a parameter is a family, or a cluster, of constructions that are not superficially related. The variation inherent to parameters is reflected in a range of different phenomena. This makes parameters a fruitful testing ground for researchers investigating UG-related phenomena in language acquisition. It is usually considered to be evidence in support of UG if a whole range of constructions appear at the same time in the grammar of language learners.

A parameter that has been widely investigated in SLA with a view to substantiating the above assumptions is the null subject parameter (White 1985, 1986; Phinney 1987; Liceras 1989; Hilles 1986, 1991; Lakshmanan 1991; Clahsen and Hong 1995). It relates to whether a language allows declarative finite sentences without overt subject, or does not allow such sentences. In an earlier version of the theory, the parameter included, as well as null subject sentences, subject–verb inversion in declarative sentences and *that*-trace effects (e.g. *Who_i do you think that* t_i *called?*). White (1985, 1986) tested native speakers of French (no null subjects) and Spanish (a null subject language), learning English. Her results indicate that these three properties do not cluster in interlanguage, the learners' transitional grammatical system, which differs from the native speakers' grammar but nevertheless exhibits some properties of the target grammar.

A later version of the theory links null subjects with uniformity of morphological verbal agreement with the subject. Hilles (1991) studied the speech of two adult, two adolescent and two child Spanish learners of English and observed a correlation between the emergence of non-uniform inflection and the appearance of overt pronominal subjects in the two children and one adolescent. Lakshmanan (1991) also studied longitudinal samples from the speech of two naturalistic child learners and did not find any clustering of the properties of the null subject parameter.

Investigation has provided evidence of parameter resetting, at least of some aspects of a parameter, and there is also evidence that L2 learners transfer, perhaps as an initial hypothesis, the L1 value of parameters. At least to my knowledge, no study so far has convincingly demonstrated clustering of superficially unrelated properties, as originally proposed in the syntactic literature, in the interlanguage of L2 learners. Therefore, it is pertinent to turn to a new parameter and see whether experimental results can confirm or disconfirm the proposals put forward to explain interlanguage development. Some of those proposals are reviewed in the next section.

1.4   Theories of access to UG

The theories advanced for and against access to UG in SLA fall into three basic positions, which can be represented by a tree (White 1995).

(9)   Access to UG

         (−)   (+)
    UG is not active   UG is still active
    in adulthood (A)   in adulthood

                         Direct access   L1 grammar as
                         L1 is immaterial   the initial hypothesis
                              (B)   (C)
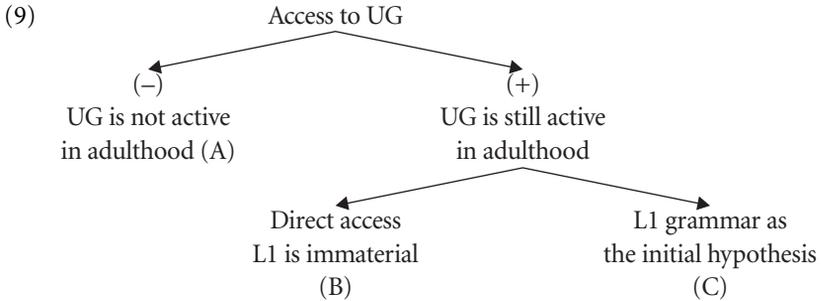
These are by no means all the positions proposed in the literature — there are
mixed positions as well as variants of the three (for two recent reviews of access
to UG positions see White 1996a, b). Since the above mentioned three positions
will make different predictions with respect to the parameter studied in this
book, I will briefly review them focusing on the type of evidence that might
support one or another position.

1.4.1   UG is not active in adulthood

Proponents of position (A), or no active access to UG in adulthood, are Bley-
Vroman (1989, 1990), Clahsen and Muysken (1986), and Schachter (1990,
1996). According to this approach, UG does not assist adult L2 acquisition.
What, if not UG, is implicated in SLA then? Surely adults do learn second
languages. The observed similarities in the performance, but not the compe-
tence, of L2 and L1 acquirers is due to various cognitive mechanisms such as
problem-solving strategies. If we make a distinction between acquisition (the
implicit unconscious acquiring of a grammar) and learning (the explicit,
metalinguistic rote-learning of grammar rules), there is more learning than
acquisition in the process of adult second language development.

     The main arguments put forward in arguing for a fundamental difference
between L1 and L2 acquisition (Bley-Vroman 1990) are as follows. L2 acquisi-
tion generally fails, that is, it is not as successful as L1 acquisition. L2 acquisition
also displays a lot of individual variability with respect to its success and its goals,
while all individuals acquire their mother tongue without variation in success
or goals. There are some age effects in L2 acquisition, that is, children and
adolescents do better than adults above 20 years of age. Fossilization (Selinker
1972), the "imperfect" grammar at which some learners seem to have plateaued,
is non-existent in native language acquisition. L2-ers have indeterminate
grammaticality judgements, presumably due to indeterminate competence.

The importance of instruction, affective factors, and possibly negative evidence in non-primary acquisition is much greater than in primary acquisition.

All of these differences, of course, are well documented in the literature and are not disputed by opponents of this approach. First and second language acquisition are different indeed. It is another problem altogether whether these differences are relevant to the issue of access to UG. It is pertinent to discuss access to UG by looking at different properties of the grammar and by asking the question whether L2 acquirers are different from L1 acquirers with respect to their grammatical competence. If evidence is found that the mental representation of some property of the grammar is fundamentally different in L2 learners as compared to native speakers, this will suggest that SLA is not guided by UG. In other words, empirical support of this position must be in the form of violations of UG, or "unnatural" grammars, in L2 data.

Clahsen and Muysken (1986) argue explicitly for such a strong position and try to show that L2 learners have a grammar not constrained by UG at all. In learning word order in German, non-native speakers resort to such linear procedures as moving the non-finite verbal form to the right and placing it in sentence-final position. Their analysis has been questioned by du Plessis, Solin, Travis and White (1987) and Schwartz and Tomaselli (1990), who argue that the stages of development of the learners' competence can be explained as resetting of parameters and arriving at a representation different from the target L2 and the source L1, but still UG-constrained.

To explain subtle UG-type knowledge demonstrated by L2-ers and amply documented in much of the literature, researchers arguing for position (A) refer to the learners' native language. Clahsen and Muysken (1996), for example, following Lebeaux (1988), articulate the following restrictive hypothesis of language acquisition. UG supplies children with all possible parameter values that have to be set by experience. Children eventually arrive at a parameter setting consistent with the input they hear. Once a parameter value is set, all the remaining unused values are "pruned down" (Brown and Matthews 1993), or are not accessible any further. This model of acquisition has several implications. One of them is that once children have fixed the value of a parameter, they cannot go back and forth between the different values because the unused ones are no longer available. Another implication is that parameter resetting is impossible in SLA, for the same reason. This model predicts that the competence of L2 learners is never going to be similar, not even closely, to that of native speakers, and all learners will be fossilized at the L1 parameter values.

An empirical study that supports this prediction is Clahsen and Hong (1995). They study the co-variance of null subjects and overt agreement in the linguistic competence of 33 Korean adult learners of German. The methodology employed was Sentence Matching (Freedman and Forster 1985) and the control group of 20 native German speakers confirmed that the procedure was sensitive to the properties under investigation. Following Rizzi (1986), Clahsen and Hong assume that in null subject languages there are two ways in which the content of the empty subject *pro* can be identified. In languages like Spanish and Italian the content of *pro* is recovered via the licensor Agr in terms of person and number affixes (also termed φ-features). In languages such as Korean, on the other hand, no φ-features exist, and the content of *pro* is recovered through co-indexation with a c-commanding referential NP. What is more, in languages that have φ-features, there is a further parameterized distinction: Agr can be [±pronominal]. In Italian Agr is [+pronominal] and identifies *pro* via head-binding (Rizzi 1986), while German Agr is [−pronominal] and does not licence empty referential subjects.

Thus, the Korean speakers learning German have to acquire morphologically overt agreement. But this is a necessary, not a sufficient condition for resetting the null subject parameter. They need also to acquire that Agr has the feature [−pronominal] in German. Reaction times measure subjects' underlying competence in German agreement marking and in null subjects. The results are given in the following contingency table (Clahsen and Hong 1995:77).

Table 1.1 Korean learners' acquisition of agreement and lexical subject

	Agr not acquired	Agr acquired
Null subject not acquired	2	5
Null subject acquired	13	13

On the basis of a non-significant contingency between the two variables, Clahsen and Hong (1995) conclude that UG is available to L2 learners only through their L1. All the L1 settings of parameters are available to the learners, as well as all universal principles, but parameter resetting is virtually impossible.

Several objections can be raised to these conclusions. First of all, the five learners in the upper right-hand part of the contingency table are easily explained. They have acquired Agr and use null subjects. In other words, they have arrived at the Italian value of the parameter, which is a valid UG option.

Secondly, the thirteen learners who have acquired overt subjects in German but still have incorrect agreement are much more problematic for the Access-to-UG Hypothesis. But the study only tests the fine surface detail of German morphological agreement, and it is conceivable that these subjects have not mastered the particular morphological markers but have acquired agreement in general. Thirdly and most importantly, as White (1997) suggests, the study does not really tease apart the German φ-features acquisition and Agr as [−pronominal] acquisition. It is misleading to claim that overt agreement is the trigger for overt subjects. It is more accurate to say that [−pronominal] Agr is the trigger for overt subjects, but the study does not really test this.

A second prediction of the parameter values pruning-down model involves principles of UG. As long as a principle is instantiated in the learners' L1, they will obey its operation in the L2. If, on the other hand, a principle is not instantiated in the learners' L1, they will not recognize violations in the L2. A study that adopts this logic is Schachter (1990). She studied the operation of subjacency, a principle constraining wh-movement, in the ESL competence of Korean and Chinese as opposed to Dutch speakers. Subjacency operates vacuously in Korean and Chinese, languages where wh-movement takes place at LF for interpretation, but not overtly in syntax, while in Dutch and English it takes place in syntax. Schachter found that Korean and Chinese learners did not demonstrate knowledge of subjacency, while the Dutch learners did. She concluded that L2 learners do not have access to principles of UG that do not operate actively in their L1.

However, these findings have been reanalyzed (Martohardjono and Gair 1993; White 1992c) to suggest that learners may not have wh-traces but *pro* as their empty category, since they do not have long wh-movement. Since *pro* is not subject to subjacency, the performance of the subjects seems consistent with their own untargetlike but still UG-constrained and L1-based analysis.

Another investigation of universal principles is Kanno (1996), who studies the operation of the ECP in the interlanguage of English learners of Japanese through accusative case marker drop. She proves that the principle is active enough in interlanguage to apply to completely new phenomena in the L2, in fact a finding opposite to that of Schachter (1990). Importantly, she shows that the learners make a distinction between the nominative case marker drop and accusative case marker drop, a distinction confirmed by the Japanese native speakers.

In sum, in order to support position (A), research needs to show that learners' interlanguages fail to exhibit UG-based knowledge unavailable from their native language and that learners fail to adopt parameter values other than

the ones instantiated in the L1. Any results showing resetting of parameters and adherence to principles that apply to new phenomena in the L2 will constitute evidence against this position.

1.4.2 Direct access

Positions (B) and (C) share the assumption that UG is actively implicated in adult SLA. They differ in their claims as to the initial state of the L2 acquisition. According to proponents of Direct Access[1] to UG (Epstein et al. 1996; Flynn and Martohardjono 1991, 1994; Flynn 1987, 1996; Martohardjono 1991, 1993), no pruning down of unused parameter values takes place, because all the "hypothesis space of UG" is the hypothesis space of the L2. Crucially, the parameters already set to the learners' L1 values do not influence their initial analyses of the input they encounter. Thus, these researchers do not speak of "parameter resetting" but of "parameter setting."

This is a conceptually coherent position, but in fact the view of the above researchers concerning the role of the L1 is not always so clear. They still use the influence of the L1 to explain certain findings. In the words of Flynn (1996: 129):

> … the L2 learner might be forced to shift hypotheses about certain dimensions of language variation when attempting to construct the grammar of the new language. … in some cases the values of the L1 and L2 with respect to the CP direction parameter will match and in other cases they will not. In the case of a mismatch (such as the case of a Japanese speaker learning English), learners will need to assign an additional new value to this parameter. In the case of a match between the L1 and L2 (as in the case of a Spanish speaker learning English), no such new assignment will be necessary.

But if the L1 plays no role in the acquisition process, then all possible settings of a parameter provided by UG will be open and available, and speakers from different native languages should demonstrate precisely the same acquisition sequences of a given L2 property. One cannot speak of a "mismatch" between L1 and L2 settings and at the same time affirm that the L1 setting is unimportant (White 1996a).

---

1. Flynn (1996) calls their model a Full Access Hypothesis, but I will use the name Direct Access here to distinguish this model from Schwartz and Sprouse's model, who also believe in full access but leave a role for the L1 as an initial hypothesis as well.

The experimental research reported in Epstein *et al.* (1996) does not test and demonstrate that the L1 plays no role in SLA. Their model predicts UG-constrained competence from the very beginning of the process of acquisition. In order to support their claims of no L1 influence, they need to test beginning learners and grammatical phenomena (both principles and parameters) that are instantiated in the L2 but not in the L1. Epstein *et al.* (1996) fail to observe these conditions in their experimental design.

Epstein *et al.* (1996) use an elicited imitation task to investigate the acquisition of functional categories (FC) by adult and child Japanese native speakers. The choice of Japanese as a first language is not without problems, since Miagawa (1991, 1993) has argued that FC are in fact instantiated in Japanese. Their adult subjects are graduate students at MIT, and these can hardly be considered beginners in English. It comes as no surprise, therefore, that the researchers find evidence of full competence as far as FCs are concerned. The prediction that learners will eventually acquire (or learn) L2 FCs is made by all the three positions we are discussing in this section, so the study fails to make its claim unique.

Some recent work by Platzack (1996) resurrects the markedness idea (see also Mazurkewich 1988) for first and second language acquisition within the framework of the Minimalist Program (Chomsky 1993, 1995). Platzack argues that, if one takes minimalism seriously, the marked–unmarked distinction becomes the heart of acquisition theory. Since overt syntactic operations like movement to FCs to check features are more costly than invisible operations, then the mechanisms forcing overt operations in a language (like strong features) will be the marked ones. In general, the Minimalist Program predicts that every word order differing from the universal one (SVO), is due to the strong, or marked, features in some FC or other. Platzack argues, that the Initial Hypothesis of Syntax (IHS) for L1 and L2 acquisition is the universal word order with all features having a weak value. Since the IHS is part of UG, language acquisition is seen as a "gradual adjustment of the IHS to the target grammar" (Platzack 1996: 371).

The most salient prediction of this model is that "we initially go back to the IHS when trying to come to grips with a second language" (Platzack 1996: 380). The evidence for this view comes from certain well-known facts of interlanguage, like the initial presence of null subjects and predominant SVO word order, even in the interlanguage of speakers who come from an OV language and are targeting another OV language (for example, the speech of Cevdet, a

Turk learning German, reported in Schwartz and Sprouse 1994: 335).[2] Another fact is the loss of V2 in the interlanguage of speakers of one V2 language (Swedish) targeting another V2 language (German). The property Verb-Second is presumably due to a strong feature in C^0 and is thus not part of the IHS. Such a case is reported in Håkansson (forthcoming), who found that around 30% of Swedish students learning German produce sequences that are not V2.

A third piece of evidence is the acquisition of negation by speakers of languages with post-verbal negation (German, Swedish), which indicates verb-raising past NegP to some strong head position. Nevertheless, early inter-language often exhibits the order negation–verb (Hyltenstam 1977; Bolander 1988) as predicted by the model.

To conclude, proponents of the direct access position argue for full and continuing access to UG, a claim shared by other researchers as well. What distinguishes their position is their denial of any role played by the learners' L1 as an initial hypothesis for analyzing the input. In order to disprove this position, then, one needs to provide evidence that, at the early stages of L2 acquisition, learners entertain the L1 values of UG parameters.

1.4.3   L1 grammar as the initial hypothesis

This position is argued for in the early work of White (White 1985, 1986, 1989a) and more recently by Schwartz and Sprouse (1994, 1996), Brown (1993), Montrul (1997), among others.[3] White (1989b), based on her experimental studies, argues that, initially, learners adopt the L1 value of a parameter. To take an example, White (1985) studied Spanish learners of English and asked the question whether [+null subject] language speakers would transfer this parameter setting to their L2, a [−null subject] language. White (1986) tested Spanish/Italian speakers as well as a control group of French speakers, who have the

---

2.   Please note that this is Platzack's interpretation of the data. Schwartz and Sprouse (1994) interpret the data as supporting an SOV analysis.

3.   Two important theories of the initial state of L2A within this approach are the Minimal Trees Hypothesis (Vainikka and Young-Scholten 1994, 1996) and the Valueless Features Hypothesis (Eubank 1993/4, 1996). Since these theories do not make relevant predictions for the parameter under investigation, I will not present their views here. In common with the FT/FA theory discussed below, they accept full access to UG and transfer from the L1. The distinction lies in what gets transferred from the L1. For Vainikka and Young-Scholten, only lexical categories transfer, for Eubank FCs also transfer but without their (strong or weak) features.

same [−null subject] value as exhibited in the L2. The results indicate that the French controls were significantly more accurate than the Spanish speakers in rejecting subjectless sentences. What is more, Spanish speakers' correct rejection of subjectless sentences increased with the increase of proficiency. Similar findings of L1 transfer are not rare (see papers in Gass and Selinker 1992; Zobl 1982; Schumann 1982; White 1992; Eubank 1993/94; Vainikka and Young-Scholten 1996; Bhatt and Hancin-Bhatt 1996; Juffs 1996, among many others).

Schwartz and Sprouse (1994) argue that it is not only separate parameter settings but the whole of the L1 grammar that is the initial state of L2 acquisition. That is why their model is labelled Full Transfer/Full Access. They share with a lot of researchers in the UG framework (Eubank, Vainikka and Young-Scholten, White) the assumption that there is no pruning of parameter values as a result of L1 acquisition. Instead, UG allows access to all the values of parameters, and parameter resetting occurs in most cases. The cases in which learners cannot reset a parameter can be explained by learnability considerations as the failure of the Subset Principle, for example. At all times, the learners' grammar is a natural language grammar, that is, it is constrained by UG. This is the second crucial claim of position (C) adherents (together with the role of the L1), and one that they share with proponents of Direct Access (position B).

One study (among many others) supporting the claim is the longitudinal study of Turkish-German interlanguage reported in Schwartz and Sprouse (1994), focussing on the course of development of the interlanguage system with respect to word order and Nominative case checking. The study demonstrates that the respective stages in interlanguage development are determined not only by the L1 grammar, but also by principles of UG, the available primary linguistic data (PLD) and learning procedures. Analyzing the different acquisition stages of word order development in terms of UG, the researchers show that the interlanguage system, like any other natural language system, should be investigated in terms of its own consistency.

A particularly convincing case of UG-constrained acquisition is provided by the situation when L2 learners do not arrive at the target parameter value, but instead demonstrate another option, instantiated in a third language. Finer and Broselow (1986) and Thomas (1991) argued convincingly for such an interpretation of their findings on the acquisition of binding. To explain some word order acquisition stages of German L2 interlanguage reported in Clahsen and Muysken (1986), du Plessis et al. (1987), and Schwartz and Tomaselli (1990) propose that at all times learners entertain UG-compatible hypotheses. It is also

possible to interpret some of the findings of the present study by proposing that learners exhibit knowledge that is not compatible with the L1 or the L2 grammars, but is nevertheless instantiated in another natural language, hence UG-constrained (see Chapter 6). A theory that denies access to UG cannot explain such findings.

In order to support this position on UG in SLA, one needs to show

a. that the L1 value of a parameter is the initial hypothesis of the learners; and
b. that parameter resetting is effected.

Position (C) has the first prediction in common with position (A) and the second prediction in common with position (B). Therefore, only combined findings supporting both predictions will constitute evidence for the Full Transfer/Full Access model.

An important premise of UG in SLA, regarding which the proponents of the different positions have come to an agreement, is that research should not directly compare native speaker performance with learner performance (Bley-Vroman 1983). It is crucial to show that L2 learners have the same contrasts in their grammar as native speakers (NS) (a premise that is going to be central in the experimental study reported on in this book), but it is not necessary to show that their judgements are identical to NSs.

The goal of this chapter was to review some existing theories of SLA and to demonstrate that there is not much consensus among researchers in the field as to the basic questions of initial state and parameter resetting availability. Therefore, research into the question of whether interlanguage is constrained by UG should expand in new directions. So far, aspectual properties of language have not been studied within the framework of UG in SLA. New syntactic proposals have made possible this expansion of parameter studies in SLA into the area of telicity marking. The experimental studies reported on in the next chapters are designed to test the predictions of the three different positions in a previously unexplored area of investigation.

The rest of the book is organized as follows. Chapter 2 introduces the terminology of aspect studies and presents basic semantic and syntactic analyses of aspectuality. Chapter 3 presents a syntactic analysis of Slavic and English situation aspect based on four different phrase structure templates for the four aspectual classes. It is proposed that the differences between Slavic and English can be described as parametric variation. Spanish facts are examined with a view to showing that Spanish VP aspect works like English. Chapter 4 reviews the literature on L1 and L2 acquisition of aspect. Chapter 5 describes two

experimental studies testing the acquisition of the aspectual parameter by Slavic and Spanish native speakers learning English. Finally, Chapter 6 discusses the results, the theoretical implications of the results, and some directions for future research.

Semantic and syntactic treatments of telicity

2.1 Introduction

In recent years, linguistic semantics has made enormous progress in the study of aspectual phenomena (see Krifka 1989, 1992; Parsons 1990; Verkuyl 1993, among others). We are also witnessing a trend towards an approach to aspectuality based on event structure (Grimshaw 1990; Pustejovsky 1991) as well as a purely syntactic approach (Tenny 1987; Travis 1992; Borer 1994; McClure 1994; Snyder 1995a), in which at least some of the semantic information is read off phrase structure. Within such an approach, the distinct syntax associated with the different aspectual classes of verbs serves as a template for the appropriate aspectual interpretations and results in telic or atelic readings. We will be justified in advocating and practicing such a syntactic approach to aspectual properties only if these properties present syntactic as well as semantic effects. This is what the present chapter will attempt to demonstrate.

2.2 More terminology

As discussed in Chapter 1, the term "aspect" covers a wide range of phenomena having to do with the internal temporal structure of events as described by verbal phrases and sentences (see Comrie 1976; Chung and Timberlake 1985; Smith 1997 [1991], among others). Aspect can informally be defined as the property which makes it possible for a sentence to denote a terminative (telic) or a durative (atelic) event. The question facing any theory of aspect is: how is this internal structure of the event represented in language?

2.2.1 Aspectual classes

The distinction between situation aspect and viewpoint aspect was introduced

in Chapter 1. In this section we will elaborate on situation aspect, or "Aktionsart" (from the German *kind of action*). In English, aspectual class is rarely signalled by aspectual morphemes. It is a semantic property which depends on the meaning of the verb, but also on its combination with its arguments and adverbial phrases, as noticed by Verkuyl (1972). That is, aspectual class is a compositional property. An event can either have the potential of continuing indefinitely, or it may have an inherent, natural boundary or limit, after which it cannot continue to change. Traditionally an event with an inherent limit is called *telic* (from Greek *telos* 'limit, end, goal') and an event without such a limit is called *atelic*. The property of telicity has been recognized in the linguistic and philosophical literature since Aristotle, and was introduced into modern-day verb classifications by Ryle (1949) and Kenny (1963). Telicity is also the basis of the quadripartition of verb phrases into aspectual classes proposed by Vendler (1967), a classification well-established in the linguistic literature. Vendler distinguished between *States*, which have no internal structure whatsoever; *Activities*, which are homogeneous processes going on in time with no inherent goal; *Accomplishments*, which involve a process going on in time and an inherent culmination point, after which the event can no longer continue; and *Achievements*, which also have an inherent culmination point, but in which the process leading up to this point is instantaneous. Activities, accomplishments, and achievements are often grouped together as the *eventive*, or *dynamic*, verb, classes, because it takes energy for the situation described in them to obtain or continue, while this is not the case for states. Let us look at some examples:

(1)	*States*	*Activities*	*Accomplishments*	*Achievements*
	know	run	run a mile	die
	be sick	travel	travel from X to Y	arrive
	remain	burn	burn up/through/out	find a wallet
	be tall	read	read the book	recognize

The clearest way to define Vendler's four classes is by means of binary semantic features (Table 2.1 is from Verkuyl 1993: 42).

Verb classifications based on ontological divisions have been criticized from two perspectives (see Dowty 1979; Mourelatos 1978; Verkuyl 1989). First, they do not adequately acknowledge the contribution of the nominal arguments for the aspectual interpretation. For example, although Vendler's examples of accomplishments are verbs plus singular count nouns, whereas most of his examples of activities and states are simple verbs, he does not elaborate on this distinction. Secondly, it is not entirely accurate to classify a particular verb as

Table 2.1 Semantic features of aspectual classes

	Process	Definite	Momentary
States	−	−	−
Activities	+	−	−
Accomplishments	+	+	−
Achievements	−	+	+

belonging to one class if other words in the sentence (nominal arguments, PPs, adverbials, particles) can force the same verb to denote different situation types. For example, a prototypical achievement verb such as *sit* may have the following uses:

(2)   *State:* The new plan sits well with the committee.
      Activity: A panel of international judges was appointed to sit annually.
      Accomplishment: He sat for his college exams in January.
      Achievement: The boy sat down on a wooden bench.

Still, verb classifications are a useful basic tool for aspectual research as long as researchers are aware of the fact that aspect pertains to VPs and whole sentences, and not to verbs as such.

2.2.2 Tests

The properties relevant for the study of aspect can be isolated on the basis of tests. As pointed out by Vendler (1967) and Dowty (1979), adverbial expressions like *in X time* and *for X time* provide some of the more reliable tests for telic or atelic interpretations. The telic sentence in (3a) combines felicitously with adverbials of the type *in X time*, while atelic sentences in (3b) through (3e) combine with adverbials of the type *for X time*.[1]

---

1.   Some caution is in order here. The adverbial expressions must be compatible with the sentences in a particular interpretation. The relevant interpretation of *in X time* is such that the event must be brought to completion, or to a logical endpoint during this interval. When this interval is over, the event has reached a state of affairs where it could not possibly continue to change.

(i)   *Claire ate a sandwich in an hour, and she finished the same sandwich on the next day.

In X time has another meaning, irrelevant to aspect, indicating that the event will begin in a certain amount of time. (ii) and (iii) are grammatical sentences but still their verb phrases are

(3) a. Claire ate an apple in an hour/*for an hour.
     b. Claire ate apples *in an hour/for an hour.
     c. Claire ate cake *in an hour/for an hour.
     d. Claire ate at a cake *in an hour/for an hour.
     e. Claire was eating an apple *in an hour/for an hour.

Another test is the felicity of the progressive tense: according to Vendler (1967) states and achievements[2] cannot take the progressive, while accomplishments and activities can:

(4) a. *I am knowing. He is possessing the house (States)
     b. *She was recognizing him. He was finding a wallet.
     c. He was running a mile. She was travelling from Ottawa to Toronto.
     d. He was running. She was travelling.

A third test attributed to Vendler (1967) and Dowty (1979), again following Aristotle, is the so-called Imperfective Paradox. It distinguishes the telic from the atelic verb classes on the basis of their entailment capabilities. Vendler (1967: 100) writes:

> If it is true that someone is running or pushing a cart now, then even if he stops in the next moment it will still be true that he did run or did push a cart. On the other hand, even if it is true that someone is drawing a circle or is running a mile now, if he stops in the next moment it may not be true that he did draw

---

not terminative.

(ii)   Claire will run in an hour.
(iii) Claire will eat apples in an hour.

The relevant interpretation of *for X time* is one in which the event continues for that interval and is not of necessity over when the interval is over.

(iv)   Claire ran for an hour.

The running event may have been discontinued or not, but the running event itself has no inherent endpoint.

Sometimes *for X time* is used with an interpretation of repeating the same telic event over and over again. The sentence in (v) means that the achievement was repeated an unspecified number of times during the course of a year. We call this the forced iterative interpretation and distinguish it from the one in (iv).

(v)   Claire broke the window for a year.

2.   These tests are not without exception. The achievement verbs *die* and *win*, for example, can appear in the progressive as in *He was dying* and *She was winning*. As we can see, the progressive morpheme extends the interval leading up to the culmination point of dying or winning. It can also force an iterative interpretation, especially in *She was winning*.

a circle or did run a mile. In other words, if someone stops running a mile, he did not run a mile; if one stops drawing a circle, he did not draw a circle. But the man who stops running did run and he who stops pushing the cart did push it.

So, the sentence in (5a) does entail the sentence in (5b), while the sentence in (5c) does not entail the one in (5d):

(5) a. Mary is running.
     b. Mary has run.
     c. Mary is drawing a circle.
     d. Mary has drawn a circle.

A test that distinguishes accomplishments from achievements is whether the verb can appear as a complement of aspectual *finish*: accomplishments can and achievements cannot.

(6) a. Mary finished eating an apple.
     b. *Mary finished winning the game.
     c. *Mary finished finding a wallet.

States can be distinguished from the eventive classes by the following test: their simple present form does not have a habitual interpretation.

(7) a. Claire knows the answer.   NON-HABITUAL
     b. Claire eats apples.   HABITUAL

Even though all tests are not without problems, by using them in combination, one can reliably distinguish the four aspectual classes in a wide range of languages.

2.3 Aspectual semantics

In this section I will briefly present some relevant semantic accounts of aspect. I will not be able to do justice to the voluminous semantic literature on aspect. Instead, I will present those semantic insights that will be incorporated into my basically syntactic account.

2.3.1 Dowty's (1979) aspectual calculus

Dowty's aspectual semantics is designed to account for syntactic and interpretational differences between the four Vendler aspectual classes introduced in 2.2.1

He assumes that all classes are derived from a primitive stative predicate and a set of three aspectual operators BECOME, DO, and CAUSE. The four verb classes are then derived from underlying stative predicates combined with the appropriate aspectual operators: DO for activities, BECOME for achievements, DO and BECOME with the connective CAUSE for accomplishments. States directly correspond to stative predicates in the logical structure.

If V_n is a predicate and $a_1...a_n$ its argument(s), the four classes can be represented (simplified) as in (8) with examples.

(8) *State*: $V_n (a_1...a_n)$
     e.g. The linen is white = [white (linen)]
     Achievement: BECOME $[V_n (a_1...a_n)]$
     e.g. The linen whitened = BECOME [white (linen)]
     Accomplishment: DO $[a_1, V_n (a_1...a_n)]$ CAUSE [BECOME $[V_n$
                        $(a_1.....a_n)]]$
     e.g. John whitened the linen = DO [John, whiten (John, linen)] CAUSE [BECOME [white (linen)]]
     Activity: DO $[a_1, V_n (a_1...a_n)]$
     e.g. John swims = DO [John, swim (John)]

Being white is a state. The proposition denoted by the achievement verb is true if and only if the linen undergoes a change from a state of being non-white to a state of being white. The proposition denoted by the accomplishment verb denotes that the change of state of the linen from being non-white to being white is caused by some activity of John's. In this book I will treat BECOME as representing a change of state and CAUSE as representing the causation process leading to the change of state.

The DO operator is somewhat different from the other aspectual operators. It turns out that it represents mainly the volitionality of the subject, the fact that the subject is a sentient being and is theoretically in control of the course of events. Consequently, DO does not have an interval semantic definition in Dowty (1979) and is left to play a minor role in the theory. I will agree with Brinton (1988) and Verkuyl (1993) that volitionality and sentience do not play a crucial role in the composition of aspectual meanings. In order to distinguish (9a) from (9b), it is the notion of dynamism, or eventiveness, and not volitionality or control, which is central.

(9) a.   John is a fool.   STATE
     b.   John is being a fool   ACTIVITY

"The function of the progressive with a state [as in (9b)] is to portray the state, which is not dynamic, *as if* dynamic" (Brinton 1988:40). For this reason the DO operator, unlike CAUSE and BECOME, will not project syntactically in our phrase structure.[3]

2.3.2   Sub-event structure

Recent semantic studies on eventuality have demonstrated that the Event is not a semantic primitive but has internal structure. Decomposition analyses of words into complex predicates goes back to Generative Semantics. McCawley (1968), following Lakoff (1970), treated monomorphemic *kill* as a semantically and syntactically complex predicate of the form *'cause-become-not-alive'*. Thus *kill* did not exist as a unit at Deep Structure; a sentence like *Bill killed John* originated from a multi-clausal structure, with each elementary predicate (*cause, become*, etc.) heading its own clause. The abstract verbal complex was formed by means of V-to-V movement, or predicate raising, which applied successive-cyclically, first adjoining *alive* to *not*, then *not-alive* to *become*, and so on. The final complex *cause-become-not-alive* was then spelled out phonologically as *kill* by a special rule. Although the Lakoff/McCawley theory of predicate raising was notoriously controversial, it inspired many subsequent theories of morphologically complex words. Generative semantics' essential insight of decomposing words into units that may be phonologically null but have semantic meaning and are syntactically represented has found its way into present-day syntax (see Pesetsky 1995; Chomsky 1995; Koizumi 1995; Harley 1995). We shall see further on in this chapter how present syntactic theories deal with Fodor's (1970) original criticism of treating *kill* as *cause-to-die*. But first we shall briefly survey the semantic evidence for the decomposition analysis.

In his essay "The Logical Form of Action Sentences", the philosopher Donald Davidson (1967 [1980]) taking up an idea first proposed by Hans Reichenbach, argues that events are concrete particulars, that is, unrepeatable entities with a location in space and time. His attention is on action verbs and their adverbial modifiers. Davidson begins by looking at pronominalizations of action verbs. To take his example (Davidsons' (2)):

---

3.   Instead, the dynamic, eventive aspectual classes will be represented with a double VP structure and statives with a single VP structure, following Noonan (1992). Thus, the aspectual class of the verb will be one of the factors that determine the syntactic projection of the clause.

(10)   a.   Jones buttered his toast in the bathroom with a knife at midnight.
      b.   Jones did it.

How can *it* be represented in the logical form of (10b) where *it* stands for the buttering of a piece of toast? In the standard accounts at the time, there would be no argument place for the singular term expressing the event of buttering. Davidson's solution is to posit an extra argument place for events. The logical form of every action sentence now contains one more argument than it seems to contain: Jones, the toast, and the buttering event. Thus the adverbial modifiers can predicate over that event argument.

(11) $(x)(\text{buttered }(\text{Jones}, \text{toast}, x))$ and $(\text{in }(\text{bathroom}, x))$ and $(\text{with }(\text{knife}, x))$
      and $(\text{at }(\text{midnight}, x))$

The advantage of this method of symbolization is that it accounts for the fact that sentence (10a) entails each of the following sentences, a fact of language that semantic theory has to capture:

(12)   a.   John buttered his toast in the bathroom.
      b.   John buttered his toast with a knife.
      c.   John buttered his toast at midnight.
      d.   John buttered his toast.

In the above view, an event is taken as a unified whole without any internal structure. However, there is evidence that an event should be viewed as a complex entity with sub-event structure. Parsons (1990) shows that English sentences with a causative transitive verb contain quantification over two sub-events: a causal event and a result event as in (13):

(13)   a.   Mary flew the kite.
      b. $\exists(e)[\text{Agent }(e, \text{Mary})$ and $\text{Cul}(e)$ and $\exists(e')[\text{Flying}(e')$ and $\text{Cul}(e')$
        and $\text{Theme}(e', \text{kite})$ and $\text{CAUSE}(e, e')]]$
      c.   The kite flew.

where 'Cul(e)' stands for "Culmination of the event" and where 'Flying (e')' means "there is another event e' that is an event of flying." Parsons argues that this 'flying' is formed from the intransitive verb 'fly', not from the transitive verb 'fly', so it refers to the kind of thing the kite does, not the kind of thing Mary does in flying it. This analysis yields the right logical relations between the transitive and intransitive forms and explains the fact that (13a) entails (13c). One piece of evidence will be the ambiguity of (14) (Parsons 1990: 118):

(14)   Mary flew her kite behind the museum.

One reading has Mary doing something behind the museum, and the other has the kite flying there. If there is only one unified event, it is hard to see how the sentence can have these two distinct interpretations. On the sub-event analysis, the two interpretations are easily accounted for, since there are two distinct events for the modifier to apply to.

A related example is the disjoint interpretation of instrumental phrases and locative phrases as in (15):

(15)   a.   Mary felled the tree into the pond with a chainsaw.
　　　　b.   The tree fell into the pond.
　　　　c.   The tree fell with a chainsaw.

The phrase *into the pond* applies to the falling of the tree and *with a chainsaw* modifies what Mary does. There must be some difference in status between these modifiers since (15a) entails (15b) but not (15c). In general, instrumentals seem to modify the causing events in causatives, motion and direction adverbials modify the caused event, and locatives and some manner adverbials can modify either. These phenomena cannot be accounted for on a unified event analysis.

More evidence for quantification and modification over sub-events comes from Pustejovsky (1988, 1991). Pustejovsky postulated three primitive event types: State, Process, and Transition. Process corresponds to activities in the Vendler-Dowty classification of verb classes, while Transition subsumes both achievements and accomplishments. Unlike previous analyses, he assumed a more complex sub-event structure, where event types make reference to other embedded event types. In order to constrain his decomposition in ways in which the generative semantics approach was unconstrained, he proposes a minimal decomposition in the form of opposition of terms. Lakoff's (1970) example is given below:

(16)   a.   The door is *closed*.
　　　　b.   The door *closed*.
　　　　c.   John *closed* the door.

Recall that Lakoff and McCawley have suggested that *closed* in (16c) must incorporate something like *cause-to-become-not-open*. Any method assuming a fixed number of primitives, however, will run into the problem of not being able to capture the full expressiveness of natural language. Pustejovsky proposes the minimal decomposition of *closed* into the opposition of terms *closed* and *not-closed*. For the verbal forms in (16b) and (16c), both terms of the opposition are

predicated of different sub-events of the whole event. For (16a) this opposition is left implicit since the sentence refers to a single state. This is the way event types should be represented with their event structure (ES), where e is a variable for any event type and where LCS' is a level mediating between LCS and ES but which directly reflects the sub-event opposition:

(17) a. The door is closed   b. John ran.   c. The door closed.
          State   Process   Transition (achievement)

          S   P   T

          | /   \   /   \
          e e_1 ... e_n P   S

                                                                        |
                                                               [closed (the-door)]

                                                               |
                                                          [¬closed (the-door)]
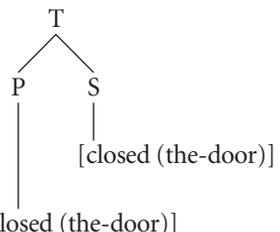
LCS   [closed (the-door)]   [run (John)]   become([closed (the-door)])

      d. John closed the door.
          Transition (accomplishment)

                    T
                  /   \
                 P   S

                 | |
                 | [closed (the-door)]
                 |
          [act (John, the-door) and ¬closed (the-door)]

LCS   cause ([act (John, the-door) and become ([closed (the-door)])

The above sub-event structure accounts for the fact that states and activities are grammatical with durative adverbials of the *for X time* type while accomplishments and achievements are not (see Section 2.4).

(18) a.   Mary was sick for a year.
      b.   Mary ran for an hour.
      c.   *Mary drew a circle for ten minutes.
      d.   *Mary died for two years.

The durative adverbial phrase acts as a measure of temporal quantity and indicates that a property P (or a process) holds without change throughout the specified interval. Thus, only non-branching sub-event structures appear to

license such modification, since branching structures by definition encode an opposition between two "states," or a change of state. The ungrammaticality of (18c) and (18d) follows from the fact that there is no single predicate or event for the durative adverbial to modify.[4] Event structure as in (17d) also predicts that accomplishments would license modification of only one of their sub-events, which is exemplified in (19).

(19)   John gave Mary the book for the afternoon.

In X time, or, as Pustejovsky calls them, frame adverbials, have exactly the opposite distribution.

(20)   a.   *Mary was sick in a year.
      b.   *Mary ran in an hour.
      c.   Mary drew a circle in ten minutes.
      d.   Mary died in an hour.

Unlike duratives, frame adverbials select for the event type Transition. They require two sub-events, e and e', and take as their argument the temporal distance between the sub-events, or the time between the onset of e and e'. Crucially, the property P on the two events must have different values (e.g., [¬closed (the-door)] and [closed (the-door)]). That is why only branching sub-event structures are grammatical with *in X time* frame adverbials.

The final piece of evidence for sub-event structure that I will discuss involves ambiguity with the adverbs *rudely* and *almost* (see also McConnell-Ginet 1982; Higginbotham 1989 for different analyses). As discussed in Cresswell (1985) and Higginbotham (1989), the sentence in (21) is unambiguous.

(21)   Mary fatally slipped.

Within a Davidsonian analysis, we would interpret this sentence as "there was a slipping event such that it was fatal to Mary." Pustejovsky (1991) distinguishes between wide-scope and narrow-scope adverbs, and argues that *fatally* is of the former type, since it modifies the whole event. Furthermore, as McConnell-Ginet (1982) points out, there are more complicated examples, where the adverb can be interpreted either as a manner adverbial or a sentential adverbial. (22) is a case in point.

(22)   Lisa rudely departed.

---

4.   Apparently Pustejovsky does not include activities in the branching structures, and he designates this fact with a triangle in the structures.

The sentence has two readings: (i) the fact of Lisa's departing was rude; (ii) Lisa departed in a rude manner. I will not go into the analyses proposed by Higginbotham (1989) and McConnell-Ginet (1982). Instead, I will show how the above ambiguity is accounted for by Pustejovsky's sub-event structure analysis.

(23) a.

          T
         / \
  P[rude(P)]   S
      | |
      | [departed(x)]
      |
[act(x) and ¬departed(x)]

b.

          T[rude(T)]
         / \
        P   S
        | |
        | [departed(x)]
        |
[act(x) and ¬departed(x)]
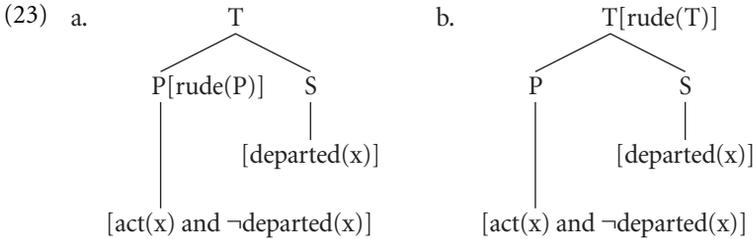
Since the departing event is a transition, Pustejovsky suggests that the adverb *rudely* either modifies a semantic expression associated with the whole event to accommodate the fact reading; or it modifies a semantic expression associated with the action sub-event to accommodate the manner reading.

Another adverbial ambiguity accounted for by the same strategy is the ambiguity of *almost* with accomplishment verbs.

(24) a.   John almost built a house.
      b.   John almost ran.
      c.   John almost died.

The sentence in (24a) has both an "intention" and a "completed" readings available: (i) John almost began building a house; (ii) John almost finished building a house. (24b) and (24c), on the other hand, have only the intention reading. The event structure analysis again allows for richer structural possibilities for adverb attachment.

(25) a.

           T
          / \
         P   S [almost (S)]
         | |
         | [house(y)]
         |
[act(John,y) and ¬house(y)]

b.

           T
          / \
  P [almost (P)]   S
         | |
         | [house(y)]
         |
[act(John) and ¬house(y)]
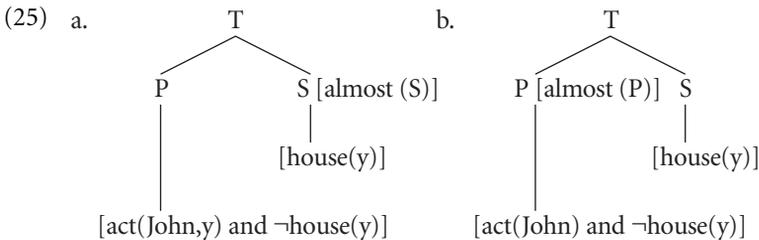
As pointed by a reviewer, a problem with this analysis is that the structure in (25b) seems to imply that the house came into existence even though John never began building it.

There is another basic problem with Pustejovsky's analysis, however, that can be demonstrated with his ideas of aspect construal. As discussed above, when the verb denotes an activity and an object NP of specified cardinality or a goal PP is added to it, the new verb phrase denotes an accomplishment (see examples in (26)).

(26) a. Mary ran.
      b. Mary ran a mile.
      c. Mary ran to the store.

On the other hand, an accomplishment verb phrase can be turned into an activity by changing the cardinality of the object from specified to unspecified.

(27) a. Mary ate an apple.
      b. Mary ate apples.

Pustejovsky (1991:63) proposes to account for those facts with syntactic composition as follows: "… when the verb denotes a process (e.g. *run, push*), and there is a phrase present, which denotes a function from processes to transitions, then the event type of the whole VP is construed as a transition." The notation $\langle P, T \rangle$ in (28) is taken to represent such a function that takes a process and returns a transition.

(28)

	T	
ES	P	$\langle P, T \rangle$
LCS′	Mary ran	to the store
LCS	[run (m)]	[at (m, the-store)]

cause (act(m), become (at(m, the-store)) BY run)
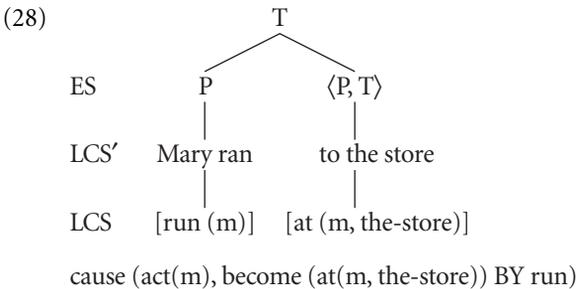
The type-shift in example (27) is dealt with in a similar fashion. And here lies the problem. Verbal phrases are composed of verbs and goal PPs or object NPs in the syntax. Thus, it is hard to see how the PP *to the store* attached in the syntactic structure is able to affect the Event Structure of the lexical item *run* with which it is construed, and to make it comparable to that of *build*. ES and LCS are by definition lexical information and should not be affected by syntactic considerations. A possible solution is to postulate two lexical items *run*, one of the intransitive verb and the other construed with a goal PP or an object NP. However, this solution is rejected by Pustejovsky himself (1991:69) on conceptual grounds.

Notice that this problem remains a problem as long as we deal with aspect construal within the lexical semantics. If we view the phenomenon of aspectual composition as (partially) a syntactic phenomenon, the problem ceases to exist.

I will turn now to some of the original arguments of the Generative Semantics decomposition proposals, since my approach will be a partial return to those intuitions. Then, I will concentrate on how the present syntactic approach takes into consideration the original criticism. McCawley (1968) proposed the following structure for the verb *kill*.

(29)

```
                    S
          _____/ | _____
        /           |          \
     CAUSE          X           S
                           ____/ \____
                          /           \
                      BECOME           S
                                 _____/ \_____
                                /             \
                              NOT              S
                                         ____/ \____
                                        /           \
                                     ALIVE           y
```
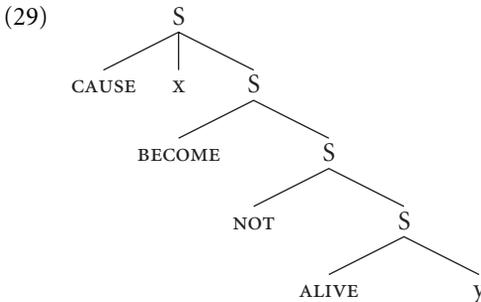
Kill is presented as composed of several primitive predicates. In effect, the meaning of *kill* is decomposed into four primitives: [CAUSE] [BECOME] [NOT] [ALIVE]. These predicates then combine via a syntactic rule of predicate-raising. Finally, the lexical item *kill* is inserted after the composition has occurred.

In a series of debates, researchers of the interpretivist school of syntax argued that this level of semantic structure should not form part of syntax. Fodor (1970) gives "Three Reasons for Not Deriving 'Kill' from 'Cause to Die'." One of his arguments against deriving (30) from (31) is based on the fact that (32) cannot be derived from (30) in the same way as (33) can be derived from (31):

(30)   Floyd melted the glass.

(31)   Floyd caused the glass to melt.

(32)   *Floyd melted the glass on Sunday by heating it on Saturday.

(33)   Floyd caused the glass to melt on Sunday by heating it on Saturday.

The idea is that with the periphrastic causative we can have the causing event and the resultant state at two different times, but this is impossible with the lexical causative. It is well known that periphrastic causatives denote two events, and thus, those two events can have separate adverbial modification, two

possible domains for "do so" ellipsis, and control of instrumental adverbials (Fodor's two other reasons). In the case of lexical causatives, however, we are dealing with one event with its own sub-event structure. Although it is possible for the two sub-events to have separate adverbial modification reflected in ambiguity (see Pustejovsky 1991), it is not possible for the two sub-events to be construed with two temporal adverbials, placing them in non-contiguous time intervals. This fact is reflected in the phrase structure representation of lexical causatives by having two VPs but a single IP (or TP and AgrSP) node. Thus, the distinction between *kill* and *cause to die* boils down to a monoclausal versus a biclausal analysis.

As Travis (1999b: 4) points out, representing aspectual meaning in the grammar started out with generative semanticists, who placed all the meaning distinctions in the syntax. Later developments in event structure (Dowty, Parsons) brought the rich distinctions back into the semantics. Pustejovsky's approach extracted from the rich semantics only the information that is relevant to event structure. By incorporating only the relevant semantic information into the syntax, the present approach evades the problem of trying to encode all the semantic information into the syntax.

2.3.3   Aspect construal

As proposed by Verkuyl (1972, 1989, 1993), aspect is a compositional property of sentences and verb phrases, not a property of verb meaning *per se*. Take the sentences in (34) for example:

(34) a.   Claire ate an apple.
     b.   Claire ate three apples.
     c.   Claire ate the apple.
     d.   Claire ate a piece of cake.
     e.   Claire ate apples.
     f.   Claire ate cake.
     g.   Claire ate at an apple.

The sentences in (34a) through (34d) are telic (terminative, in his terminology), while the ones in (34e) through (34g) are atelic (durative, in his terminology). It is obvious that, the verb form *ate* being the same, the aspectual difference between the sentences must be attributed to a difference between the NPs like *an apple, three apples, the apple, a piece of cake*, on the one hand, and the bare plurals and mass NPs like *apples* and *cake*, on the other. Thus, we are witnessing

here an interaction between the atemporal properties of NPs and the temporal aspectual properties of VPs and sentences.

Verkuyl introduces two features in order to capture this compositionality of aspect. The NP feature [±Specified Quantity of A], or [±SQA], simply reflects whether the NP's denotation can be exhaustively counted or measured: *apples* and *cake* in (34e, f) pertain to an unspecified quantity of apples and cake, while *an apple, three apples, the apple, a piece of cake* in (34a–d) pertain to a specified quantity of apples and cake. In this book I will adopt this distinction proposed by Verkuyl and will be speaking of NPs of *specified* and *unspecified cardinality*. Note that the definite-indefinite distinction is tangential to the (un)specified cardinality distinction, as both *an apple* and *the apple* are of specified cardinality.

The second feature Verkuyl proposes is [±ADD TO] to distinguish stative verbs like *want* from eventive verbs like *eat*. [+ADD TO] is associated with a dynamic verb describing an event that progresses in time over successive additive intervals in such a way that the nominal feature can bound it. The VP will be interpreted as atelic or telic depending on the type of verb and the type of complement. The PLUS principle governs the compositionality of these features. To obtain a telic reading, it is necessary not only that the verb be [+ADD TO] but also that the object have its cardinality specified, or have the feature [+SQA]. In other words, only two pluses produce telic aspect. Telic aspect is a way to signal that we are speaking about what we conceive of as events, temporal entities that can be counted and quantified over.

Atelic aspect is a way to signal that we are talking about something going on in time unboundedly. Atelic aspect obtains when one of the features is negative in value. If the verb is stative, an atelic reading arises by default (see 35).

(35) a. Claire knows the answer.
      b. Claire knows people.

When the verb is eventive, the object has to have its cardinality unspecified as in (33d, e), or there must be no object at all, as in (34f).

Verkuyl (1993) defines the two features [+SQA] and [+ADD TO] within a formal system based on set-theoretic semantics. As Tenny (1996) notices, Verkuyl's system successfully incorporates a number of the insights of lexical semantics (for example Gruber 1965/1976; Jackendoff 1983, 1990) into formal semantics, a long overdue cross-fertilization of the two subfields. This makes it particularly amenable to incorporation into phrase structure. Most importantly, Verkuyl himself convincingly argues for the subject–object asymmetries

familiar to syntacticians and proposes phrase-structure rules based on type logic. In his system of aspectual composition, the aspectual contribution of the internal argument is substantially larger than that of the external argument, since it is the internal argument that measures out the event, a fact noted by Tenny (1987, 1994), Krifka (1989, 1992), and Dowty (1991). Verkuyl's most important insight, however, and the one that we will retain in our syntactic treatment of aspect, is that aspect is composed by the interaction of the verbal and the nominal aspectual features.

However, Verkuyl's system of aspectual composition is not without problems. I shall briefly sketch some of them and indicate a possible solution. First of all, it is difficult to capture the four Vendlerian aspectual classes with the two features Verkuyl proposes. This is the ontological classification that underlies his compositional scheme:

(36) NP: [–SQA]   [+SQA]

| //STATE// | XPROCESSX | \EVENT\ |

V: [–ADD TO]   [+ADD TO]

Since Verkuyl argues that the distinction between accomplishments and achievements has no linguistic consequences, it is excluded from his classification and both classes are collapsed into a telic "event" class. Let us examine his argument. According to Vendler (1967) and Dowty (1979), accomplishments involve a somewhat extended process leading to the change of state and the change of state itself (e.g. *draw a circle*). Achievements, on the other hand, lack this extended process leading to the change of state; instead, the change of state is instantaneous (e.g. *find a wallet*). Verkuyl considers this extended process as a purely extralinguistic consideration with no linguistic consequences. "[F]rom the point of view of language the length of (a time unit involved in) an event does not qualify as a meaning element that distinguishes certain verbs from others" (p.49). The example he gives makes his claim clearer. Using the "extended process" criterion, we would have to classify *type the letter p* as an achievement, since it only takes a split second; but we would classify *type that business letter* as an accomplishment, since it takes some time to finish. This fact is demonstrated by the "punctual adverbial" test: one cannot answer the question in (37b) with a punctual time adverbial.

(37)   a.   At what time did you type the letter p? At noon sharp.
       b.   At what time did you type that business letter? *At noon sharp.

Now, with modern computers as they are, it is no longer the case that typing a letter takes time. In fact, if it is a standard business letter it can be produced by hitting one single key. Then it is purely accidental that *type the letter p* and *type that business letter* should belong to different aspectual classes, hence the length of the event does not seem to be a linguistic matter. Given these considerations, there is no ground, Verkuyl claims, to distinguish between accomplishments and achievements in the study of structural meaning involved in aspectual composition, even if it is maintained in the philosophical ontological literature.

Even if we agree with Verkuyl's logic that classifying any particular accomplishment as an achievement is purely accidental, we still have to verify whether languages of the world dispose of this ontological distinction as English does. There is evidence in some languages that the accomplishment-achievement distinction has linguistic effects, which will be difficult to explain without taking this distinction into consideration. I will provide two examples from Japanese and Bulgarian. Both examples will indicate that the distinction is encoded on a structural level and is used in calculating aspect.

Uesaka (1996) discusses the unique aspectual construction in Japanese, combining a verb and an aspectual affix *te-iru,* which signals two types of viewpoint aspect: progressive and perfect of result. Take the examples in (38a) and (38b).

(38)   a.   *John-ga   hon-o   yom-te-i-ru.*
            John-NOM book-ACC read-*te-i*-PRESENT
            'John is reading the book/John has read the book.' (Uesaka's 2–6)
       b.   *John-ga   hon-o   kak-te-i-ru.*
            John-NOM book-ACC write-*te-i*-PRESENT
            'John is writing the book/John has written the book.'

These sentences are ambiguous between the reading, in which John engages in the reading/writing of the book at the utterance time, and the reading, in which John has read/written the book at some previous point in time, but the resultant state of this event is relevant to the utterance time (a possible context for example (38a) is that John has read the book and now has got to see the film made after the same book). Both sentences denote accomplishments.

The sentence in (39), on the other hand, denotes an achievement and the progressive reading is excluded; only the "perfect of result" reading obtains.

(39) *John-ga   shin-te-i-ru.*
      John-ɴᴏᴍ die-*te-i*-ᴘʀᴇꜱᴇɴᴛ
      'John is dead/*John is dying.

The Japanese verb *die* according to Kindaichi (1950), cited in Uesaka (1996), expresses "the moment of one's taking one's last breath. … The event of *to die* starts and finishes at the same moment". This verb cannot even appear in the progressive tense in Japanese, unlike in English. Any theory of aspectuality should be able to account for this linguistic distinction between *read/write* and *die*, and it is hard to account for the distinction if we collapse accomplishments and achievements in one telic class.

   Another language that refers to the linguistic (structural) distinction between accomplishments and achievements is Bulgarian. Since this is the language discussed at length in this book, I will very briefly outline the facts and will refer the reader to the discussion in Chapter 3 for a possible account. In Bulgarian, accomplishment verbs are made up of imperfective roots and perfectivizing preverbs (ᴘᴠ) as in (40). Achievements, however, are almost never made up of a root plus a perfectivizing preverb; it is often the case that they are perfective roots (see (41)):

(40) a. *Pisa-x   pismo.*
          write-1ꜱɢ-ᴘᴀꜱᴛ letter
          'I wrote (some parts of) a letter.'
      b. *Na-pisa-x   pismo.*
          ᴘᴠ-write-1ꜱɢ-ᴘᴀꜱᴛ letter
          'I wrote a letter.'

(41) *Namer-ix   portmone.*
      find-1ꜱɢ-ᴀᴏʀɪꜱᴛ a wallet
      'I found a wallet'

Note that the telic reading in (40b) obtains only in the presence of the preverb, whereas (41) is telic without a productive preverb. I will return to these facts below, but for the sake of the present argument it is sufficient to demonstrate that accomplishments and achievements in Bulgarian have different morphological make-up. As in the Japanese example above, we will have to postulate a structural difference between the two aspectual classes which Verkuyl's system of aspectual composition forfeits.

   The second problem of Verkuyl's analysis that I will touch upon here has been noticed and addressed by the author himself. In the sentence (42a) all NPs are of specified cardinality and the verbs are [+ADD TO].

(42) a. John pushed the cart.   ATELIC
      b. John pushed the cart away.   TELIC

The PLUS principle predicts that the sentence in (42a) will be telic, contrary to fact. The direction Verkuyl takes in explaining these counterexamples away is to claim that *push*-type verbs are a sort of hybrid between [+ADD TO] and [−ADD TO]. *Push* is analyzed as a complex verb made up of a completely neutral root, i.e., a root without any information about the argument structure in which it is going to be inserted, and another morpheme XP. When this morpheme is the aspectual telic particle *away*, as in (42b), the whole complex verb is telic and the PLUS principle is observed. Whenever the XP morpheme is zero, the whole complex verb remains atelic. This analysis is shown in (43).

(43)
```
        [+T]                          [−T]
       /    \                        /    \
  [+SQ]    [+T]_VP              [+SQ]    [−T]_VP
  John     /    \              John     /    \
     [+T]_V   [+SQ]              [−T]_V   [+SQ]
      /  \                        /  \
    XP   [+ADD TO]              XP   [+ADD TO]
   away    push                 Ø      push
```
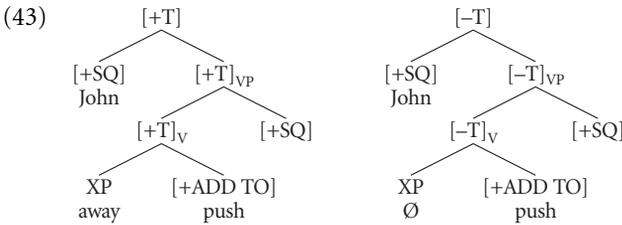
This analysis leaves us with some unanswered questions. Most importantly, the nature of this zero "untelicizing" morpheme is entirely stipulated, since there is no independent evidence for it. *Push*-type verbs will be the only area in the structure of English where one would need to take recourse to such a morpheme. Why doesn't the same morpheme distinguish between *write* and *write up* in English? How is the lexical difference between *push* and *write* encoded in the lexicon? The proposed analysis appears to be a possible analysis in need of elaboration, but it fails to convince the reader that it is the necessary analysis. This is unfortunate, since the analysis of *push*-type verbs is one of the most interesting and promising areas of aspectual research, and an area in which future solutions are likely to bring about changes in our conception of aspect.

At the end of this section I shall summarize the semantic insights that our syntactic analysis will incorporate:

1. The LCS of verbs can be regarded as consisting of several primitive predicates (CAUSE, BECOME, BE) whose combination leads to the four aspectual classes in the Vendler-Dowty classification.
2. Many linguistic facts can be explained if we view telic events as having subeventual structure, i.e., involving a (possibly instantaneous) process and a change of state.

3. Aspect is compositional insofar as a verbal feature and a nominal feature interact to produce a particular aspectual interpretation.

2.4 Aspect in syntax

2.4.1 Tenny (1987, 1994)

Until recently, aspect had been studied from the perspective of philosophy and semantics. Tenny (1987) is the groundbreaking dissertation, which brought aspect into the syntactic categories and showed how aspectual processes can interact with syntactic processes. This work suggested that the view of autonomous syntax operating independently of the semantics of a language is untenable and triggered a renewed interest in the "syntax of aspect" within Government and Binding theory (Chomsky 1981a, 1986b).

Tenny's (1987:247) main proposal is the Aspectual Interface Hypothesis as in (44):

(44) The mapping between cognitive thematic structure and syntactic argument structure is governed by aspectual properties. Only the aspectual part of cognitive (thematic) structure is visible to the syntax.

In addition, she argues that the aspectual properties associated with internal, external, and oblique arguments constrain the kind of event participants that can occupy these positions: only the internal argument, but not the other two, measures out the event.

The two aspectual properties that are syntactically relevant are *delimitedness* and *affectedness*. "Delimitedness refers to the boundedness over time of an event as described by a linguistic expression" (1987:17). This distinction is very close to the telic–atelic distinction introduced in Section 2.1.2. I will present the syntactic reflexes of this property in some detail since this family of constructions is crucial to the main focus of this book.

English has a verb-particle construction in which the particle can appear on both sides of the object NP (unlike prepositions, see (45b)) and which also has a particular semantic property of signalling the delimitedness of the event described by the VP. The examples in (45a) are all delimited, whereas the ones in (45b) need not be so:

(45) a. look up a name in the phonebook/look a name up in the phonebook
        think up an answer/think an answer up

       think through a problem/think a problem through
       sit out a game/sit a game out

b.   look out of the window/*look the window out of
       think of somebody/*think somebody of
       sit at the table/*sit the table at

Whatever the analysis of the particles in (45a) may be, some reference must be made to their aspectual properties.

Certain syntactic differences between resultative and depictive secondary predicates can also be attributed to their aspectual nature. Resultatives as in (46) describe the effect on the object of the event denoted by the verb, in other words, delimit the event. Depictives as in (47), on the other hand, describe the object or subject independently of the effect of the verbal event.

(46) a. I watered the tulips flat.
      b. I cut the bread into thin slices.

(47) a. I cut the bread hot.
      b. I ate the meat raw.

The sentences in (46) can only mean that, as a result of my watering, the tulips are now lying flat, and as a result of my cutting, the bread is now sliced thin. The sentences in (47) cannot mean that as a result of my cutting, the bread is now hot, and as a result of my eating, the meat became raw. They can only describe the state of the bread and the meat during the processes of cutting and eating. The most important syntactic distinction between resultatives and depictives is that resultatives cannot be predicated of the subject, while depictives can be predicated of the subject and the object.

(48) a. John ate the meat naked.   SUBJECT ORIENTATION
      b. John ate the meat burnt.   OBJECT ORIENTATION
      c. *Susan wiped the table tired.   SUBJECT ORIENTATION
      d. Susan wiped the table clean.   OBJECT ORIENTATION

The sentence in (48c) is ungrammatical on the interpretation that as a result of her wiping the table, Susan became tired.

Tenny (1987) tentatively adds another construction to the verb-particle and resultative secondary predicates: the double object construction in English as in (49) where *Mary* has the Goal theta role and *a package* — the Theme theta role.

(49) Margaret sent Mary a package.

She discusses some unifying characteristics of particles, resultatives, and Goal objects: they all require an accusative (Theme) object; they may occur on either side of the Theme object; they must be unique in the VP and are more tightly thematically related to the verb than to the Theme object. Together with particles and resultatives, Goal objects delimit the event described by the VP.

(50) a. push (me) the wheelbarrow
      b. lower (me) the rope

The events of pushing the wheelbarrow and lowering the rope in (50) are not telic, as we have seen, but they become delimited when the Goal object is added that marks the end of the change of location of the moving object. On the basis of their common semantic and syntactic characteristics, Tenny argues for a unified account of particles, resultatives, and double object constructions, without proposing a concrete phrase structure. I will return to this point in more detail in Chapter 3.

Affectedness is the property of an argument, which undergoes a change of state during the course of the event described by the verb, and it correlates with direct internal argument-hood (but not with subject- and object-hood).

(51) a. John split the piece of wood.
      b. John opened the door.

Verbs with affected arguments in English can have middles (as proposed by Hale and Keyser 1987) and can take part in NP passivization (as described by Anderson 1977):

(52) a. This wood splits easily. (examples from Hale and Keyser 1987)
      b. This door opens easily.
      c. *This traffic jam avoids easily.
      d. *Fleeing burglars pursue easily.
      e. The Mongols' destruction of the city (examples from Tenny 1987)
      f. The city's destruction by the Mongols
      g. Sally's pursuit of the cat
      h. *The cat's pursuit by Sally

In (52a, b) the arguments are affected and middle is possible, unlike in (52c, d). In (52e) the internal argument is affected and NP passivization is possible (52f). In (52g) the internal argument is not affected, and NP passivization is ungrammatical (52h). Tenny argues that one cannot account for these facts without referring to the aspectual property of affectedness.

Affected arguments are those internal arguments that not only measure out but also delimit the event. Only internal but not external or oblique arguments can measure out and delimit the event described by the VP.[5] Examples of internal arguments that measure out and delimit the event are the internal arguments in (53a). Examples of internal arguments that measure out but do not delimit the event are given in (53b). We can judge the progress of the event by inspecting the location of the object.

(53) a. Mary built a house.
          The actors performed the play.
          They translated the poem.
      b. Mary pushed the cart.
          John drove the car.

Thus, aspectual properties are related to fundamental subject–object asymmetries in the syntax. Using the aspectual property of the internal argument, one can account for the familiar unaccusative–unergative distinction in the following way: unergative verbs are verbs, in which the argument engages in some kind of volitional activity (e.g., *run, dance, whisper*), whereas unaccusatives describe situations in which the argument undergoes some sort of change or is affected, in other words, the action is delimited (e.g., *melt, freeze, fall)*. The

---

5. Independently from Tenny (1987), a similar idea appeared in the semantics literature. It was first proposed by Hinrichs (1985) but fully developed by Krifka (1989). Dowty (1991) calls this the Incremental Theme theta role and defines it as follows: the meaning of a telic predicate is a homomorphism from its (structured) Theme argument denotations into a (structured) domain of events. To take an example, in the event of *John mowed the lawn*, we can look at the lawn at a particular point in time and conclude something about the "aspect" of the event of his mowing the lawn from the state of the lawn: the event has not yet begun, or is half-way through, or is already completed, according to the grass being all tall, or partly tall and partly short, or all short. By contrast, we could not learn anything about the event by inspecting the state of John. In this event John is the Agent and the lawn is the Incremental Theme. Dowty (1991) argues contra Tenny (1987) that the Incremental Theme theta role can be assigned to subjects as well, based on the following examples:

(i)   John entered the icy water (very slowly).
(ii)   The crowd exited the auditorium (in 21 minutes).
(iii)   Moving slowly but inexorably, the iceberg took several minutes to pierce the ship's hull to this depth.

It should be noted, however, that at least in examples (i) and (ii) above, the subjects are what is traditionally known as D-Structure objects. Thus, Dowty's argument is based only on sentence (iii), which is not entirely straightforward.

proposal that it is the internal argument that measures out the event can be tested with the adverbial *halfway.*

(54) a. *Martha danced halfway.
     b. *Thomas ate halfway.
     c. The lake froze halfway.
     d. The candle melted halfway.
     (examples from Tenny 1987)

The locative alternation is an alternation in syntactic argument structure that also depends on certain characteristics of the theme and the goal. The aspectual constraint on internal arguments predicts the following familiar facts about this construction.

(55) a. John sprayed the paint on the wall.
     b. John sprayed the wall with the paint.

It is quite obvious that only the internal argument is interpreted as a delimiter and as fully affected. In (55a) the implication is that all the paint has been used up to spray (possibly parts of) the wall, while in (55b) it is the wall that is exhaustively sprayed with (possibly parts of) the available paint.

    Another familiar set of linguistic facts that can be explained with the affectedness and delimiting nature of the internal argument is the behavior of psych verbs. These are verbs that denote psychological states and have an argument bearing an Experiencer theta role — experiencer subject as in (56a) and experiencer object as in (56b). The other argument may be referred to as Theme.

(56) a. John fears ghosts.
     b. Ghosts frighten John.

The delimiting adverbials in (57) are resultative secondary predicates that refer to the central property of the internal argument: measuring out the event. Notice how they pick out the internal argument exclusively.

(57) a. The children feared the movie to the end.
     b. *The children feared the movie to death.
     c. *The movie frightened the children to the end.
     d. The movie frightened the children to death.
     (examples from Tenny 1987)

To summarize the main thrust of Tenny's proposal, there are strong generalizations to be made about correspondences between meaning and syntactic

structure. Once the effects of aspectual properties on syntactic structure had been identified, syntactic theory could no longer ignore them.

2.4.2   Hale and Keyser (1992, 1993)

Hale and Keyser (1987, 1992, 1993) incorporate semantic insights into syntactic structure and argue that syntactic principles govern sublexical processes. I will examine some of the main evidence for their proposals and pay particular attention to their justification of phrase structure built on event structure.

If one accepts a view of the lexicon, which assumes that verbs have a number of theta roles to assign, there is no explanation for why there are so few different theta roles. Presumably, the information encoded in theta roles is idiosyncratic and could be listed in the lexicon like any other idiosyncratic information. Hale and Keyser (1992, 1993) address the fundamental question of the paucity of theta roles and argue that, on such a view, there is no obvious reason why there should not be tens and hundreds of theta roles. Thematic relations are few, they claim, because they reduce to the elementary lexical syntactic relations of complement and specifier, and these are restricted in relation to the lexical categories V, N, A, P. They propose an account that involves the decomposing of verbs into component primitives (similar to the Dowty 1979 operators CAUSE, BECOME, DO and Jackendoff's 1983, 1990 elements of Conceptual Structure). Combinations of primitives and lexical categories result in syntactically complex, though apparently "monomorphemic" verbs, which subsequently enter the syntax.

The empirical support for the conception of argument structure just outlined comes in large part from the study of denominal and de-adjectival verb formation and involves the use of incorporation, i.e., the head-movement variant of Move-α (Baker 1988). To illustrate this mechanism, let us take an example with unergative verbs, e.g., *laugh, sneeze, dance*. By hypothesis, they involve incorporation, therefore, their formation is governed by syntactic principles. Their structure is as in (58):

(58)

```
          V′
         /  \
        V    NP
             |
             N_i
```
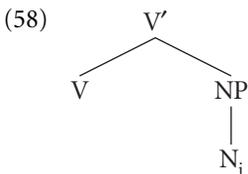
Incorporation of N_i into V, deriving for example the verb *dance* from the N_i *dance,* is in accordance with the Head-Movement Constraint (Travis 1984) or equivalently, the Empty Category Principle (Baker 1988), requiring X^0 to properly govern any head that incorporates into it.[6] If a noun is external to V, as would be the case if N is the head of the subject NP, then a derivation incorporating that noun into the V head is impossible. That derivation will violate the essential syntactic requirement of proper government. (59) shows that such incorporation is indeed ungrammatical:

(59) *It cowboyed a polka (= A cowboy did/danced a polka)

Another example of the necessity of a syntactic derivation comes from the analysis of denominal location verbs like *shelve* (as in *shelve the books*), *corral* (as in *corral the horses*) and denominal locatum verbs as *saddle* (as in *saddle the horse*) and *hobble* (as in *hobble the mule*). Their initial Lexical Relational Structure (similar to the LCS we discussed in Section 2.2.2) shares the essential relational structure with verbs like *put.*

(60)

```
              V′
            /    \
           V      VP
               /     \
             NP       V′
          her books  /   \
                    V     PP
                        /    \
                       P      NP
                              |
                              N
                              |
                            shelf
```

---
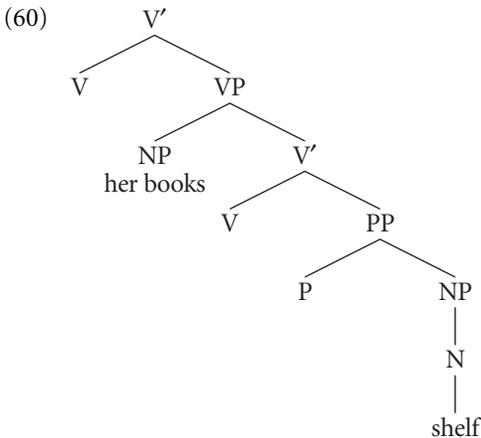
6. This is a definition of government from Baker (1988: 39) (following Chomsky 1986b):

    A governs B iff A c-commands B and there is no category C such that C is a barrier between A and B.

The notion of barrier is highly technical and needs a long exposition (see Baker 1988: 51–63 for an exhaustive treatment). For the purposes of understanding Hale and Keyser's analysis, we shall take incorporation to mean that an X^0 may only move into the Y^0 that governs it, where "govern" means that the moved X^0 will both c-command its trace, and that no other potential governor Z^0 will intervene between the trace and its antecedent.

As shown in (61), the surface form of the verb is derived by three applications of head movement, the first of which incorporates the lower N *shelf* into the P that governs it. The compound so formed then moves into the verb that governs it, forming another compound there, which finally makes the final move to incorporate into the upper V.

(61)

V'
├─ V
│ ├─ V
│ │ ├─ P
│ │ │ ├─ N — shelf
│ │ │ └─ P
│ │ └─ V
│ └─ V
└─ VP
   ├─ NP — her books
   └─ V'
      ├─ V — t
      └─ PP
         ├─ P — t
         └─ NP — N — t
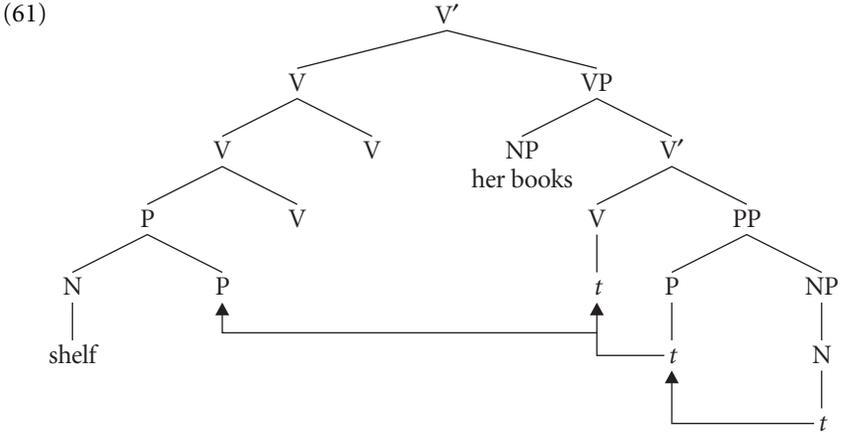
Each step in this derivation conforms to the ECP, that is, incorporation involves movement into a head that properly governs it, and that is why the "monomorphemic" verb *shelve* surfaces in the syntax. Now, if denominal verb formation was not governed by syntactic principles, that is, if it was a lexical process of category change, then the range of possible denominal verb types would be expected to include the following:

(62) *It cowed a calf (= A cow had a calf. A cow calved.) (H and K's 11)
       *It machined the wine into bottles
        (= A machine got the wine into bottles. A machine bottled the wine.)

Hale and Keyser explain this gap in the English lexicon with the syntactic constraints on incorporation: a subject cannot incorporate into the V head, because it cannot properly govern its trace.

English also lacks verbs of the type in (63):

(63) *She churched her money. (=She gave a church her money.)
        (H and K's 14)
       *They housed a coat of paint. (=They gave a house a coat of paint)

where *church, house* have the meaning described in the parenthetical sentences. The explanation goes as follows: since the inner VP in (64) contains a governor

(the V that is its head), that VP counts as the immediate governing domain of
the NP in its Spec position. Hence, movement of the N *house* into the upper V
head would violate the ECP, because there is a closer governor for the trace than
its antecedent.

(64)

```
            V′
          /    \
         V      VP
              /    \
            NP      V′
             |     /   \
             N    V     PP
             |         /   \
          house       P     NP
                            /  \
                     a coat of paint
```
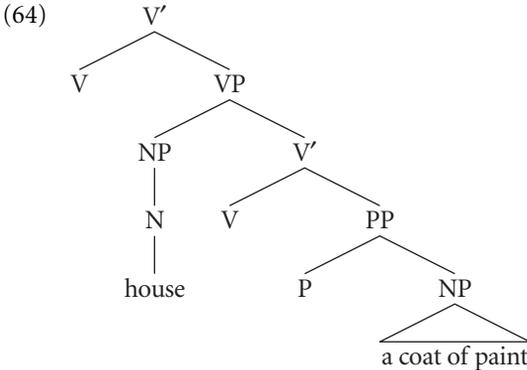
The next logical step in this line of argument is the claim that the representation
of the argument structure of a verb is just a syntactic representation of the usual
sort. If we come back to the question from the beginning of this subsection,
why there are so few theta roles, the answer relies on Kayne's discussion of
unambiguous projection (Kayne 1984) and Larson's related proposal, the Single
Complement Hypothesis (Larson 1988), which requires that the head–comple-
ment relation be bi-unique. Hale and Keyser's argument is that, given unambig-
uous projection and the limited number of lexical categories, they can enter
into a limited number of configurations only. In one sense, theta roles do not
exist, they are only convenient labels for positions in structured representations.

Let us now turn to the four notional types related to the projections of the
four lexical categories. Each of the lexical categories is identified with a particu-
lar notional type, that is, an elementary meaning. The notional type of a verb,
for example, is a (dynamic) event (as in Davidson 1984; Higginbotham 1985)
symbolized by *e*. The structural relations in the X-bar projection as in (65) are
unambiguous.

(65)

```
            VP
          /    \
        NP      V′
              /    \
             V      VP
```
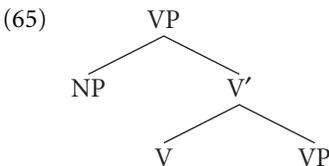
It is logical to suppose that, in addition to the unambiguous structural relations, there are elementary semantic relations associated with (65), since the lexical items involved have elementary notional content. Furthermore, those semantic relations are also unambiguous, as the structural ones, and fully determined by the LRS projection of categories. The upper V in (65) governs a lower V (not shown in this tree), the head of its complement VP. Corresponding to this syntactic relation is the similarly asymmetric semantic relation of implication, that is, the upper VP event implicates the subordinate event in a *causal* relationship $e_1 \rightarrow e_2$. Thus, in this light we are justified in designating the NP in (65) as Agent, since it bears a specifier relation in the structure projected by the "causative" verb. Hale and Keyser symbolize this relation with ">". Thus the semantic representation of the whole of (64) is $n > (e_1 \rightarrow e_2)$, where n represents the notional type of nouns. Next, they consider the inner VP in (65). (66) exhibits a possible structure that this node can dominate as in *She put the book on the shelf*.

(66)

```
              V′
           /      \
          V        VP
                 /    \
               NP      V′
              book   /    \
                    V      PP
                   put    /   \
                         P     NP
                         on    shelf
```
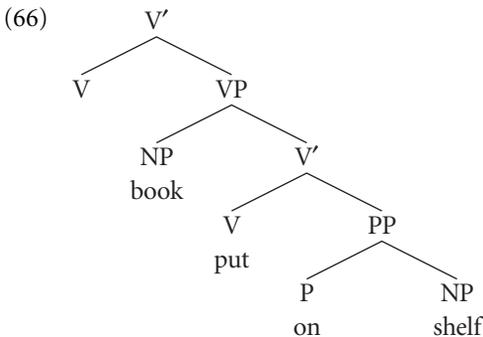
The notional type of the Preposition is "interrelation", symbolized by *r*. The semantics of the relation embodied by V′ is "a dynamic event implicating an interrelation", or $e \rightarrow r$. A subject is absolutely required in the lexical syntactic projection of this V, since it corresponds to an entity that completes the interrelation r. It is the subject of a "predicate of change", otherwise known as Theme (Gruber 1965 [1976], Jackendoff 1972). But transitive sentences in English involve Themes as in *The cook thinned the gravy*. Therefore, Hale and Keyser argue, the double VP analysis associated with (66) can be extended to all transitive sentences as in (67).

(67)

```
                    VP
              /            \
           NP               V'
        the cook        /        \
                      V            VP
                            /             \
                          NP               V'
                       the gravy       /        \
                                     V            AP
                                               /    \
                                              /_____\
                                                thin
```
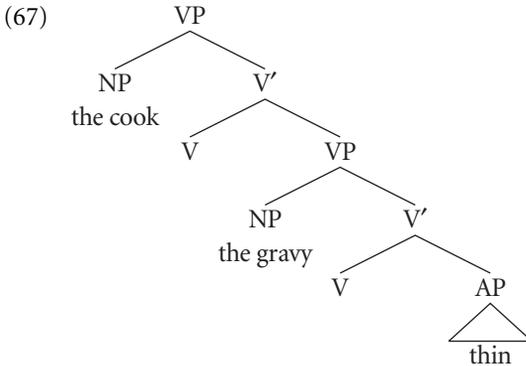
The lexical category A is associated with the notional type "state", or s. In (67), a dynamic event implicates a state, or e→s, and the meaning is "change resulting in a state." Since it is a fundamental semantic requirement that AP be attributed of something, a subject necessarily appears in the Spec of the lower VP, as in the case of PP complements. It is again the Theme, because it is the entity undergoing change, semantically expressed as n>(e→s). Finally, the notional type of N is "entity", or n. The structure associated with the projection of N is the one Hale and Keyser attribute to unergative verbs as in (68a, b).

(68) a.   The child laughed.
      b.   The children had a good laugh.
      c.

```
              VP
          /        \
       NP           V'
                /        \
              V            NP
```
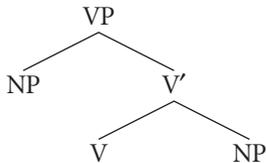
In (68c) a dynamic event implicates an entity e→n, corresponding to the notion that the implicating event is completed, or perfected "by virtue of the creation, production or realization of the relevant entity" (1993:74).

Hale and Keyser's valuable proposals have far-reaching implications for our general conception of phrase structure and for language acquisition. If we consider that the LRS (or meaning components) of verbs project unambiguous structure, then the broad claim that children use meaning to learn the argument structure of verbs (Pinker 1989, among others) appears to be justified. Still, the structures proposed by Hale and Keyser are not detailed enough to be able to reflect the telicity or atelicity of verbs, a fundamental property of every VP. To take an example, the authors claim that (68c) is the underlying structure of both

(68a) and (68b). But the former is typically interpreted as atelic, while the latter has only a telic interpretation. In general, most unergative verbs are known to be atelic, while the cognate object structures associated with them are telic. Hale and Keyser's phrase structure is not really capable of capturing this fact.[7] Thus, the need arises for another functional projection arises, where the important contribution of the object to calculating VP aspect in English will take effect. This is AspP proposed by Travis (1992) and discussed in the next subsection.

2.4.3 Travis (1992, 1994)

Travis (1992) argues for two main claims. First, that there is a derived object position, that is, objects do move for case reasons, and it is within VP. Second, objects move to the Spec position of a functional category, AspP, associated with completive aspect. She presents three different proposals for a derived object position: Mahajan (1990), who claims that AgrOP is above VP, Johnson (1991), who argues that objects can optionally move to SpecVP, and Sportiche (1990), who proposes that the derived objects' landing site is somewhere within VP, without specifying exactly where.

What motivates Travis to propose this functional projection between the two layers of a Larsonian VP shell is additional data from Tagalog, an Austronesian language. She first shows that the upper VP is not empty but has the semantic content of CAUSE. In Tagalog, CAUSE is morphologically realized.

(69)   *Tagalog causative-inchoative alternation*, cited in Travis (1992) from
       Maclachlan (1989):
       a.   *t-um-umba*   X fall down
            s-um-abog   X explode
            l-um-uwas   X go into the city city
            s-um-abit   X be suspended
            s-um-ali   X join

---

7.   Two crucial differences are notable between the analysis assumed in this book and Hale and Keyser's (H and K). Firstly, for H and K, the object is case-licenced without movement in its base-generated position. Yet, there is extensive evidence that in English the object moves overtly (Johnson 1991; Koizumi 1995; Sportiche 1990). Secondly, they assume that the external argument is base-generated in its surface structure position, the Spec of IP. What argues against their analysis is the whole set of arguments in support of the Internal Subject Hypothesis (Fukui and Speas 1986; Kitagawa 1986; Koopman and Sportiche 1991; Kuroda 1988), which will not be repeated here.

b. *mag-**tumba*** Y knock X down
    *mag-**sabog*** Y scatter X
    *mag-**luwas*** Y take X into the city
    *mag-**sabit*** Y hung X
    *mag-**sali*** Y include X

As can be seen from the alternations in (69), the causative verbs are derived from the inchoative counterparts by adding the morpheme *mag*, which can further be decomposed into the topic marker *m* and the morpheme *pag*. Travis argues that *pag* encodes causation and assigns the Causer theta role. This morpheme is situated in the head of the upper VP in the Larsonian shell structure, and the Causer is generated in the Spec of the higher VP.

    Furthermore, she observed that there is another aspectual morpheme, namely reduplication (RED) which may appear between the causative *pag* and the root *tumba* as shown in the examples in (70b, c). Tagalog has two morphemes in the tense-aspect system: one that Travis calls outer aspect and which encodes whether or not the event has started; and inner aspect which encodes roughly whether or not the event is complete (see Maclachlan 1989).

(70) *Aspect in Tagalog* (from Travis 1999b)
    a. Aspect 1 (outer aspect, ± start):   +start   -in/n-
        Aspect 2 (inner aspect, ± incomplete): +incomplete reduplication
    b. *n + m + pag-tumba (nagtumba)*   'has V-ed'
        Aspect1 + TM + CAUS-fall   Perfective
    c. *n + m + pag + **RED** + tumba (nagtutumba)* 'was V-ing'
        Aspect1 + TM + pag + **Aspect2** + fall   Imperfective

As (70c) shows, outer aspect is a prefix which appears to the left of the *pag*-causative morpheme, whereas inner aspect appears as reduplication on the root, i.e., between *pag-* and the root. Based on this evidence and taking the surface positions of morphemes to be indicative of phrase structure positions, she argues that there is a non-lexical category, AspP, within the VP layers. The syntactic node Aspect has scope only over the endpoint of the event, and not over the initial point (see the Agent in upper SpecVP). This is the structure she proposes:

(71)

```
                    VP
            ┌────────┴────────┐
         Agent              V′
                      ┌──────┴──────┐
                      V           AspP
                   'cause'    ┌─────┴─────┐
                           derived      Asp′
                           object   ┌────┴────┐
                                   Asp      VP2
                                        ┌────┴────┐
                                     Theme       V′
                                             ┌────┴────┐
                                             V         XP
                                                   Location/Goal
```
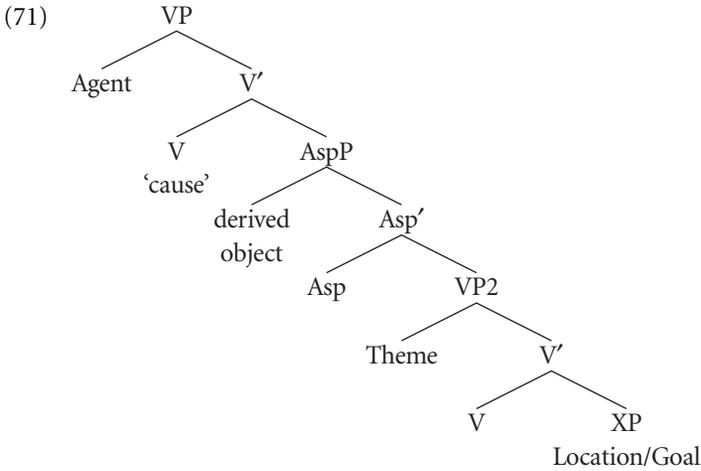
Apart from the empirical argument of the Tagalog data, Travis's proposal is also motivated by three conceptual reasons. First, with a structure of the type given in (71), the parallel between dative shift and passive indicated by Larson (1988) is complete. There is regular A-movement in both processes. The logical subject (the Agent) and the logical object (the Theme) are base-generated in the Spec positions of lexical categories and move for case reasons to the Spec positions of functional categories. The double-object word order (e.g., *John gave Mary a book*) will be derived by movement of the Goal argument *Mary* to the SpecAspP position, over the Theme argument. Thus, this account is conceptually appealing.

Secondly, Travis notes several intriguing relationships between aspect and direct objects in many languages. To take just one example, Mahajan (1990) claims that Hindi allows objects to appear in a derived A-position. However, this movement happens only in perfective sentences. He argues that perfect participles do not assign case to their object and therefore the objects of perfectives have to move to a derived position to receive structural case. Furthermore, as we discussed at length in 2.2.3, Verkuyl (1972, 1993) proposes that a feature of the verb and a feature of the nominal argument conspire to bring forward an aspectual interpretation. It is conceptually attractive to claim that this happens in a Spec–Head relationship within a functional category.

Finally, following Pustejovsky (1988), Travis captures sub-event structure in her phrase marker. The upper VP in the VP shell is no longer just an empty slot to be filled by head-to-head movement. It represents the causal part (*building a house*) of the culminating accomplishment *build a house*. The lower VP represents the resultant state *a house is built*. This analysis is based on the

variety of sub-event structure tests that we discussed (2.3.2) and especially on the ambiguity of the *almost* test. In the sentence in (72) the adverb *almost* can modify either the process or the resultant state, reflected in the following two interpretations:

(72)   John almost built a house. (Travis's (21))
      a.   almost engaged in the building process
      b.   almost finished a house

Travis (1994), based on the Malagasy causative construction, further argued that there is another aspectual functional category between VP and TP, which she calls EventP (EP). The function of EP is to bind the event argument of the verb, following Higginbotham (1985). Higginbotham (1985:561) conjectures that the Event argument in the theta grid of the verb is discharged "at the point where the VP meets Infl. The interpretation is existential generalization over the the E-position, as in Davidson (1966), hence, it is a form of theta-binding." The tree in (73) from Travis (1994:566) uses the type of notation given by Higginbotham.

(73)

```
                 IP
               /    \
             NP      I′
                   /    \
                  I      VP ⟨... *E⟩
                        /    \
                      V ⟨...E⟩
```
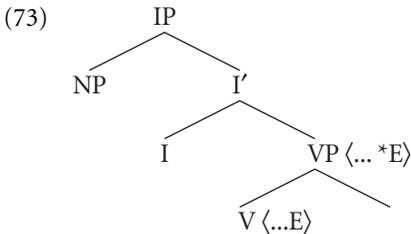
Travis (1994) espouses this existential generalization over the event argument as the function of EP.[8] She proposes that binding categories (AspP and EP in her structure) are non-distinct from functional and lexical categories. They both select a VP and bind an event-type theta role in the head V. But while AspP may have an effect on the telicity of the event (± endpoint), EP will have scope over the whole event. It can be used to encode the realis/irrealis distinction and it can also have referential meaning as its nominal counterpart R.

    Travis's aspectually oriented phrase structure tree now looks like this (irrelevant details omitted):

---

8.   Higginbotham suggests that the event argument E is theta-bound, or syntactically satisfied, by I^0 (T^0 in more recent terms). If the event argument is bound off below TP, then Travis is left with the question of whether T ends up restructuring a world variable rather than an event variable. The precise semantic contribution of EP and TP need to be spelled out in more detail.

(74)

```
            TP
          /    \
         T      EP
              /    \
             E      VP
                  /    \
              Agent     V′
                      /    \
                     V      AspP
                   CAUSE   /    \
                        Spec    Asp′
                              /    \
                            Asp     VP
                                  /    \
                              Theme    V′
                                     /    \
                                    V      Location
                                 BECOME/BE
```
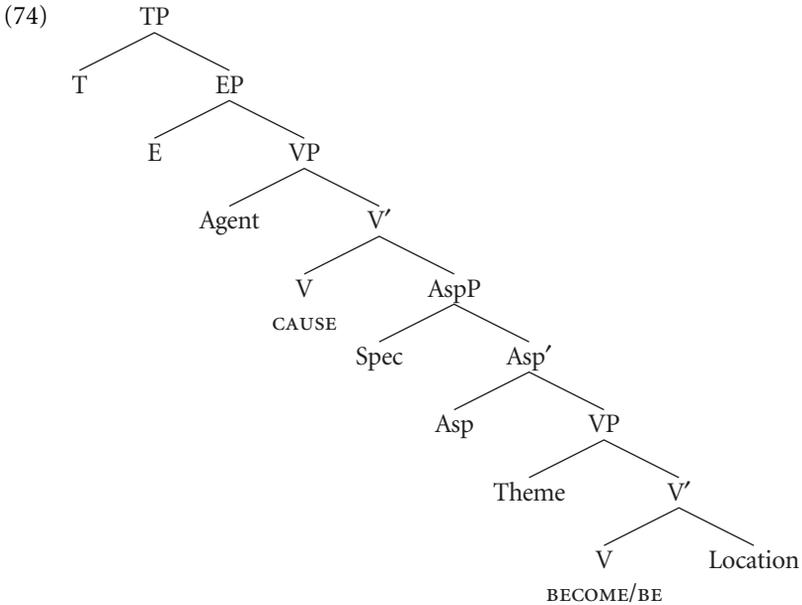
This phrase structure allows the possibility of proposing four different templates for the four aspectual classes of the Vendler-Dowty classification. Evidence from other languages (Amharic, Japanese, Hindi, Slavic) that have been studied with this phrase structure in mind (Amberber 1993, 1996; Uesaka 1994, 1996; Slabakova and Uesaka 1995) have supported and extended the analysis further. It is also the basis for the parametric approach to Aspect that will be developed in this book.

2.4.4   Borer (1994, 1998)

Another approach, which takes into consideration aspectual characteristics of predicates, is Borer (1994, 1998). Borer argues against what she terms "the-lexical-entry-driven approach" to argument projection, which assumes that lexical entries contain some syntactic information concerning the projection of their arguments, and that by and large this information determines the properties of a specific level of representation, namely D-structure. This attempt to understand how the lexical entry determines the projection of arguments is the common denominator between approaches such as the UTAH (Baker 1988), Lexical Conceptual Structure (Levin and Rappaport Hovav 1995) and various thematic hierarchies (Larson 1988; Grimshaw 1990, among others). The main

argument against such approaches is variable behavior verbs in Italian, Dutch and Hebrew, verbs that alternate between unaccusative and unergative realizations. (75)–(77) are examples from Hoekstra and Mulder (1990).

(75) a. *Jan heeft gesprongen.*   (Dutch)
         Jan has   jumped.
      b. *Jan is in de sloot gesprongen.*
         Jan is in the ditch jumped

(76) a. *Gianni ha corso.*   (Italian)
         Gianni has run.
      b. *Gianni e corso a casa.*
         Gianni is run   to home

(77) a. **Ne   hanno corso/i due.*
         of-them have   run   two
      b. *Ne   sono corsi   due a casa.*
         of-them are   run+AGR two to home

(78) a. *ha-praxim navlu li*   (Hebrew)
         the flowers wilted to me
         'My flowers wilted'
      b. *ha-praxim$_i$ navlu lahem$_i$*
         the flowers wilted to-them
         'The flowers were wilting.' (implies volition or at least self-directed motion)'

(79) a. *ha-kelev ne'elam   li*
         the-dog was disappeared to-me
         'My dog disappeared.'
      b. *ha-kelev$_i$ ne'elam   lahem$_i$*
         the-dog disappeared to him
         'The dog disappeared.' (implies volition/intention)

The paradigm in (75)–(77) illustrates the typical unergative verbs such as *springen* 'jump' in Dutch and *correre* 'run' in Italian, which normally take the unergative auxiliary 'have' and do not allow *ne*-cliticization. These are considered classical unergative diagnostics. Still, when a PP specifying the endpoint of the motion is added, those same verbs exhibit the full range of unaccusative diagnostics (auxiliary 'be', ne-cliticization).

(78) and (79) from Hebrew illustrate that verbs like *naval* 'wilt' and *ne'elam* 'disappear' can behave both as unaccusatives, allowing a possessor dative, and as unergatives, allowing a reflexive dative (Borer and Grodzinsky 1986).

Furthermore, it has been observed (Van Valin 1990; Dowty 1991) that syntactic unaccusative diagnostics are linked to telic and non-agentive characteristics, while syntactic unergative diagnostics are associated with atelic and agentive interpretations. In addressing this issue, Levin and Rappaport Hovav (1995) postulate lexical rules giving rise to multiple semantic classifications of verbs, which in turn license the appearance of these verbs in more than one construction. Following Dowty (1991), Borer points out that the hypothesis that a large and semantically coherent group of verbs has a duplicate categorization in unaccusative and unergative syntactic classes, which in turn leads to two different semantic interpretations, seems to miss the point. Borer argues that the unergative/unaccusative distinction is "a distinction between different verb/ argument complexes, rather than different verbs alone." (Borer 1998:63)

Borer's proposal is in the spirit of Hale and Keyser's (1993) reduction of thematic roles to relative syntactic positions. She assumes that phrase structure is constructed based on lexical entries in which the arguments are not hierarchically ordered, as illustrated:

(80) a. V^{MAX} b. V^{MAX}
          | |
      $derive^9$, DP, DP   wilt, DP

The hierarchical representation of arguments required for the correct assignment of interpretations is achieved through movement of such arguments to some Spec of a functional projection. The arguments are licensed in such Spec positions through case checking. This is the structure she assumes for the telic interpretation:

(81) $AspP_{+E}$
       /   \
     DP Asp'
              /   \
         Asp_{+E} VP
                        |
                    V, t_{DP}

Only in a Spec–Head configuration with [+E] Asp head can the DP object receive a telic interpretation. [+E] stands for Eventive in the *aktionsart* sense of

---

9. A possible example sentence for this verb's argument structure may be "Mary derived the theorem." The author does not provide an example.

the word, but what it actually means is Terminative or Telic, since she proposes another functional projection as the landing site of objects of atelic predicates. Accusative case is optionally available in the AspP$_{+E}$ projection, but assignment of Nominative case in SpecTP is obligatory.

The logical possibilities are for AspP$_{+E}$ either to project or not to project, but, when it projects its Spec must be filled, and, when projected, it may or may not be an accusative case position. They give rise to the following three derivations:

(82) AspP$_{+E}$ projected, no accusative case

```
                TP
              /    \
          Spec      T′
          Nom      /  \
                  T    ...        UNACCUSATIVE
                      /   \
                    AspP_{+E}
                    /      \
                 Spec      Asp′
                 −Acc      /   \
                        Asp     VP
                                |
                              V, DP
```
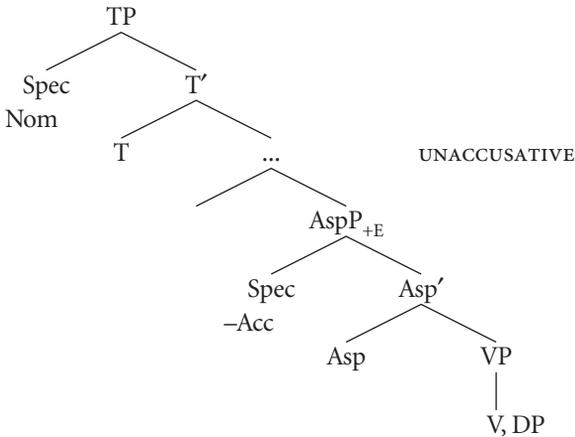
(83) AspP$_{+E}$ projected, accusative case assigned

```
        *        TP
              /      \
          Spec        T′
                    /    \
                  T       ...        ILLICIT
                        /    \
                      AspP_{+E}
                      /      \
                   Spec      Asp′
                   +Acc      /   \
                          Asp     VP
                                  |
                                V, DP
```
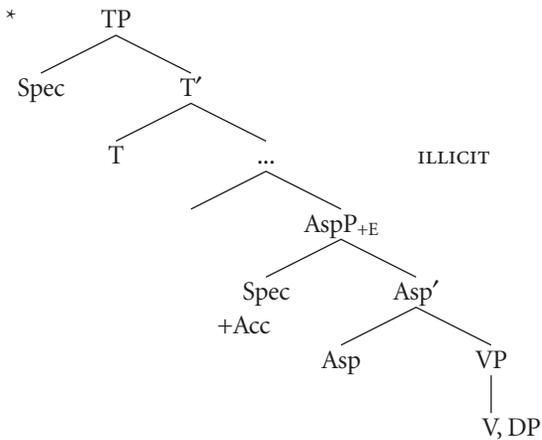
(84) AspP$_{+E}$ not projected (and Accusative case unavailable)

```
                    TP
                  /    \
             Spec        T′
             Nom        /  \
                       T    ...            UNERGATIVE
                           /  \
                              VP
                              |
                             V, DP
```
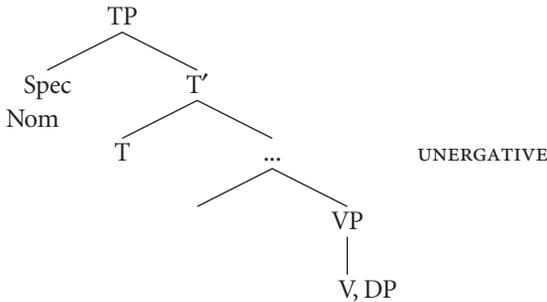
In (82) the Spec is projected and hence must be filled. A DP moving into this position enters the coindexation relations with the [+E] aspectual head and a telic interpretation results. The same DP moves to SpecTP, where it is assigned Nominative case. (83) is ruled out by the obligatory assignment of Nominative case, which is not satisfied. Finally, in (84) AspP$_{+E}$ is not projected, and so a DP in need of case must go to the SpecTP where it receives Nominative case. The aspectual properties of AspP$_{+E}$ have not been activated, and an atelic interpretation results.

In order to capture the agentive meaning of the subject of unergatives, Borer assumes another, higher functional aspectual projection AspP$_{+OR}$ (OR standing for Originator). If the lower aspectual node is not specified, the higher one must be specified, imparting its Agentive meaning to the DP, which passes through its Spec position.

So far, Borer's aspectual syntactic projections can account for the same range of facts that the proposals of Travis (1992) can capture, but with some unnecessary stipulations. For example, there is no independent evidence for the functional projection AspP$_{+OR}$ imparting agentive meaning, and without any additional motivation it remains a stipulation. Where Borer's analysis takes us further afield is in the case of non-specifics. As discussed above, bare plural and mass noun objects (Verkuyl's [−Specified Quantity]) transform an event type from accomplishment to activity.

(85) a. Mary built a house/some houses/many houses.   ACCOMPLISHMENT
      b. Mary built houses.   ACTIVITY

Following Enç (1991), Borer assumes that these two types of nominals incorporate into the verb, forming a complex verb. Derivation will proceed as in the unergative case in (84) without any complications.

A different type of non-specifics, those which Enç (1991) calls relational specifics and Borer calls referential non-specifics (e.g., *a certain* N, as in *There is a certain man at the door*), move to another Spec position, SpecFP$_{EX}$, where EX stands for Existential. F dominates an existential operator and relations of existential closure obtain between the existential head and its specifier (see tree in (86).[10]

(86)

```
                    TP
                  /    \
               Spec     T′
                       /  \
                      T    AspP_EM
                           /    \
                         Asp′
                        /    \
                     Asp      FP          NUCLEAR SCOPE
                            /    \
                         Spec     F′
                      Partitive  /  \
                               F     VP
                               ∃     |
                                  V, DP, DP
```
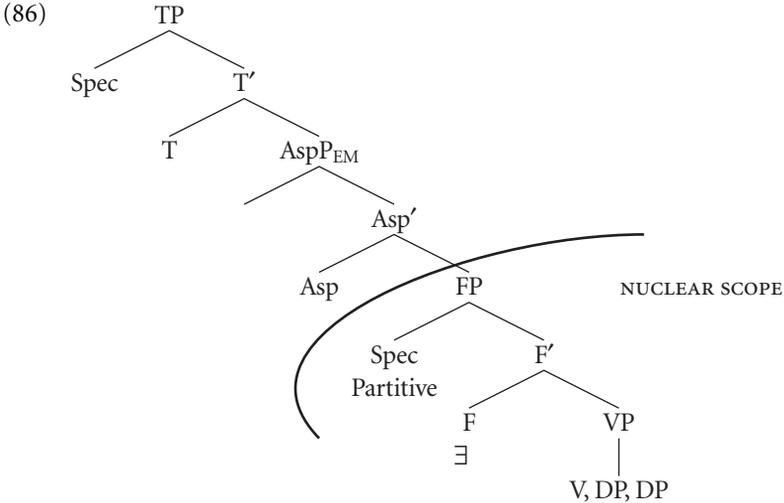
Evidence for such a functional projection comes from the fact that in Finnish and German the case distinction between specific and non-specific nominals is realized as a distinction between Accusative case and Partitive case. Other evidence comes from the syntactic behavior of the object expletive *ta* in Chinese (Lin 1993).

To recapitulate Borer's proposal, there are three aspectual functional heads above the VP. They are, in bottom-up order: FP$_{EX}$ responsible for the existential interpretation, AspP$_{+E}$ responsible for the telic interpretation in which the object measures out and delimits the event, and AspP$_{+OR}$ responsible for the

---

10. Although Borer (1994:38) states that the existential projection FP$_{EX}$ is within the nuclear scope and consequently has to impart an atelic interpretation, it is difficult to construct examples illustrating this fact.

(i)   Mary ate a certain sandwich. (telic/?atelic)
       Mary read a certain book. (telic/?atelic)

A reviewer for this book considers these sentences clearly compatible with a telic interpretation, and I agree with the judgement. If this is the case, the sentences above will be problematic for Borer's analysis.

agentive interpretation of the subject of transitives and unergatives. Objects also fall into three groups: bare plurals and mass nouns ([−SQ]) which incorporate into the V head and do not activate any aspectual projection, leading to an atelic interpretation; referential non-specifics, which move to FP_{EX}; and specifics ([+SQ]), which move to $AspP_{+E}$ and receive a telic interpretation.

Even though Borer's proposal makes detailed distinctions between types of objects according to their impact on the telicity of the event, she assumes that all verbs, at least all eventive verbs, contribute equally to the composition of aspect. Her VP has no internal structure and thus overgenerates. Her system is not in a position to account for the difference between (87a) and (87b), which is a relevant aspectual distinction.

(87) a. Mary pushed the cart.   ACTIVITY
      b. Mary built the cart.   ACCOMPLISHMENT

As the sentences in (87) indicate, when we have an identical object DP but different aspectual interpretations, we must attribute the difference to the semantic features, which are part of the lexical entry (LCS) of the verbs. This fact can be captured within an approach that assumes that most of the aspectual construal happens in the syntax, but there are some lexical semantic distinctions, which cannot be ignored.

2.5 Conclusion

This chapter introduced the fundamental notions and basic tests in the study of aspect. Among the extensive semantics literature on aspect, only those insights were briefly reviewed, which can be incorporated in the syntax of aspect. The growing syntactic literature was selectively represented (e.g., excluding some recent work as Koizumi 1995; Harley 1995) with a view of a partially "historical" presentation of the major proposals in the order in which they originated. Having discussed aspectual phrase structure in English, we are now ready to turn to aspectual structure in Bulgarian.

English and Slavic telicity

A syntactic account

3.1 Introduction

As pointed out in Chapter 2, in recent years enormous progress has been made in the study of aspectual phenomena (see Borer 1994, 1998; Grimshaw 1990; Krifka 1989, 1992; Parsons 1990; Pustejovsky 1991; Travis 1992, 1994, 1999a, b; Tenny 1987, 1994; McClure 1994; Snyder 1995a; Verkuyl 1993). Within syntactic approaches to aspectuality, at least some of the semantic information of sentences and verbal phrases is reflected in phrase structure. Semantic proposals for subevent structure (Parsons 1990; Pustejovsky 1991) have given rise to an articulated VP structure as in Larson (1988). As a result, it has been proposed that aspectual verb classes can be distinguished syntactically and can be correlated with such syntactic reflexes as case checking and agreement patterns. The distinct syntax associated with the four aspectual classes of verbs serves as a template for the appropriate aspectual interpretations and results in atelic or telic readings. As I have argued in Chapter 2, proposals for an exclusively syntactic approach seem to overgenerate. Hence, the constraining effect of lexical features will be conceptualized as checking of the features [± telic]. This chapter will attempt to demonstrate, comparing Slavic and English aspectuality, that the subtle differences in aspectual interpretation that I am about to describe are due to the different structural positions of aspectual morphemes in the two languages.

Both Slavic and English aspectual systems have been studied extensively from the perspective of descriptive and functional linguistics (see for example papers in Flier and Timberlake 1984; Flier and Brecht 1984). Both might nevertheless benefit from an examination from the perspective of phrase structure. For example, it has been noted that Slavic grammaticalizes aspectual differences while English does not. But from the point of view of a universal syntactic schema this assumption needs to be re-examined. Thus, I will propose that both aspectual systems under consideration are equally grammaticalized.

All the differences in English and Slavic situation aspect usage can be traced to the null versus overt character of the telic morpheme and its phrase structure position.

I will first outline my assumptions for the four different templates in English, providing some justification for them. Next, I will present the constructions dependent on the English value of the parameter of Aspect. In Section 3, I will propose and provide evidence for a Slavic value for the parameter.

3.2   English phrase structure templates

Since the four Vendler-Dowty aspectual classes of verbs have distinct syntactic behavior, it is conceptually attractive to represent their differences in phrase structure. The four distinct phrase markers act as templates, into which roots with specific lexical meaning are inserted. In my proposal, aspectually relevant lexical meanings are captured in the form of features. If the lexical aspectual feature of the inserted root does not match the meaning of the functional category it moves to, the derivation will violate Full Interpretation. The four phrase markers and the lexical features are language universals. What is parameterized across different languages is the specific syntactic position of aspectual morphology (both overt and covert) in a template. Languages select from a universally available array of functional categories to grammaticalize in Infl, and these 'strong' Infl projections may be separate words, or clitics, or may be morphologically incorporated within the verb (Jelinek 1995, 1998). While in English telicity is checked in the AspP projection, in Slavic it is checked in the head of a higher aspectual projection which I have named PerfectP (PerfP).

Based on the work of Hale and Keyser (1993), Travis (1992, 1994, 1996, 1999a, b), and Verkuyl (1993) discussed in the previous chapter, I propose phrase markers with the following basic characteristics. The stative and the achievement templates have a single VP structure while the activity and accomplishment templates have a double VP structure. In the latter, the upper VP denotes the causative sub-event and a process leading to the change of state; the lower VP denotes the actual change of state and the resultative sub-event. Event participants (arguments) take part in the aspectual composition through case checking in AspP (accusative case) and TP (nominative case). AspP is an important functional category for aspect construal. The derived object moves to the Spec of AspP to check accusative case and the verb moves to the head Asp. It is at this point, in a Spec–Head relationship with the verb, that the verb imparts its temporal properties to the object DP. Depending on a verbal lexical feature

[telic] and on a nominal feature (specified or unspecified cardinality [± SQA]), the aspect of accomplishment and activity VPs are calculated (Verkuyl 1993).

I shall adopt an organization of the grammar as in Halle and Marantz's (1993) Distributed Morphology sketched in (1). This work suggests that morphology comes after syntax and that syntax presents a good rough draft for the subsequent processes of morphology. Crucially, this framework argues for a late insertion of lexical items in fully formed syntactic trees, after which the derivation proceeds by head movement up the tree in the uncomplicated cases, of which Slavic and English aspect are examples. Whether morphemes are prefixes or suffixes is determined by their lexical specification.

(1)   DS
            |
           SS
          /   \
        LF   MS
                 |
                PF
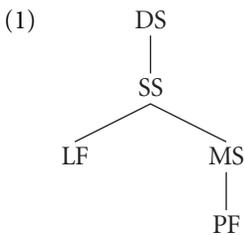
The event type and the interpretation of the event are determined by the syntactic representation of the functional categories dominating VP. Telicity is compositionally calculated in the AspP projection (reflecting the change of state), based on a lexical verbal feature and a structural feature of the direct object. Before presenting the four phrase markers, let me spell out and justify the ingredients of my analysis. These will be based on Vendler's (1967) attribution of features to the four aspectual classes of predicates. The table is from Verkuyl (1993).

(2)

	−Process	+Process
−Definite	State	Activity
+Definite	Achievement	Accomplishment

The [definite] feature captures the fact that achievements and accomplishments are telic while states and activities are atelic. The [process] feature expresses the fact that activities and accomplishments are both originated by a volitional agent and have duration; states and achievements do not have a volitional agent and duration. The latter distinction is justified on the basis of the progressive tense test in English. Since the progressive tense captures the dynamic nature of an event in progress, states and achievements do not readily take the progressive (examples are from Travis 1996).

(3) a.   I am pushing the cart.   ACTIVITY
     b.   I am writing a novel.   ACCOMPLISHMENT
     c.   *I am knowing the answer.   STATE
     d.   *I am recognizing her face.   ACHIEVEMENT

Following Travis (1996), I will assume that activities and accomplishments are bracketed together on the basis of having two sub-events reflected in two VPs. For activities, the second sub-event (change of state, or the beginning of a resultant state) will be represented by its absence, that is, by not being attained within the temporal boundaries of the event. States and achievements, on the other hand, lack a process dimension, hence a volitional Agent. This fact will be reflected in their having a single VP structure (see Noonan 1992 for the structure of states). I extend Travis's (1996) proposal by suggesting that there is another property that states and achievements share: they come from the lexicon marked as atelic or telic, respectively. As a result, cardinality of the direct object has no effect on the aspectual composition in AspP.

    In addition, I suggest that this lexical feature is responsible for constraining the syntactic calculation of the telicity value. Some verbs (states, achievements) are specified for the plus or minus value of the feature [telic] in the lexicon. Other verbs (accomplishments, activities) are underspecified for the feature, or have an [α telic] value. Thus, these predicates take their telicity value from the nominal feature of the object.

    The nominal feature I will assume is Verkuyl's (1993) specified quantity of A, or [SQA] (see Chapter 2). This feature reflects the (un)specified cardinality of nominal arguments. I will repeat the definitions for ease of exposition. A DP is of specified cardinality if its denotation can be exhaustively counted or measured (e.g., *an/the apple, three pears, a/the bag of popcorn*); a DP is of unspecified cardinality if its denotation cannot be exhaustively counted or measured (e.g., *apples, popcorn*). In other words, the unspecified cardinality nominals include bare plurals and mass nouns, while the specified cardinality nominals encompass all the rest. Note that the property of definiteness on noun phrases is tangential to the property of cardinality, since both definite and indefinite DPs are classified within the specified cardinality ones.

    Let us now present the phrase structures in turn and illustrate how they work for the four aspectual classes. The sentences in (4) are stative:

(4) a.   Mary likes John.   ATELIC
     b.   Mary knows this house.   ATELIC
     c.   Mary hates red apples.   ATELIC

(5) STATE:

```
                        AspP
                       /    \
                   Spec      Asp′
                     ↑      /     \
                          Asp      VP
                        [–telic]  /   \
                           ↑   DP_subj   V′
                                       /   \
                                      V    DP_obj
                                   [–telic]
```
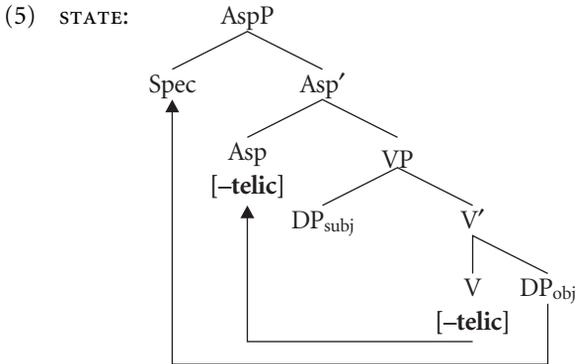
The verbs *like, hate, know* have a lexical feature [−telic] specified in the lexicon. When the verbal root is inserted in the phrase marker in (5), the verb moves to the head of AspP and the object moves to the Spec of AspP. Here aspect is calculated in a Head–Spec relationship. Crucially, [−telic] predicates are not amenable to any change based on information coming from the object: they stay atelic predicates regardless of the cardinality of the object. As the sentences in (4) indicate, a stative verb can take an object with Verkuyl's feature [+SQA] as *John, this house* or [−SQA] as *red apples*. Aspect in AspP is calculated as atelic.

Next, consider the achievement sentences in (6):

(6) a. Mary found a wallet.   TELIC
     b. Mary recognized her old friends Charlie and Bill. TELIC
     c. Mary noticed changes in her mother's face.   TELIC
     d. Mary discovered money in the road.   TELIC

(7) ACHIEVEMENT:

```
                        AspP
                       /    \
                   Spec      Asp′
                     ↑      /     \
                          Asp      VP
                        [+telic]  /   \
                           ↑   DP_subj   V′
                                       /   \
                                      V    DP_obj
                                   [+telic]
```
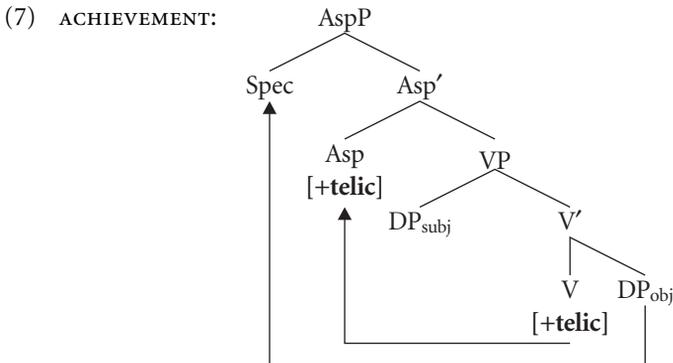
The derivation here proceeds in much the same way described for the stative phrase marker in (5). The crucial difference is the specification of the lexical

feature for telicity. When the verb moves to the AspP projection to check accusative case on the object, the aspectual interpretation of the whole predicate is calculated as telic. Again, the cardinality of the nominal argument seems to be overrun by the lexical feature, as the sentences in (6c, d) suggest. The fact that achievements lack the (more or less) prolonged process leading up to the change of state, and they lack the accompanying meaning of agentivity, is reflected in their single VP structure (compare to the structure of the other telic class, accomplishments, below).

To summarize so far, the phrase markers of states and achievements share the characteristic of having a single VP and relying on a lexical feature of the inserted verb root for the calculation of the overall telicity value. Unlike states and achievements, in the next two phrase markers the cardinality of the object is crucial in determining the aspectual interpretation. They have a double VP structure reflecting the presence of the causal sub-event in their makeup. Let us turn to activities first.

(8) a. Mary drank Czech beer.   ATELIC
    b. Mary ate red apples.   ATELIC
    c. Mary swam in the local pool. ATELIC

(9) ACTIVITY:
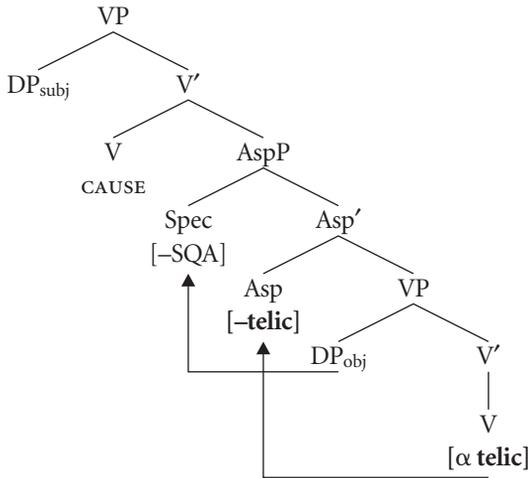
The verbs *eat, drink, swim* are underspecified for the lexical feature [telic], or they have an [α telic] value. These roots are inserted in the lower V head and proceed by head movement to Asp. In AspP verbs match their lexical feature to the [−SQA] (or unspecified cardinality) feature of objects like *Czech beer, red apples.* This type of object cannot be measured or counted, and, due to the

homomorphism between verb and object (Krifka 1989; Dowty 1991, see footnote 5 in Chapter 2) the newly construed eventuality does not have an inherent endpoint. Thus, the aspectual interpretation is one of an atelic eventuality. But this is not the end of the derivation. Since the template is a double VP one, the verb picks up a null CAUSE morpheme on its way to TP and the whole VP acquires an agentive interpretation. Notice that the lack of object as in (8c) patterns together with an object of unspecified cardinality as in (8a, b).

The sentences in (10) are accomplishments:

(10) a. Mary drank a glass of Czech beer.   TELIC
     b. Mary ate a red apple.   TELIC
     c. Mary swam ten laps in the local pool.   TELIC

(11) ACCOMPLISHMENT:
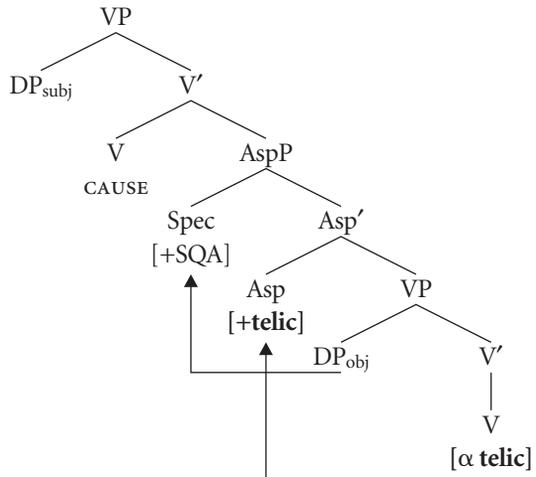
As in (9), the verbs *drink, eat, swim* are underspecified for telicity and they enter the derivation in the same way as they do the derivation for activities. The crucial difference comes from the objects in Spec of AspP. Since the objects *a glass of Czech beer, a red apple, ten laps* have the feature [+SQA], they are able to impose it on the verbs and the aspectual interpretation is calculated as telic. The event will be over when the object is "consumed" in the widest possible sense of the word. The event will then include a change of state. We can view the effect of the specified cardinality object as adding a null [+telic] morpheme in the AspP head. Further on, the verb picks up a null CAUSE morpheme, which imparts agentivity to the whole verbal phrase.

We can now tackle the problem of the *push* type of verbs that we discussed in Subsection 2.3.3. Aspectual analysis needs to explain why verbs like *push* and

drive, apparently eventive verbs, can take objects of specified cardinality as *the cart* and *that car* but do not change their aspectual class from an activity to accomplishment as other eventive verbs do (cf. examples in (12) and (13)).

(12) a.   Mary ate sandwiches.   ACTIVITY
      b.   Mary ate that sandwich.   ACCOMPLISHMENT

(13) a.   Mary pushed the cart for twenty minutes.   ACTIVITY
      b.   Mary pushed the cart into the garage.   ACCOMPLISHMENT
      c.   Mary pushed the cart away.   ACCOMPLISHMENT
      d.   Kathy drove that car for two years.   ACTIVITY
      e.   Kathy drove that car from Montreal to Toronto.   ACCOMPLISHMENT

In order to become accomplishments, these sentences need the addition of a resultative particle as in (13c) or a goal prepositional phrase as in (13b) and (13e). Verkuyl's (1993) solution to this problem was to assume that *push*-type verbs are a sort of hybrid between [+ADD TO] and [−ADD TO] verbs and to postulate a null untelicizing morpheme to account for the durativity of (13a) and (13d). I argued in Subsection 2.3.3 that this analysis is stipulative and I will suggest a better solution here in terms of the template analysis.

I shall assume that verbs like *push* and *drive* are simply marked in the lexicon with the feature [-telic]. In this respect they are not unlike stative verbs such as *hate* and *know*. When they are inserted in the activity template in (9), they move up to AspP and enter into Head–Spec relationship with an object of specified cardinality. Due to their lexical feature [-telic], there is no homomorphism between verb and object denotations, or, in other words, the objects are not "affected" by the process. In Tenny's terminology, the objects are capable of measuring the event but not of delimiting it. That is the function of the goal PPs attached higher in the structure. Thus, the objects are not capable of changing the aspectual class of the whole VP, and it remains an activity. At the same time, the double VP structure imparts dynamicity to the eventuality and distinguishes it from states.

The proposed analysis is very simple and does not need to resort to the stipulation of a null untelicizing morpheme of Verkuyl (1993). Instead, my solution follows without any extra assumptions from an analysis accounting for a larger body of data and supported by independent evidence (see Travis 1992, 1994). Although quite obvious, this analysis is impossible within a framework similar to Verkuyl's, since the latter does not rely on structure of VP. Simply claiming that *push* is atelic (or [−ADD TO]) like *know* leaves such an analysis with no way to capture the distinction between activities and states. In the

template approach, on the other hand, the state–activity distinction follows from the single versus double VP structure and the presence of the CAUSE morpheme in the upper V of activities. Note that now we have two ways of producing an activity interpretation: when an [α telic] verb root is checked against an object of unspecified cardinality as in (9) and when an atelic *push*-type root is inserted in the same template.

To summarize the phrase structure approach to the four aspectual classes in English, I have argued that a purely syntactic calculation of aspectual interpretation is too strong an analysis for two of the classes. Instead, in the case of states and achievements, the aspectual value of a predicate depends on a lexical feature [±telic]. For these classes, the cardinality of the internal argument cannot change, or override, the lexical feature. In the case of activities and accomplishments, however, it is the cardinality of the internal argument which is responsible for the aspectual interpretation. The experimental study presented in this book looks at the acquisition of accomplishment/activities only, which I have argued is a syntactic process, and disregards the lexically encoded states and achievements.

3.3   The aspect-related constructions

The aim of this section is to present the cluster of constructions that may be analyzed as related to the telicity marking parameter. These are the Secondary Resultative Predicate as in (14), the Verb–Particle construction as in (15) and the Double Object construction as in (16).

(14)   John wiped the table clean.

(15)   a.   The children ate the cookies up.
        b.   The children ate up the cookies.

(16)   Mary sent her brother a Christmas card.

First, I will present syntactic research arguing for a unified account of this family of constructions. Secondly, I will discuss proposals that the same family of constructions is related to aspect. Finally, I will turn to analyses claiming that the Double Object is not part of this cluster.

3.3.1   On a unified account of Resultatives, Particles, and Double Objects

Kayne (1984) noticed that Double Object constructions and Verb–Particle constructions of the type exemplified in (16) and (15) respectively pattern together in the sense that languages either have both of them or have neither. Larson (1990), building on ideas from Larson (1988) suggests that Verb–Particle constructions like *look up, throw out* and *smash in* should be treated on a par with other Resultative Secondary Predicates, essentially applying the same analysis as the one for the Double Object construction (see the structure in (17)).

(17)

```
                    VP
                  /    \
                DP       V
          the children  / \
                       V   VP
                          /   \
                        DP      V'
                  the cookies  /  \
                              V    PP
                                   |
                                   up
```
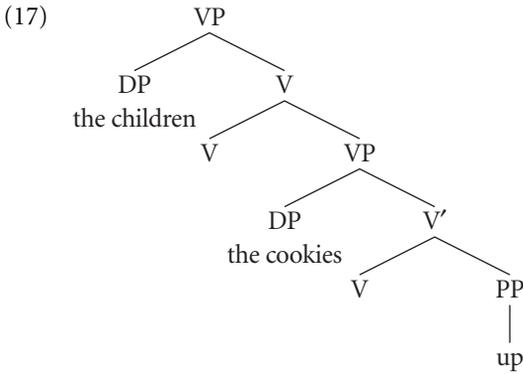
The verb and particle can be viewed as constituting a basic V′, harbouring the object DP in its specifier. The analysis has to account for the two possible positions of the particle in English: the "outer particle construction" as in (15a) and the "inner particle construction" as in (15b). The structure in (17) allows for this optionality of particle positions. When the verb moves to the head of the VP-shell, the outer particle position is straightforwardly achieved. The alternative inner particle position can then be obtained from (17) by optionally reanalyzing V′ as V^0 and raising this complex V^0 to the higher V position. A similar approach, unifying Particles, Resultatives, and Double Objects as "complex predicates" is pursued in Hale and Keyser (1993), Marantz (1993), Pesetsky (1995) and Snyder (1995a, b, 1996), among others.

An alternative approach to the same constructions is the small clause (SC) approach, initiated by Kayne (1984) for Particles and extended to all Resultatives in Hoekstra (1988) (see also Den Dikken 1995; Sybesma 1992; Carrier and Randall 1992). The analysis is along the following lines:

(18)

```
              VP
          /        \
the children        V'
                 /      \
                V        PP/SC
                     /          \
              the cookies       P'
                                |
                                P
                                |
                                up
```
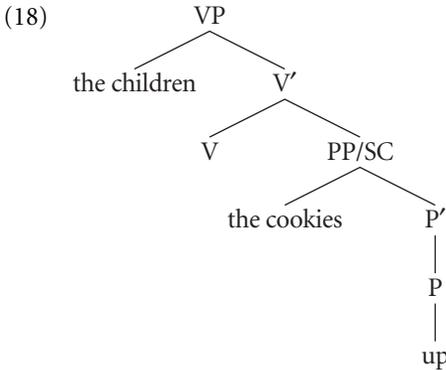
The well-known empirical argument supporting this type of analysis, due to Kayne (1984), is that subextraction from the object DP in Particle constructions like (19a), Resultatives like (19b), and Double Objects like (19c) is ungrammatical just as subextraction from SC subjects is ungrammatical in (19d). Resultatives, Particles, and Double Objects also pattern with small clauses with respect to the impossibility of nominalization as in (20).

(19) a. *What did they look [[the information about *t*] up]?
      b. *What did they paint [[the door of *t*] black]?
      c. *Who did they give [[the brother of *t*] an idea]?
      d. *Who do they consider [[the brother of *t*] a fool]?

(20) a. *our looking of [[the information] up]
      b. *our painting of [[the door] black]
      c. *our giving of [[John's brother] an idea]
      d. *our consideration of [[John's brother] a fool]

I will not go here into the arguments for one approach against the other. For the purposes of this study it is crucial to notice that both lines of research unify the same three constructions in a cluster on the basis of a common analysis.

3.3.2 Resultatives, Particles, and Double Objects are unified on the basis of aspect

As I briefly discussed in Chapter 2, Tenny (1987) presents six unifying syntactic characteristics of Particles, Resultatives, and the dative arguments in Double Object constructions. These are given below and the relevant elements are italicized.

(i) All of these constructions require a post-verbal accusative object.

(21) a. *John put *down.*
      b. *John wiped *clean.*
      c. *John gave *Mary.*

(ii) All of these elements (with minor qualifications) can occur on either side of the accusative object. Note that we have to make the accusative object sufficiently heavy in the case of Resultatives (22b).

(22) a. John ate the apple *up.*/John ate *up* the apple.
      b. The gardener watered the tulips *flat.*/The gardener watered *flat* the tulips that she had planted the week before and had not expected would ever come up.
      c. John mailed a package to *Mary.*/John mailed *Mary* a package.

(iii) Particles, resultatives, and datives must be unique in the verb phrase.

(23) a. *John ate the apple *up through.*
      b. *John scrubbed the floor *clean dry.*
      c. *John mailed a parcel *to Mary to Sue.*

(iv) The verb and the particle, resultative, and dative object are more tightly related thematically than the verb and the accusative object in the sense that the combination of verb and dative, particle, or resultative together select the accusative object.[1]

(24) a. *dry the socks up
      b. dry the socks out
      c. dry the floor up
      d. ?dry the floor out

(25) Mary took Felix to the cleaners/to task/into consideration.

(26) a. water the tulips flat
      b. ?water the sidewalk flat
      c. ?water the tulips shiny
      d. water the sidewalk shiny

---

1. Tenny admits that it is difficult to test for this effect with particles since resultative particles have a limited range of meanings. Still, *up* in *dry up* implies a complete drying of the surface of an object, while *out* in *dry out* imparts a sense of the action from inside to outside. This is the intuition the examples in (24) are based on. All grammaticality judgements throughout this subsection are Tenny's.

(v) Particles, resultatives, and dative objects contribute to the delimiting of the event described by the verb phrase.[2]

(27) a. John pushed the cart.   NON-DELIMITED
      b. John pushed the cart over.   DELIMITED

(28) a. Sue pressed the pages.   DELIMITED OR NON-DELIMITED
      b. Sue pressed the pages flat.   DELIMITED

(29) a. She's going to sing a song for her dead lover.
      b. *She's going to sing her dead lover a song.

(vi) The accusative objects in the three constructions are capable of measuring out and possibly delimiting the event described by the verb. In this respect they behave like canonical direct arguments.

Although she does not propose a specific syntactic analysis underlying the three constructions, Tenny (1987) argues for the existence of such a unified analysis on the basis of their common syntactic behavior.

A concrete syntactic unified account is proposed by Snyder (1995a). Since it is the basis of my second language acquisition hypothesis, I will present this analysis in some detail. It is motivated in part by the finding that, in the speech of twelve children, the family of constructions analyzed as complex-predicate constructions appeared at the same time (Snyder and Stromswold 1997). Those included Double Object datives, Prepositional datives with *to*, and Verb–Particle constructions. The authors argue that the children are acquiring a parametric property of English, which adds the entire family of constructions to the children's grammar simultaneously. This parametric property is the null telic morpheme in English.

Snyder (1995a) argues that English differs from Romance, Hebrew, and Japanese in allowing the phonologically null aspectual morpheme ($\emptyset_{telic}$) characterized in (30):

(30) $\emptyset_{telic}$ (P)(e) = True, for any event e and any predicate of events P, iff for that event e′ which is a subevent of e and which is the "natural endpoint" of e, P(e′) = True

___

2. The constraint that the double object must delimit the event explains, according to Tenny (1987), several special semantic properties of the dative (noted in Green 1973): the dative must be understood to exist, to be a recipient, to coexist with the accusative object, and to be animate and sentient.

The intuitive idea behind this is that this null telic morpheme takes an event and a predicate of events and makes sure that the predicate is true only at the natural endpoint of that event. Snyder (1995a) motivates the unifying analysis of particles, resultatives, and double objects with their dependence on this null telic morpheme. If a language permits this morpheme to be projected in the syntax, then it will be possible in that language to convert an activity into an accomplishment through the addition of the $\emptyset_{telic}$ morpheme and a predicative complement to that morpheme. The analysis he proposes is schematized in (31).

(31) a. John painted the house red.

   b. *Theta identification of event arguments at LF:*

   painted′   (x)   (y)   (e)
   $\emptyset_{telic}$ (P)   (e)
   _____
   [painted′ (x) (y) (e) and $\emptyset_{telic}$ (P) (e)] (P) (x) (y) (e)

   c.
```
              VP
            /    \
        John      V′
                /    \
              V        VP
                     /    \
                   DP       V′
                the house  /   \
                          V     XP
                       painted  /  \
                                X    AP
                            Øtelic  red
```
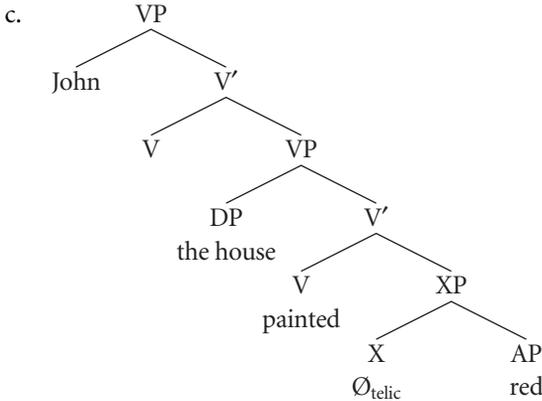
Crucially, the Davidsonian event argument (e) of the verb *paint* and of $\emptyset_{telic}$ have to be equated through a process of theta-identification in the sense of Higginbotham (1985). By identification, a position in one argument structure is linked to a position in a second argument structure in such a way that both are satisfied by a single syntactic expression.

The analysis of Particles follows the one for Resultatives, *mutatis mutandis*. (32) provides Snyder's (1995a) analysis of the Double Object construction with a verb such as *give*, an essentially triadic verb.

(32) a. John gave Mary a medal.

b.

```
                    VP
                  /    \
              John      V
                      /   \
                     V      VP
                           /   \
                        Mary     V
                               /    \
                              V       XP
                              |      /   \
                           gave    X      PP
                                   |     /   \
                                Øtelic  P      DP
                                        |     /   \
                                      Øwith  a    medal
```
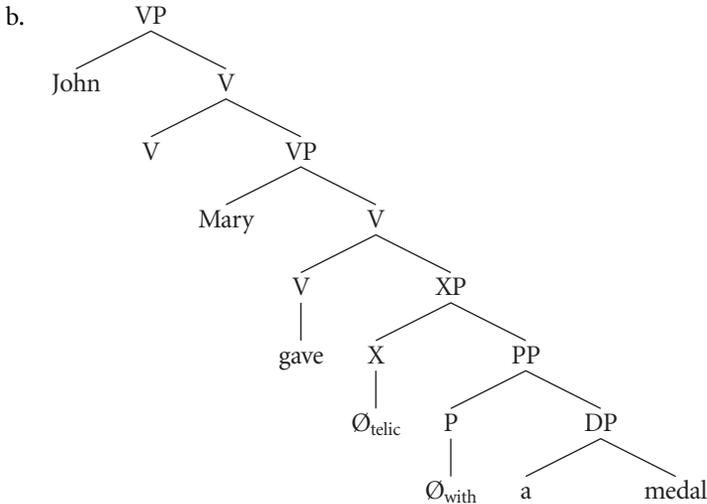
The verb takes Agent, Theme, and Goal arguments. A null possessive morpheme, corresponding roughly to the meaning of preposition *with* and labeled Ø_{with}, takes Goal and Theme arguments. The syntactic structure of *John gave Mary a medal* parallels the structure of *John presented Mary with a medal*, where the predicate *with* is null.

Another structure is proposed for sentences with verbs like *throw*, essentially dyadic verbs that may take optionally a Goal argument.

(33) a. John threw Mary the ball.
      b.

```
            VP
          /    \
      John      V
              /   \
             V      XP
             |     /   \
          threw   X      PP
                  |    /    \
               Øtelic Mary    P
                            /    \
                           P      DP
                           |     /   \
                        Øwith   the   ball
```
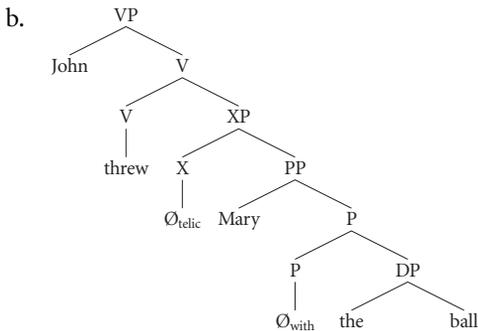
The verb *throw* takes only Agent and Theme arguments. The null possessive morpheme, again as in (32), takes Goal and Theme arguments. This approach assumes a view of lexical selection in which a verb need not be directly related to all of its lexically specified arguments. When a verb selects an Agent and a Theme, and another morpheme sharing the verb's event argument also selects

a Theme, then the Theme is syntactically expressed as the argument of only one of these predicates.

In (33b) the Goal is necessarily projected as the subject of a small clause headed by the null possessive morpheme, while in (32b) it is projected as an internal argument of the verb *give*. Thus, the two analyses pertain to the two different approaches to the Double Object construction: (32) is a complex predicate structure while (33) is a small clause structure. Snyder's (1995a) tentative conclusion is that the issues of parametric acquisition of the whole family of constructions are largely independent of the choice between the complex-predicate and the small-clause approaches, since both proposed constructions crucially depend on the null telic morpheme.

This is the place to make a distinction between the null telic morpheme proposed by Snyder (1995a) and the null telic morpheme that I propose in the aspectual templates above.[3] The latter accounts for aspectual effects of the [+SQA] direct object in English, and is situated in the head of AspP between the two VPs. The former is generated as a complement of the lower VP and makes possible the appearance of the aspect-related constructions. Both morphemes have similar semantic functions: imparting a restriction, or delimiting the event. The one in AspP is based on the homomorphism between verbal action and degree of affectedness of the object, whereas the one, which is in the complement of the lower VP position, imposes a restriction based on another overt XP, either a resultative, a particle, or a theme object in the double object construction. The restriction requires that this XP be the natural endpoint of the accomplishment event. It is conceivable that both morphemes exist in the phrase structure of English, in the two distinct syntactic positions outlined above. To avoid terminological confusion, it is pertinent to rename the morpheme unifying the aspect-related constructions a "telic restrictor morpheme" (as proposed by W. Snyder, p.c.) while keeping the name "null telic morpheme" for the one in AspP between the two VPs. We will return to a discussion of both morphemes in Chapter 6.

---

3.   I am indebted to William Snyder who brought this distinction to my attention.

3.3.3   Double object may not be part of the cluster

Baker (1997) takes issue with the view that the Double Object construction depends on aspectual considerations.[4] He argues for the Uniformity of Theta Assignment Hypothesis (UTAH) as in (34).

(34)   Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure.

An analysis claiming that the sentences in (35a) and (35b) were both base-generated and had the same theta roles at the same time would not be consistent with the UTAH.

(35)   a.   I gave the candy to the children.
        b.   I gave the children the candy.

Baker (1997) argues that the sentence in (35b) is derived by movement from underlying structures like the one in (35a), and the different theta roles account is not supported by sufficiently robust evidence. In order to make this point clear, Baker compares the Double Object construction to the Locative Alternation as in (36), a case of "different theta roles" alternation.

(36)   a.   I loaded the hay onto the truck.
        b.   I loaded the truck with hay.

Baker argues that the Locative Alternation results from two different conceptions of the event denoted by the verbal phrase: one in which the hay is seen as primarily (and exhaustively) affected, and one in which the truck is seen as primarily affected (Pinker 1989; Dowty 1991). Once the viewpoint is picked, the affected argument (that is, the Theme) is consistently generated as the direct object. Thus, the minimal contrast between the two alternations illustrates the two options allowed by the UTAH.

We will review the semantic evidence and mention the syntactic evidence only briefly. The crucial question is whether the (a) and (b) examples in (35) and (36) mean the same thing. There is a clear intuition that in the case of the locative alternation, the object argument is "totally affected." In both sentences of the alternation, the direct object is seen as undergoing a change of state (Pinker 1989)

---

4.   Tenny (1994) also refrains from claiming that the Double Object is part of the same cluster as Particles and Resultatives.

and thus "measures" the progress of the event denoted by the VP (Tenny 1994). Recall that bare plurals as direct objects turn an accomplishment into an activity. Dowty (1991:591–592) uses this test to show that in the locative alternation only the direct object determines the aspectual interpretation. Whether the oblique object is of specified cardinality or not has no effect on the interpretation:

(37)   a.   John sprayed this wall with paint in an hour/*for an hour.   TELIC
        b.   John sprayed paint onto this wall *in an hour/for an hour.   ATELIC
        c.   John sprayed subway cars with this can of paint *in an hour/for an hour.   ATELIC
        d.   John sprayed this (whole) can of paint onto subway cars in an hour/*for an hour.   TELIC

Dowty concludes from this that *paint* is the incremental theme in (37b, d), while *this wall* and *subway cars* are incremental themes in (37a, c). In other words, the thematic roles associated with the participants in the event differ in the two versions of the locative alternation.

   Baker (1997) tries to replicate the judgements for the Dative Alternation, and the results are not so clear:

(38)   a.   I have read stories to the children for an hour/*in an hour.   ATELIC
        b.   I have read the children stories for an hour/*in an hour.   ATELIC
        c.   I have read the story to the children ?for an hour/in an hour.   TELIC
        d.   I have read the children the story ?for an hour/in an hour.   TELIC

Here dative shift seems to have no effect on the judgements: the cardinality of *stories/the story* determines whether the event is an activity or an accomplishment. Thus, *stories/the story* is the Incremental Theme in both versions of the Dative Alternation, and there is no evidence that they differ in their theta roles.

   In fact, the literature that argues for an aspectual account of the Double Object construction (Tenny 1987) and for the different-theta-roles approach (Jackendoff 1990; Dowty 1991; Speas 1990) does not claim that the two members of the alternation differ in delimitedness *per se*. Instead, researchers typically try to support the intuition that the recipient in (35b) is affected in a different way than the recipient in (35a). The basic idea, which goes back to Green (1973), is that transfer of possession involved in this type of verbs must succeed in the Double Object frame (see (39b), (40b), (41b) below), whereas it need not in the dative with *to* frame ((39a), (40a), (41a)).

(39)   a.   I taught French to the children.
        b.   I taught the children French.

(40) a. I threw the ball to Bill.
     b. I threw Bill the ball.

(41) a. She sang a song for her dead lover.
     b. *She sang her dead lover a song.

While agreeing that there is something to this intuition, Baker (1997) argues that we have to accept this fact only at the level of "suggestion," not at the level of "implication." He disagrees with the strength of the judgements and provides the following examples, which are not contradictory.

(42) a. I taught the children French, but they didn't learn it at all.
     b. I threw John the ball, but it didn't reach him because of the strong wind.
     c. Mary sang her lover a song, but he didn't hear it because he had just died.

In addition to these semantic tests, Baker (1997) employs a variety of syntactic tests to show that the dative alternation and the locative alternation have a different status.[5] His claim is that the Theme of a double-object verb and the objects of both versions of the locative alternation are underlying direct objects, but Benefactive/Goal arguments are not. If he is on the right track, then we cannot view the dative object in the double object construction as the one truly "delimiting the event" and thus appearing in the complement of the null telic morpheme.

    I have presented Baker's (1997) arguments in order to paint a clear picture of the cluster of aspect-related constructions. To summarize the existing views, some researchers (Tenny 1987; Larson 1988; Hoekstra 1988; Snyder 1995a, b) claim that Resultatives, Particles, and Double Objects form a family of constructions for which a unified analysis can be proposed. Other researchers (Tenny 1994; Di Sciullo 1996; Baker 1997) do not consider the Double Object construction to be part of the same cluster. We will come back to the different analyses in later chapters, but my L2 acquisition research questions do not crucially depend on a solution to this conflict of views.

---

5. The tests involve adjectival secondary predication, wh-movement out of the first object in the double object construction, heavy DP shift of the direct object, derived nominals, synthetic compounds, quantifier scope interactions and interaction with unaccusativity. The interested reader is referred to the original paper.

3.4   The encoding of Slavic VP aspect

3.4.1   The complete array of aspectual morphemes

Slavic languages are well-known for the overt realization of their rich aspectual morphology. Bulgarian has a special place among them for the exceptional regularity of this morphology. We shall therefore exemplify the processes with Bulgarian verbal morphology, but it should be kept in mind that the same combinations of morphemes exist in all Slavic languages although with a larger degree of lexical idiosyncrasy. Additionally, Bulgarian and Macedonian are the only two Slavic languages, which have kept the historically older distinction between the Aorist and Imperfect Tense while also developing the common Slavic distinction between Perfective and Imperfective Aspect. As a result, Bulgarian aspectual morphology is exceptionally rich even among Slavic languages, and speakers of Bulgarian are very sensitive to various aspectual meanings. But before exemplifying the verbal morphology, an important fact should be noted. Unlike Russian, Czech, Polish, and other Slavic languages, Bulgarian has overt determiners parallel in function to those in English.

(43)   *(edna) jabəlka, jabəlka-ta*
    an   apple apple-DET
    'an apple, the apple'

The following gives the template of Bulgarian verbal morphology. I shall briefly discuss the morphemes in turn and give some examples.

(44)

Perfectivizing — Preverbs	Root —	Secondary — Imperfective Suffix	Tense/Viewpoint Aspect/Agreement
pre-	*pis*	*-va-*	*-x*
'again'	'write'		

Preverbs (PV) in Slavic encode telicity (see Brecht 1984 for Russian, Kučera 1983 for Czech and Russian, Wierzbicka 1968 for Polish) or change of state (see (45b–e)). Simplex imperfective stems as in (45a) encode Activities or States in the Vendler (1967)-Dowty (1979) classification. Accomplishments are derived by adding a preverb as in (45b–e).

(45)   a.   *pis-a*
       write-3SG/AORIST
       'he wrote'

b. *na-pis-a*
   pv-write-3sg/aorist
   'he wrote up'

c. *pre-pis-a*
   pv-write-3sg/aorist
   'he copied'

d. *o-pis-a*
   pv-write-3sg/aorist
   'he gave a description'

e. *za-pis-a*
   pv-write-3sg/aorist
   'he wrote down'

Perfective preverbs in Slavic can be divided into two types: those with no idiosyncratic lexical meaning, which only encode telicity (completion of the event), e.g., *na-piša* 'write in full'; and those that have idiosyncratic lexical meaning, e.g., *pre-piša* 'write again, copy'. The former can be dubbed 'purely telic preverbs' and the latter 'lexical preverbs.' These perfective preverbs add to the verbal stem the meaning "the event is complete, the inherent endpoint is reached." It is appropriate to imagine them as basic telicity morphemes indicating that the verb is not an activity but an accomplishment. The 'lexical' preverbs, on the other hand, have that basic meaning of telicity PLUS an added idiosyncratic meaning of iterativity, inception, intensity, and so on. The difference should be viewed as one of semantic complexity.

 An important observation is in order here. Since all Bulgarian preverbs are polysemantic, we can only speak of particular 'senses' of each preverb. For example, *na-* has a reading in which it is purely telic and about four more readings in which it is (more or less) lexical, that is, has additional idiosyncratic meanings different from pure telicity:

(46) a. *na-piš-a*   TELIC
       pv-write-1sg
       'to write up'

   b. *na-pečel-ja*   TELIC + a lot of objects affected
      pv-gain-1sg
      'to gain a lot of (money)'

   c. *na-kap-ja*   TELIC + the whole surface affected
      pv-drip-1sg
      'to drip over the whole surface of'

d.   *na-lude-ja se*   TELIC + full saturation of desire
     PV-crazy-1SG   (used for intransitive 'desire' verbs only)
     'to have all my wild oats sowed'
e.   *na-mraz-ja*   TELIC + beginning of state/event
     PV-hate-1SG
     'to start hating someone'

Thus, what particular meaning the preverb *na-* will have depends on the idiosyncratic choice of root. Throughout this book when I say 'purely telic preverb' I actually mean 'a purely telic sense of a preverb.'

Secondary Imperfective (SI) morphemes (see (44) above) impart the meaning of iterativity or habituality to the whole predicate. This suffix cannot be combined with stative or activity roots. It imposes a semantic restriction on the stems with which it combines: they have to be telic. This semantic constraint is easily explained when we consider the nature of iterative eventualities: they are repeated instances of finished single events. (47) gives the relevant examples:

(47) a.   *obič-ax*   STATE
           love-1SG/AORIST
           'I loved'
      b.   **obič-va-x*   STATE
           love-SEC.IMPERF-1SG/AORIST
           'I used to love'
      c.   *na-pis-va-x*   ACCOMPLISHMENT
           PV-write-SEC.IMPERF-1SG/AORIST
           'I wrote up completely many times'
      d.   **pis-va-x*   ACTIVITY
           write-SEC.IMPERF-1SG/AORIST
           'I wrote many times'

I have argued, following Travis (1994), that the SI morpheme is in the head of EventPhrase (EP), a syntactic projection above the second layer of VP. The main evidence for this claim is that the SI morpheme has selectional restrictions on the perfective stem, and it could not have selectional restrictions if it did not c-command the perfective preverb. Since SI is outside the scope of this study, I am not going to present the rest of the arguments here (but see Slabakova 1994).

Finally, Bulgarian has another aspectual distinction in the past: that of viewpoint aspect. The Aorist tense provides an actual, not a potential, endpoint of the event; while the Imperfect tense denotes an eventuality in progress, without supplying initial or final endpoints. Thus, it can be argued that the two

aspectual tenses encode the feature (un)boundedness (Depraetere 1995). Here
are some examples.

(48) a. ATELIC BOUNDED
          Pis-ax   pismo na mama včera   (i   trjabva da go dovǝrša
          write-1SG/AOR letter to Mom yesterday and must to it finish
          dnes)
          today
          'I wrote a letter to my Mom yesterday (and I must finish it today).'

      b. TELIC BOUNDED
          *Na-pis-ax   pismo na mama včera,   (*i   trjabva da go*
          PV-write-1SG/AOR letter to Mom yesterday   and must   to it
          dovǝrša dnes).
          finish   today
          'I wrote a letter to my Mom yesterday (*and I must finish it today).'

      c. ATELIC UNBOUNDED
          Piš-ex   pismo na mama včera   kogato ti   se obad-i.
          write-1SG/IMP letter to Mom yesterday when you call-2SG/AOR
          'I was writing a letter to my Mom yesterday when you called.'

      d. TELIC UNBOUNDED
          štom   na-piš-ex   pismo na mama, tja se obažd-aše.
          when PV-write-1SG/IMP letter to Mom she called-3SG/IMP
          'Every time when I wrote a letter to my Mom, she called me back.'

The example in (48a) has the verb *pisax* 'wrote' without a preverb and in the
Aorist tense. As a result, no claim has been made as to the final outcome of the
event. The inherent endpoint has not been reached, although an actual end-
point has. That is why we can conceivably continue this sentence with the clause
and I must finish it today. The example in (48b), on the other hand, while still
bounded, is also telic. That is, since the inherent endpoint of the event has been
attained, the event cannot be continued at a later point. The sentence in (48c)
is a typical example of an event in progress; no claim as to the telos has been
made. Once the inherent endpoint has been attained, signaled by the preverb,
as in (48d), the event can only be transformed into a habitual, or iterative
sequence of many finished events. It can reasonably be suggested that the Aorist
and Imperfect morphology check the features [±boundedness] in another
aspectual functional category just under TP (see Giorgi and Pianesi 1997 for a
similar proposal for Romance aspectual tenses).

To recapitulate so far, the tree in (49) captures the various aspectual morphemes in Bulgarian and their tentative syntactic position (irrelevant Spec positions omitted). In indicating the position of perfective preverbs, I anticipate the discussion in the following sections. The overt aspectual morpheme positions are given in bold.

(49)

```
                        TP
                       /  \
Nom. case → T         AspP
                     /    \
Viewpoint aspect → Asp     EP
              [±bounded]   /  \
Secondary Imperfective → E    VP
                            /    \
                        DP_subj   V′
                                 /   \
                                V    PerfP
                              CAUSE  /    \
Situation aspect (PV) ───────→ Perf    AspP
                            [±telic]   /    \
Accusative case ──────────────────→ Asp     VP
                                           /    \
                                        DP_obj   V′
                                                 |
                                                 V
```
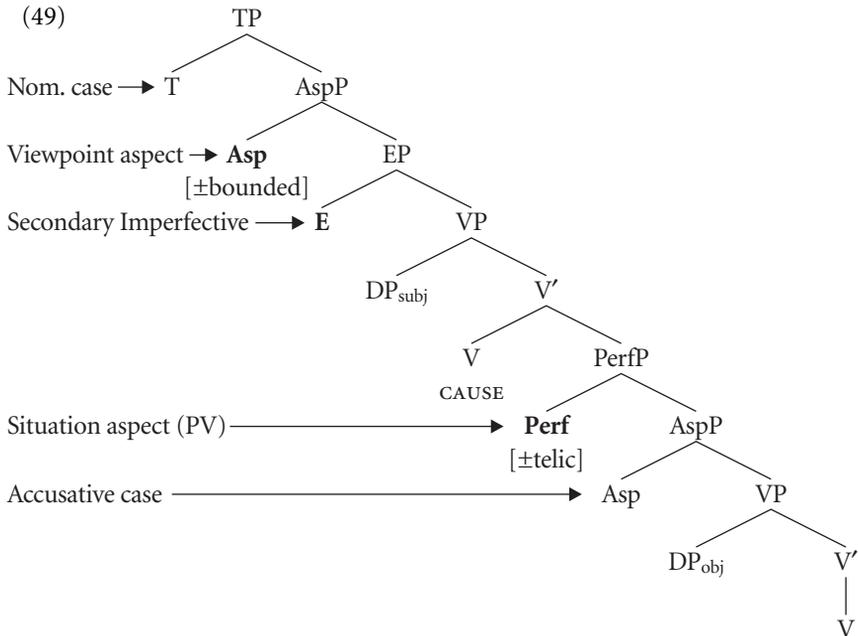
I would like to add one more argument to the claim that Bulgarian perfective preverbs are situation aspect morphemes, and not viewpoint aspect morphemes, as claimed by Smith (1991/97) for Russian. As the tree above and the data in (48) indicate, Bulgarian is a Slavic language with overt viewpoint aspect: the Aorist and Imperfect tense morphemes. To have the same (or similar) features of two different overt morphemes in the same functional category is highly unusual. It actually contradicts the optimal solution to the minimal design specifications of the language system (Chomsky 1999), which would be to check one feature in one functional category. What is more, the Bulgarian telicity and boundedness markers cannot conceivably be checked in the same functional category, as there is a complex interaction between the two. In (48d), the presence of the telicity morpheme constrains the interpretation of the unboundedness morpheme as iterative only, but crucially not continuous (compare to (48c)). At the same time, there is overwhelming typological

evidence that all Slavic perfective preverbs are of the same type, or category. Thus, it is unlikely that preverbs are situation aspect markers in some Slavic languages but viewpoint aspect markers in others. The preverbs' uniform treatment as VP operators has been proposed by de Swart and Verkuyl (1999), Macgreggor-Kozlowska (1999), Piñon (1993), and Verkuyl (1999). We return to some of these proposals below.

3.4.2 Preverbs and verb class

The distribution of the different types of preverbs across aspectual classes of verbs can give us an indication as to what they stand for. Looking at overt morphemes in Bulgarian (and Slavic in general), we notice that almost all verbs taking preverbs are accomplishments, and all accomplishments without exception contain preverbs.

(50) *iz-jam sandwič*   *iz-peja arija*   *pro-četa kniga*
      PV-eat sandwich   PV-sing aria   PV-read a book
      'eat up a sandwich'   'sing an aria'   'read a book in full'

Achievements, on the other hand, are almost never made up of a preverb plus verb.

(51) *umiram*   *namiram portmone* *pristigam*
      die   find   wallet   arrive
      'die'   'find a wallet'   'arrive'

Even if some achievements can be viewed diachronically as containing a preverb, synchronically they are monomorphemic. There are some limited number of achievements that do take perfective preverbs. Crucially, however, achievements never take purely telic preverbs; they only take preverbs with lexical meanings. Thus, their derivation is not conditioned by aspectual necessity (changing the aspectual class of the root) but rather follows the lexical necessity of denoting a different meaning.

(52) *dam*   *iz-dam*   *na-dam vik*   *pre-dam*
      give   PV-give   PV-give cry   PV-give
      'give'   'publish'   'give out a cry'   'betray; give a message'
                  *finish giving *finish giving   *finish giving

Let us look at the derived predicates *iz-dam* and *na-dam (vik)* in more detail. The root *dam* is marked in the lexicon with the feature [+telic] exactly in the same way as English achievements are. Since Bulgarian perfective preverbs have two semantic components, i.e., telicity and idiosyncratic lexical meanings, when

attached to already telic roots, they only function with their second component and modify the lexical meaning of the root. This ontological aspectual constraint can be formulated informally as follows:

(53)   *Telic roots need not and, hence, cannot be further telicized.*

I mentioned above that preverbs have multiple senses. *Na-* is the preverb that is most often used, and is perceived by native speakers as a purely telic preverb. *Iz-* and *pre-* can also be purely telic. But when these preverbs combine with the telic root *dam* 'give', none of them can mark telicity only. Their single purpose is changing the lexical meaning of the whole predicate. That is why I am going to treat these derived achievements essentially as compounds: they enter the syntax already formed in the lexicon and carrying the [+telic] feature.

(54)   V
            iz-dam 'betray' [+telic]

        V   V
       iz-   *dam*
       PV   'give'
                            [+telic]
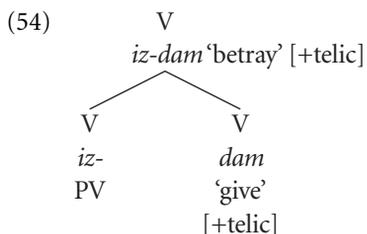
To summarize, perfective preverbs function as telicity markers only in the case of accomplishments. They turn simple root activities into telic predicates. States and achievements come with their telicity value specified in the lexicon, just as in English. I will assume exactly the same phrase markers for Bulgarian states and achievements as for the English ones. The experiment presented in this book investigates only the second language acquisition of accomplishments and activities, by far the biggest majority of verbal predicates. That is why I turn to the derivation of accomplishments below.

3.4.3   The phrase structure position of preverbs:
Evidence from VP-internal scope

Turning once again to phrase structure, one might want to equate PVs in Slavic with English particles signaling bounded events, such as *up* in *eat up*. Brinton (1988) claims that such particles are telicity markers in English. A solution along these lines has actually been proposed by Schmitt (1996). However, particles and preverbs have different scope effects over the cardinality of the object DP. When perfective (eventive) verbs combine with bare plural and mass

DPs in Bulgarian, it might be expected that an atelic interpretation will arise: since cardinality is marked similarly in the two languages, cf. (43), Bulgarian bare plurals should be equivalent in effect to English bare plurals. However, the event is interpreted as telic. Examples (55)–(57) demonstrate that this effect is not dependent on the choice of tense, since the tense is Aorist in the (a) sentences and Imperfect in the (b) sentences. Notice that the bare plural objects can be referred to by a specific pronoun *go, gi* in the conjoined clause in (56) and (57); that is, the objects themselves have specific interpretation.

(55) a. *Toj na-pis-a^P*   *pisma*   **3 časa/za   3 časa.*
          he   pv-write-3sg/aor letters *for 3   hours/in 3 hours
          'He wrote letters in 3 hours.'

   b. *Stom na-pi-šeše^P*   *pisma*   **3 časa/za   3 časa   toj otivaše*
       when pv-write-3sg/imperf letters *for 3   hours/in 3 hours he went
       da gi pusne.
       to them post
       'Whenever he wrote letters in 3 hours, he went out to post them.'

(56) a. *Xudožnikət na-risuva*   *kartini*   **3 časa/za   3 časa   i*
          artist-det   pv-paint-3sg/aor pictures *for 3   hours/in 3 hours and
          izleze   da gi   prodava na ulicata.
          went out to them sell   in street-det
          'The artist painted pictures in 3 hours and went out to sell them in the street.'

   b. *Vseki den xudožnikət na-risuvaše*   *kartini*   **3 časa/za*
       every day artist-det   pv-paint-3sg/imperf pictures *for 3   hours/in
       3 časa   i   izlizaše da gi   prodava na ulicata.
       3 hours and went   to them sell   in street-det
       'Every day the artist painted pictures in 3 hours and went out to sell them in the street.'

(57) a. *Tja z-gotvi*   *jadene*   **3 časa/za   3 časa   i   go*
          she pv-cook-3sg/aorist food   *for 3   hours/in 3 hours and it
          iz-jade   za 5 minuti.
          pv-eat-3sg/aorist in 5 minutes
          'She cooked food in 3 hours and ate it up in 5 minutes.'

   b. *Tja z-gotvjaše*   *jadene*   **3 časa/za   3 časa   i   go*
       she pv-cook-3sg/imperf food   *for 3   hours/in 3 hours and it
       iz-jaždaše   za 5 minuti.
       pv-eat-3sg/imperf in 5 minutes
       'She used to cook food in 3 hours and eat it up in 5 minutes.'

In English, perfective eventive verbs combined with bare plural or mass DPs result in a durative interpretation.

(58) a. He wrote up notes for 3 hours/*in 3 hours.
      b. The artist painted pictures for 3 hours/*in 3 hours and went out to sell them in the street.
      c. She cooked food for 3 hours/*in 3 hours.

Those facts, combined with the distributional and semantic considerations discussed above, suggest that the Slavic preverbs are in a higher position than the object. English particles, which may optionally appear to strengthen AspP, are in the head of AspP in the phrase structure tree of Travis (1992), as shown in (59). I suggest that the preverbs' [±telic] features are checked in the head of an aspectual projection PerfectP (PerfP), based on the presence or absence of a perfective preverb.

(59)

```
                    TP
                   /  \
                  T    EP
                      /  \
                     E    VP
                         /  \
                     t_subj  V'
                            /  \
                           V    PerfP
                               /   \
          Preverb ──────────> Perf  AspP
                                    /   \
                                DP_obj   Asp'
                                        /   \
          Particle ────────────────> Asp    VP
                                          /    \
                                       t_obj   V'
                                              /  \
                                             V    Location
```
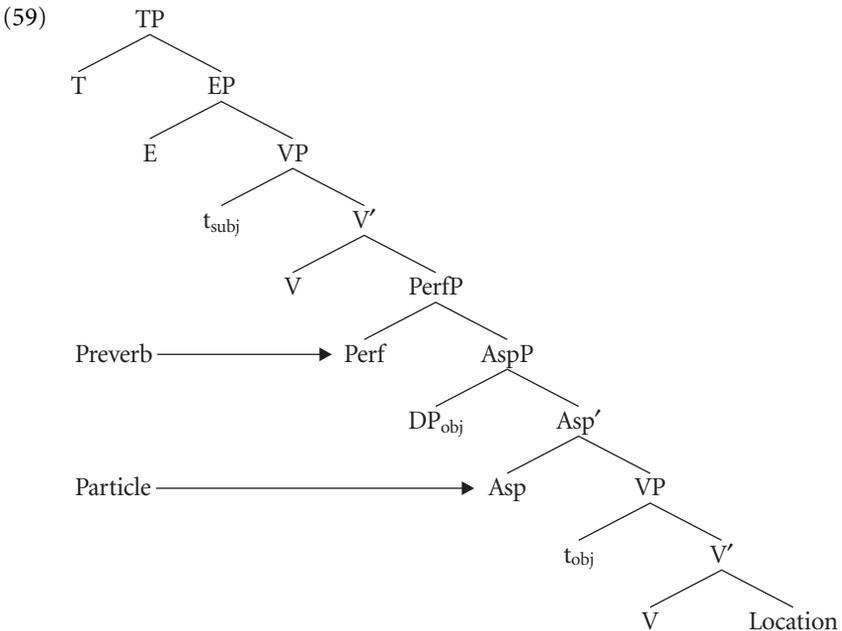
In English the aspect of the verb phrase is calculated in AspP. When the DP object moves to Spec of AspP to check accusative case, the cardinality of the object is crucial for the aspectual interpretation. If the object is of unspecified cardinality (*letters, food*), the VP denotes an activity. If the object is of specified cardinality (*a letter, three letters, the letters*), the VP denotes an accomplishment.

Even if there is a particle in the AspP head as in (58a), normally considered to be a telicity marker, the cardinality of the object is still decisive for determining the aspectual class.

In Slavic, on the other hand, the aspectual interpretation is not decided in AspP. If a preverb is in the head of PerfP, a position from which it c-commands the object, the VP denotes an accomplishment. If there is no preverb in Perf, then the VP is an activity. Consequently, the cardinality of the object in Slavic does not matter for aspectual interpretation, it is only the presence or absence of preverb that signal aspectual class. Notice that the lack of preverb is meaningful in Slavic, as it signals [−telic]. In English, of course, speakers do not know whether a verb is telic or atelic if they see the form in isolation (Verkuyl 1972).

In previous work (Slabakova 1997a, b) I argued that perfective preverbs are BECOME morphemes that have been lexically conflated with CAUSE morphemes and are positioned in the head of the upper VP. This analysis implied that Bulgarian activities, which lack preverbs, also lack the CAUSE morpheme, contributing the semantics of protracted causation to the eventuality. Thus, the analysis of English and Bulgarian activities differed radically. The present analysis solves this problem.[6]

Some more evidence for the analysis comes from biaspectual verbs, marked in the examples below as Imperfective/Perfective (I/P). As late borrowings into the language, these Bulgarian verbs do not employ preverbs to become perfective (Kabakčiev 1984). Crucially, those verbs behave very much like English eventive verbs: the cardinality of the DP object determines the interpretation.

(60) a. *Mexanicite   remontiraxa$^{I/P}$ koli.*   ATELIC
          mechanics-DET repair-3PS/PAST cars
          'The mechanics repaired cars.'

      b. *Mexanicite   remontiraxa$^{I/P}$ kola-ta.*   TELIC
          mechanics-DET repair-3PS/PAST car-DET
          'The mechanics repaired the car.'

(61) a. *Policaite   arestuvaxa$^{I/P}$ ženi.*   ATELIC
          policemen-DET arrest-3PS/PAST women
          'The policemen arrested women.'

      b. *Policaite   arestuvaxa$^{I/P}$ žena-ta.*   TELIC
          policemen-DET arrest-3PS/PAST woman-DET
          'The policemen arrested the woman.'

---

6. I am grateful to Lisa Travis and William Snyder, who pointed out the problem.

When the object DP moves to SpecAspP to check Accusative case, it has scope over the verb or its trace in Asp, thus imposing its cardinality just like in English. But when a preverb has overtly filled the PerfP head, taking scope over the object, the cardinality of the object is irrelevant. It has been noticed that languages use predominantly verbal (Slavic) or predominantly nominal (English) markers of temporal (inherent) boundary (Kabakčiev 1984; Filip 1994). In our analysis, this clear difference receives a straightforward explanation: it follows from the c-commanding position of preverbs and the fact that telicity in English is calculated in AspP, crucially depending on the object's cardinality.

3.5 What can be explained if preverbs are higher than the derived object position?

Next, I will examine more syntactic evidence for the claim that perfective preverbs are in a higher structural position than (un)specified cardinality objects in English. I will examine three scope facts: the interpretation of perfective and imperfective VPs under the scope of negation in Polish, the effect of preverbs on articleless Russian and Czech DPs, and the restriction the Polish imperfective (lack of preverb) places over quantified DPs. The idea is to show that, in every case, preverbs would not have the described effects if they were not in an asymmetric c-commanding position over DP objects. I follow Haegeman's (1991: 135) definition of c-command: "A c-commands B iff A does not dominate B and every X that dominates A also dominates B, where X is understood as the first branching node." Thus, the head will not be able to c-command its specifier in any of the three cases discussed.[7]

3.5.1 Perfective and imperfective VPs in the scope of negation

De Swart and Verkuyl (1999) argue that languages can pick out certain positions from the universal set of aspectual positions available in (62), depending on the linguistic means they employ to mark the telicity or boundedness of sentences. For example, Dutch (like English) employs determiners in the

---

7. Some researchers (e.g., Williams 1984) assume a version of m-command to determine the scope of heads, which, informally put, says that a node X m-commands every node that is dominated by the first maximal projection XP dominating the node X. Note that I assume strict c-command, NOT m-command in this book.

aspectual composition; Finnish uses partitive versus accusative case marking on the DP object to signal the same distinction; Slavic languages use the prefix of the verb as part of this compositional machinery. The tree is de Swart and Verkuyl's (1999) Figure 1.6 on p. 23.

(62)
```
                    S
         ┌──────────┴──────────┐
        ...                     S
                      ┌─────────┴─────────┐
                    Asp_β                  S
                              ┌────────────┴────────┐
                            NP_ext                  VP′
                                           ┌─────────┴────────┐
                                         Asp_α                 VP
                                                     ┌─────────┴─────────┐
                                                     V                 NP/PP
                                                              ┌──────────┴──────────┐
                                                            Asp                    NP_int
                                                                          ┌──────────┴──────────┐
                                                                        Det                      N
```
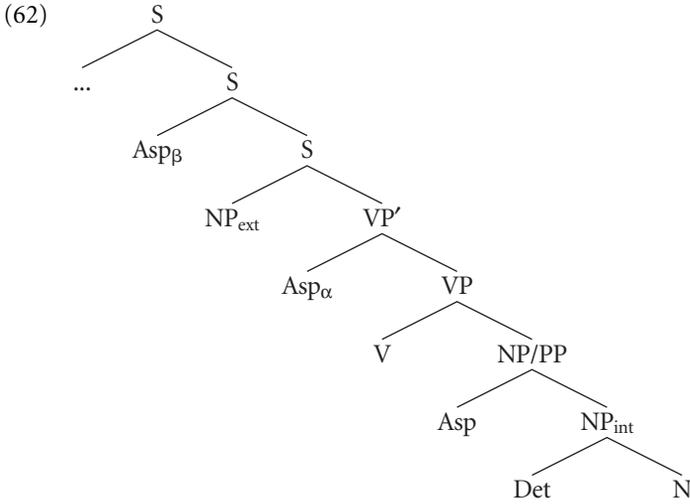
The authors argue that Dutch and English choose the aspectual position ASP above the internal argument to mark telicity while Slavic languages choose the ASP_α position, because perfective preverbs in Slavic act as verbal 'operators.' In their system this term implies that the preverb takes the whole VP composed of verb and internal argument as its domain, and acts as a function on the whole unit, imposing its own telicity value on the range. What the semantic term 'operator' means when translated into syntactic terms is that the process of verb head movement from V to ASP_α involves aspectual composition as an inevitable part of the checking of aspectual features. The telicity value of the higher projection obligatorily takes scope over the telicity value of the lower projection. This system is very similar to the one adopted in the present book (compare (62) to my tree in (49)). The first argument de Swart and Verkuyl (1999) provide in support of their analysis is the fact that aspectual composition following the Plus Principle (Verkuyl 1993, 1999; see also Chapter 2 of this book) does not seem to work for Russian.

(63) a. *On   čital   etu knigu.* ATELIC
          he   IMP-read   this book
          [+SQA] [[+ADD TO] [+SQA]]

    b.   *On*   *pro-čital*   *etu knigu.*   TELIC
        he   PERF-read   this book
        [+SQA] [[+ADD TO] [+SQA]]

All constituents of the sentences above have plus values, which would result in both sentences being telic. However, only the sentence in (63b) is telic, while the one in (63a) is atelic. Thus, the cardinality of the object cannot impose itself on the verbal phrase interpretation but the perfective preverb can.

    The second important argument comes from the interpretation of Polish perfective and imperfective sentences under negation.

(64) a. *Prżez lata nie czytał żadnej ksiązek*
        for   years NEG read-3SG no   book-GEN
        'For years he did not read books.'
    b. *Prżez lata nie prże-czytał ani jednej ksiązki*
        for   years NEG PV-read-3SG not even one book-ACC
        'For years he did not read a single book.'

The sentence in (64a) means that the event of book reading was not true in the specified time period, whereas the sentence in (64b) with the perfective verb expresses the fact that not a single book has been read for years. Thus, the presence of the preverb *prze-* has singled out a specified quantity of the internal argument. Both sentences are durative, as the acceptability of the 'for years' adverbial suggests. In summarizing their argument, de Swart and Verkuyl (1999: 26) say:

> … we may say that there are reasons to assume that the perfective and imperfective operators can be seen as applying to the taking of the internal argument by the verb. In this sense they overtly contribute to the making of the VP what in Germanic languages (mostly) takes place without an appeal to morphological encoding. Moreover they contribute to the interpretation of the NP in the absence of quantificational or referential information. So essentially, Imp and Perf may be seen as VP-operators in Slavic languages.

We turn to the interpretation of DP objects in the next subsection.

3.5.2   Verbal versus nominal markers of temporal boundary

Partee (1991), Filip (1993), and Krifka (1992) argue that semantic distinctions expressed by verbal predicates may have semantic effects on the interpretation of nominal arguments comparable to that of articles. This can best be illustrated

in transparent contexts with undetermined DPs (mass and bare plural nouns). Russian as well as Polish and Czech are languages that lack an overt article system. The sentences in (65) and (66) only differ in their main verbs: the bare past form in (65) is an imperfective form and the prefixed form in (66) is perfective. Even though mass and plural nouns do not have referents with inherent boundaries, the DPs in (66) are understood as bounded. Their most natural interpretation is of a contextually specific portion of coffee or a known set of books, rather than of coffee and books in general, as in (65).

(65) a. *Pil   kofje.*   (Russian)
         drink-3SG/PAST coffee-ACC
         'He was drinking (some) coffee.

   b. *Čital   knigi.*
         read-3SG/PAST book-PL/ACC
         'He was reading books.'

(66) a. *Vy-pil   kofje.*
         PV-drink-3SG/PAST coffee-ACC
         'He drank up (all) the coffee.'

   b. *Pro-čital   knigi.*
         PV-read-3SG/PAST book-PL/ACC
         'He read up (all) the books.'

In other words, the use of determinerless DPs with bare plural or mass noun heads in a language such as Russian corresponds to the referential use of definite articles in a language such as English.

   In English, as we already saw above, a bare past form combined with a mass or bare plural DP object is interpreted as atelic, while the cardinality of the object encodes the telic interpretation.

(67) a. He drank coffee.   ATELIC
   b. He read books.   ATELIC

(68) a. He drank a cup of coffee.   TELIC
   b. He read three books.   TELIC

The comparison between English and the articleless Slavic languages presents another argument for the different scope effect of DP objects and preverbs. This time, preverbs provide the only formal clue as to how the mass/bare plural DPs are to be interpreted, which can be explained by their c-commanding position.

3.5.3   Piñon's (1993) ambiguity problem

In this third case of scope differences between Slavic and English we will be concerned with the imperfective. Recall that when a Slavic verb is in its bare form, the lack of preverb signals the imperfective. I assume that in Polish the zero preverb is also encoded in the PerfP as the preverb.

It has been noticed by Slavic scholars (Wierzbicka 1968) that quantified noun phrases interact in a seemingly complicated way with imperfective aspect. When an imperfective verb combines with a numerically quantified Incremental Theme DP, the sentence loses the ability to denote simple single events. It can only denote (i) iterative/habitual events, or (ii) a complex event consisting of a number of sub-events of the *same* type. Filip (1994) and Piñon (1993) argue for semantic analyses of the phenomenon in a unification-based approach and a lattice-theoretic approach, respectively. Semantic analyses, however, need to be supplemented in this case with syntactic analysis in order to answer the question of *why* certain constraints are imposed. Scope determined by c-command is the simple answer.

To take a concrete example, Piñon (1993) argues that there is a contrast between the Polish sentence in (69) and its English equivalent in (70). The English progressive produces an ambiguity between two readings, which are distinguished in Polish. On one of these readings, the Polish sentence is unacceptable.

(69)?#*Ewa jadła^I trży   jabłka, kiedy Jan   w-padł.*
     Eve eat-PAST three apples when John PV-fall-PAST
     'Eve was eating three apples when John dropped in.'
    #*Ewa jadła^I jedno po   drugim trży   jabłka, kiedy …*
     Eve eat-PAST one   after second three apples when
     'Eve was eating three apples one after another when …'
    ✓*Ewa jadła^I równoczesnie   trży   jabłka, kiedy …*
     Eve eat-PAST simultaneously three apples when
     'Eve was eating three apples simultaneously when …'

(70)   'Eve was eating three apples when John dropped in.'
    ✓Eve was eating one after the other three apples when…
    ✓Eve was eating simultaneously three apples when…

What (69) brings out is a distinction with respect to which the English progressive in (70) remains silent. The main clause of the English sentence can describe the situation in which Eve is actually eating only one apple, but in which there

is reason to believe she will eventually eat all three. The main clause in Polish describes only the situation in which all three apples are being eaten simultaneously, which by normal standards is implausible, hence the question mark for the grammaticality of the sentence. Thus, whereas the English progressive allows the SEQUENTIAL or the SIMULTANEOUS reading, the Polish imperfective excludes the SEQUENTIAL one. Piñon's (1993) solution is, essentially, the following: the Polish imperfective requires the object to have homogeneous reference while the English progressive lacks this restriction.[8] This difference stems from a difference in order of semantic combination, which in turn arises out of different structural configurations in the two languages. The imperfective interpretation in Polish enters the semantic composition because the imperfective morpheme is an affix which combines with a verb stem to yield a V^0 and its aspectual scope is the verb itself. The English progressive morpheme is an auxiliary of category I^0, which combines with a VP to yield an I' and its aspectual scope is the VP. Thus, for Piñon progressivity is not located in the *-ing* suffix *per se.*

Piñon's (1993) analysis is valuable and insightful in that it acknowledges the relevance of syntax for a semantic problem. However, we could raise an objection. It does not make much sense syntactically for an affix combined with a V^0 to have scope over the verb only. In syntax, affixes are normally positioned in functional categories above the lexical categories. What Piñon's analysis implies is that his imperfective operator has scope over the Theme, the argument within VP. This is exactly the result of the analysis proposed here, achieved through positioning preverbs higher than AspP, where the derived object moves for case reasons. If we agree with Piñon's semantic analysis and change his syntactic claims, then the structure in (71) explains why this constraint is in place. Since the imperfective is encoded in the lack of preverb in PerfP, it is in a c-commanding position and can impose its selectional restrictions on the shape of the event.

---

8. In order to understand homogeneous reference two other fundamental notions should be introduced. (see Link 1983; Krifka 1989, 1992) Those are cumulative reference and divisive reference. If a predicate refers cumulatively, then if it applies to each of two entities, it applies to their join as well. On the other hand, if a predicate refers divisively, then if it applies to an entity, then it applies to all parts of that entity, if there are any. Finally, a predicate with both cumulative and divisive reference has HOMOGENEOUS reference. For example, if we take the noun *water,* we can see that the join of two amounts of water will still be water (cumulativity), and parts of water will still be water (divisibility), hence *water* has homogeneous reference.

(71)

```
            EP
          /    \
         E      VP
              /    \
             V     PerfP
                  /    \
               Perf    AspP
               no PV  /    \
              three apples  Asp'
                          /    \
                        Asp     VP
                              /    \
                           t_obj    V'
                                    |
                                    V
```
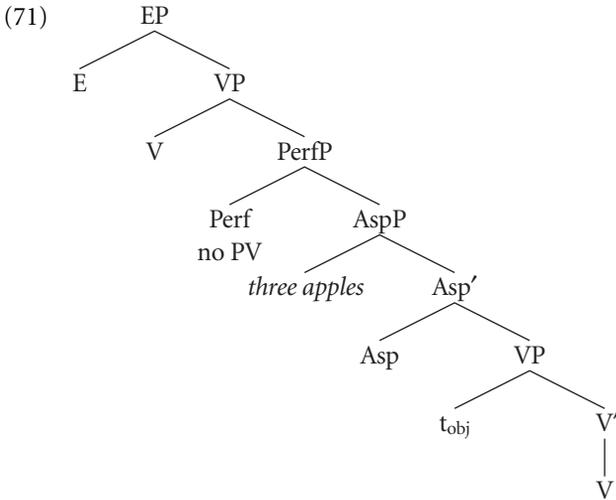
In English, on the other hand, since the numerically quantified DP c-commands the progressive morpheme at LF, the former will not be constrained in its interpretation and the sentence will rely on adverbial modification or context to disambiguate it.[9]

(72)

```
            EP
          /    \
         E      VP
              /    \
             V     AspP
                  /    \
            three apples  Asp
                        /    \
                      Asp     VP
                      -ing   /    \
                          t_obj    V'
                                   |
                                   V
```

---
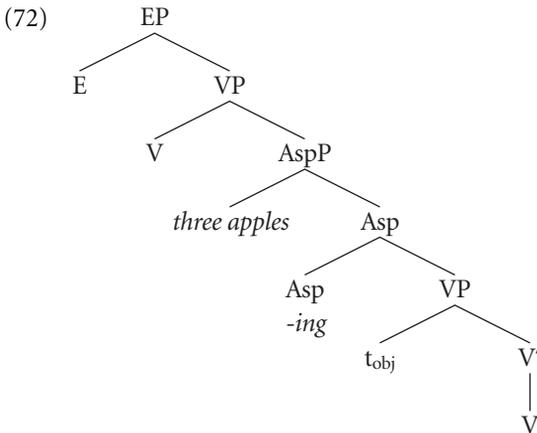
9.   Thus, it can be observed that the Spec–Head configuration, although used for encoding many other relations, is not used to encode quantificational restrictions.

3.6   The telicity parameter and the aspect-related constructions in English and Bulgarian: Bringing it all back together again

This chapter has proposed, following de Swart and Verkuyl (1999), Piñon (1995), and Verkuyl (1993, 1999), that telicity marking is parameterized in English and Slavic languages. English (as well as Dutch and possibly other Germanic languages) marks (a)telicity (in the accomplishment and activity classes) in an aspectual projection AspP between the two halves of a VP shell structure. The calculation of telicity crucially depends on the verb being lexically underspecified for telicity (or having the [α telic] verbal feature) and on the (un)specified cardinality of the internal argument. Slavic languages, on the other hand, mark telicity in the accomplishment and activity classes by (most often) resorting to another strategy. They choose an additional functional category PerfP from the universal array of functional categories (Jelinek 1995, 1998), where perfective preverbs check the feature telicity overtly. Lack of preverb produces an atelic reading. As a result of this strategy, the cardinality of the object is almost never responsible for bringing forward a telic or an atelic interpretation.

The logical question arises of how the telicity marking strategy of natural languages is related to the (un)availability of the aspect-related constructions: verb–particles, resultatives, and double objects. It is this connection that is explored in part of the experimental study presented in Chapter 5. The relationship between object-oriented telicity marking in English and the availability of the aspect-related constructions is probably indirect.[10] The generalization is that aspectual prefixes, such as the Bulgarian perfective preverbs, "compete" in some way with the null telic restrictor morpheme proposed by Snyder (1995a, b) and discussed in Section 3.3.2 of this chapter. For example, both types of aspectual morphemes might need to combine directly with a bare [α telic] verb in order to satisfy their morpho-syntactic and semantic-interpretative requirements. The principle in (53), repeated here for ease of reference, is an instance of such a requirement.

(53)   *Telic roots need not and, hence, cannot be further telicized*

The following examples are highly suggestive in support of the idea that the null restrictor morpheme, purportedly involved in the forming of verb–particle,

---

resultative, and double-object constructions, competes with certain aspectual prefixes (William Snyder, personal communication, based on Keyser and Roeper 1992).

(73) a. John wrote up the assignment.
      b. John re-wrote the assignment.
      c. *John re-wrote the assignment up.

(74) a. Tony rolled the dough flat.
      b. ?Tony re-rolled the dough.
      c. *Tony re-rolled the dough flat.

(75) a. Sue sent the stockholders the report.
      b. ?Sue re-sent the report.
      c. *Sue re-sent the stockholders the report.

As the examples indicate, prefixes such as *re-* and particles (73), resultatives (74), and double objects (75) cannot co-occur, suggestive of some clash in their requirements.

I have argued that, when an object of specified cardinality moves to check case in the Spec of AspP, it brings forward a telic interpretation of the whole VP. This process can be conceptualized as a null telic morpheme appearing in the head of AspP. On the other hand, Snyder (1995a, b) has argued that there is a null restrictor morpheme in the complement of the lower VP position. This second null morpheme imposes a restriction based on another overt XP, either a resultative, a particle, or a theme object in the double-object construction, requiring that this XP be the natural endpoint of the accomplishment event. It can be argued, based on examples like those below, that the null telic morpheme is a necessary condition for the appearance of the null restrictor morpheme.[11]

(76) a. *Sheila drank lemonade down./*Sheila drank down lemonade.
      b. *Sheila ate pancakes up./*Sheila ate up pancakes.
      c. *Sheila thought problems through./*Sheila thought through problems.

(77) a. *Connie watered tulips flat.
      b. *Connie nailed windows shut.
      c. *Connie walked shoes threadbare.

---

11.   Note that these judgements are a bit delicate. The star is for the intended atelic activity reading. However, provided sufficient context, some of these sentences may be open to a "habitual" interpretation, which involves repetitions of a finished event. The issue certainly merits further research.

(78) a. *Melissa gave friends presents.
      b. *Melissa sang children lullabies.
      c. *Melissa sent relatives Christmas cards.

Both in English and in Bulgarian, then, the form of the direct object has some (limited) capacity to favor particular aspectual readings when the situation aspect is otherwise ambiguous. Yet, in Bulgarian the presence of an aspectual preverb normally disambiguates the situation aspect and in some sense "overrides" the contribution of the direct object. Hence, the Bulgarian-to-English L2 learners' task is to recognize that English lacks any aspectual marking comparable to the Slavic preverb system. Upon that recognition, the form of the direct object might automatically assume priority in disambiguating situation aspect. Moreover, the systematic absence of telic preverbs would open up the possibility of a null restrictor morpheme, and input sentences involving particles or secondary result predicates could begin to receive a UG-compatible analysis. Notably, an analysis along those lines assumes that the semantic properties of the Vendlerian aspectual classes are obtained in essentially the same way in English and Bulgarian, and that the differences between languages concern morpho-syntax rather than the deep properties of the syntax-semantics interface.

3.7   Conclusion

This chapter argued for the basic idea that phrase structure is crucial in the compositional approach to aspect and that languages differ in the relative structural positions their (overt and covert) aspectual morphemes take. Thus, it is not compatible with a UG approach to assert that "grammatical" aspect is accomplished by bound morphemes and auxiliaries while "lexical" aspect is brought about by lexical features of verbs. Rather, we should view the relevant nodes in phrase structure as responsible for certain aspectual meanings, and then describe what items can fill these nodes in different languages. As to the comparison between Slavic and English attempted in this chapter, it was shown that the relatively higher structural position of Slavic perfectivizing preverbs is responsible for the subtle differences in aspectual interpretation of arguments and sentences.

CHAPTER 4

First and second language acquisition of aspect

4.1   Introduction

The acquisition of tense and aspect has been at the centre of attention of first and second language acquisition researchers since the early seventies with the appearance of such studies as Bronckart and Sinclair (1973), Brown (1973) and Antinucci and Miller (1976). A considerable body of data has been accumulated, with substantial proportion of it on the acquisition of languages other than English (Bronckart and Sinclair 1973 for French, Antinucci and Miller 1976 for Italian, Cziko and Koda 1987; Shirai 1993 for Japanese, Weist, Wysocka, Witkowska-Stadnik, Buczowska and Konieczna 1984 for Polish, Stephany 1981 for Greek, Aksu-Koç 1979, 1988 for Turkish, among others). The most influential theory trying to analyze and interpret the data has been variously labelled Aspect Before Tense, The Primacy of Aspect Hypothesis, or the Defective Tense Hypothesis. Different attempts at explanation have involved the Prototype Theory (Clark 1989; Lakoff 1987; Rosch 1973; Ross 1973; Taylor 1989), The Bioprogram Theory (Bickerton 1984a, b, 1988), Slobin's cognitive operating principles (Slobin 1985) and discourse motivation (Andersen and Shirai 1994). In this chapter I will review the literature on L1 and L2 acquisition of aspect, arguing against an interpretation along the lines of Primacy of Aspect. I will claim that the bulk of the observed data actually give us a completely different picture of children's and L2 learners' competence in acquiring verbs and that the patterns of acquisition can be accounted for by Universal Grammar syntactic templates of each aspectual class of verbs in conjuction with the Distributional Bias Hypothesis (Brown 1973; Stephany 1981; Shirai and Andersen 1995; Robison 1995b). I will argue that what children are marking at the outset of tense/aspect acquisition may be the feature [boundedness] (Depraetere 1995, see Chapter 1, Section 1.2.1). Finally, I will address the implications of this proposal in the context of semantic versus syntactic cueing for verb learning.

4.2   First language acquisition research on aspect

Before going into individual analyses, it is useful to set out the different findings of studies into aspect, as formulated by the proponents of the Primacy of Aspect Hypothesis (Andersen and Shirai 1996: 533):

1. Children first use past marking (e.g., in English) or perfective marking (Chinese, Spanish, etc) on achievement and accomplishment verbs, eventually extending its use to activity and stative verbs.
2. In languages that encode the perfective/imperfective distinction, imperfective past appears later than perfective past, and imperfective past marking begins with stative verbs and activity verbs, then extending to accomplishment and achievement verbs.
3. In languages that have progressive aspect, progressive marking begins with activity verbs, then extends to accomplishment and achievement verbs.
4. Progressive markings are not incorrectly overextended to stative verbs.

4.2.1   The early primacy of aspect hypothesis

The tendency of children to mark tense based on certain characteristics of the event itself (like whether it is a state or a dynamic activity, whether it is punctual or ongoing in time, whether it is completed or not) has been noticed in the early diary studies such as Stern and Stern's and Gregoire's, reported in Werner and Kaplan (1963). Bronckart and Sinclair (1973) is the first experimental study investigating the developmental relation between tense and aspect. They presented 74 French-speaking children (aged 2;11 to 8;7) with enactment of situations varying in terms of aspectual values such as duration, presence or absence of a resultant state, repetitiveness, and continuing action. Examples were: a horse jumping over a fence, a truck slowly pushing a car into a garage, and a fish swimming in a basin. After each presentation, the children were asked to describe the situation they had just seen. Although the experimental set-up supposedly required the use of past tense forms, children used different tense inflections in describing different types of events. Children used past tense markers (*passé composé*) with verbs that denoted events with clear end results, or telic verbs (e.g., *go to the garage*) and present tense markers with verbs that do not denote clear end results, or atelic verbs (e.g., *swim in the basin*). For the younger children, duration was the determining variable for choice of tense, non-durative telic events being invariably used in the past tense. This tendency diminished as the children grew older, thus approximating adult use. These

findings led Bronckart and Sinclair to the claim that tense markers are used to describe various properties of events prior to marking deictic tense. That is, children differentiate between events on the basis of properties related to their internal structure. This strategy, they propose, eventually provides a guideline for the discovery of the tense structure available in the children's language.

Antinucci and Miller (1976) found a similar tendency in longitudinal studies based on data collected from one English-speaking and seven Italian-speaking children and focusing on an earlier period of development (between 1;6 and 2;5 years of age). They observed a very interesting phenomenon: Italian children go through a stage in which they mark object-agreement in person and number, which is unattested in adult grammars. The transitive verbs thus marked, however, were only the verbs denoting a change of state and a subsequent resultant state, that is, accomplishment verbs. At this same stage of development, atelic activity verbs do not occur in the past tense at all, but only in the present. Antinucci and Miller's interpretation is as follows: past tense markers are first used as adjective markers (that is why they agree with the object) and serve to focus on the perceptible resultant state of the object, particularly after a dynamic change of state.[1] Only later does the child shift attention from the current state to the preceding dynamic change of state and extend the use of the inflection to past time in general. The cognitive constraints in their Piagetian framework model are due to the child's propensity to represent past events that are at least partially present in the here-and-now, by means of their results. In Antinucci and Miller's study, this cognitive deficiency stage is not overcome in years, as in Bronckart and Sinclair's experimental study, but spans over a number of months. Unfortunately, this study did not report on the use of any other but the past tense morpheme. Their conclusion that past tense was used to refer to resultant states only would have been better supported if they had demonstrated that the children use atelic verbs with another type of tense morpheme.

---

1.   See Borer and Wexler (1992) and Fantuzzi (1993) for alternative accounts. Borer and Wexler (1992) reanalyze Antinucci and Miller's data to argue for the "maturation" of syntax. Fantuzzi (1993) reanalyzes Antinucci and Miller's data and argues that participle-object agreement may just be an overgeneralization of the patterns in the input, since the adult language allows agreement with subjects of unaccusative verbs and with cliticized objects, but not with full NPs. It is plausible to propose that Italian children are overextending the agreement rules to apply to direct objects (or themes) in general. Thus, the overgeneralization of agreement marking poses no more of an intractable learnability problem than the various types of overgeneralizations exhibited by children acquiring English (Bowerman 1982).

Another detailed study of the acquisition of verb inflections in English is Bloom, Lifter and Hafitz (1980). They investigated the emergence of the verb system and inflections in a naturalistic study of four American children between the ages of 1;11 and 2;4. The mean length of utterance (MLU) of the children at the beginning of their study was between 1.5 and 2 and at the end of the study it was between 2.5 and 3. Bloom *et al.* observed that when verbs are first marked, inflections occur selectively with different aspectual categories of verbs: *-ing* is marked on activity verbs; past tense markers, both regular and irregular, appear with achievement verbs; and the present tense marker *-s* appears with completive/durative verbs. Stative verbs are rarely marked inflectionally. Bloom *et al.* emphasized the aspectual contour of the events rather than the presence or absence of resultant state, thereby going away from Bronckart and Sinclair's (1973) and Antinucci and Miller's (1976) cognitive deficiency explanation. In their discussion section entitled Aspect before Tense, Bloom *et al.* argue that what governs the use of inflections is primarily aspectual contrasts along the following lines. The stative/non-stative distinction is the significant variable in marking inflection versus omitting it. The durative/non-durative distinction is the crucial one for marking *-s/-ing* versus *-ed* or irregular past. The completive/non-completive distinction is responsible for the marking of *-ing* versus present *-s*. In this way, they conclude, children use aspect to learn tense. Bloom *et al.* (1980) follow Jakobson's (1957) original Aspect before Tense hypothesis which captures the observation that when both tense and aspect are marked in a language, the aspectual marking will appear closer to the verb stem and before the tense marking. According to Bloom *et al.*, this principle would support the developmental sequences. Evidence for this comes from Radulović's (1975) study on the acquisition of Serbo-Croatian, in which it is demonstrated that children acquired the perfective/imperfective distinction earlier that the past/non-past distinction. They explicitly claim that "where tense and aspect are coded differently, as in Russian and other Slavonic languages, the expectation is that aspect will be learned before tense" (Bloom *et al.* 1980:407). Another related claim that they make is that the children's initial use of tense morphology to encode aspectual class is redundant, since aspect is already inherently encoded in the verb. That is why Shirai (1993) calls their claim The Redundant Marking Hypothesis.

4.2.2   Against the primacy of aspect hypothesis

Weist *et al.* (1984) is the first publication in the ensuing debate between Lois Bloom and Richard Weist and their respective associates (see Rispoli and Bloom

1985; Smith and Weist 1987; Bloom and Harner 1989). Weist *et al.* (1984) take issue with the three studies we have reviewed above, both with respect to the universality of their findings and with respect to their interpretation and label them The Defective Tense Hypothesis. In order to understand Weist *et al.*'s arguments, some knowledge of Slavic aspect is required. But since the topic of this book is partly Slavic aspect, I will simply refer the reader back to Chapter 3. However, it is relevant to introduce the system of Polish future marking. With imperfective verbs, non-past inflections produce the present tense. There is no present perfective. With perfective verbs non-past inflections produce future meaning. The future tense for imperfective verbs is periphrastic with the help of the auxiliary *be*. Table 4.1 illustrates this.

Table 4.1 Polish verbal morphology

	Imperfective	Perfective
Non-past tense	buduje 'he is building'	**z-buduje** 'he will build'
Past tense	budowal 'he was building'	z-budowal 'he built'
Future periphrastic	**bedzie budowal** 'he will be building'	–

The verb system of child Polish begins with two frozen forms, the third person singular present tense form of imperfective verbs, and the second person singular imperative of both perfective and imperfective verbs. These two forms are used to make statements and requests, respectively, and it seems that at this stage, around age 1;0, the tense marker does not signal temporal deictic relations. Weist *et al.* (1984) studied longitudinally six children during four observation sessions in naturalistic settings. Three of the children were 1;7 to 1;9 and the other three were between 2;0 and 2;2. The younger children were observed from the initial period of productive tense morphology. All utterances were transcribed and accompanied by extensive context notes. The verb phrases were then classified into the four Vendlerian aspectual classes and the occurrences of each aspectual class with past morphology were analyzed. The results show that (1) imperfective verbs are used in the past tense, contra findings in Bronckart and Sinclair (1973); (2) imperfective verbs in the past were used to refer to actual situations; (3) the children contrasted imperfective and perfective forms of the same verb; (4) telic verb phrases were used in the past tense independently of their resultant states, contra Antinucci and Miller (1976); (5)

children did use past time references, ranging between 24% and 73% of the verb uses; (6) children were capable of deictic future references.

The second study reported in the paper was a cross-sectional one. The subjects were two groups of 9 chidren each, aged 2;4 to 2;8 and 3;4 to 3;11, respectively. In this experimental study, the researchers repeated the Genevan technique used in Bronckart and Sinclair (1973) with acting out telic and atelic situations and asking the children to retell what they saw. An important difference from the earlier study was that the question eliciting the response was itself in the past tense. In a range of other situations the children were shown present events interrupted at a significant moment. Then, they were asked to continue the act-out and to say what will happen. The results of the second study reinforced the findings of the first, and generally indicated that neither tense nor aspect morphology can be viewed as redundant information in the children's competence, contra Bloom *et al.* (1980).

There was a particularly revealing part of the data, which the other studies on aspect had not discussed so far. The Aspect before Tense Hypothesis claims that children cannot separate tense from aspect marking, since they use past tense inflections redundantly to mark inherent telicity and present tense to mark atelicity. This hypothesis would predict that the children would not use tense morphology independently of the aspect system. But the Polish children in Weist *et al.*'s study produced productively a combination of perfective aspect and non-past marking to refer to future events. The future periphrastic forms were also used productively. These findings indicate that tense was not a defective category in the competence of these children.

Another important observation of this study, to which I will return later, is the fact that "the distinction between perfective and imperfective aspect in Polish seems to be primitive"(Weist *et al.* 1984: 369). In other words, children do not use the perfective aspect to make reference to situations, which are not completed. No errors in the use of perfective and imperfective aspect occur.

4.2.3   The late primacy of aspect hypothesis

The findings of Weist *et al.* (1984) could not be ignored. In the ensuing debate, proponents of the early Aspect before Tense Hypothesis weakened the strength of their claims, and it was later relabelled the Primacy of Aspect Hypothesis or the Relative Defective Tense Hypothesis (Andersen 1989). I will try to distinguish between the early and the later claims of this approach. The three early

studies we have reviewed (Bronckart and Sinclair 1973; Antinucci and Miller 1976; Bloom *et al.* 1980) argued that:

1. only telic verbs will receive past tense inflection in children's language;
2. tense distinctions will be redundant and only accompany an aspectual distinction;
3. only references to immediate past situations will be made. (Weist *et al.* 1984: 348)

Taking into account Weist *et al.*'s (1984) findings, Andersen (1989) acknowledges that such an absolute, all-or-nothing hypothesis is too stringent indeed. However, a less stringent version of it (the Primacy of Aspect Hypothesis) still holds true. According to this hypothesis, past inflections are *predominantly* attached to achievement and accomplishment verbs in the early stages, and imperfective past marking, which emerges later, is *predominantly* used with state and activity verbs in the beginning. Thus, "it makes an observational descriptive claim about inherent-lexical-aspect and grammatical tense-aspect pairings and does not include the cognitive deficiency explanatory claim that Weist *et al.* argue so cogently against" (Andersen and Shirai 1996: 536).

We have to agree with this observational descriptive claim, since it is well supported by the data. However, the question remains open what exactly these facts tell us about children's underlying linguistic competence. I will discuss an alternative interpretation after introducing Shirai's longitudinal study of L1 English development, Behrens's work on the L1 acquisition of German, and some L2 studies of the acquisition of aspect.

Shirai and Andersen (1995), based on Y. Shirai's (1991) doctoral dissertation research is an important work within the POA, since it makes claims somewhat stronger than the weaker claims of the late POA, at least with respect to past marking, and proposes a cognitively based account of the data. The study is based on the transcribed speech samples of three children acquiring English: (1) Adam from age 2;3 to 4;10 and (2) Eve from age 1;6 to 2;3, both from Brown (1973), and (3) Naomi from age 1;6 to 4;9 (Sachs 1983). All finite verb forms with past and progressive inflections were coded both for form and for inherent aspectual class. One weakness of the earlier studies was the lack of precise descriptions of the procedures for determining inherent lexical aspect. Shirai and Andersen (1995) report reliable tests for this coding, supplemented by intra-rater reliability of 93% two years after the initial coding. One of the most important findings of this study was the observed distributional bias in the maternal speech addressed to the children. Since I am going to discuss this issue

at length later on, here I will only review the authors' findings with respect to the children's speech.

The emergence of past inflections in the children's speech was initially limited to achievement verbs exclusively. Table 4.2 reveals the results and the ages of the children.

Table 4.2 Past morphology used at Stage 1 (Shirai and Andersen's Table 7)

Adam (2;3–2;4)		Eve (1;6–1;7)		Naomi (1;6–1;10)	
broke	1	*broke*	1	*fell(down/out)*	4
*sat wall**	1	*fell*	1	*throwed***	5
went to school	2	*spilled*	2	*found*	1
fell (down)	10				
lost shoe	2				
brought	1				

* The only verb coded as activity; **Overgeneralization of -ed (including *throwded*)

Almost all of these verbs, with the exception of *sat wall*, are semantically marked [+result], [+punctual], and [+telic], which is why the authors do not attempt to decide which of these semantic features is most important for the acquisition of tense, apropos Antinucci and Miller's (1976) singling out of the resultative factor as the crucial one for the encoding of past.

The emergence of progressive inflections, on the other hand, was not limited to activities only. From the very beginning, the children were using activity verbs and a smaller proportion of achievement verbs marked with progressive *-ing*. Table 4.3 (adapted) gives the relevant percentages, raw tokens in parentheses, and the ages of the children.

Table 4.3 Inherent aspect with progressive inflections at Stage 1

	State	Activity	Accomplishment	Achievement
Adam (2;3–2;4)	0%	58% (11)	10% (2)	32% (6)
Eve (1;6–1;7)	0%	75% (9)	0%	25% (3)
Naomi (1;6–1;10)	4% (5)	68% (93)	4% (5)	24% (33)

Shirai and Andersen (1995) also elaborate that in the very beginning of stage 1 for Naomi, *-ing* was used exclusively with activity verbs and achievement verbs used iteratively. In other words, the child is exemplifying exactly an adult

usage of achievement verbs with -ing. Some examples include *flopping around*, and *jumping*, that is, verbs inherently marked as [+telic] and [+punctual]. This is a finding that conforms to the weaker claims of the POA, namely, that progressive and past inflections are *predominantly* used with telic and atelic aspectual classes of verbs respectively. Still, the authors summarize their results with the stronger claim that "a common pattern of morphological development was found for both past and progressive forms: they are initially restricted to particular semantic classes of verbs (…) and then expanded later to cases that differ semantically from the prototype" (1995:757).

Shirai and Andersen (1995) propose a cognitively based prototype explanation for the findings of their study. The prototype account has been advanced in research on the development of lexical semantics (Bowerman 1978) and morphology (Slobin 1985; Taylor 1989). Prototype theory was developed in cognitive psychology by Eleanor Rosch (Rosch 1973, 1978; Rosch and Mervis 1975) to account for human categorization. Prototype theory assumes a graded category membership. A category has its best exemplar — the prototype — and peripheral members, which might not share much with the best exemplar. Applied to language acquisition, the claim is that children acquire a linguistic category starting with the prototype of the category, and later expand its application to less prototypical cases. The prototype account is also proposed to resolve the conflicting claims whether early past morphology encodes aspect or tense. What children are doing, according to Shirai and Andersen (1995), is "simply attaching early past inflection to the prototype of the category past ([+telic], [+punctual], [+result]). The reason the children appear to be marking aspect is that the prototypes of past (tense) and perfective (aspect) are very similar" (1995:759).

Here I will point out some inconsistencies in the Prototype explanation of the study's findings, and I will return to criticism of the broader claims of the POA after discussing SLA findings. In their explanation of progressive marking, Shirai and Andersen bracket together activities with iterative achievements like *jump, come, go*, "which to the children are probably the same as activity verbs" (1995:758). For children both of these processes (*he is crying* versus *he is jumping*) consist of a succession of small elements that comprise the whole process, and they do not differentiate between the two. Thus, the prototypical features for adding the progressive are [−telic] and [+durative]. But notice that the feature [+durative] comes from the addition of the progressive morpheme -*ing*. There is nothing inherently durative in *jump* and it only becomes durative when one uses it in the progressive tense. The researchers are accounting for the

addition of a morpheme based on the feature of that same morpheme — a circular argument indeed. It seems in this case that children are not guided by the inherent quality of the predicates that they mark progressive — they want to express a durative situation and express it by imposing iterativity on a telic, punctual verb, just like adults do. Thus, I will continue to accept the weaker claims of the late POA that progressive *predominantly* appears with activities, but I view the emergence of progressive with some achievements as a counter-example to the stronger claims of "restricted appearance" of the above quotation.

4.2.4   Against the late primacy of aspect hypothesis

Behrens (1993) approaches a huge corpus of language acquisition data of German with a view of testing the hypotheses proposed in the literature according to the predictions they make. She studies the speech production of seven German children between the ages of 1;0 and 4;0 and analyzes the course of development of their individual tense systems and the interrelation of tense with aspectual features.

Behrens divides the proposals about the acquisition of tense and aspect into three types. First, proposals that interpret the findings as an indication that children use past tense forms to mark perfective aspect rather than deictic past tense because they have not yet developed a full time concept, which would allow them to abstract themselves from the here-and-now perspective (Bronckart and Sinclair 1973; Antinucci and Miller 1976). This hypothesis predicts that there should be no genuine past tense marking before the children have the respective cognitive abilities, and early past tense marking should be non-existent.

The second type of proposal is more or less exemplified by the POA hypothesis discussed above, and by Slobin's (1985) theory of an innate semantic space, which allows children to acquire their grammar. In other words, seman-tic predisposition, or innate concepts, equip children with a starting point for the acquisition of morphology. Children show an inclination towards particu-larly salient scenes and perspectives, which provide them with a guideline in their early grammaticalization. According to this view, children go through a stage determined by universal semantic distinctions, before they acquire the semantics of the target language. With respect to temporal reference, resultative events offer a good mapping point for pastness markers. Thus, this view would predict that there will be a very strong correlation between early past tense marking and resultative (telic) verbs, and that this correlation would be restricted only to the encoding of the resultative state of telic verbs.

The third type of theory that Behrens (1993) checks against German acquisition data is the opposite of Slobin's (1985) semantic guideline to morphology. It assumes that children do not need conceptual pre-tuning but can derive the target semantics from the observation of form–function patterns in the input. In this respect, the third hypothesis is minimalist in its theoretical assumptions. It predicts that usage of early tense markers follows the pattern of the target language rather than encoding pre-existent concepts. It also predicts that the acquisition of a particular form is easier the more accessible the form–function relationships are, that is, if the form is perceptually salient and semantically transparent. This hypothesis can be falsified by children's consistent non-target usage.

To test the first hypothesis, the data were searched for cases of not-here-and-now reference to past events before the onset of linguistic tense marking (around 2;0 of age). Such cases were found at age 1;2 and earlier, suggesting that children have a basic temporal orientation of past and future time long before, and dissociated from, the morphological tense marking. Such cases constitute counter-examples to the cognitive deficit theory.

In testing the second against the third hypothesis, the data show that German children have a preference for marking past tense on telic verbs. However, this preference is not exclusive, because activity and stative verbs in the past are found from early on. To further test the exclusive prediction of the semantic guideline to morphology theory, all telic verbs in the past were analyzed to see whether they do indeed refer to visible resultative states of change of state verbs. Four types of early tense marking were discovered, which do not allow a purely resultative reading: when telic events result in the disappearance of the reference object; when negated telic verbs are used by the children where no visual change of state occurs; when telic verbs are used in pretence activities where the reference is hypothetical; and finally, when the children use participles in a future perfective way to show that there will be a resultative state, but in the future. Thus, the results of this study clearly show that in their language production German children do not rely on resultativity as a semantic basis for past tense usage. Instead, they use these tenses not only to encode aspectual properties but also to encode general temporal reference. As there are no errors or principled restrictions in the children's usage of tense, Behrens (1993) concludes that the form–function correspondence need not be attributed to conceptual semantic pre-tuning.

To summarize the tendencies observed in the L1 acquisition studies discussed so far:

1. Children are quite sensitive to the telic–atelic event distinction;
2. In the early stages of acquisition of tense and aspect morphology, children use more often imperfective marking on activity verbs and past tense marking on accomplishment and achievement verbs, but this is far from exclusive;
3. Children do not make errors in terms of the correct usage of tense and aspect markers.

4.3   Second language acquisition of aspect

What are the implications of the POA hypothesis for second language acquisition? As noted above, the early studies on the L1 acquisition of aspect attributed the children's use of tense morphology to mark aspect to a cognitive deficit, suggesting the children did not have the concept of deictic past. However, as Andersen (1989) points out, this cognitive deficit cannot be the only explanation of the phenomenon, if we see L2 learners behaving in a similar fashion. The latter clearly do have a concept of deictic past, but they show the same tendency in acquiring the past and perfective morphology. L2 acquisition facts indicate that the cognitive deficit theory should be discarded. On the other hand, transfer from the first language is frequently attested. Keeping in mind the weaker claims of the late POA, we will review the work of Andersen, Shirai, Robison and Bardovi-Harlig.

Andersen (1991) is based on pseudolongitudinal data from the natural acquisition of Spanish by two children, English native speakers living in Puerto Rico. The data were obtained at two times: when one subject (Annette) was 8 and the other (Anthony) was 12 and both had been in Puerto Rico for two years, then again two years later. Comparison data from a 16-year-old native speaker of Spanish were also used. The working hypothesis of this study is as follows:

(1)   In beginning stages of language acquisition, only inherent aspectual distinctions are encoded by verbal morphology, not tense or grammatical aspect.

In order to understand Spanish grammatical aspectual marking, we should discuss the three examples in (2).

(2)   a.   Present: *Nadie   baila   tan bien como él.*
                            Nobody dances as   well as   he (does).

b. Preterite: *Nadie   bailó   tan bien como él.*
    (perfective)   Nobody danced as   well as   he (did).
c. Imperfect: *Nadie   bailaba tan bien como él.*
    (imperfective) Nobody danced as   well as   he (did).

Since the English gloss does not reflect the different interpretations of (2b) and (2c), Andersen gives situations in which the forms will be appropriate. The sentence comes from the transcript of the native speaker control, in reference to a scene from the film Saturday Night Fever, where John Travolta is mesmerizing the audience with his dancing. (2b) views the action as a whole event in the past and can be used as follows:

(3) *bailó*: Nobody danced as well as he did in the dance contest we just saw.

(2c), on the other hand, gives the internal temporal structure of the situation (Comrie 1976), or views the situation from within. Thus, it is appropriate for use in the following situations:

(4) *bailaba*: Nobody danced as well as he did when we were young.

(5) *bailaba*: Nobody danced as well as he did while everyone's eyes were fixed on him.

Andersen's (1991) results can be exemplified in Table 4.4 (adapted).

Table 4.4 Developmental sequence for encoding tense and aspect with past inflections in Spanish interlanguage

Stages	States	Activities	Accomplishments	Achievements
1	Present	Present	Present	Present
2 (Anthony)	Present	Present	Present	Preterite
3	Imperfect	Present	Present	Preterite
4 (Annette)	Imperfect	Imperfect	Preterite	Preterite
5	Imperfect	Imperfect	Pret.+Imperf.	Preterite
6 (Anthony)	Imperfect	Pret.+Imperf.	Pret.+Imperf.	Preterite
7	Imperfect	Pret.+Imperf.	Pret.+Imperf.	Pret.+Imperf.
8 (Annette)	Pret.+Imperf.	Pret.+Imperf.	Pret.+Imperf.	Pret.+Imperf.

Recall that Andersen's data come from two children tested at two times, two years apart. Thus, only four of the developmental stages indicated by Table 4.4 are attested (2 and 6 for the subject Anthony, 4 and 8 for the subject Annette), the other four (1, 3, 5, 7) are hypothetical. At stage one, the hypothetical generalized learner uses only present forms and no inflections of any kind. At stage

two, the learner uses Preterite with an achievement verb like *break*. At stage three, prototypical states such as *have* appear in the Imperfect. By stage four, the prototypical punctual marker, the Preterite form, spreads from achievements into accomplishment verbs and Imperfect spreads from states to activities. But native Spanish permits, in fact, requires any verb to be able to receive either Preterite or Imperfect inflections. This alternation only obtains at stage five, and only with accomplishment verbs. At stage six, activities can also appear in Preterite as well as Imperfect form, at stage seven achievements can appear with Imperfect as well as the usual Preterite. Stage eight represents the target as far as grammatical aspectual marking is concerned in Spanish. Thus, the eight development stages illustrate how inherent aspectual class is used by the learners to acquire the grammatical, viewpoint aspect. Not a single counter-example to the POA is reported by the author.

At this point we have to say that Table 4.4 seems a very good illustration of a hypothesis, but it is almost too neat to be true. Language acquisition seldom proceeds in such clean and logical stages. Four of those stages are hypothetical and not supported by actual data. It is very hard to defend the eight-way distinction if we take a closer look at the stages. Take for example stages two, three, and four. We are told that, at stage two, states and activities appear only in the Present. At stage four, both states and activities can already appear in the Imperfect tense. How do we know that it was states that appeared first with Imperfect and not activities? In the absence of data, it may very well have been the other way round, activities may have appeared with Imperfect first, followed by states, or both aspectual classes may have appeared in Imperfect at the same time. Similarly for stage five, where it is claimed that accomplishments appear for the first time with both Imperfect and Preterite contrastive marking. It could have been activities to appear contrastively in the past before accomplishments, for all we know. In summary, Andersen (1991) leaves us with a lot of unanswered questions, as far as the methodology as well as the reporting and interpretation of data in the paper are concerned.

The two studies of Russian native speakers learning English, namely Flashner (1982) and Wenzell (1989) are very difficult to compare with the findings of the studies reviewed above, due to terminological and methodological differences. Most importantly, the studies do not report the procedures used for classifying verbs or verb phrases into aspectual classes. In her analysis of the interlanguage of three Russian immigrants, Flashner (1982) concluded that grammatical (as opposed to lexical) aspect controlled the distribution of past tense morphology. But as I have shown in Chapter 3, in Slavic languages telicity

is (mostly) overtly marked by perfective preverbs (with the exception of verbs in the achievement class). What Flashner (among many others) called grammatical aspect in Russian is simply an overt realization of situation aspect. For this reason her findings should be interpreted in the following way: perfective verbs expressing accomplishments took the past form more often than stative verbs.

Wenzell (1989), analyzing spontaneous narratives from three Russian speakers (aged over 59), approached the data from the point of view of their discourse structure. She found that all three speakers have a (perhaps fossilized) basic system consisting mainly of the opposition of past and non–past. However, this system did not correspond semantically to the present–past distinction made by English native speakers. Perfective notions tended to be marked with past endings, especially in foreground contexts, imperfective notions tended to be marked with non-past, base of the verb forms. Wenzell (1989) argued that this is a clear-cut case of transfer from Russian. The age and the proficiency level of her subjects indicate that these learners are marking the aspectual distinctions in their first language with the past tense morphological means of the target language simply because they have not acquired the respective aspectual marking of English, namely, the *-ing* progressive morpheme.

Robison (1995a) employed oral data gathered by Roger Andersen in 1975 from a cross-section of Puerto Rican college students learning English. The study analyzed both oral interviews and writing samples from 26 students, divided into four proficiency levels based on the writtten tests. The lexical aspect of each predicate was determined by means of operational tests. Every effort was made to ensure that the particular inflections on the analyzed predicates were used by the subjects productively. A six-way classification of verbal predicates was introduced. In addition to the familiar four Vendler-Dowty classes, Robison proposed two more classes: "punctual states" and "punctual activities." The goal of the study was to check for skewed distributions of verbal morphemes across different categories of lexical aspect and to compare the degree of skewing across speakers of different ability levels. To provide a single measure of distributional bias that could be compared across speakers, the ratio of observed to expected frequency was calculated for each token and type count and reported in addition to percentages of target distribution. It was found that every one of the proficiency groups demonstrated a statistically significant dependence between morphological marking and

aspectual category.[2] Contrary to the POA hypothesis, the affiliation of progressive marking with activities, instead of diminishing, strengthened with proficiency levels. In all four groups progressive was applied to activities in non-target-like grammatical contexts like infinitive constructions and present tense contexts, as the following examples demonstrate (Robison 1995a: 357).

(6)   *And.. she help-..she help-..she help to me and my sister.. to – to **going** .. at the university. My mother is a housewife, ..uh she went to-..I think to f–ifth grade .. in school, …she is too smart too, … and she uh works at home. .. And **taking care** of her little .. cousin.*

A biased use of past marking toward telic verbs is significant in all but the lowest proficiency level group. Here again, the link between past and punctual events remains high at higher proficiency levels and may even increase, again contrary to the predictions of the POA hypothesis. Much of the past marking on punctual events occurs in non-anterior contexts (1995a: 358):

(7)   [S23 is describing her mother's daily routine.]
*When she wake up, she **went** to– ..to prepare the breakfast. .. Then .. she does the house, .. she make the– .. she make the dinner.*

With rising proficiency levels, past marking spreads out from its concentration on punctual events (or achievements) into the adjacent aspectual categories durative event (accomplishment) and punctual activity. The third person singular present inflection *-s* correlates weakly with states. The most important finding of this study is that the English verb inflections for past and present simple tense shift from markers of lexical aspect among lower-level learners to markers of tense at the highest level, while *-ing* strengthens as a marker of lexical aspect. The proposed explanation is that there exists a distributional bias in the NS input, which learners pick up and amplify.

A weakness of the study is the use of six instead of the well-established four aspectual classes, since this classification obscures the findings and makes

---

2.   This was calculated in the following way. "To provide a single measure of distributional bias that could be compared across speakers, the ratio of observed to expected frequency was calculated for each token and type count. For a given lexical category and inflection, the observed frequency is the actual number of tokens or types that were counted. The expected frequency equals the total of tokens/types in the given aspect category factored by the fraction of all tokens/types that bear the given inflection; statistically, it is considered the number of tokens/types one would expect if lexical aspect and morphological marking were independent." (Robison 1995a: 353)

comparisons with other studies more difficult. This is the six-way distinction Robison (1995a) argues for.

← *stative*		*dynamic* ——————————→	
←————————————————		*atelic*	*telic* ——→
durative	state	activity	durative event
punctual	punctual state	punctual activity	punctual event
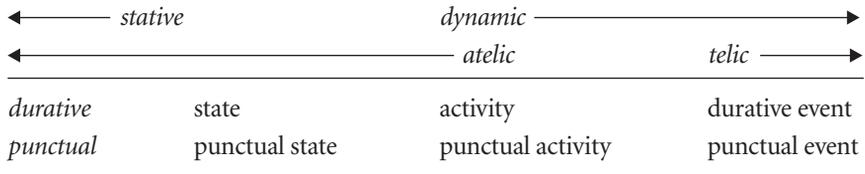
Figure 4.1 Six-way classification of lexical aspect

"Punctual states," an oxymoron in itself, are inert perception predicates as in (8):

(8)   John noticed the scratch in the woodwork.

The semantic basis for classifying *notice* as a state is the fact that it encodes an involuntary state of affairs requiring no energy. "Punctual activities" are atelic predicates involving a series of instantaneous events that can keep on occurring as in (9):

(9)   She is jumping.

The operational tests for punctuality Robison uses are the familiar ones: punctual verb phrases are ungrammatical with *for X time* adverbials, and they can be modified by point-time adverbials as *at 9 o'clock*. These tests are well-established tests for achievement verbs. The verbs *notice* and *jump* behave as all other achievement verbs do when used with these tests. Vendler's classification is based on the four classes of verbs exhibiting different syntactic behavior. But there is no syntactic evidence for the argument that *notice* and *jump* should be classified as punctual states and punctual activities, respectively. It is quite clear that what Robison calls punctual activities are habitually/iteratively used achievements, and what he calls punctual states are simply achievements as well. As I pointed out in Section 2 of this chapter in the discussion of Shirai and Andersen (1995), the iterative, atelic quality of achievements like *jump* is brought about by the progressive morpheme *-ing* in *she is jumping*, not by any inherent aspectual properties of the predicate itself. Classifying *jump* as an atelic predicate obscures the fact that at the lowest proficiency level this type of verb is used more with the progressive inflection than with the past inflection, contrary to the predictions of the POA hypothesis. The question remains as to how the statistical analysis of the results of this study would have been influenced, had all three punctual classes been treated as what they really are: telic punctual achievements.

In her cross-sectional study of tense and aspect in interlanguage, Bardovi-Harlig (1992) approaches the POA debate focussing on the relationship between form and meaning. The research question the study asks is: if form-meaning associations made by learners are untarget-like, are they evidence for "rogue" grammars or are they rule-governed? Bardovi-Harlig tested 135 adult learners at 6 levels of proficiency, from beginning to advanced, as well as 23 NS controls. The subjects came from 14 different L1s. Learners had to complete a cloze test with 14 missing verbal forms. Target forms included simple past tense, past progressive, past perfect, and present perfect/present perfect progressive. Verb forms were analyzed for formal accuracy and for appropriate use in context. The cloze test data were supplemented by composition data. Of the seven simple past tense targets, learners showed the highest rate of appropriate use for *tell* and *die*, achievement verbs and the lowest rate for *live, work*, and *take care of,* activity verbs. These findings were supported by additional data from the written compositions. The results suggest that the development of form precedes appropriate use, that is, fully grammatical forms emerge and are used by the learners before they carry target-like meaning.

Bardovi-Harlig and Reynolds (1995) investigated the acquisition of the simple past tense in 182 classroom language learners at six levels of proficiency. They are focussing on one half of the POA, predicting that learners will predominantly mark past on telic verbs. Subjects came from 15 different L1s. Learners were given 32 short passages with 62 test items and 26 distractors. They were given the base form of the verb and were asked to supply the missing inflection for the appropriate context. Context was established through the use of time adverbials or verb tense. The target for each test item was determined by the NS (n = 29) responses. Broken down by lexical aspectual class, the 62 items testing the use of simple past tense included 14 achievements, 11 accomplish-

Table 4.5 The use of Simple Past by lexical aspectual class and level in percentage of responses

Level	States	Activity	Accomplishment	Achievement
1	52.7	50.8	73.3	62.4
2	57.4	65.1	81.9	79.5
3	66.5	68.3	87.0	87.6
4	71.9	53.6	82.9	84.2
5	76.4	67.7	90.6	87.8
6	82.9	82.0	91.9	90.9
NS	97.4	95.7	97.8	97.3

ments, 12 activities, and 10 states. The table below demonstrates percentage of appropriate use of the different lexical classes.

Examination of the other tenses besides simple past used by the learners also reveals the influence of lexical aspect. In the case of activity verbs, the single main competitor to simple past is the progressive. In the case of stative verbs, the main competing form to the simple past tense is the state verb in the non-past. The authors conclude that learners treat telic verbs as best case examples of past tense carriers at all levels of proficiency but show lower use of past with activity and state verbs.

The usage of past tense in interlanguage was further examined by testing activity and state verbs in the environment of adverbs of frequency like *always, usually, often*, as in (10).

(10)   When George lived in Peru, he *(play)* <u>played</u> soccer every day.

With the introduction of adverbs of frequency in the environment of activity verbs, the appropriate use of simple past stays nearly constant, but the use of non-past increases significantly. Non-past replaces progressive as the most used alternative, showing that learners do not recognize such environments as environments for the simple past and cannot dissociate habitual activity from past or present time. This is another way in which past tense is argued to be undergeneralized in interlanguage grammars.

Thus, it appears that tutored learners, irrespective of their first language, quite like untutored learners and children, are sensitive to lexical aspectual class with respect to tense use, not only at the beginning stages of the acquisition but at higher levels of proficiency as well.

Bardovi-Harlig and Bergström (1996) investigates the acquisition of English and French as a second language. In this review we shall concentrate on the findings for French, since the ESL findings are largely compatible with the results of the studies reviewed so far. Written narratives were collected from 23 learners of French using a film retell task. Learners were divided into four groups on the basis of their ability to mark past tense in past-time contexts, which cut across proficiency levels, independently established by the university they were enrolled in. The tense/aspect morphology used by the learners of French included *passé composé*, imperfect, and present. Verb phrases were assigned to aspectual classes according to the established tests. The results are summarized in the following table (adapted from Bardovi-Harlig and Bergstrom's (1996) Table 5 on p. 317).

Table 4.6 Distribution of Verb Morphology across aspectual class in French
in percentage of verbs

Group*	Form	States	Activity	Accomplish-ment	Achievement
1	PC	0	26.0	50.0	63.4
(n = 4)	Imp	25.0	0	0	0
	Pres	70.0	70.0	40.0	34.1
2	PC	13.6	65.0	72.2	66.0
(n = 7)	Imp	27.3	5.0	5.6	4.3
	Pres	31.8	30.0	11.1	25.5
3	PC	20.8	70.7	87.2	87.9
(n = 7)	Imp	29.2	7.3	5.1	1.1
	Pres	47.9	9.8	5.1	7.7
4	PC	13.9	55.2	61.3	79.3
(n = 5)	Imp	63.9	31.0	29.0	11.5
	Pres	19.4	10.3	3.2	6.9

* Here group means the postulated by the authors stage of development

The authors argue that the results provide support for the POA hypothesis in that *passé composé* forms are marked predominantly on telic verbal classes. Like Spanish, French has an imperfect form whose meanings are a superset of the progressive meaning. Andersen (1991) posits the spread of imperfect to be from states to activities to accomplishments to achievements, and these results support the claim. When imperfect spreads to activities and accomplishments, the use of *passé composé* drops, and the use of grammatical aspect becomes more target-like.

To summarize the common findings of the second language acquisition studies researching the POA:

1. SLA studies generally support the weaker version of the POA hypothesis;
2. Tutored classroom learners and untutored naturalistic learners show roughly the same behavior with respect to marking tense;
3. Some studies find overgeneralization of progressive marking to states in English (Robison 1990), but others do not (Bardovi-Harlig and Reynolds 1995; Bardovi-Harlig and Bergström 1996);
4. Learners appear to retain and strengthen the bias of using progressive more with activity verbs across proficiency levels, while they tend to lose the

correlation between telicity and past tense. In other words, past eventually spreads to all aspectual classes but progressive does not spread (Robison 1995; Bardovi-Harlig and Bergström 1996).

An important European SLA study on the acquisition of temporality must be mentioned here, if only for the impressive range of data it makes available for research. This is Dietrich, Klein, and Noyau (1995), a largely descriptive, functional study, which does not aim at supporting any particular theoretical framework. The authors argue that their data disconfirm the POA hypothesis, but do not propose an alternative explanation.[3] Still, and even in the way they are reported, their findings are of interest for researchers of tense and aspect in second language acquisition.

The European Science Foundation Project is a cross-linguistic longitudinal study of untutored adult learners, coming from six first languages (Punjabi, Italian, Turkish, Arabic, Spanish, Finnish) and acquiring five second languages (English, German, Dutch, French, Swedish). First and second languages were paired so that for every first language, there were two second languages, and vice versa. The forty learners were regularly recorded over a period of two and a half years, from as near to the beginning of the learning process as possible. The recorded data are highly comparable across languages and subjects. The authors divide the acquisition process into three parts: pre-basic variety, basic variety, and developments beyond that.

In the pre-basic variety stage, learners' utterances consist of uninflected nouns and adverbials, rarely a verb, and never a copula. All verbs are in their base form in English. Temporality is expressed through individual lexical items like *start* and *finish* and through adverbials. If there are any inflected verb forms, they are in free variation. Priority is given to marking the localization of the event in time, which is in clear contrast to the findings reported for first language acquisition and other SLA studies, some of which we have reviewed in this chapter.

---

3. Klein and Perdue (1997), based on the same ESF data, propose an explanation of the Basic Variety in terms of the Minimalist Program within the generative framework (Chomsky 1995). They argue that the Basic Variety language is a special case of an I-language (standing for 'internal, individual, intensional' language as in Chomsky 1986a, the individual's linguistic knowledge in general) where all functional categories have their feature strength neutralized, or supressed. Language acquisition beyond the Basic Variety, then, is understood as a change in feature strength.

All learners in the study achieved a basic variety stage, which is character-
ized by utterances containing predominantly uninflected verbs, their argu-
ments, and optionally adverbials. There is no case marking or finite construc-
tions. The form chosen for the base of the verb may differ: in the acquisition of
English both the bare stem of the verb and the -*ing* form were observed. Since
no aspectual analysis was done on the verb phrases in the progressive, we
cannot compare these findings to those of other studies. But the verbs anec-
dotally reported to occur with the -*ing* are very similar to the ones reported by
Shirai and Andersen (1995) for first language development: *reading, working,
coming, going, looking, setting*. There is a steadily increasing repertoire of
temporal adverbials and what Dietrich *et al.* (1995) call "boundary markers,"
and I will call "telicity markers"such as *start* and *finish* used in constructions
like *work finish* 'after working is/was/will be over.' The authors also argue that
the basic variety is relatively neutral with respect to the specificities of the
second language and irrespective of first language. They see the basic variety as
reflecting more or less universal properties of language.

In the third stage, learners have to go beyond those universal properties of
linguistic temporality and acquire the peculiarities of the respective target
languages. The study finds commonalities between all learners at this stage as
well, which may be a reflection of the fact that four of the five target languages
investigated are Germanic languages. The common features of interlanguages
at this stage are stated to be as follows. Formal variation precedes functional use
in the sense that a learner would use the base of the verb or a progressive form
or various present tense forms without a clear and recognizable functional
contrast, be it a contrast of the target language or some learner-variety internal
contrast. Also, according to Dietrich *et al.,* tense marking precedes (grammati-
cal) aspect marking, in the sense that, even if using perfect and progressive
forms, the learners do not demonstrate any functional use of these forms. This
seems at first approximation to be in contrast to the findings of Weist *et al.*
(1984) for L1 acquisition and Andersen's (1991) findings for L2 acquisition,
and again the conflicting results may be due to the properties of the target
languages. In the researchers' own findings, learners mark telicity overtly, with
the help of whole lexical items, which is exactly parallel to the overt marking of
telicity in Slavic languages or in the learners' own L1s (Punjabi, for example).
What is grammaticalized in some languages is covert in others, so generaliza-
tions of the type "tense is marked before aspect" may turn out to be misleading.

Finally, Dietrich *et al.* (1995) notice another common property of all
interlanguages developing beyond the basic variety — the fact that irregular

morphology precedes regular morphology in past marking.[4] This suggests that the learners start out by acquiring whole individual items in the input without analyzing them as "verb + irregular past morpheme" and then, very slowly, they may generalize over those items to reach a rule like "add *-ed* to the stem to mark past."

To summarize our discussion of Dietrich *et al.,* their findings may not after all be so different from the findings of other studies discussed above, after a more careful look at the data has been taken. It is a pity that the data in the book is not quantified at all, so that comparisons with other findings in the field could be attempted.

4.4   Criticism of the primacy of aspect hypothesis

4.4.1   Defective tense versus relativized defective tense

In discussing the arguments and interpretations of data reflecting children's and adult L2 learners' acquisition of tense and aspect, we must distinguish between the claims of the early Defective Tense Hypothesis (DTH) and the later claims of the Relativized Defective Tense Hypothesis (RDTH). Since this book is couched in the UG in SLA framework, the underlying question is whether the learner's grammatical system (child grammar, interlanguage) is a simpler version of the adult native speaker's language system, or it is a "rogue" grammar, an unnatural grammar that does not fall out from principles and parameters of UG.

The early claims of the DTH as argued for in Bronckart and Sinclair (1973) and Antinucci and Miller (1976) can be summarized as follows: children until the age of six are using tense marking to (redundantly) encode aspectual rather than temporal distinctions. This mistake in interpretation is possible because perfective aspect is generally appropriate when referring to an event in the past. Not until the children have acquired the cognitive abilities associated with decentring (disassociating moments in time) do they use tense to code temporal order, Bronckart and Sinclair claim. This claim directly implies that children's grammars are radically, qualitatively different from adult grammars, and are essentially rogue grammars.

---

4.   This has been observed for L1 acquisition as well. Such L2 development is reminiscent of the fact that children use both the regular and irregular forms correctly at first, as a result of being stored as unanalyzed wholes.

This line of thought can be extended to several predictions, none of which are actually supported by data. One prediction is that young children speaking all languages will exhibit such behavior, since the deficit has a cognitive explanation. Smith (1980) and Weist *et al.* (1984) (among others) falsify this prediction with data from the spontaneous speech of English and Polish children, respectively. Smith (1980), following Reichenbach (1947), proposes that the adult system of temporal reference is based on the notions of speech time (S), reference time (R), and event time (E). Children's early temporal ordering system differs from the adult's system in two ways: only two times are involved, S and E, and the orientation point (what in adult grammars is R) is fixed at S. Thus, the system has two basic relations of simultaneity and sequence, and pastness in the child system indicates a time prior to S. In her view, the child system is simpler but not different in organization from the adult: both have the essential property of relating a time to an orientation point by simultaneity and sequence.

Another possible prediction of the DTH is that adult L2 learners would not exhibit such bias in marking past and progressive, since they are cognitively mature, and the deficit has a cognitive basis. The facts point the other way: mature L2 learners do exhibit a correlation between inherent lexical aspect classes and grammatical tense/aspect marking. Since two strong predictions of the theory are refuted, it is obvious that other explanations must be sought. Andersen (1989) agrees that Weist *et al.* (1984) and Smith (1980) have cogently argued against the DTH. However, he suggests that a less stringent version, the Relativized DTH must still hold true, namely, past inflections are predominantly attached to achievement and accomplishment verbs in the early stages, and imperfective marking is used predominantly with activity and state verbs. The new name is of course misleading, because, no matter how one relativizes the claim that children's grammar has a defective category of tense, it still remains a claim of a defective category. Following Smith (1980) and the broad tenets of the UG framework, I will argue that there is nothing defective in children's grammars. Instead, the data should be re-examined with a view of establishing what is the children's early competence with temporality.

4.4.2   Competence versus performance issues

We will agree with the POA researchers' description of the data but offer a radically different interpretation. It is true that inherent semantics of verbs does indeed appear to affect the acquisition of tense/aspect inflections. However, if

we find that the co-occurrence of past morphemes with telic verb phrases and progressive with atelic verb phrases is statistically significant, what does that tell us about the learners' underlying linguistic competence?

The answer is crucially dependent on the questions that a theory of language is asking. In the framework of Universal Grammar (Chomsky 1981a, 1986a) the questions we are fundamentally concerned with are:

i.   What constitutes knowledge of a language?
ii.   How does such knowledge develop?
iii. How is such knowledge put to use?

Research arguing for the POA hypothesis is directly relevant to the third question and may suggest a tentative answer to the second question, but it does not even come close to addressing the first question. Explanations of the facts in terms of discourse theory (Andersen and Shirai 1994) clearly address the issue of language use. Explanations in terms of Prototype theory (Andersen and Shirai 1996; Shirai and Andersen 1995) may be interpreted to address the issue of some cognitive principles underlying language acquisition. But they are not really addressing the issue of learners' linguistic competence and the way it is acquired. In the rest of this chapter I will discuss how the available data on the acquisition of tense/aspect can inform the theory, if we are asking the first two of the questions above.

A related issue in L1 and L2 acquisition theory is the problem of what percentage of correct usage in obligatory context is necessary in order to accept that a category or a construction has been acquired. Traditionally, it was assumed that a form has to occur in 90% of obligatory contexts for it to be considered as successfully acquired (Brown 1973). Recently, Vainikka and Young-Scholten (1994, 1996) in L2 acquisition work assumed 60% of correct usage as an indication of successful acquisition. A large number of L1 acquisition studies use 75%. All three criteria are in fact arbitrary, and have been questioned by researchers in first and second language acquisition theory (Meisel, Clahsen and Pienemann 1981; Valian 1991; White 1992a). Stromswold (1989, 1996) argues that the measure of age of acquisition of a certain construction is the age of "first clear usage," where first clear usage is defined as the first novel occurrence of a construction that shortly thereafter becomes clearly productive in the child's speech. Thus, it is far from obvious that if a learner produces a correct form less than 90% of times, she has no mental representation of that category. The example Stromswold (1996) gives is of a child that uses past tense *-ed* in 10% of obligatory contexts. One can still argue that if she

uses -*ed* only to mark the past tense on verbs and never applies it to an adjective, noun, or adverb, she has acquired the past tense inflection, even though in 90% of the cases where it is required, she does not use it. In fact, if a language learner demonstrates *productive* (or in the case of tense inflections, contrastive) usage of a form, this suggests that the category is indeed present in her grammar. Other factors may come into play, as we shall see promptly, to influence high or low percentages of correct usage. For this reason, I have suggested that statistically significant co-occurrence of certain aspectual classes with specific tense morphemes does not shed any light on the grammatical competence of learners. In fact, we should be searching to check if all aspectual classes are productively used with all types of inflections.

The reverse side of correct usage is comprehension. Do we really want to claim that until a learner demonstrates 90 or 60% of correct usage of question formation, for example, she does not understand questions that she encounters in the naturalistic input? Or, to take the example of the acquisition of aspect, is it the case that children do not understand sentences in the past tense unless they contain telic verb phrases? This is hardly likely at the approximate age of two, and no researcher has indeed attempted such a claim, but this is a logical implication of the argument that there is a stage in the development of children's competence when they only associate past with telic. In fact, it has long been realized that children's comprehension of some grammatical constructions, especially those pertaining to grammatical morphology, may precede children's production of these forms (Shipley, Smith, and Gleitman 1969). Researchers relying only on spontaneous production data may have actually underestimated children's grammatical competence, especially at early stages of development (Demuth 1996).

4.4.3   A new look at the data

Let us now take another look at the data and check the percentages swept under the carpet by the proponents of the POA hypothesis. Weist *et al.* (1984) report that Marta (1;8) produced in the past tense 14% of all activity verbs, 10% of all achievement verbs, and 10% of all accomplishment verbs; for Wawrzon (2;2) the percentages of verbs in the past are 8% of all activities, 12% of all achievements, and 12% of all accomplishments; for Agatka (2;8) the percentages of verbs in the past are 13% of activities, 11% of achievements, and 6% of accomplishments. Shirai and Andersen (1996) indicate that of Naomi's progressive-marked verbs at age 1;10, 84.1% were activity verbs but the remaining 13.6%

were achievement verbs. Bloom, Lifter, and Hafitz (1980) state that in the speech of four children, the following verbs appeared with more than one inflection at the same time (*-ing, -s*, and *-ed*): *go, do, make*, and *get*. Other verbs that occurred with more than one inflection included *eat, sit, ride*, and *fix*, although they occurred predominantly with one of the inflections. Although the authors do not analyze the aspectual class of these verbs, it is apparent that they are both telic and atelic. What is important to note is that the children used inflections contrastively from the beginning stages of acquisition.

Most of the SLA data come from the research of Robison (1995a) and Bardovi-Harlig and colleagues that we discussed above. The table below is from Robison (1995a), his Table 2. Groups 1 to 4 represent proficiency levels, the percentages represent the distribution of inflections within each aspectual or temporal category. Thus, 1.6 per cent of all state tokens in Group 4 were in progressive forms. Note that Robinson has two additional aspectual classes, punctual states, and punctual activities, which can be considered as regular achievements.

A striking feature of this distribution is the high proportion of verbs that appear in base form (compare to the similar results of Dietrich *et al.* 1995). Even in the most advanced group, subjects use the base of the verb more than 70 per cent of the time. Using either the 75% or the 90% criterion of mastery, we would be forced to dismiss these subjects as having zero competence in English tense morphology. The next thing we notice in the data is that accomplishments (his Durative Events) are used by the least proficient learners 4.5% of the time with *-ing* and 4.5% of the time with PAST, while achievements (his Punctual Events) are used 20.7% of the time with *-ing* and 9.2% with PAST. These findings argue against the claims of the POA hypothesis, at least for this proficiency level. At the next proficiency level the tendency of marking achievements with *-ing* is reversed, but still, the percentages rarely exceed 20%. It is hard to understand why a co-occurrence (say, *-ing* with telic verbs), which is demonstrated 10% of the time, is more important than a co-occurrence (past with telic verbs), which appears 20 or 30% of the time.[5] The small percentages

---

5.   I am aware of the fact that the author is discussing the discrepancies between L2 learners and native speakers, which are argued to vary as a function of aspectual class. However, I am discussing here the performance of the learners as a reflection of the contrasts in their linguistic competence. The comparison with native speakers in this case would be an instance of the "comparative fallacy" (Bley-Vroman 1983).

Table 4.7 Distribution of Verb Morphology over lexical aspect categories (percentages)

	State	Activity	Punctual activity	Durative event	Punctual event	Punctual state
Group I						
Base	93.2	81.0	88.9	88.8	70.1	83.3
-ing	.7	14.5	11.1	4.5	20.7	0
PAST	1.4	2.7	0	4.5	9.2	16.7
-s	4.7	1.8	0	2.2	0	0
Group II						
Base	90.2	70.0	77.1	73.6	63.6	73.3
-ing	2.9	23.0	5.7	9.1	3.0	6.7
PAST	3.7	4.3	14.3	10.9	32.1	20
-s	3.2	2.7	2.9	6.4	1.2	0
Group III						
Base	93.9	68.2	80.0	79.6	72.0	62.5
-ing	1.1	26.2	6.0	7.5	5.4	0
PAST	.9	3.2	10.0	11.6	17.2	37.5
-s	4.0	2.4	4.0	1.4	5.4	0
Group IV						
Base	89.5	65.0	72.7	67.0	70.4	50.0
-ing	1.6	25.8	6.1	9.6	.9	0
PAST	1.0	3.1	18.2	18.1	22.2	50.0
-s	7.8	6.2	3.0	5.3	6.1	0

of target use do not warrant the conclusion that subjects manifest a dependence between morphological marking and aspectual category.

Bardovi-Harlig (1992) studied cross-sectionally 135 classroom learners of English from fourteen different native languages with the help of a cloze test. I have summarized some of her results in Table 4.8 below (telic verbs in bold), leaving aside the perfective tenses.

What these results reveal is that the students are marking the past tense across all aspectual classes, telic and atelic, simply because the cloze passage provided them with the right context for the past tense marking. The interpretation that these students are marking tense, and not lexical aspect, is supported by the fact that no lexical class made them use the past progressive more often than the past simple. What is more, the fact that the present progressive hardly appears at all in the data (because the cloze does not provide context for it) suggests again that the learners are accurate in distinguishing between tense and aspect by means of morphology.

Table 4.8 Distribution of responses in percentages across verbs and levels

	tell	*die*	live	work	take care of	stay
Level 1						
past	68.4	57.9	31.6	47.3	26.3	31.6
pres.progr.	10.5	5.3	15.8	10.5	15.8	10.5
past progr.	0	0	10.5	5.3	5.3	5.3
Level 2						
past	85.0	80.0	50.0	60.0	50.0	35.0
pres.progr.	0	0	10.0	0	5.0	0
past progr.	0	0	0	0	0	0
Level 3						
past	75.0	81.3	25.0	43.8	56.3	62.5
pres.progr.	0	0	0	0	0	0
past progr.	6.3	0	31.3	31.3	31.3	6.3
Level 4						
past	96.6	79.3	48.3	44.8	51.7	86.2
pres.progr.	0	0	3.4	3.4	0	0
past progr.	0	0	3.4	31.0	17.2	0
Level 5						
past	96.9	78.8	75.8	81.8	81.8	72.7
pres.progr.	0	0	0	0	0	0
past progr.	0	0	9.1	9.1	9.1	3.0
Level 6						
past	88.9	83.3	66.7	61.1	66.7	83.4
pres.progr.	0	0	0	0	0	0
past progr.	0	0	0	11.1	11.1	0

Bardovi-Harlig and Reynolds (1995) tested the use of simple past tense in 182 classroom learners of English coming from 15 native languages. The test included 62 short passages providing past tense context. The results (see Table 4.5) reveal that the learners are marking the past tense fairly consistently across all lexical classes, telic and atelic, right from the least advanced proficiency level.

Bardovi-Harlig and Bergström (1996) tested 23 learners of French using a film retell written task. Their results (see Table 4.6) indicate that in the acquisition of French, as in the acquisition of English as a second language, learners are capable of marking all lexical classes of verbs with *passé composé* and *imparfait* morphology.

To summarize the real results of the SLA studies, the hypothesis that in L2 acquisition verbal morphemes initially mark lexical aspect — the temporal features inherent in the semantics of a predicate, independent of the time line and regardless of their function in the target language — is not supported by the data. Learners demonstrate linguistic competence that is not fundamentally different from that of adult native speakers. In the next section, we will address the question of what can explain the aspectual class bias.

4.5   The distributional bias hypothesis

Almost from the very beginning of the aspect and tense acquisition studies, it has been observed that the native speaker input addressed to learners (motherese, foreigner talk) does not display equal proportions of telic and atelic predicates with past or progressive morphology. Brown (1973) was the first to point out the relationship between the children's use of the progressive and the mother's use of the progressive. Stephany (1981) studied both Greek children's speech and their mother's speech directed to the children and found a strong correlation between the two. She stated that "a surprising conformity of the distribution of semantic verb classes … can be seen between child speech and child-directed mother's speech" (Stephany 1981:53). Ninety-six per cent of past forms were found to be in the perfective form in mothers' speech, and 100% in the children's speech. Ninety-three per cent of all stative verbs were in the indicative present imperfective form in both mothers' and children's speech. Telic verbs were used 158 times in the past in the speech sample of the mothers, as opposed to 94 activity verb uses in the past. This dramatic distributional bias in caregiver speech may itself be a sufficient explanation for the bias observed in children's speech.

Another study that has looked at the correlation of mother–child aspectual bias is Shirai and Andersen (1995). The two tables that follow are self-explanatory. Table 4.9 presents the progressive inflections, while Table 4.10 presents the past inflections.

To my knowledge, apart from an unpublished paper by Shirai (1990), no studies exist that address the same problem in L2 acquisition. This is definitely an area of applied linguistics where more research is necessary. But it is even more interesting to compare the speech addressed to children with naturalistic speech among adult native speakers. Stephany (1981) reports research investigating this issue. Table 4.11 comparing motherese and adult-directed speech is

Table 4.9 Inherent aspect with progressive inflections at Stage 1 in percentage of use

	States	Activity	Accomplishment	Achievement
Adam (2;3–2;4)				
Mother	0	51	14	35
Child	0	58	10	32
Eve (1;6–1;7)				
Mother	0	53	8	39
Child	0	75	0	25
Naomi (1;6–1;10)				
Mother	3	65	12	20
Child	4	68	4	24

Table 4.10 Inherent aspect with past inflections at Stage 1 in percentage of use

	States	Activity	Accomplishment	Achievement
Adam (2;3–2;4)				
Mother	17	7	10	66
Child	0	6	0	94
Eve (1;6–1;7)				
Mother	23	5	13	59
Child	0	0	0	100
Naomi (1;6–1;10)				
Mother	11	17	17	55
Child	0	0	0	100

from Andersen and Shirai (1996), adapted from Stephany (1981).

The findings of Stephany (1981) indicate that a much higher percentage of dynamic verbs (activity, accomlishment, achievement) in subjunctive forms were found in child-directed speech than in adult-directed speech. The author explains this with the context of motherese: in Greek the subjunctive is used to direct one's behavior, and is thus much more predominant in mothers' speech to children. Another thing observed by Stephany is that even in adult-directed speech, the distributional bias is obvious, although not so dramatic as in the child-directed speech. As Andersen and Shirai (1996: 552) correctly point out, "with the kind of exclusive mapping of perfective past on dynamic verbs in Stephany's child-directed speech sample, a child can easily be misled into thinking that only resultative-dynamic (and less prominently, nonresultative-dynamic) verbs are used in the past tense."

Table 4.11 The frequency of indicative verbs by semantic class in mothers' speech

Stephany's classification	Stative	Nonresultative dynamic	Resultative dynamic
Vendler's classification	State	Activity	Achievement/ accomplishment
Child-directed speech			
Present imperfective	129	300	158
Past perfective	0	85	158
Past imperfective	1	9	0
Adult-directed speech			
Present imperfective	234	365	242
Past perfective	19	132	200
Past imperfective	23	62	28

Robison (1995b) is another study addressing the issue of skewed aspectual distribution in NS–NS speech. In an earlier study, published as Robison (1995a), the author studied the speech of Spanish speakers learning English, based on interviews with the subjects (see discussion above). Robison (1995b) applied the same methods of data collection to three young NSs of English, chosen to parallel the characteristics of the Spanish L2 learners: the three NSs came from the Midwest and were first-year students at the University of Puerto Rico. The data from the interviews were subjected to exactly the same procedures as the ones used in Robison (1995a). All three NSs demonstrated a bias of past marking in favor of achievements, but the bias is more moderate than the one demonstrated by NNSs. A greater diffusion of past across lexical categories is apparent among NSs. But the progressive marking showed a different picture. In NS speech, the progressive marking seems particularly to differentiate activity predicates from the other semantic classes. Activity is the only aspectual class that exhibits a deficit of past marking for each of the subjects. The author observes that NS skewing of verb inflections with respect to lexical aspect derives entirely from a progressive/non-progressive distinction: progressive marking on activities contrasts with -s or an absence of marking on other aspectual categories in non-anterior contexts and with past in anterior contexts. These findings are exemplified in the excerpt below, where the speaker begins the narrative in the past tense and then switches to historical present at a climatic point of the action.

(11)   *Oh, one time I was — I was <u>holding</u> this one horse, and um … I was <u>brush-ing</u> him off or something. .. A horse I was <u>taking care of</u>. ..And someone <u>scared</u> him, .. and he <u>took off</u>, right? .. we were — we were inside. We were in the stable. … And he just — he <u>freaked out</u>, so he was — .. you <u>leaped</u> back, and (…) <u>broke</u> the chains that were <u>holding</u> him, right? .. and just <u>started jumping</u> up and down. just .. completely terrified. .. And I was <u>hold-ing on</u>, ((laugh)) and this horse is <u>leaping</u> up in the air you know, .. and uh so he <u>takes</u> this huge leap, .. <u>slips</u> on the — <u>comes</u> back down, <u>slips</u> on the concrete, and <u>falls</u> .. you know like right next to me, and I <u>fall</u> down too, .. it was terrifying.*

The type of NS–NS discourse may prove to have an effect on skewing the distribution of lexical classes with tense inflections. For example, in the above narrative, where a whole event is recounted, including a habitual situation preceding the main event and a subsequent one-time situation, the distribution of progressive and non-progressive is obviously skewed. It is conceivable that analyzing NS–NS conversations not engaging in retelling past events might produce a different picture. This possibility must be left for further research.

To sum up, two types of findings can be tentatively outlined based on the research discussed in this section. The speech of adult native speakers demonstrates skewed distribution of progressive and past marking across lexical classes of verbs. Activities are more often marked progressive than other classes, telic predicates are more often marked past than atelic ones. This bias is even more pronounced in the NS speech directed to language learners. This alone can explain the skewed distribution in learner speech. These findings, however, have to be considered in conjunction with the fact that learners do use all aspectual classes with all inflections, even if in small numbers and percentages. These two observations taken together point to the conclusion that the underlying competence for marking tense/aspect on all lexical classes of verbs is indeed present, but the performance results are skewed due to skewed input and discourse necessities.

4.6 Viewpoint aspect versus situation aspect

Another theoretical distinction between two types of aspect marking in language can also shed some light on the patterns of child and L2 acquisition of aspect. A consensus has been obtained recently in the literature on syntactic aspect that languages distinguish between inherent lexical aspect and grammatical aspect.

The definitions in Smith (1997 [1991]) are especially clear. The sentences in (12) differ as to aspectual *viewpoint*, or temporal perspective.

(12) a. John and Mary built a rock garden last summer.
      b. John and Mary were building a rock garden last summer.

From (12a) we know that a building event occurred in its entirety, a rock garden was built to completion. In contrast, (12b) conveys only that a building event was in progress. There is no information about whether it was completed. *Situation* aspect, on the other hand, is categorized in terms of temporal structure of situations (both dynamic and stative). The term refers to the familiar inherent lexical classes, invoking characteristics as terminativity and durativity.

Recently, Depraetere (1995) has suggested that the pie can be cut another way, with two other aspectual distinctions: that between *telicity* and *atelicity* and that between *boundedness* and *unboundedness* (see also Section 1.2.1 in Chapter 1). These two types of concepts are often confused in the discussions of aspectual classes of verbs. (A)telicity is based on potential endpoints of events, while (un)boundedness refers to actual spatio-temporal boundaries. "A clause is telic if the situation is described as having a natural endpoint, beyond which it cannot continue. A clause is bounded if it represents a situation as having reached a temporal boundary, irrespective of whether the situation has an inherent endpoint or not" (Depraetere 1995: 1). As the reader can verify, there is a big overlap between Smith's viewpoint aspect and Depraetere's boundedness, but the two do not always coincide. Using Depraetere's two features, we have a four-way distinction as in (13):

(13) a. Claire ate a piece of cake.   TELIC + BOUNDED
      b. Claire ate cake.   ATELIC + BOUNDED
      c. Claire was eating a piece of cake. TELIC + UNBOUNDED
      d. Claire was eating cake.   ATELIC + UNBOUNDED

Pi, Slabakova and Uesaka (1997) (see Chapter 3 of this book for a similar analysis) argue that the aspectual distinctions between (a)telicity and (un)boundedness are systematically encoded in the syntax, in the aspectual projections InnerAspP and OuterAspP as below:

(14) [TP [VP$_{Aux}$ [OuterAspP [EP [VP [InnerAspP [VP]]]]]]]

A detailed discussion of the two aspectual features and their encoding in syntax is outside the scope of this chapter. However, if we accept for a moment that both interpretable aspectual features are encoded in UG, then we may reach a

different view of what exactly children are marking at the beginning of aspect acquisition. We are seeking to explain the discrepancies between child and adult data, for example these summarized in Tables 4.9 and 4.10. It may be the case that using past tense inflections, children in English are actually marking [+boundedness], and by using progressive inflections, children are marking [−boundedness]. It just so happens that in English *-ing* encodes one feature only — the aspectual feature [−boundedness], but *-ed* encodes two features, deictic tense and aspectual [+boundedness]. Thus, the child's initial hypothesis can be formalized in UG-compatible terms.

Wagner (1997) is one of the first studies to address this issue experimentally. The study uses a comprehension task of sentence-to-scene matching. Starting out to test the premise that children use viewpoint aspect markers to actually encode situation aspect, she finds that children as young as 2;6 do not make a distinction between viewpoint and situation aspect based on verbal morphology cues but improve their performance when open-class cues like adverbials (e.g., *partway, all the way)* are added to the sentence. This result shows that children do not have a problem with the semantics of viewpoint aspect, but they still have a "mapping problem" — they have difficulty mapping the semantics onto the particular morphology. This developmental pattern is a familiar one — children's first words are open-class elements, and only later do they master the closed class words and the morphology of their language.

The findings of Wagner's experimental study suggest the possibility of children using viewpoint aspect or [± boundedness] markers similarly to adults. The difference in performance (young children perform at chance where viewpoint morphology is concerned) is due to the well-documented problem of mapping between meaning and morphology. These findings are also compatible with the idea that both (a)telicity and (un)boundedness are given to the child by UG. In sum, when all terminological nuances are made precise, this direction of research may prove fruitful in discovering the child and L2 learner's underlying competence at the outset of aspect acquisition.

4.7   The template approach to language acquisition

In this section I will link the proposals made in Chapter 3 concerning the syntactic projection of verbs' Lexical Conceptual Structure (LCS) to some recent L1 acquisition proposals. Grimshaw (1994), trying to reconcile two views on the acquisition of verbs (the syntactic versus semantic bootstrapping approaches)

elaborates on the way mapping between meaning and form eventually proceeds. The problem for learning verbs can be schematized as follows:

Situation⟍
            ⟩ Observer ⟶ Word representation
Sentence ⟋
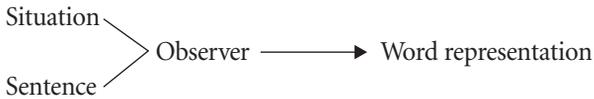
It is obvious that no amount of observation of either the sentence or the situation alone can bring the learner to an adequate verb meaning. Instead, the two have to be mapped one onto the other. What is more, neither the situation alone, nor the sentence alone are the usual input to the learner. Grimshaw (1994: 423) specifies the following steps in the learning process:

1. The learner interprets a scene or situation, hears a sentence, and detects the verb.
2. The learner finds a relationship R among participants in the situation (entities, propositions, etc.) that is sensible given the interpretation of the observed situation.
3. The learner checks that R involves participants consistent with the content of the (candidate-argument) expressions in the sentence, and rejects an R that does not meet this requirement.
4. The learner constructs a lexical conceptual structure which is consistent with R, and assigns candidate-argument expressions in the sentence to argument positions in the LCS.
5. This LCS is fed through the semantics-to-syntax mapping principles of UG in their language-particular instantiation.
6. The s-structure predicted by step (5) is compared to the observed s-structure.
7. If they do not match then no learning takes place.
8. If they do match, then the morpheme is entered into the lexicon with the hypothesized LCS.

The proposed elaboration comes in step 5. By hypothesizing the LCS of the verb in question, the learner has reached the syntax–semantics interface. Four different templates are provided by UG, reflecting the four lexical aspectual classes, as discussed in Chapter 3. The syntactic properties connected with these templates simultaneously help the learner to evaluate the sentence heard as a description of the situation. The syntactic environment of the verb then directly tells the learner whether the initial hypothesis was correct or not.

Let us take an example with a dynamic activity verb and a dynamic situation. Imagine a child observing a swimming person and hearing a sentence like

Mary is swimming. The LCS of the verb *swim* may be hypothesized as "the agent is engaged actively in a swimming event." This hypothesis leads to the insertion of the verb in an activity template. The fact that this template is a double VP structure, a reflection of its dynamic characteristics, implies that the progressive inflection is compatible with the template. The syntactic frame in which *swim* appears in the sentence thus confirms the hypothesized LCS.

Now let us turn to our second example of how aspectual templates function in language acquisition. A child observes a situation very similar to the one described above, but with the final point achieved. Mary was swimming in a pool, and she has just stopped. The sentence accompanying the situation is *Mary swam a mile.* Following steps (1) through (4) above, the child will analyze the situation and attribute a telic LCS to the verb *swim.* She will insert the root *swim* into an accomplishment template. One characteristic of this template is that it involves an object of specified cardinality. Checking this characteristic against the object *a mile,* the child receives support for her initial hypothesis.

It is also possible that the child had understood the situation as telic, but still inserted the verb root *swim* into an activity template. This may be done on analogy with previous instances where *swim* was used in the child's input as an activity verb. But then the object of specified cardinality *a mile* cannot be accommodated in the activity template. This fact is an indication to the child that the initial hypothesis was wrong and another hypothesis has to be put forward, namely, that the verb *swim* this time is used as an accomplishment.

How is this discussion relevant to the L1 and L2 acquisition of tense and aspect reviewed in the first part of the chapter? Grimshaw (1994) proposes a learning mechanism for verb meanings. However, the way verb meanings are acquired is directly parallel to the way lexical aspectual classes are acquired. In fact, we probably cannot even separate the two notions, since a big part of a verb meaning is which aspectual class the verb belongs to. As we have known since Vendler (1967), event types are categories of verbs sharing broad meaning, and at the same time they have distinct syntactic behavior demonstrated by various syntactic tests. It is reasonable to suppose that event types can be acquired using the same mechanism as verb meanings. Recent research (van Hout, Randall and Weissenborn 1993; van Hout 1996; Wagner 1997) has shown that children are sensitive to telic and atelic aspectual classes and demonstrate it in syntactic behavior. They may perform differently than adults in not always being able to map meaning onto closed-class morphology, but their underlying competence is no different from that of adults.

To summarize the arguments discussed in this section, the LCS of a predicate determines the number and theta roles of the arguments. UG provides an array of functional categories and the four distinct phrase structure templates. Having interpreted a situation as telic or atelic, the child maps it to the appropriate template. At this point, the syntax, in the form of case checking of objects and/or addition of verbal morphology signalling (a)telicity and (un)boundedness, helps the child to validate or invalidate her initial analysis.

4.8   Acquisition of the cluster of aspect-related constructions

A cluster of aspect-related constructions, namely Verb–Particles, Resultatives, and Double Objects, is one focus of investigation in the experimental study reported on in this book. It has been argued in Chapter 3 that learners of English who are not aware of the way the language marks telicity are not going to be aware of the complex predicate constructions. For this reason, it is pertinent to discuss the first language acquisition of this cluster.

The acquisition of Double Objects has been studied extensively (see Fischer 1971; Cook 1976; Osgood and Zehler 1981; Roeper, Lapointe, Bing, and Tavakolian 1981; Pinker 1984; Mazurkewich and White 1984; White 1987; Gropen, Pinker, Hollander, Goldberg, and Wilson 1989 for child language acquisition, and Mazurkewich 1984; Bley-Vroman and Yoshinaga 1991 for SLA). I will not present their findings here because it is the acquisition of Double Objects as part of a cluster of constructions that is relevant to the present investigation.[6]

To my knowledge, Snyder and Stromswold (1997) is the only study that investigates the appearance of a number of constructions claimed by syntactic research to be a cluster of "complex predicate" constructions. The researchers analyze transcripts from 12 children in the CHILDES database and compare the emergence of Double Objects, *to*-datives (e.g., *John gave the book to Mary*), V–NP–Particles (e.g., *Kevin took the garbage out*), V–Particle–NPs (e.g., *Kevin took out the garbage*), Perception Verbs (e.g., *Mary heard the man arrive*), Causation Verbs (e.g., *Kevin made John talk to Sally*) and *put*-locatives (e.g., *Harry set the book on the table*). The measure of acquisition of any particular

---

6.   Fischer (1971) is the only study that links Verb–Particle Constructions with Double Objects. However, she investigates them in separate experiments and does not look for correlations in the first appearance of these constructions.

construction was the first clear and novel utterance of that construction. Making a distinction between constructions, whose appearance is correlated in time, and constructions, whose appearance is concurrent, they found that the acquisition of Double Object constructions and *to*-datives were significantly correlated with one another, but the former are acquired significantly earlier than the latter. There was also a significant correlation between the acquisition of constructions with verbs of causation or perception and both types of dative constructions, but there were no significant orderings in the ages of acquisition for perception/causation verbs and either types of datives. The acquisition of the *put*-locative construction was also significantly correlated with the acquisition of both types of dative construction. The age of acquisition of *put*-locatives was not significantly different from acquisition of the Double Object datives. *Put*-locatives, however, were acquired significantly earlier than *to*-datives. Significant correlations were found between the acquisition of Double Object datives and V–NP–Particle constructions and between the acquisition of *to*-datives and the V–Particle–NP construction.

Thus, it was hypothesized that two properties of grammar are responsible for the appearance of the complex predicate constructions:

a. Property A which licences Double Object/V–NP–Particle/Causation–Perception/*put*-locatives
b. Properties A + B together licence *to*-datives/V–Particle–NP constructions.

Snyder and Stromswold (1997) conjecture that property B may be related to the distinction between directive and dative uses of *to* in English (e.g., *I went to Toronto* versus *I showed it to Mary*). That is, Property B could be a lexical property of *to* indicating its ability for "mediated theta selection" (i.e., not direct theta selection by the verb, but one mediated by a preposition). Property A may possibly be a case theoretic property that allows a verb to assign structural case to an NP, even when that NP receives part or all of its thematic properties from a lower predicate.[7] Snyder (1995b) relates the latter property to the productivity of N–N compounding in languages of the world. Snyder (1995a) proposes that property A may be availability of the null telic morpheme discussed at length in Chapter 3 (see also discussion in Chapter 6, Subsection 6.4.3).

To sum up, in arguing that the appearance of the above constructions is due to children acquiring a parametric property of English, Snyder and Stroms-

---

7. Snyder and Stromswold (1997) eventually present an argument against this approach on pp. 308–310.

wold's (1997) developmental findings constitute strong support for a syntactic theory relating the constructions in a cluster. These developmental findings also provided the incentive for testing (some of) the constructions from the cluster in the interlanguage of adult second language learners of English (see experiment in Chapter 5).

4.9   Conclusion

In this chapter, we have established that children are quite sensitive to the telic-atelic event distinction. In the early stages of acquisition of tense and aspect morphology, children use more often imperfective marking on activity verbs and past tense marking on accomplishment and achievement verbs, but this is far from exclusive. The same biased distribution is observed in SLA, and again only as a tendency, not as an exclusive choice. It was argued that these findings should not lead to the conclusion that learners are marking aspect with tense. In fact, the aspectual bias may be attributed to distributional bias in the input, which, in its own turn, may be based on discourse considerations.

It was proposed that aspectual templates are a part of the innate linguistic competence of humans. Both the L1 and L2 acquisition findings discussed in this chapter provide support for this view. At the same time, if we accept that those templates and aspectual distinctions in general are innate, then the existing data should be re-interpreted.

CHAPTER 5

An experimental study
of the L2 acquisition of telicity

5.1   Introduction

This chapter describes an experimental study, which tests the acquisition of the telicity marking parameter by Slavic learners of English. The experiment has two purposes: one is to investigate the nature of the aspectual competence of the learners, and specifically, whether they have acquired the way (a)telicity is marked in English, and the other is to relate that to the learners' knowledge of the cluster of constructions proposed to be part of the parameter. In the next section, the research questions and hypotheses of the study will be outlined. The design, methodology, tasks, and subjects of the study will be introduced. Finally, the results of the study will be presented.

5.2   Research questions

The first general research question concerns the resetting of parameters. Principles of UG are operative in all natural languages, whereas parameters need to be set to a particular value in a particular language: purportedly, UG provides L2 acquirers with all the available options, or values, and the task is to set them appropriately on the basis of positive input (see discussion in Chapter 1). One of the fundamental questions in L2 acquisition has been whether parameters can be reset in non-primary language acquisition, similarly to primary acquisition. Is it the case that at the end of L1 acquisition, all unused parameter values are pruned down and are unavailable for further resetting? Or is it the case that adult L2 learners have access to parameter values unused in the L1? In other words, are L2ers capable of acquiring any language property that is not instantiated in their L1?

Furthermore, once a parameter is set at a certain value, this has consequences for the entire grammar. A host of seemingly unrelated constructions

that are theoretically related to the parameter value should be found in the grammar. Can adult learners attain the L2 value of some parameter, and if so, do they also acquire the related constructions? If it can be demonstrated that the parameter value correlates with knowledge of the cluster in learners at different proficiency levels, this will be compatible with the claim that the parameter value and the related cluster appear together, or that appearance of one is a predictor for the appearance of the other. Alternatively, if parameter resetting does not include acquisition of the related cluster, it could legitimately be argued that parameter resetting is impossible in L2 acquisition (Clahsen and Muysken 1996) and that UG does not guide SLA.

A third scenario is also logically available. If syntactic research has proposed to link two properties of language, property A and a cluster C, but has also identified a third property B, so that A and B jointly imply C, then the relationship between A and C is a one-way implication and A is a necessary but not sufficient condition for the appearance of C. The resetting-of-the-parameter hypothesis will be supported if some subjects are found to have acquired A and cluster C. Other subjects who have acquired only property A and none of the cluster will not disconfirm the parameter resetting hypothesis, if it can be shown that they have not acquired property B.

But what if the cluster of constructions was learned by the subjects individually and unrelated to the parameter value? It is not inconceivable for separate constructions to be learned on a one-to-one basis and the knowledge of one construction need not coincide with knowledge of another at any given moment in the interlanguage of any individual learner. However, this would argue against a parametric account. Thus, another important question is whether every one of the individual constructions in the cluster will co-occur at the same time in the interlanguage of individual learners. We saw in Chapter 1 that studies investigating the verb-movement parameter found that one property (adverb placement) did not go together with the other properties, which purportedly form part of the cluster. Syntactic research has also suggested that adverb placement may not properly belong to the verb-movement cluster. I believe that if learners can be shown to have acquired every individual structure attributed to a parameter value, this fact will constitute evidence for the availability of UG and also provide support for the original syntactic proposal. Thus, clustering will support the resetting-of-the-parameter scenario.

Another general question addressed by the experiment is knowledge of telicity. In order to determine whether learners know how to encode telicity in the L2, it is first pertinent to find out whether they understand the concept of telicity.

It is important to show that Slavic learners of English make a distinction between a telic event that has a natural endpoint, after the attainment of which the event can no longer be continued (e.g., *eat a sandwich, draw a circle*), and an atelic one that does not have such an inherent endpoint (e.g., *eat popcorn, draw circles*). If learners demonstrate that they are insensitive to encoding telicity and atelicity in language, they may be assumed to have no access to UG. I propose that UG reflects the cognitive universals that are the basis of the event type distinction and that are encoded in every language.[1] As to the source of such knowledge for the L2 learner, since knowledge of the telic–atelic distinction can be achieved through direct access to UG and through the L1 of the learners, these two mechanisms cannot be teased apart (see Hale 1996).

The third research question is, generally stated, whether learners are able to acquire properties of the L2 that are not present in their L1, solely on the basis of the positive L2 linguistic input. The properties under consideration are not explicitly taught in the classroom and, hence, explicit positive evidence and negative evidence (information that certain sentences do not occur) are not provided. By saying that the properties under consideration are not taught, I do not mean to say that the constructions exemplifying those properties are not taught. It is beyond any doubt that simple sentences with a past tense verb and an object are introduced as early as the first days of instruction. Language teachers do not draw students' attention to the fact that cardinality of the object determines aspectual interpretation (they do not suspect it at all) any more than mothers draw the attention of their children to the same property. That is, telicity marking is a property of language that is never explicitly taught to children and L2 learners since it is part of the implicit knowledge of language speakers.

On the other hand, the related constructions can be and are explicitly taught, to different degrees. Double objects are presented and drilled in language classrooms. Verb–particles are mainly taught as lexical items, and resultatives hardly at all. What is important for our study is that language teachers do not instruct students that resultatives, particles, and dative objects optionally encode telicity. In fact, it would not be exaggerated to assume that the theoretical notion of telicity forms no part of language classroom curricula. Thus, if it is acquired at all, we can be certain that it is acquired on the basis of PLD only.

---

1. It can also conceivably be argued that event types are purely cognitively and perceptively acquired without the help of language. This is a fundamental question, which I will not attempt to address here.

5.3   The telicity marking parameter summarized

For ease of reference, I will summarize the claims I have made in Chapter 3 as to the values of the telicity marking parameter. The following syntactic trees reflect the position of the [+telic] morpheme in English and in Bulgarian (Slavic).

(1)   *English*
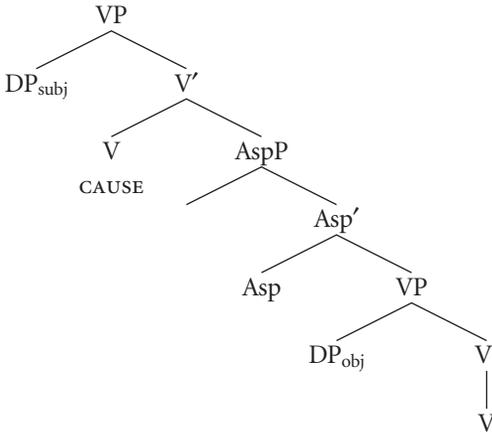
(2)   *Slavic*
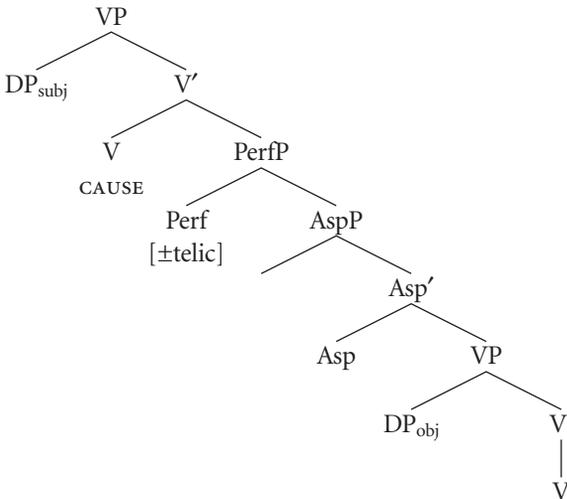
The morphological and syntactic realizations of the category of telicity in the accomplishment and achievement classes are as follows:

English	Slavic
[+telic] morpheme is in the AspP head	[+telic] morpheme is in the PerfP head
[+telic] morpheme is null and crucially depends on the object's cardinality	[+telic] morpheme is overt and is a lexically selected preverb on verbs
YES Particles, Resultatives, and Double Objects	NO Particles, Resultatives, and Double Objects

5.4   Specific hypotheses

The following specific hypotheses were put forward to investigate the general research questions based on the proposed telicity marking parameter:

1.   L2 learners will start out with the L1 value of the proposed parameter (see White 1985, 1989; Schwartz and Sprouse 1994, 1996). This means that beginning and low intermediate learners will consider the verb as crucial in determining the aspectual interpretation of the sentence and will not be aware of the fact that in English it is the cardinality of the object that is crucial in determining telicity. More specifically, they will perform more accurately in recognizing the atelicity of a dynamic verb and an unspecified cardinality object (e.g., *make cakes*) than in recognizing the telicity of a dynamic verb with a specified cardinality object (e.g., *make a cake*). I predict that learners will treat the telic *make a cake* type randomly. If learners have not noticed the importance of objects in English, but at the same time they want to encode or decode telicity, a universal property of VPs, they will look for no other indication but the verb form itself. Since in Slavic a simplex verbal form with no preverb is atelic, a similar form of the English will indicate atelicity to the learner.

2.   If we hypothesize that learners will at some point have access to the L2 value of the telicity marking parameter via UG, then they should show development towards the L2 value in their interlanguage stages. This will be reflected in an increase (or maybe even, ideally, a sudden flip) of accuracy in the learners' knowledge of telic and atelic interpretations of English sentences across proficiency levels. Advanced learners will perform like native speakers, with the usual fluctuations.

3.   The three related constructions, Verb–Particle, Resultative Secondary Predicates, and Double Objects should co-occur with acquisition of English telicity marking in the interlanguage grammar of individual learners, since these

constructions have been hypothesized to be related manifestations of the same parameter value that postulates telicity encoding through the cardinality of the object. At least two of these grammatical items, particles and secondary predicates, represent an overt realization of the otherwise null telic morpheme. It is also conceivable that the null telic morpheme makes the related constructions possible, but does not absolutely require them.[2] In this case one will observe a one-way implication of the type "if Particles/Resultatives/Double Objects, then null telic morpheme" but not "if null telic morpheme, then Particles/Resultatives/Double Objects."

4.   The three related constructions, Verb–Particle, Resultative Secondary Predicates, and Double Objects should also cluster together in the interlanguage grammar of individual learners. That is, learners should not be expected to know Verb–Particle constructions but not Secondary Predicates, and vice versa. This specific hypothesis is based on the theoretical syntactic analyses of the constructions as a cluster and on L1 acquisition research findings that the same constructions appear together in the grammar of English children. If particles and resultatives are overt realizations of the null telic morpheme and if they are acquired only after the null telic morpheme has been already acquired, then learners would not be expected to acquire one overt realization of telicity without acquiring the other.

5.5   Participants

In order to investigate the questions above, an experimental study was performed. Testing was done in Sofia and Varna, the capital and the third largest town of Bulgaria, an Eastern European country in the Balkans. A hundred and thirty individuals from five different groups were tested, all satisfying the requirement of being adult learners, i.e., they all started using English for communication after puberty. The first group consisted of grade 10 and 11 students (n = 37). Grade 10 and 11 are the last two years of regular high school in Bulgaria. At the time of testing, they had studied English for 3 and 4 years respectively in a classroom setting only. Teachers in regular high schools are Bulgarian, and indeed some of them have trouble discussing a wide range of topics in English. These students had not travelled widely outside the country

---

2.   The theoretical justification of this possibility will be discussed in Chapter 6.

and had limited contact with English NSs. Their average age was 17.9.

A second group of high school students (n = 12) were tested, who had a much wider exposure to English. These were 10th graders in the American College of Sofia, a private school where roughly half of the teachers are American and the other half are highly qualified Bulgarians. Most of the education and all extra-curricular activities take place in English, and it is not uncommon for the students to spend 12 hours a day in an English-speaking environment. On entering the school three years prior to the time of testing, the subjects had not been significantly exposed to the foreign language. Their average age was 17.5.

A third group of subjects (n = 51) were students in their 2nd and 3rd year at Sofia University (SU), specializing in Geography, Economics, or Law. All students in this group had been assigned to advanced levels of English proficiency by the SU placement tests. Their English classes generally aim at enriching their English for Special Purposes skills and consist mainly of discussion and comprehension exercises based on original texts in the respective areas. Most of these students came from specialized English language high schools. One enters such a school after rigorous, highly competitive entrance exams at the age of 14. During the first, preparatory year, training consists of intensive six-hour-a-day English courses. After that, some subjects are taught in English, some in Bulgarian, with emphasis on the written academic language and communication in English. It is common for these schools to have native speaker teachers in residence. Since subjects in this group had completed their education in such specialized, or comparable, schools, their basic proficiency level as advanced was taken for granted and university teachers' efforts were concentrated on teaching them the language of their future professions. The average age of subjects in this group was 22.

A fourth group of subjects consisted of 10 students of English philology at Sofia University in their 2nd year, studying to become English teachers. All of them came from the specialized English high schools described above and had entered the university after written and oral entrance exams in English. Their proficiency level (advanced) was comparable to the subjects in the third group and their age was on average 21.1.

Subjects in the fifth group (n = 15) were also studying to be English teachers, but under completely different circumstances. Since political changes in the country started in 1989, the teaching of Russian in grade, secondary, high schools, and universities was largely abolished. This process left a considerable number of Russian teachers unemployable. Some of them have decided to retrain as English teachers and Sofia University offers intensive remedial courses

in English for two-three weeks, two times a year. Thus, the subjects in this group were practicing teachers, highly motivated to improve their English significantly for career purposes. They had started learning English well into adulthood and had not lived in English-speaking countries. The mean age in this group was 34.

Some general remarks about exposure of the Bulgarian subjects to English are in order. Apart from the regulated classroom activities, most students reported that they listened to radio news and music in English and they watched English language television, widely available on cable. Many of the university students had had contact (professionally or otherwise) with English NSs. Generally speaking, interest in foreign, especially American, culture is very high in the country, and motivation to learn English has never been stronger. Thus, we can assume that even beginning students of English are not restricted to classroom study only, but have some exposure to naturalistic data.

In addition, the study tested 16 North American English (NAmE) speakers as a control group, all students at McGill University, Montreal, but not in linguistics. In order to be able to make comparisons between dialects, 16 British English (BrE) speakers were also tested. With one exception, an individual who had lived in Canada for 22 years, all BrE controls were undergraduate and graduate students at McGill University (not in linguistics), and their stay in Canada was a few months to a year on average.

5.6   Assessment of proficiency levels

Subjects had to be divided into proficiency levels. My goal was to use an effective but not particularly time-consuming independent measure of proficiency, since the main test itself was demanding and long. Another consideration was the fact that Bulgarian students are very used to multiple-choice-type and fill-in-the-blanks-type exercises, which tap their metalinguistic knowledge, and a relatively high score on a standard proficiency test might not adequately reflect underlying grammatical competence. Instead of using the Michigan test or other standardized tests, I opted for a cloze test devised and used successfully by Chen (1996). It was adapted from a text passage in American Kernel Lessons: Advanced Student Book (O'Neill *et al.* 1981). Apart from the first sentence, given whole for establishing context, every seventh word was omitted throughout the whole passage, giving 40 blanks altogether. Subjects and controls were asked to fill each blank with one and only one word that fit meaningfully in that space.

The cloze test together with the instructions is given in appendix A. If a blank was filled with exactly the same word as in the original text, one point was given. If no word was supplied or if the word supplied was meaningful, but not the exact match as the original word, no point was given. Thus, the maximum score was 40.

To divide the subjects into proficiency levels, the following criterion was used: subjects whose scores fell in the same range as scores of native speakers were deemed to be advanced and subjects below that range were considered intermediate.

The two control groups did not differ significantly in their scores. As far as the L2 learners are concerned, scores fell into a normal curve, ranging from 0 to 30, with a mean of 16.54. Since the lowest native speaker score was 21, the cut-off point for the Advanced learners group was taken to be 21. Scores on both sides of the grand mean, 20 to 14, were taken to be High Intermediate. The lowest proficiency was represented by scores between 0 and 13.[3]

Admittedly, this is an arbitrary procedure for dividing subjects into proficiency levels. But there is a statistical procedure to support this division post hoc, namely, a regression test.[4] The best fit between groups and subjects is if we divide the 130 subjects into 130 groups (a fit of 100%), and the worst fit is when all the subjects are in one group (a fit of 0%). To establish how many groups and what cutoff points to use, I proceeded as follows. First, I checked the fit with the subjects divided into two groups, raw scores 0 to 15 and 16 to 30. The R^2 value was 0.65. Secondly, I divided the subjects in three groups as already described, 0–13, 14–20, 21–30, and the R^2 value jumped to 0.82. Finally, I divided the subjects into four groups: 0–10, 11–17, 18–21, 22–30 with a roughly equal number of subjects in each group. The R^2 value increased to 0.87, which was considered an insufficient increase to justify the division into so

---

3.   Strictly speaking, it seems that subjects scoring 0 at the cloze test should not be considered as Low Intermediate learners. All of these learners came from the regular high school group tested in Varna. I have several different reasons for keeping these subjects and not disqualifying them from further participation in the experiment. First of all, in the test administration procedure, the cloze test was left for last with this group, the subjects were already tired and they did not make a big effort in filling it out correctly. Secondly, these subjects did very well on some other tasks, namely the Translation task and the Stories task (see below). Since the Translation task was used as a vocabulary test, their accuracy on it was crucial, and it was consistently high. Thirdly, the students' teacher rated them according to her own classroom tests and activities, and she ranked them all as Low Intermediate.

4.   Thanks go to Johanne Paradis for suggesting it to me.

many groups. Thus, I decided to retain three levels of proficiency, with the Advanced group falling within native speaker range (21–31), the High Intermediate group around the grand mean (14–20) and the Low Intermediate learners scoring 13 and below.

Table 5.1 Mean scores of learners and controls on the Cloze Test

Groups of subjects	n	Mean	SD	Score range
Low intermediate	35	7.029	4.31	0–13
High intermediate	50	17.106	1.68	14–20
Advanced	45	23.477	2.26	21–30
NAmE controls	16	25.93	2.64	21–31
BrE controls	16	26.06	1.76	22–28

A one-factor ANOVA on the raw scores showed a significant difference between groups ($F(4) = 11.554$, $p < .0001$). A planned comparison Scheffé test revealed differences between all the groups, significant at the .05 level, except for the two control groups. Although the range of scores of the advanced learners fell within that of the NAmE controls, nevertheless as a group their performance on the cloze test differed from that of the NSs.

5.7 Methodology

5.7.1 The Aspect task

It was a particular challenge to devise aspectual interpretation tasks, since judgements in the area of aspect are notoriously murky, and it is often the case that native speakers disagree about salient interpretations. The test had to obey the following conditions: it had to tap participants' most neutral interpretations based on clauses containing a verb plus object, with adverbs and temporal PPs like *in X hours* and *for X hours* excluded, since they give extra aspectual cues. Furthermore, it could only indirectly access a learner's semantic match of whether the event has an inherent endpoint or not, since one cannot directly ask a subject whether she judges the event as telic or atelic.

For this reason, the aspect test was based on combinatory felicity of two clauses in a complex sentence, one of which established the context, and the other contained the telic or atelic VP to be tested. Test sentences included 24

two-clause sentences in four conditions, as well as 16 fillers. Subjects were asked to judge how naturally the two clauses combine, using a range of answers from -3, meaning "a completely unacceptable combination", through 0, signifying "I don't know," to +3, standing for "a perfectly natural combination." Complex sentences were divided into four different conditions as follows:

(3) *Characteristic (atelic) + Atelic (C+A)*
     Sharon worked in a bakery and made cakes.

(4) *Characteristic (atelic) + Telic (C+T)*
     Antonia worked in a bakery and made a cake.

(5) *Atelic + Atelic (A+A)*
     Mr. Smith sold cars and now he sells motorcycles.

(6) *Telic + Unfinished (T+U)*
     Mike drew a circle on a sheet of paper but the circle is only half-finished.

In conditions (C+A) and (C+T), the first clause establishes a salient characteristic of the subject, usually one that is connected with a profession or long-term habits. The second clause then supplies either an atelic or a telic related event. Since the subjects were instructed to judge the sentences for naturalness of combination, and not grammaticality, different scores were expected in the first two conditions. Strictly speaking, the sentence in (4) is not ungrammatical, and one can think up a situation in which this sentence may be true. Still, matching a clause describing a characteristic activity of the subject with another atelic, unbounded event as in (3) represents a much more natural combination. Sentences as in (3) were expected to be preferred (i.e., rated significantly higher) to sentences as in (4), combining an atelic with a delimited event, by controls and subjects who know the difference between *made a cake* and *made cakes.* The same logic applied to the other two conditions, but there the difference between (5) and (6) was presumed to be even greater. Combining a telic

Table 5.2 Predicates used in Aspect Task

C+A	C+T	A+A	T+U
fix cars	fix a car	draw pictures	draw a circle
make cakes	make a cake	make cakes	eat the cake
pack lunches	pack a lunch	read books	read a book
sell used cars	sell a used car	sell cars	pack their luggage
sew clothes	sew a suit	sew clothes	colour his picture
wrap purchases	wrap a purchase	write travel books	write a report

clause with a clause denoting that the same event is unfinished as in (6) was expected to be judged as strictly ungrammatical, or −3, while the combination of two atelic clauses as in (5) was expected to be felt as perfectly natural and consequently judged as +3.

The VPs in Table 5.2 containing simple vocabulary were used in the test[5] (see Appendix B for the complete test).

All verbs in the test clauses (but not in the context clauses) were in the simple past tense, since in English this is the neutral bounded form (see Smith 1997 [1991]), and telicity changes are effected by the cardinality of the object only. It was not the aim of the experiment to study Slavic speakers' knowledge of viewpoint aspect, in Smith's terminology, but of situation aspect, or telicity marking. That is why keeping the verbal morphology constant was an important condition.

5.7.2   The Translation task

In addition to judging the combinatory felicity of the clauses, the subjects were asked to translate the verbal form of the test clause into their own language. The targeted knowledge here was twofold. First of all, this translation served as a vocabulary test for the whole experiment.[6] Clearly, one cannot evaluate knowledge of marking telicity if the learners have not encountered the lexical items involved. Answers involving mistakes in the translation were excluded from the analysis. I decided not to eliminate students on the basis of erroneous single translations, since translation mistakes were very few, less than 1% of all answers.

---

5.   Originally, it was planned to use the same VPs in all four conditions to minimize the effect of lexical meaning on aspectual interpretation. Extensive piloting of the test showed that this was impossible to do, since aspectual judgements are tentative at best, and are very dependent on contextual situation. Some pilot controls (a different group altogether from the actual experiment controls) judged a predicate as carrying an obvious interpretation in one condition, but not in another. Thus, some uniformity of predicates was sacrificed for aspectual saliency, but it was considered important to keep the same predicates at least in the first two conditions.

6.   Strictly speaking, this vocabulary test was only useful for the Low Intermediate learners, all of whom came from the regular high school in Varna, since the other subjects were more advanced and did not make any mistakes in the translation at all. All of the verbs in this test (including the fillers) were present in the high school English textbooks that the students had covered (p.c. of their teacher). Since this fact by itself does not guarantee knowledge, during the administration of the test, the English teacher and the researcher readily supplied information about the meaning of the test lexical items involved.

The second purpose of the translation was to corroborate the results of the aspect test. Since, to the best of my knowledge, tests of aspectual judgements are not found in the acquisition literature and the present test was very much a first attempt and thus a shot in the dark, it was necessary to check whether the same subjects who do not distinguish between *made a cake* and *made cakes* in the test also display the same error in translation. But why is translation so clearly indicative of aspectual interpretation? Because the telicity morphemes in Slavic are overt, and no VP is allowed to surface without this telicity marker. For example, *made a cake* should be translated in Bulgarian with *na-pravi torta*, whereas *made cakes* with *prave-še torti* or *pravi torti*. Thus, if the translation results corroborate the test results, this will be a clear indication that the aspectual interpretation test is successful in accomplishing its purpose, and could be used in future research.

5.7.3   The Grammaticality Judgement task

The grammaticality judgement included 80 sentences, 40 grammatical and 40 ungrammatical, in four different conditions (n = 20). Subjects had to choose either Gr. or UGr. The test was presented in two versions, with the same sentences in different orders, to control for ordering effects. Here are some examples (all test sentences are given in appendix C):

(7)   *Condition A = Verb + Particle:*
       The native men and women waited out the crisis.
       *George loves out eggplant and basil pizza.

(8)   *Condition C = Transitive Resultatives*:
       Steven nailed all the top floor windows shut.
       *My friend Pamela feared the dinosaurs senseless.

(9)   *Condition D = Double Object*:
       Simon gave Jenny a red scooter and a red hat.
       *Sharon taught French the children in the neighborhood.

In Condition A, half of the grammatical and half of the ungrammatical sentences had the particle after the verb and preceding the object, and the other half had the particle after the object. Ungrammatical sentences in Conditions A and C included stative predicates and aspectual resultative particles or resultative secondary predicates, which violate the theta-identification condition at LF (Snyder 1995a): stative verbs have no event arguments, which can be theta-identified with the event arguments of the null telic morpheme and the resultative element.

Independently of the syntactic analysis we accept, we have to account for the universal fact that there is no such thing as a delimited state. Ungrammatical sentences in Condition D had the positions of the dative object and the accusative object switched.

5.7.4   The Stories task

In this test, subjects were asked to read a story, establishing a clear telicity or atelicity context. Two sentences were given below the story, and subjects had to indicate the one that described the story best. All the test sentences were grammatical English sentences, their appropriateness depending on the context provided by the story. The advantage of this type of task is that one can indirectly access aspectuality judgements without the subjects' having to concentrate on the form of the sentence to be judged. The test included 18 stories and pairs of test sentences, six establishing atelic context, six describing telic events and six fillers (see Appendix D). (10) and (11) provide examples of atelic and telic stories.

(10)   Samantha worked in a bakery. The bakery sold bread as well as cakes and cookies. Samantha worked from early morning until late afternoon.
    ☐ Samantha made a cake.
    ☐ Samantha made cakes.

(11)   Yesterday Samantha got up early. It was her son's birthday. She usually liked to surprise him for his birthday. She decided to surprise him with a birthday cake.
    ☐ Samantha made a cake.
    ☐ Samantha made cakes.

5.8   Results

Of the 130 subjects originally tested, eight were discarded due either to mistakes on the translation of vocabulary test, or to response bias on the related constructions test. They will not be considered further.

5.8.1   The Aspect task

Group results

We will look at results from the aspectual interpretation test in its two parts: rating of complex sentences in condition Characteristic + Telic (C+T) versus condition Characteristic + Atelic (C+A); and rating of complex sentences in condition Telic + Unfinished (T+U) versus Atelic + Atelic (A+A). Figure 5.1 presents the aspectual judgement means on the first pair of conditions: C+T vs C+A. Repeated measures MANOVA shows an effect of group ($F(4, 152) = 2.965$, $p = .022$), a strong effect of condition ($F(1, 152) = 120.665$, $p < .0001$), and a significant interaction between condition and group ($F(4, 152) = 4.182$, $p = .003$). I will return to the group differences below.
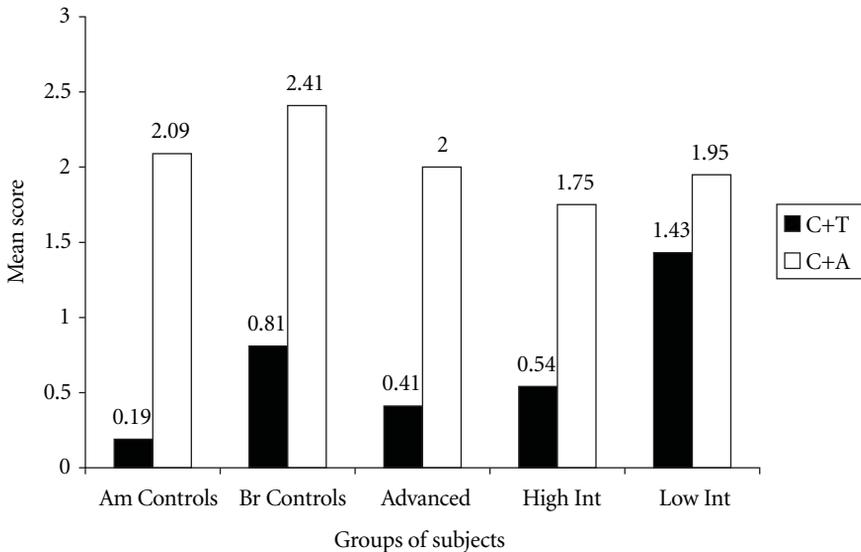
Figure 5.1 Aspectual Judgement Means on conditions C+T and C+A

What we are looking for in this experiment is a significant difference between the means on the two conditions, which will indicate that subjects (as groups) distinguish between telic and atelic sentences. Using this criterion, we find that all groups of subjects have acquired the telic–atelic distinction. The relevant statistics are given in Table 1 in Appendix F.

In fact, it turns out that this criterion is too lenient, as far as the Low Intermediate group of subjects are concerned. Their means on conditions C+T

versus C+A are very close together (see Figure 5.1). For this group, even if there is marginal statistical significance (see Table 1 in Appendix F), it cannot reliably be accepted that these subjects have acquired telicity marking since their means are too close together, unlike the robust significant effects of all the other groups of subjects and controls. What is more, the significant interaction between condition and group ($p=.003$) can only be due to the Low Intermediate group's performance.

The effects of condition are even more robust for the other pair of conditions, T+U vs A+A, illustrated in Figure 5.2. Repeated measures MANOVA shows an effect of group ($F(4,152) = 4.179$, $p=.0032$), a strong effect of condition ($F(1,152) = 466.254$, $p<.0001$), and a significant interaction between condition and group ($F(4,152) = 9.737$, $p<.0001$). The group statistics are given in Table 2, Appendix F. All groups show significant differences between the two conditions. This is not surprising, given that the T+U condition involves a contradiction and has negative means. The significant interaction between condition and group once again suggests that the Low Intermediate group is less proficient than the rest of the groups.
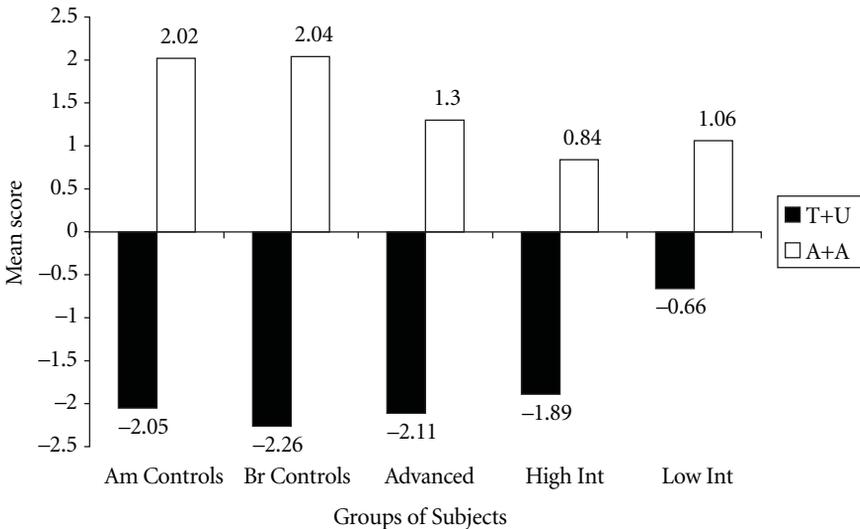
Figure 5.2 Aspectual Judgement Means for conditions T+U and A+A

When we compare control groups across condition, there is no significant difference between the judgements of the two groups of NSs: British English

speakers and North American speakers. It was hypothesized at the start that there would be some dialectal differences between North American and British English. This hypothesis was not confirmed.[7]

The results demonstrate that all control and subject groups distinguish between telic and atelic sentences. Indeed, this is the most important finding of this test, and the main contrast we should be looking for. Bley-Vroman (1983) warns against the comparative fallacy of comparing L2 learners with NS performance on a given property of grammar. Grimshaw and Rosen (1990) argue that children's performance should be judged not on how they compare to adults, but whether they "treat the two classes of sentences in a systematically different way" (Grimshaw and Rosen 1990: 189). On the other hand, our prediction is that the Low Intermediate learners may not have reset the parameter yet, in contrast to the more advanced groups. Therefore, separate ANOVAs were performed for each condition, looking for group effects. The results are presented in Table 3 in Appendix F.

The most noteworthy result in Table 3, Appendix F is that on telic sentences (Condition C+T and Condition T+U) the Low Intermediate learners perform significantly worse than the rest of the learners and the NAmE controls, while the High Intermediate and the Advanced learners perform like the controls. On the other hand, on atelic sentences (Condition C+A and Condition A+A) Low Intermediate learners as a group perform like the controls and the advanced learners. This fact was predicted by the hypothesis that beginning learners will transfer the L1 value of the parameter.

It is not particularly surprising also that on one of the atelic conditions (A+A) High Intermediate learners perform significantly worse than the rest of the groups, and this is offset by their good performance on the other atelic condition (C+A). This fact suggests that High Intermediate learners as a group are in a state of flux, but the tendency to recognize telic from atelic sentences is already in place.

Advanced learners perform like the controls in all four conditions.

Individual results on the Aspect task

Next, I will concentrate on the individual results of this test. Recall that the criterion for acquiring telicity marking in English is a significant difference

---

7. It is the case that most North American English speakers in the control group were Canadian. Different results may obtain if US American English speakers are tested.

between scores on the C+T vs C+A conditions and a significant difference between scores on the T+U vs A+A conditions. The only statistical procedure that can be used for individual results is the paired two-tailed t-test. T-tests were performed on all results, that is, one t-test for each pair of conditions per subject. This procedure turns out to be very conservative in assessing knowledge of aspect, so that even eight of the 32 NS controls did not reach significance on one pair of conditions. Still, it is the only procedure that will reliably differentiate between individual subjects who make a distinction between telic and atelic VPs and those who do not make such a distinction. Table 5.3 shows the number of people who have acquired or not acquired aspect in each learner group.[8]

Table 5.3 Number of subjects who acquired/did not acquire aspect per group

	Aspect in English acquired	Aspect in English not acquired
Controls	24	8
Advanced	32	10
High intermediate	18	28
Low intermediate	1	33
Total	75	79

5.8.2   The Translation task

We now turn to another task that the learners performed, namely, the Translation task. Recall that telicity is marked overtly in Bulgarian, the subjects' native language, and that the aspectual judgement test asked the subjects to translate the underlined verbal form in the test sentences. In translating, subjects considered the whole VP and provided a verbal form in Bulgarian with or without a preverb, the marker of telicity. For example, if a subject considered the sentence *Sharon worked in a bakery and made a cake*, she had to choose between two forms in Bulgarian: *praveše* (atelic) and *na-pravi* (telic). If the subject chose the telic form, one point was given, if she chose the atelic form, no point was given. Not all subjects fulfilled the translation task accurately. A few subjects misunderstood the instructions and translated the verbal forms in the present tense,

---

8.   As a reviewer suggests, it is also possible that the failure of some controls to reach significance by t-test reflects a problem with the rating scale. Numerical ratings of grammaticality or acceptability are a difficult, hence "noisy" task for many non-linguists.

as lexical items independent of the whole sentence. Such translations were used as a vocabulary test but were excluded from the translation results. 104 learners completed the translation accurately, 28 in the Low Intermediate group (n=35), 36 in the High Intermediate group (n=50), and 40 in the Advanced group (n=45).

Figure 5.3 shows the overall translation accuracy as percentage of all learner groups.
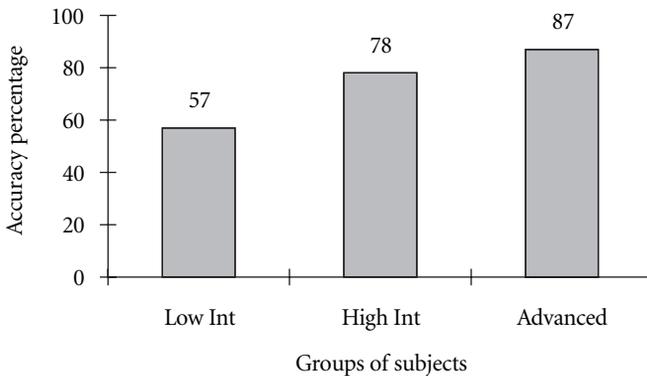
Figure 5.3 Translation accuracy

Figure 5.4 shows the results broken down by condition. Repeated measures MANOVAs were performed. First of all, it was confirmed that there is an effect of group ($F(2, 101) = 45.44$, $p<.0001$) and of condition ($F(3, 303) = 3.44$, $p=.017$) in the data as a whole. There is also a significant interaction between group and condition ($F(6, 303) = 9.19$, $p<.0001$), which is due to the performance of the Low Intermediate group on the telic sentences.

The difference in means of the Low Intermediate subjects on the C+T vs C+A conditions is highly significant ($F(1, 27)=23.696$, $p<.001$), suggesting that low proficiency subjects are translating telic sentences significantly worse than atelic sentences, a fact that bears on the subjects' initial state of the parameter value. This finding is consistent with the relatively small difference between the aspectuality judgements of this group on Condition C+T versus C+A compared to all other subjects and the controls (see Figure 5.1 and Table 3 in Appendix F). Put together, the results of the translations and the aspectuality judgements of Low Intermediate subjects suggest that they consider telic VPs as atelic (or perform at chance), because the telic verbal form in English does not have an overt preverb and thus resembles the atelic form in Bulgarian. For the other two
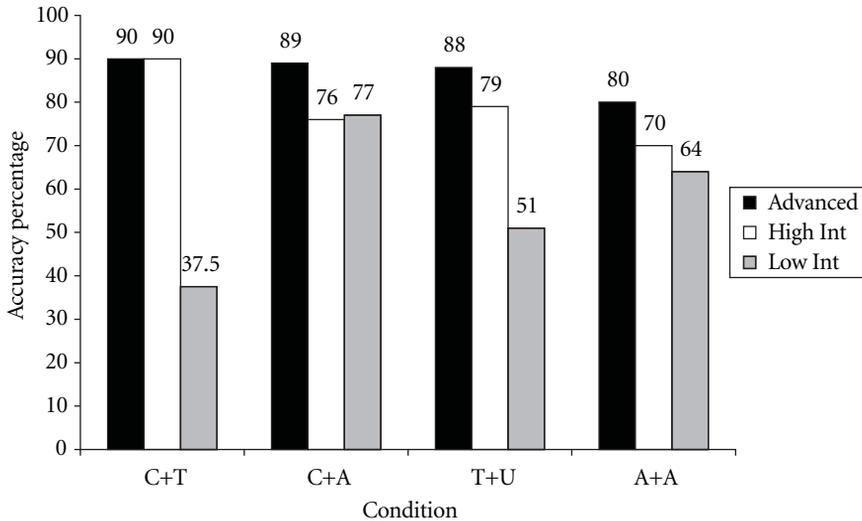
Figure 5.4 Translation accuracy across condition

conditions, T+U vs A+A, there was no significant difference ($F(1, 27) = 2.671$, $p = .114$), and the overall accuracy is about chance (51% vs 64%, respectively). On the whole, Low Intermediate learners are accurate 57.37% of the time.

Now consider High Intermediate subjects' translations. As a group, they exhibit a smaller but still significant difference between the C+T and the C+A conditions. This time though, the difference is in the other direction — they are more accurate on telic than on atelic VPs ($F(1, 35) = 5.645$, $p = .023$). They exhibit no significant difference on the T+U vs A+A contrast ($F(1, 35) = 1.141$, $p = .241$). On the whole, High Intermediate subjects are much more accurate than Low Intermediate subjects in their translation, or interpretations (78.75% accuracy). We can conclude that there is a significant jump in their underlying competence regarding telicity marking in English.

Further progress is indicated by Advanced learners' translation results. They exhibit no significant differences ($F(1, 39) = 0.097$, $p = .75$) on Condition C+T versus C+A ($F(1, 39) = 0.123$, $p = .35$), on Condition T+U versus A+A, and their performance is consistently high (86.75% on average).

A comparison was undertaken among the learners' group results on the Translation task. The results are presented in Table 4 in Appendix F. The important thing to notice in Figure 5.4 and Table 4 in Appendix F is that Low Intermediate learners' accuracy is significantly worse than High Intermediate and Advanced learners' accuracy only on the telic conditions (C+T and T+U),

but it is comparable to theirs on the atelic conditions (C+A and A+A), again supporting the prediction of initial transfer of the L1 value of the parameter.

To summarize the group results on the Aspect and the Translation task, learners across the three proficiency groups exhibit a steady increase in their knowledge of the way telicity and atelicity is marked in English. The Low Intermediate learners treat all English verb forms as atelic or they appear to guess. At this point in their development, learners appear to be unaware of the significance of objects for signalling telicity in English. More advanced learners recognize telicity marking in English.

5.8.3   The Grammaticality Judgement task

I will turn now to the results of the Grammaticality Judgement test of the aspect-related constructions. One of the main purposes of this study is to investigate the co-occurrence of knowledge of aspect with knowledge of the cluster of constructions theoretically related to the telicity marking parameter. I will reiterate that the cluster under investigation involves the Verb–Particle construction, the Transitive Secondary Predicate construction, and the Double Object construction.

An omnibus repeated measures MANOVA performed on the data as a whole indicates that there is a significant effect of group ($F(4, 150) = 51.639$, $p < .001$), a significant effect of grammaticality ($F(1, 150) = 11.471$, $p = .001$), a significant effect of condition ($F(3, 450) = 14.844$, $p < .001$), and significant interactions between group and grammaticality ($F(4, 150) = 8.198$, $p < .001$), group and condition ($F(12, 450) = 2.826$, $p = .001$), and grammaticality and condition ($F(3, 450) = 5.797$, $p = 0.001$). This is illustrated in Figure 5.5, detailed results for each group are given in Table 5 and Table 6 in Appendix F.

Looking at the various constructions individually, all three groups of subjects accept grammatical Verb–Particle constructions (Condition A) with an accuracy of about 70%, as Figure 5.6 illustrates. All learner groups perform significantly differently from the American controls (see also Table 7 in Appendix F for details).

As for ungrammatical sentences, Advanced subjects are significantly more accurate ($t(41) = 2.58$, $p = .006$) in rejecting ungrammatical stative verbs plus particles of the type *George loves out eggplant and basil pizza* than at accepting grammatical verbs plus particles of the type *The native men and women waited out the crisis* (see Figure 5.6 and Table 6, Appendix F). High Intermediate subjects are somewhat, though not significantly, more accurate at rejecting
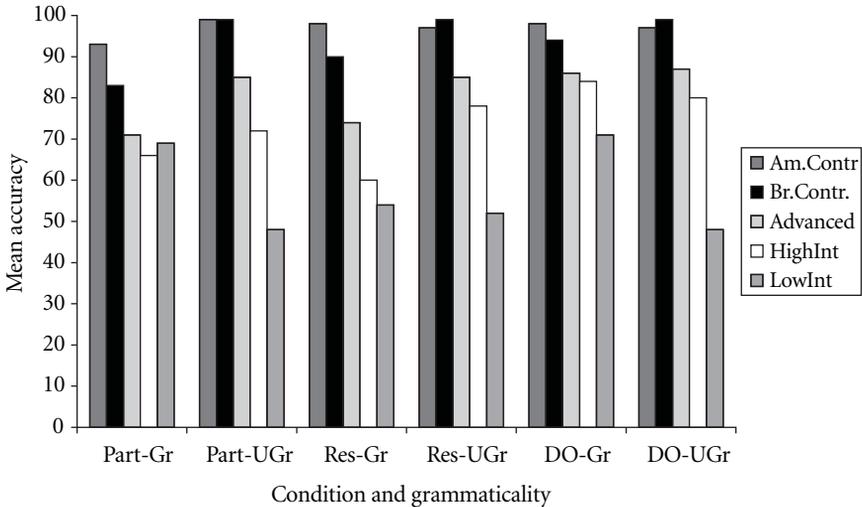
Figure 5.5 Cluster Mean Accuracy across condition and grammaticality
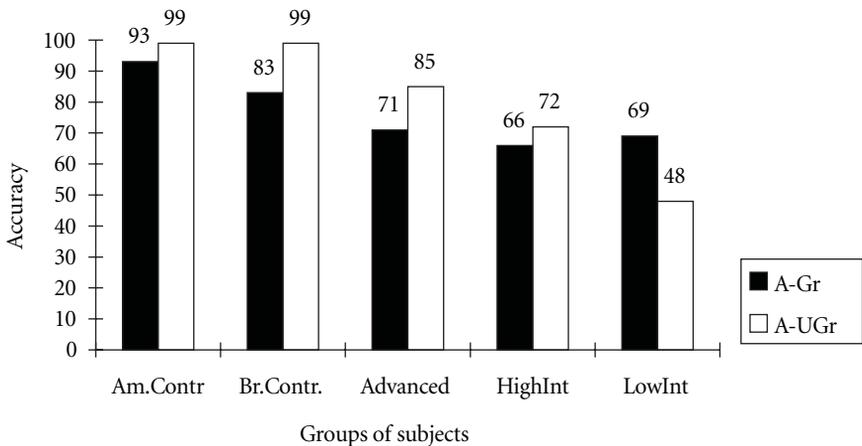
Figure 5.6 Accuracy on Verb–Particle construction (in per cent)

ungrammatical condition A sentences, while Low Intermediate learners are significantly less accurate at judging ungrammatical than grammatical sentences ($t(33) = 3.66$, $p = .006$). In fact, the latter perform at chance level in judging the ungrammatical condition A sentences.

Eighty-three per cent of the errors in this condition are in the five sentences that had the particle separated from the verb by the object as in e.g., *The native men and women waited the crisis out*. All subjects strongly preferred Verb–Particle

constructions in which the particle was verb-adjacent, e.g., *The native men and women waited out the crisis.* Thus, the relatively lower acceptance rate of grammatical sentences can be attributed to the subjects' not accepting the separation of the particle from the verb but accepting the construction as a whole.[9,10]

The results on Transitive Resultatives (Condition C) are shown in Figure 5.7.
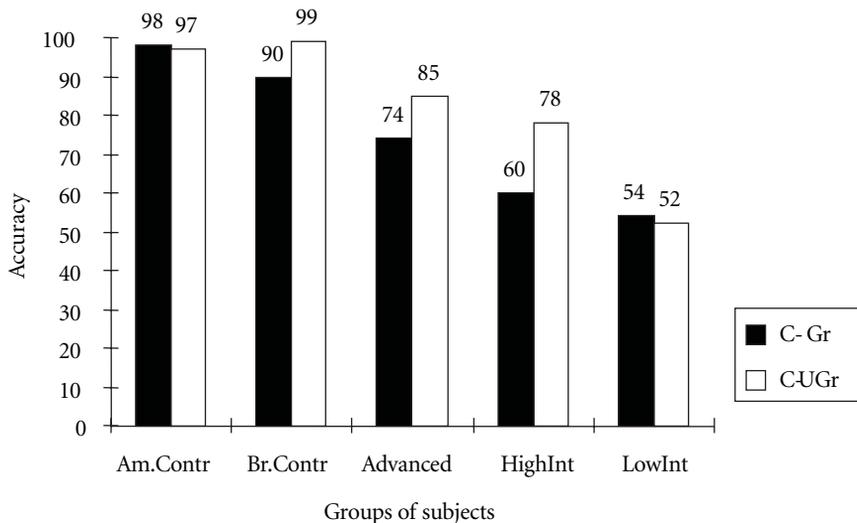
Figure 5.7 Accuracy on Transitive Resultatives (in per cent)

All learner groups perform significantly worse than the controls, as Table 7 in Appendix F indicates. Again, Advanced and High Intermediate subjects are significantly more accurate on rejecting ungrammatical secondary predicates (e.g., *My friend Pamela feared the dinosaurs senseless*) than on accepting grammatical secondary predicates (e.g., *Steven nailed all the top floor windows shut)* (see Table 6 in Appendix F). Low Intermediate subjects are at chance on both grammatical and ungrammatical secondary predicates.

Figure 5.8 shows learner's performance on condition D, Double Objects.

---

9.   Unfortunately, the results of this study do not allow us to tease those two possibilities apart. If subjects had been asked to judge and correct the sentences, this would have been possible. However, it was felt that the test was too long and cumbersome as it was, and answers might have been biased by fatigue. That is why correction was not one of the tasks the learners had to perform.

10.   It is interesting to note that "V Particle NP" precedes "V NP Particle" in L2 acquisition of English. The order is reported to be the opposite in Snyder and Stromswold (1997).
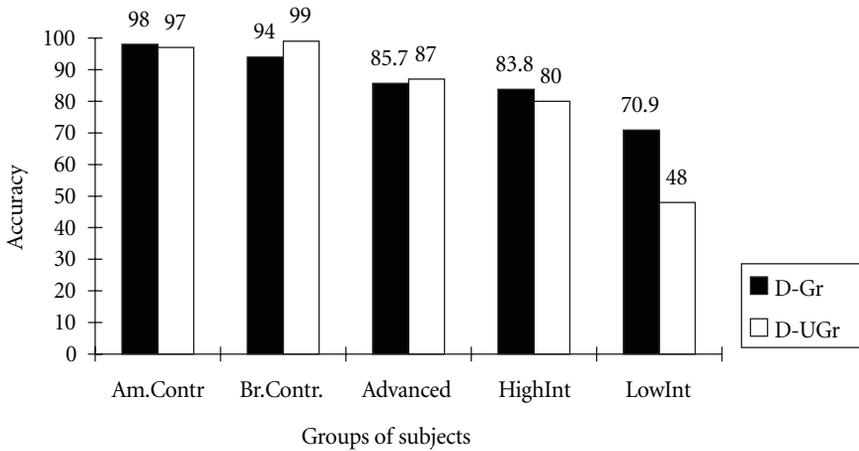
Figure 5.8 Accuracy on Double Objects (in per cent)

All groups are again significantly different from the controls as Table 7 in Appendix F indicates. This time, there is no significant difference between acceptance of grammatical sentences and rejection of ungrammatical sentences for the Advanced and High Intermediate learners (see Figure 5.8 and Table 6 in Appendix F). Low Intermediate learners, on the other hand, perform around chance in rejecting sentences of the type *Sharon taught French the children in the neighborhood*, and they are significantly more accurate at accepting grammatical Double Objects, their best performance across all conditions.

In order to assess the group performance on Double Objects as compared to Particles and Resultatives, mean scores were processed by hand to find the Honestly Significant Difference between the means (HSD = 5.35). It was found that in the Advanced and the High Intermediate groups, Double Objects were judged significantly more accurately than Particles and Resultatives, while in the Low Intermediate group, Particles and Double Objects were judged significantly more accurately than Resultatives.

The mean accuracy of all learner groups on grammatical and ungrammatical sentence types (i.e., a part of Figure 5.5) is repeated here in Figure 5.9, with a view of establishing clustering effects.

Accuracy on grammatical sentences on Double Objects (Condition D) is significantly higher than accuracy on grammatical sentences with Particles (Condition A) and Resultatives (Condition C) for Advanced and High Intermediate learners (see statistics in Table 6, Appendix F). The Low Intermediate
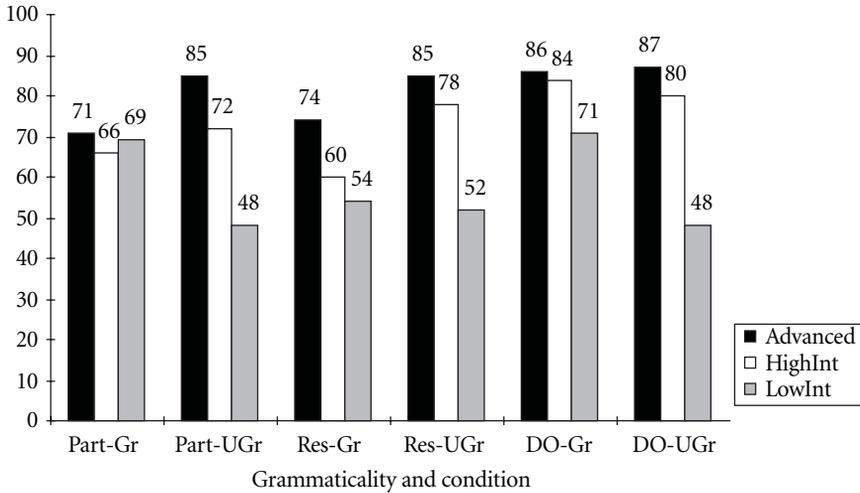
Figure 5.9 Accuracy across Grammaticality and Condition

learners judge Double Object grammatical sentences significantly more accurately than Intransitive and Transitive Resultative grammatical sentences. In other words, if we assume that accuracy reflects acquisition, Double Objects appear to be part of learners' competence somewhat earlier than Resultatives and Verb–Particles. This fact is not without its theoretical justification (see discussion in Chapter 3 for some theoretical reasons why Double Objects may not be part of this cluster after all).

Before concentrating on individual results, let us summarize the group results of the study so far. Advanced and High Intermediate students pattern like the controls as far as acquisition of aspect is concerned, showing the relevant distinction between telic and atelic sentences, but all groups of learners are significantly different from native speakers in their judgements of the related constructions. The Low Intermediate, in particular, appear to be performing at chance.

Individual results on the GJ task

A look at the individual results on the related constructions will support the conclusion that learners are more accurate on aspect than on the related constructions. A criterion of 75% accuracy on the related constructions was used as a cut-off. A subject had to have 15 out of 20 sentences in each condition judged correctly, in order to be counted as having demonstrated knowledge of

Verb–Particles, Resultatives, and Double Objects. This performance would be different from chance at $p = .02069$.

Using these criteria, thirty-three subjects were found to have acquired the aspect-related constructions while eighty-nine did not demonstrate such knowledge. Their distribution in groups is shown in Table 5.4.

Table 5.4 Number of subjects who acquired/did not acquire the related constructions per group

	Related construction acquired	Related constructions not acquired
Advanced	23	19
High Intermediate	10	36
Low Intermediate	0	34

Crucially, individual results should be investigated to see whether Double Objects are acquired earlier than Resultatives and Verb–Particles. Group results suggested that Double Objects were acquired earlier and more accurately than Particles and Resultatives. But group results may be misleading in this respect, because the means in each case may reflect some subjects performing well, while other subjects performing inaccurately. If the individual results support the group results, then one can confidently affirm that specific hypothesis IV, namely, all three constructions cluster together in interlanguage, will be rejected. If, on the other hand, individual results contradict group results, then hypothesis IV will be retained, because the correlations of mean scores on the three constructions (see below) are based on individual performance, not on group performance.

The number and percentage of successful subjects in each condition are presented in Table 8 in Appendix F (see Chapter 6 for a visual presentation of the same data). Stepwise multiple regression analysis was performed on the individual results as they appear in Table 8, Appendix F (that is, not on individual means but on data ranging over 1 standing for "acquired," 0 standing for "not acquired"). This procedure revealed that each one of Particles, Resultatives, and Double Object construction is significantly well predicted by the other two. In particular, success in the acquisition of Particles is better predicted by success in Resultatives, but when the latter is factored out, Double Objects is still a significant predictor of Particles. Double Objects are better predicted by Resultatives, but Particles still predict Double Objects reliably. Thirdly, Resultatives are better predicted by Double Objects, but Particles are still a significant predictor.

In order to assess whether knowledge of the three constructions is correlated in the interlanguages of individual subjects, a Pearson correlation procedure was performed on the individual mean scores of all subjects. This procedure revealed highly significant correlations: $r=.49$ for Particles/Resultatives, $r=.475$ for Particle/Double Objects and $r=.608$ for Resultatives/Double Objects, $p<.0001$ throughout. However, these correlations can be very misleading, since mean scores increase with increased proficiency and the high correlation values may reflect simply this fact. In order to tease apart the true correlation values from effects due to proficiency, three partial correlations were calculated for each pair of conditions, with the cloze scores held constant. In other words, the question we are asking is, what is the correlation between these two conditions for subjects at the same level of proficiency. Thus, the influence of proficiency on the accuracy of subjects on the related constructions is partialed out. This procedure revealed lower, but still significant correlations: $r=.261$ for Particles/Resultatives with cloze scores held constant, significant at $\alpha =.01$; $r=.207$ for Particle/Double Objects with cloze scores held constant, significant at $\alpha =.05$; and $r=.365$ for Resultatives/Double Objects, with cloze scores held constant, significant at $\alpha =.001$.[11]

At the start of the experimental studies, it was hypothesized that all three related constructions would be acquired together. The findings of the multiple regression procedure and the partial correlations offer weak support for this hypothesis, given the present research design. In order to support this hypothesis strongly, a different experimental design would be necessary. For the time being, we have to conclude that the reported differences in the percentages of subjects who have acquired each particular construction are not meaningful. In other words, the group results were actually misleading, and the weak but significant correlations are compatible with the hypothesis that Particles, Resultatives, and Double Objects do cluster together in the interlanguages of this sample of learners.

Contingency of acquisition of aspect and the related constructions

Combining the two types of estimations of individual subjects' underlying linguistic competence, the following contingency table is arrived at:

---

11. The probability values for the above three partial correlations were determined by Table J in Glass and Hopkins (1996), $p=.641$ at $v =98$.

Table 5.5 Bulgarian learners' acquisition of aspect and the related constructions

	Aspect in English acquired	Aspect in English not acquired
Related constructions acquired	26	7
Related constructions not acquired	25	64

The above contingency is significant at $\chi^2 = 25.434$, $p < .0001$. Twenty-six learners demonstrate knowledge of the related constructions and the way telicity is marked in English. Sixty-four learners exhibit no knowledge of both. The problematic cases are the twenty-five learners from the bottom left-hand cell of Table 5.5 who have mastered aspect but do not show sufficiently high and consistent knowledge of Verb–Particles, Resultatives, and Double Objects. Even more problematic are the seven learners from the top right-hand corner of Table 5.5 who do not demonstrate knowledge of telicity marking but do know the aspect-related constructions. Those learners are only 5% of all subjects, and their results may be attributed to performance errors or to inadequacies of the tests. The 25 learners with knowledge of aspect but no related constructions, however, cannot be dismissed so lightly. Some possible explanations of their performance will be discussed in Chapter 6.

The following three tables give the contingency for each group of learners.

Table 5.6 Advanced learners' acquisition of aspect and the related constructions

	Aspect in English acquired	Aspect in English not acquired
Related constructions acquired	19	4
Related constructions not acquired	13	6

Table 5.7 High Intermediate learners' acquisition of aspect and the related constructions

	Aspect in English acquired	Aspect in English not acquired
Related constructions acquired	7	3
Related constructions not acquired	11	25

Table 5.8 Low Intermediate learners' acquisition of aspect and the related construc-
tions

	Aspect in English acquired	Aspect in English not acquired
Related constructions acquired	0	0
Related constructions not acquired	1	33

The relationship between proficiency levels and subjects' grammatical
competence with the telicity marking parameter will be discussed in Chapter 6.

5.8.4 The Stories task

One last test remains to be discussed — the stories test. The following table
presents the accuracy in percentage. Standard deviations are in brackets.

Table 5.9 Accuracy percentages and SDs on stories task

Groups	Atelic stories	Telic stories	*F*	*df*
Am.E. Controls	99 (1)	99 (2)	no variation	1, 60
Br.E. Controls	100 (0)	99 (2)	no variation	1, 60
Advanced	99 (2)	99 (2)	no variation	1,172
High intermediate	98 (3)	97 (3)	no variation	1,184
Low intermediate	84 (11)	78 (23)	7.42*	1,122

* $p < .01$

The results of the Advanced and the High Intermediate groups are excep-
tionally high and not significantly different from the controls. This test proved
to be comparatively "easy" for subjects since one could perform correctly if one
knew plural marking and articles in English. Since the stories had to establish
context (see examples (10) and (11) in Section 5.7.4), they included an object
either in plural or singular, bare or with article, in other words, an object of
specified or unspecified cardinality. The sentences below the stories differed
only in the objects' cardinality, and the subjects could easily identify the correct
cardinality by matching plurality and article markings.

Still, the results of the low intermediate group present an interesting
comparison. Those learners perform significantly better on atelic stories than
on telic stories. This finding supports our claim that learners start out with the

without a preverb to be atelic, as is the case in Bulgarian. In this way, they make more errors in recognizing telic sentences. In Chapter 6, I will compare these results with results of Spanish native speakers acquiring English who took the same test. Thus, the low proficiency learners' performance on this task will be revealed to have added importance.

5.9   Conclusion

In this chapter I reported on an experimental study investigating the second language acquisition of telicity marking and the aspect-related constructions in English by Slavic adult NSs. Group and individual results were presented. In sum, it was found that low proficiency learners are quite accurate in judging atelic sentences but are at chance in judging telic sentences. Higher proficiency subjects, however, are competent in recognizing telicity marking in English; in fact, their competence is comparable to that of the native speakers in that they differentiate appropriately between telic and atelic sentences, and recognize both types. As far as the related constructions are concerned, learners also exhibit an increase in grammatical competence. Individual scores on all three constructions were significantly correlated, even when the influence of more general English proficiency was partialled out. In the next chapter, these results will be analyzed in light of the general and specific hypotheses of the studies and some implications of the findings will be discussed.

Discussion, implications, and conclusion

6.1 Introduction

In this chapter the results of the experimental study will be summarized, and then discussed in light of the general and specific hypotheses. Some implications for the theory of SLA will be reviewed, in particular, which approach to the Access-to-UG Hypothesis is supported by the findings of the study. Some methodological considerations will be brought forward in discussing the innovative tests of the experiment. Finally, some areas for future research will be identified.

6.2 Summary of the results

The results obtained from the Aspect task were evaluated within groups and between groups. The four conditions were grouped in two pairs contrasting telic and atelic sentences, and the two control groups as well as the three learner groups demonstrated that they recognize the telic–atelic contrast. The performance of the Low Intermediate subjects, however, although showing a statistically significant difference between telic and atelic sentences, was due to their accuracy on the atelic condition, while their performance on the telic condition was at chance and was probably due to guessing. The conclusion that the criterion of significant difference between group means on telic and atelic sentences was too lenient for the Low Intermediate group was supported by the comparison between learner and control groups as well as by consideration of individual results.

There was no significant difference between the judgements of British English and North American English control groups on telic and atelic sentences. Advanced learners as a group performed like the controls on all four conditions. High Intermediate learners performed like the controls on both telic and one atelic condition, while judging the other atelic condition significantly

lower than the rest of the learners and the controls. Although unpredicted, this finding is not unexpected in investigating interlanguage in the process of development. While the High Intermediate group rated one of the two atelic conditions lower than the controls, in the translation task the two groups performed similarly (see below). The performance of the Low Intermediate subjects was both as predicted and consistent. They judged atelic sentences like the controls but telic sentences significantly differently from the controls and the rest of the learners, thus suggesting that their grammars were different from all other groups (i.e., L1 settings rather than L2).

The translation task corroborated the findings of the aspect task. Advanced subjects were consistently accurate. High Intermediate subjects were slightly more accurate on telic than on one of the atelic conditions (Condition C+A), but not Condition A+A, on which they had exhibited lower performance on the aspect task. Thus, the findings of the aspect and the translation tasks regarding the High Intermediate subjects contradict each other, and testify to the relative state of confusion of these subjects' parameter values. Low Intermediate learners perform at (or lower than) chance on the telic conditions but similarly to the rest of the learners on the atelic conditions.

The grammaticality judgement task revealed that British English and North American English controls judge the Verb–Particle construction, Transitive Resultatives, and Double Objects consistently and accurately.

Between-group comparisons showed that all learner groups perform significantly less accurately than the controls. Low Intermediate learners perform mostly at chance, with the notable exception of grammatical Double Objects, which they accept with 71% accuracy. Both the Advanced and the High Intermediate group accept grammatical Double Objects significantly more accurately (87% and 84%, resp.) than Transitive Resultatives (74% and 60%, resp.) and Verb–Particles (71% and 66%, resp.). Thus, it was tentatively proposed that Double Objects do not cluster together with the rest of the constructions. However, individual results suggested that such a conclusion would be premature. Rather, individual scores on all three constructions were significantly correlated with each other at $\alpha = .05$ and less, when the influence of proficiency was factored out.

Finally, a statistically significant contingency ($\chi^2 = 25.434$, $p = .0001$) was established between knowledge of aspect and knowledge of the related constructions in individual subjects.

6.3   Evidence for and against specific hypotheses

6.3.1   Hypothesis I: Transfer of L1 values

The first specific hypothesis regarding learners' performance on the telicity marking parameter is that the L1 value of the parameter will be transfered to the learners' interlanguage as an initial analysis of the L2 input. L1 value transfer would entail accurate performance on atelic but inaccurate performance on telic sentences.

Why might this be the case? Recall that in Slavic and Bulgarian (see summary of parameter in Chapter 5), telicity markers are overt preverbs on the verbal form, whereas in English telicity is encoded by the cardinality of the object. For a person with the Slavic value of the telicity marking parameter, a verbal form without a preverb would signal atelicity. The cardinality of the object would be immaterial if the verb were considered the sole marker of (a)telicity. That is why it was hypothesized that Bulgarian low proficiency learners would judge atelic sentences as accurately as their more advanced counterparts: the atelic forms of the verb in the two languages coincide.

Telic sentences, on the other hand, would initially be interpreted as atelic, since the verb form is still without a preverb, and the significance of the object's cardinality would not have been noticed yet. It was predicted that beginning learners would judge telic sentences essentially at chance, and would not be able to distinguish between telic and atelic sentences.

The hypothesis was supported by the results of the Aspect and Translation tasks. Although the Low Intermediate group means on the more conservative telic–atelic condition pair (C+T vs C+A) exhibited a weak contrast ($p = .03$), this effect is due to the coincidence between the atelic forms of the verb in English and in Bulgarian. If this group had not had such high scores on the atelic sentences, their telic–atelic contrast would not have reached significance. It is reasonable to suppose that without this coincidence, beginning subjects would not have been able to demonstrate even a weak contrast between telic and atelic sentences.

The matter of DP interpretation should be discussed here. A reviewer correctly notes that the logic of the Aspect task depends on how subjects interpret the bare plural and mass noun phrases (signalling unspecified cardinality) as compared to noun phrases with a determiner or quantifier (signalling specified cardinality). As I mentioned in Chapter 3, Section 3.4.1, Bulgarian constitutes an exception among Slavic languages in having overt determiners

parallel in function to English determiners. Thus, in order to express an unspecified cardinality nominal, a bare plural or mass noun is used in Bulgarian (e.g., *bira* 'beer', *jabəlki* 'apples') as well as in English (e.g., *beer, apples*). In order to denote specified cardinality, DPs with overt determiners are used in Bulgarian (e.g., *edna jabəlka* 'an apple', *deset jabəlki* 'ten apples', *jabəlki-te* 'the apples') as well as in English (e.g., *an apple, ten apples, the apple*). One would expect the marking of cardinality to transfer from the L1 to the L2 of the learners, especially when it is functionally parallel. Indeed, the logic of the experimental task is dependent on this assumption. It seems highly unlikely that learners of English would transfer unspecified cardinality marking and not transfer specified cardinality marking, or vice versa. But even if we assume, for the sake of the argument, this situation to be correct, the following discrepancy has to be explained. Subjects who exhibited non-target-like grammars were inaccurate on telic but very accurate on atelic sentences. This result could conceivably be attributed to their incorrect interpretation of DPs with determiners in English. However, note that the context clauses in all four experimental conditions and all fillers in the aspect task contained DPs with overt determiners (see Appendix B). It is then impossible to account for the subjects' superior accuracy on the atelic conditions with misinterpreting only specified cardinality nominals but not unspecified cardinality nominals. Clearly, it is not DP interpretation that is responsible for the subjects' differential accuracy, but the verbal marker of telicity in their L1. Moreover, if the reviewer was right and subjects' behavior was to be attributed to problems with DPs in general (i.e., general uncertainty as to what the articles are doing), one would expect random behavior across the board, with presence or absence of articles making no difference. Instead, subjects are demonstrating the relevant sensitivity as predicted.

Low proficiency subjects' accuracy on the translation task supports this conclusion. They are significantly less accurate than higher proficiency subjects on the telic C+T condition (37.5%) and T+U condition (51%) but as accurate as the higher proficiency subjects on the atelic C+A condition (77%) and A+A condition (64%).

There is another way of testing for L1 transfer, however, and that is comparing low level proficiency learners from two native languages, one exhibiting the parameter value of the target language and one that has a different value.[1]

---

1.   I am grateful to Bonnie Schwartz for suggesting this to me at the GASLA conference in Montreal, 1997.

Here I will provide an overview of a study reported in detail elsewhere (Slaba-kova 2000) which tests Hypothesis I in the interlanguage of Spanish and Bulgarian low proficiency learners. But first, let us establish that Spanish has the same value of the telicity marking parameter as English. Nishida (1994) and Bonneau, Bruhn-Garavito, and Libert (1994, 1995) have argued that in Spanish the telicity value of a sentence depends on the object's cardinality. Spanish has two simple past tenses: the Preterite and the Imperfect. When a verbal form in the Preterite is combined with a specified cardinality DP (e.g., *diez manzanas* 'ten apples', *una copa de vino* 'a glass of wine'), the interpretation is of a finished, telic event.

(1) a. *Juan comió   diez manzanas en una hora.*   TELIC
         John eat-3SG/PRET ten apples   in an hour
         'John ate ten apples in an hour.'

     b. *Juan tomó   una copa de vino en un minuto.* TELIC
         John drink-3SG/PRET a   glass of wine in a   minute
         John drank a glass of wine in a minute.'

When the same verbal form in the Preterite (*comió*, *tomó*) is combined with a DP of unspecified cardinality like *manzanas* 'apples', *vino* 'wine'), the interpre-tation is atelic, just like in English.

(2) a. *Juan comió   manzanas por una hora.*   ATELIC
         John eat-3SG/PRET apples   for an hour
         'John ate apples for an hour.'

     b. *Juan tomó   vino por un minuto.*   ATELIC
         John drink-3SG/PRET wine for a   minute
         'John drank wine for a minute.'

On the other hand, Spanish has a property in common with Slavic, too. It has an overt telicity marker, the particle *se* in one of its many functions (see Nishida 1994; Bonneau, Bruhn-Garavito, and Libert 1994, 1995). When *se* appears in the sentence combined with a Preterite verb, DPs of unspecified cardinality are no longer felicitous in the sentence. The following examples are from Nishida (1994).

(3) a. **Juan se tomó   vino anoche   antes de acostarse.*
         John *se* drink-3ss/PRET wine last night before going to bed
         'John drank wine last night before going to bed.'

b. *Juan tomó   vino anoche   antes de acostarse.*
John drink-3SG/PRET wine last night before going to bed
'John drank wine last night before going to bed.'

c. *Juan se tomó   una copa de vino anoche   antes*
John *se* drink-3SG/PRET a   cup of wine last night before
de acostarse.
going to bed
'John drank a cup of wine last night before going to bed.'

Spanish differs from English in having another aspectual distinction encoded in the past tenses: the distinction between Preterite versus Imperfect. This distinction is different from the Past Simple–Past Progressive distinction in English. (4a) denotes a one-time finished event, while (4b) denotes a habitual activity in the past. Both meanings are glossed with the simple past in English, thus neutralizing the Spanish distinction.

(4) a. *Julieta practicó   tenis.*
Juliet   practice-3SG-PRET tennis
'Juliet practiced tennis.'

b. *Julieta practicaba   tenis.*
Juliet   practice-3SG-IMP tennis
'Juliet practiced tennis.'

However, it has been suggested (Poletto 1992; Giorgi and Pianesi 1997) that this aspectual contrast is checked in another functional projection much higher than VP, probably TP. Thus, for the purposes of the transfer study, Spanish encodes VP aspect similarly to English. The optional telic marker *se* appears to be very similar to the optional telic particles (e.g., *up*).

Keeping in mind the parameter values, it was hypothesized that Spanish low intermediate learners would perform equally accurately on telic and atelic sentences. It was demonstrated, on the other hand, that Bulgarian low intermediate learners perform significantly more accurately on atelic than on telic sentences.

The study compared the performance of the 34 NSs of Bulgarian of the Low Intermediate proficiency group and 21 NSs of Spanish, all adult learners of English, tested in Argentina.[2] The same 32 NSs of English were used as control

groups: 16 speakers of British English (BrE) and 16 speakers of North American English (NAmE).

The Spanish native speakers had to fill in the same cloze test used in the main study presented here. Spanish and Bulgarian learner groups were matched on their cloze test scores.

Subjects' performance on the aspect task was compared. Recall that this task reflects the subjects' judgement of how well telic and atelic clauses combine with atelic habitual context, on a scale from −3 to +3. In this task, we are looking for a significant difference between C+T (habitual and telic) and C+A (habitual and atelic) means. As Table 6.1 below indicates, Spanish low proficency learners are as accurate in recognizing the VP aspectual contrast as the native speakers of English.

Table 6.1 Statistical effect of telicity by subject group

	Atelic Mean (*sd*)	Telic Mean (*sd*)	*F*	*df*	*P*
NAmE controls	2.09 (0.54)	0.19 (1.1)	38.08	1,30	.0001
BrE controls	2.41 (0.57)	0.81 (0.79)	42.95	1,30	.0001
Spanish learners	2.08 (0.88)	0.40 (1.45)	17.69	1,40	.0001
Bulgarian learners	1.48 (0.81)	1.94 (0.96)	4.56	1,66	.03

Bulgarian low proficiency learners still show a marginally significant contrast between telic and atelic sentences, but it cannot reliably be accepted that they recognize the aspectual distinction in the target language. In order to establish why it only appears that Bulgarian learners recognize the contrast, we should compare mean judgements across condition (see Table 6.2).

Table 6.2 Statistical effect of group for telic and atelic sentences

	F	*df*	*p*
Telic	5.8	3,85	0.0001
Atelic	1.36	3,85	ns

Two ANOVAS were performed on telic and atelic sentences separately, looking for an effect of group. On telic sentences there is a highly significant effect of group. Post-hoc Scheffé analysis shows that this effect is due to the performance

of the Bulgarian learners. On the other hand, on atelic sentences all learner groups and controls perform without any difference. Thus, the small significant difference between telic and atelic means that Bulgarian learners show in the Aspect task (see Table 6.1) is due to an accurate performance on atelic sentences and an inaccurate performance on telic sentences, just as Hypothesis I predicts.

The same conclusion is supported by a comparison of learners' performance on the stories task. This task expected the learners to correctly match a telic story with a telic test sentence and an atelic story with an atelic test sentence. Bulgarian learners were significantly more accurate on matching atelic stories and sentences than they were on telic stories and sentences. The Spanish learners did not exhibit that contrast, as Table 6.3 indicates.

Table 6.3 Statistical effect of telicity by subject group in stories task

	Atelic (*sd*)	Telic (*sd*)	*F*	*df*	*p*
NAmE controls	99 (1)	99 (2)	–	1,60	ns
BrE controls	100 (0)	99 (2)	–	1,60	ns
Spanish learners	89 (10)	83 (14)	2.14	1,80	ns
Bulgarian learners	84 (11)	78 (23)	7.42	1,122	.01

The results of this second study unequivocally support Hypothesis I. There is no other way to explain the different patterns of performance of Spanish and Bulgarian low proficiency learners of English except by invoking transfer of the L1 value of the telicity marking parameter. We can conclude that in the area of aspect we find the same L1 transfer effects as in the previously studied areas of second language acquisition, like null subject, verb-raising, and others (Gass 1996).

What about the related constructions? L1 parameter value transfer implies that learners who do not have the value of the telicity marking parameter also will not demonstrate knowledge of Particles, Resultatives, and Double Objects. This is exactly what we observe: low proficiency learners hover around chance accuracy on Particles and Resultatives, with the notable exception of Double Objects (see discussion below). In fact, the contingency in Table 5.8, Chapter 5, supports this overwhelmingly. Out of 34 Low Intermediate subjects, 33 individuals demonstrate knowledge neither of aspect nor of the related constructions.

6.3.2   Hypothesis II: Resetting is possible

Our second specific hypothesis predicted that subjects would eventually move towards the L2 value and that resetting of the telicity marking parameter would be successful. This movement would be gradual for subjects as a group but in the form of a leap for individual subjects. The group results of the Aspect task support this hypothesis (see Table 5.3 in Chapter 5).

   The issue of resetting parameters should never be settled by only considering groups of subjects, because means may conceal inter-subject variability. The individual results are the most important support for the second specific hypothesis. The following four figures present individual results for all groups on conditions C+T vs. C+A. Br. English and N. Am. English controls' means are collapsed, since they are not significantly different.
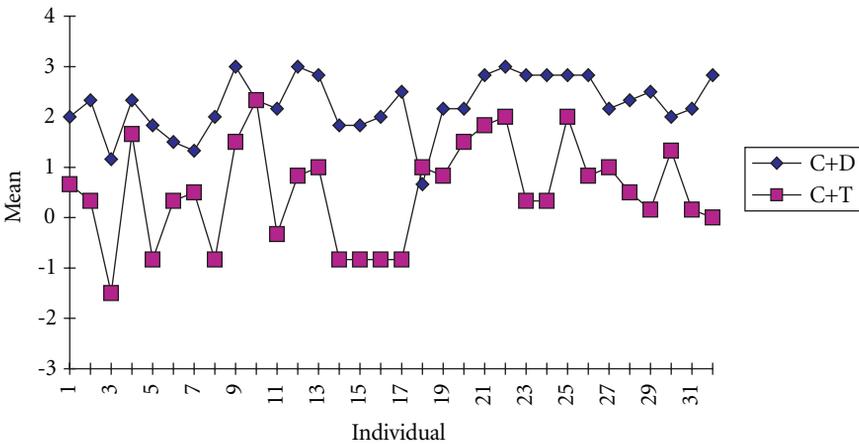
Figure 6.1 Controls' Means on C+T vs. C+A

Figure 6.1 shows that controls' judgements of telic and atelic sentences are compact and do not vary chaotically. The figure reflects two lines, one plotting C+T means for each individual subject, and the other, C+A means. Ideally, all individual C+A means should be higher (that is, more acceptable) than the C+T means. Aspectual judgements are notoriously murky and the controls' task was not to judge sentences as grammatical or ungrammatical but to express their preference for a combination of clauses. Keeping this in mind, the individual variation among controls from two different dialects of English seems rather minor. Still, together with this uniformity of preference, there are two cases of overlapping means, even among the controls.
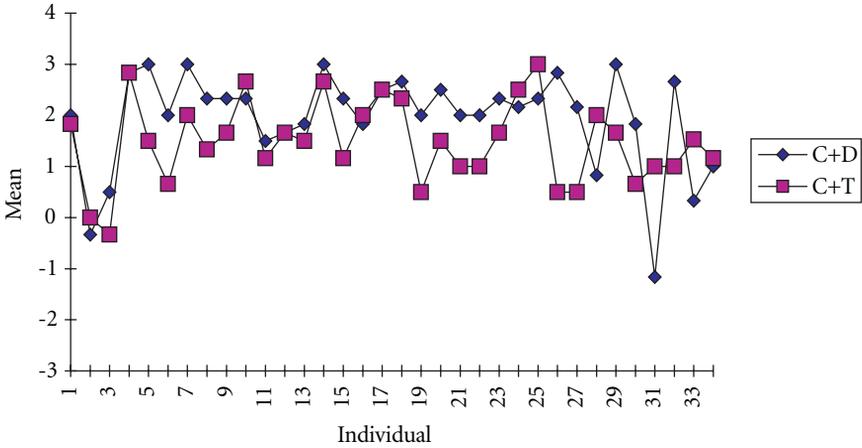
Figure 6.2 Low Intermediate Subjects' Means on C+T vs. C+D
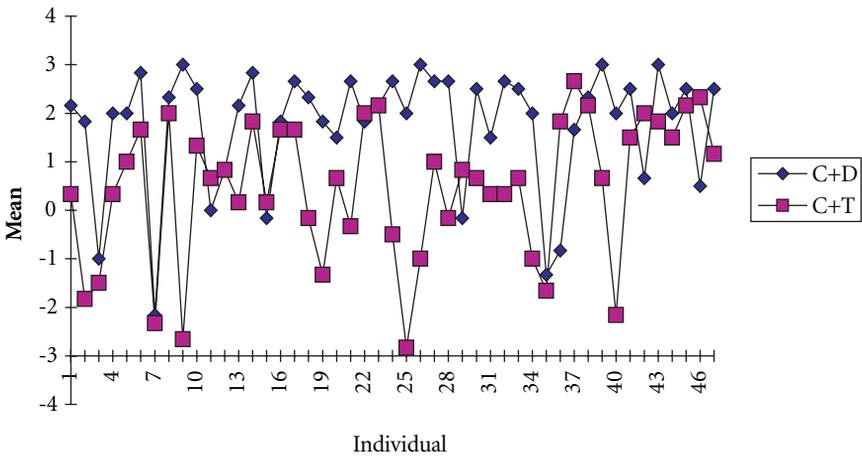
Figure 6.3 High Intermediate Subjects' Means on C+T vs. C+A

The plot for the Low Intermediate means in Figure 6.2 presents a completely different picture. Although the group means on both conditions are significantly different, the plot reveals this to be largely the product of statistics, since, as a whole, individual means on the two types are very close to each other and frequently overlap or cross in the opposite direction. The intuitions of these
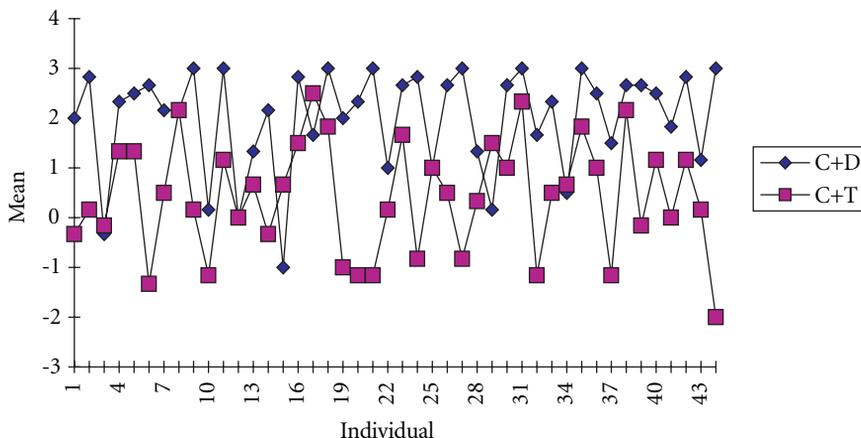
Figure 6.4 Advanced Subjects' Means on C+T vs. C+A

subjects about the telic–atelic contrast are clearly shaky, or non-existent.[3]

The plot for the High Intermediate learners presents yet another picture. While the lower proficiency learners exhibit almost no contrast, in the mixed middle group there are many subjects who have established the telic–atelic contrast, and also many others with overlapping or crossing means. Clearly the nascent grammar faces severe competition from the native grammar, but more often than not, the contrast is already in place. Although the advanced subjects' plot is not yet so uniform as the NS one, their intuitions are clearly contrasting telic and atelic sentences. The investigation of ultimate attainment was not a goal of this study, so it is not clear from our data whether (a uniform group of) advanced learners can achieve intuitions similar to NSs.

Looking at the individual data plots, another fact can be observed. Across all proficiency groups one can find both types of learners: those who have reset the parameter and those who have yet to do so. This is quite clear with the High Intermediate group, where 18 subjects have acquired aspect in English and 28 have not. But this situation is to be expected with the mid-level group as well. What is more surprising is that one subject in the Low Intermediate group has already acquired the aspectual contrast in English, while ten subjects in the Advanced group have not (see Tables 5.6, and 5.8 in Chapter 5). This is an

---

3. Although visually some of the distances between the means on the C+T vs C+A condition may not seem so small, all but one of these distances are statistically non-signifi-cant, due to large standard deviations.

indication that, as far as parameter resetting is concerned, traditional proficiency measures like standardized proficiency tests and cloze tests are not good predictors of success or failure (see Juffs 1996 for similar findings).

6.3.3 Hypothesis III: Acquisition of aspect co-occurs with acquisition of the related constructions

An important part of parameter theory is the prediction that a number of apparently unrelated constructions will appear in the learner's grammar at the same time with the value of the parameter. In this case, it was predicted that learners who demonstrate knowledge of telicity marking in English will also have acquired the Verb–Particle construction, the Transitive Resultative construction, and the Double Object construction. This hypothesis was also supported, with a caveat to be discussed below. Table 5 in Chapter 5, repeated here for ease of reference, presents the contingency of acquisition of aspect and acquisition of the related constructions ($\chi^2 = 25.434$, $p = .0001$).

Table 6.4 Bulgarian learners' acquisition of aspect and the related constructions

	Aspect in English acquired	Aspect in English not acquired
Related constructions acquired	26	7
Related constructions not acquired	25	64

The 26 learners in the upper left-hand cell and the 64 learners in the lower right-hand cell are the predicted cases supporting the hypothesis of contingency. The problematic cases are the seven subjects who have not yet acquired aspect but demonstrate knowledge of the related constructions. Since they are only 5% of all subjects, I do not consider their existence a counter-argument of the hypothesis of contingency. Their performance can probably be attributed to performance errors.

It is much more interesting, however, to consider the other problematic fact: the 25 learners who have mastered aspect but have yet to master the related constructions. These subjects' performance merits explanation. It is conceivable to think of the relationship between two properties of grammar, say A and B, in the following three ways:

i.   A implies B,
ii. B implies A,
iii. A implies B and B implies A.

Thus, if we find absolute co-occurrence of the two properties at different stages of language development, the two-way implication will be supported. But if we find that one property has appeared at a certain stage of development while the other has not, this would suggest a one-way implication. The contingency results of the study seem to favor the latter option.

Can we confidently assert that acquisition of the null telic morpheme is a necessary but not sufficient condition for the acquisition of Verb–Particles, Resultatives, and Double Objects (or Complex Predicates), as our results suggest? A theoretical justification for this claim can be found in cross-linguistic comparisons.

Snyder's (1995a) analysis relates the Complex Predicate constructions in English with the null telic morpheme. The null telic morpheme appears in each Complex Predicate construction and is semantically interpreted as forming a morphological compound with the resultative, dative object, or particle at LF. This is the analysis of the cluster underlying the hypotheses of the two experiments described in the book. Snyder (1995b) identifies another property of English as the most reliable predictor of the appearance of complex-predicate constructions in the speech of English children: productive nominal root-root compounding of the type illustrated in (5) (Snyder 1995b: 27).

(5)   a. $[_N [_N$ coffee] $[_N$ cup]]
      b. $[_N [_A$ black] $[_N$ bird]]
      c. $[_N [_V$ guard] $[_N$ dog]]

The cross-linguistic generalization, supported by a survey of not less than 33 languages, is the following: "A language permits "Larsonian" complex predicates (Transitive Resultative, Transitive Verb–Particle, Double-Acc, and/or *make*–Acc) iff it permits *productive* nominal compounding" (Snyder 1997, p. 7). Note that the above is a two-way generalization.[4] The intuition behind the "compounding parameter" is that the same mechanism permits affixation of the free morpheme *guard* to *dog* that allows affixation of *up* to *eat* in the Verb–Particle construction *eat up* and *clean* to *wipe* in the Resultative construction *to wipe X clean.*

---

4.   Note also that this is a biconditional between productive nominal compounding and the possibility *in general* of Complex Predicate Constructions (CPC). The specific set of CPCs, if any, which are available within a productive-compounding language, seems to be determined by other properties of the language. Apparently, most or all of these properties are determined prior to the acquisition of nominal compounding in children learning English, with the result that productive compounding and a variety of CPCs enter the child's speech more or less concurrently. (I am grateful to William Snyder for clarifying this.)

As indicated in Chapter 3 (Section 3.3.2), it is conceivable that there are two null telic morphemes, one in AspP between the two VPs, and one responsible for the aspect-related constructions.[5] Snyder (p.c.) proposes that the latter be renamed "the telic restrictor morpheme." Both null morphemes depend on the English value of the parameter of aspect. However, the telic restrictor morpheme needs to head an aspectual projection different from the one between the two VPs. It is generated as a complement of the lower VP (Snyder 1995a). This structural configuration is permitted only when the telic restrictor morpheme incorporates (or forms a compound with) the V^0 above it.

Thus, combining Snyder's two analyses with the extension proposed in Chapter 3 of this book, a learner would be confronted with the following learning task. First, the learner should notice that the cardinality of the direct object in English licences the null telic morpheme in a Spec–Head relationship with the verb in the functional category AspP (see Chapter 3). This null telic morpheme may also licence the null restrictor morpheme in the complement of the lower VP position. This property can be designated as property A. Secondly, the learner has to notice that nominal compounding as in (5) above is productive in English, and consequently, all non-affixal open-class items can enter into compounding relations at the point of semantic interpretation, or become X^0 at LF. For example, if the learner knows the words *salamander* and *jar* as free morphemes, he or she must also know that they can combine to produce *salamander jar*, with the meaning of "the jar where someone keeps their salamanders," among other possible meanings. We can call this property B. This knowledge will enable the learner to incorporate the null restrictor morpheme into the verbal head above it. Thirdly, Complex Predicate constructions become possible because the null restrictor morpheme is interpreted by the learner as a non-affixal element, which can, jointly with the particle, resultative XP, or the dative object, characterize the single event-argument as being of a telic nature. That is property C.[6]

5.　What follows is only one possible relationship between the two telic morphemes. The matter certainly merits further research.

6.　There is another piece of evidence for the one-way implication status of the relations between properties A, B, and C. As Snyder (1997) points out, there are at least two languages that are seeming counter-examples to the generalization that properties B and C imply each other. Italian, for example, has Verb–Particle constructions with a resultative meaning (i) and intransitive and transitive Resultative constructions (ii), but no productive N–N compounding.

If the above-described learning situation is on the right track, the learner is indeed faced with a double task: to acquire property A, and then to acquire property B. Only then property A and property B will jointly make property C possible in the grammar. It is now clear that property A and property C, which have been investigated in the book, are in a one-way implicational relationship. That is, acquiring the null telic morpheme is a necessary but not sufficient condition for acquiring Verb–Particles, Resultatives, and Double Objects. This is exactly the learning process that my experimental results support. The 25 learners who have demonstrated knowledge of aspect have presumably not noticed yet the productive compounding in English, hence, for them complex predicates are still ungrammatical. Unfortunately, noun compounds were not included in my experiments, so this remains a hypothesis to be tested in the future.

The strongest support of the proposed analysis will obtain if a language can be found to exist featuring a null telic morpheme (in the sense of Chapter 3) but no productive compounding and no complex-predicate constructions. In other words, the 25 subjects who have acquired aspect in English but no related constructions will be entertaining an attested, UG-constrained analysis and not a wild grammar. Such a language is Spanish.

The examples (1) to (3) given above in Section 6.3.1 demonstrate that Spanish shares with English the availability of a null telic morpheme. The examples from Spanish below indicate the lack of productive N–N compounding and ungrammaticality of complex predicate constructions.

(6) a. *zapatos de tango*
       shoes   for tango

(i) Verb–Particle constructions (Di Sciullo 1996)
buttare <u>via</u>   al   vaso/buttare il   vaso <u>via</u>
throw   away the glass/throw the glass away

(ii) Resultative construction (Di Sciullo 1996)
Ho caricato l'autocarro pieno.
'I loaded the truck full (to the brim).'

Following Giorgi and Longobardi (1991) and Beard (1996), Snyder (1997) argues that compounding is blocked in Italian for language-internal reasons. Italian has head-initial compounds, that is, the agreement, which is obligatory on the head, remains in the middle of the word. For those reasons structures like *capo settore/capi settore* ('department head/-s') remain marked and unproductive. In other words, language-internal mechanisms block property C in Italian, although property B is present. If we agree with this explanation, then the above generalization that property B always implies property C seems too strong.

    b. *tango zapatos*   N–N COMPOUNDING
        tango shoes

(7) a. *Los nativos esperaron hasta el   final de la   crisis.*
        the natives waited   until the end of the crisis
        'The natives waited out the crisis.'

    b. *Los nativos esperaron la   crisis para afuera.*   VERB–PARTICLE
        the natives waited   the crisis out
        'The natives waited out the crisis.'

(8) a. *Ben lavó   las ventanas hasta que quedaron claras.*
        Ben wiped the windows until they were   clean
        'Ben wiped the windows clean.'

    b. *Ben lavó   las ventanas claras.*   RESULTATIVES
        Ben wiped the windows clean
        'Ben wiped the windows clean.'

(9) a. *Simon dio   una motocicleta roja a Eugenia.*
        Simon gave a   motorcycle red to Eugenia
        'Simon gave Jenny a red scooter.'

    b. *Simon dio   Eugenia una motocicleta roja.*   DOUBLE OBJECT
        Simon gave Eugenia a   motorcycle red
        'Simon gave Jenny a red scooter.'

Thus, combining the availability of the null telic morpheme with the unavailability of N–N compounding and complex predicate constructions, one can argue for a third value of the telicity marking parameter — a Spanish one.[7] In this way, Spanish offers some evidence for the distinction between property A, the null telic mopheme, and property B, productive non-affixal element compounding, which jointly necessitate property C, the aspect-related constructions. The 25 Bulgarian learners who have acquired the null telic morpheme but not the related constructions may have chosen the Spanish value of the parameter.

6.3.4   Hypothesis IV: All three related constructions cluster in interlanguage

Hypothesis III dealt with the question of whether knowledge of the three complex predicate constructions co-occurred with knowledge of aspect in English.

---

7.   The Spanish facts described here are probably not the whole picture, and much more extensive investigation of the data is required before proposing a definite analysis. This is left for further research.

Note that it did not address the question of whether knowledge of one of the three constructions co-occurred with knowledge of the others. This is what hypothesis IV addresses. To paraphrase the question again, is it true that in the interlanguage of Slavic learners knowledge of Particles will predict knowledge of Resultatives and Double Objects, or knowledge of Double Objects will predict reliably knowledge of Particles and Resultatives?

At first glance, it seems that group accuracy on particles and resultatives is lower than that of double objects, as Figure 5 below illustrates. As reported in Chapter 5, Advanced and High Intermediate learners have acquired Double Objects significantly more accurately than Particles and Resultatives.[8] What is more, if grammatical and ungrammatical sentences are viewed separately (see Table 6 in Appendix F), the differences above prove to be due to lower acceptance rate of grammatical Particles and Resultatives as compared to Double Objects, and not to incorrect acceptance of ungrammatical ones. These facts suggest that the related constructions do not cluster in SLA.
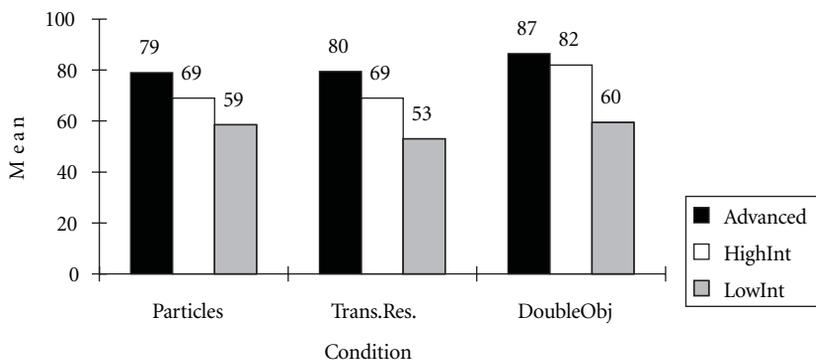
Figure 6.5 Cluster Mean Accuracy

This is not an unexpected split of the cluster. While several researchers (Kayne 1984; Tenny 1987; Larson 1988; Hale and Keyser 1993; Marantz 1993; Pesetsky 1995; Snyder 1995a, b) have linked the three constructions under investigation, other researchers (Baker 1997; Di Sciullo 1996) disagree with this grouping of Particles, Resultatives, and Double Objects (see Chapter 3). Baker (1997) argues for the Double Object having a different syntactic and semantic status than the Locative Alternation, an alternation clearly based on aspectual properties.

8.   In the Low Intermediate learners' competence, however, Double Objects pattern with Particles, both significantly better acquired than Resultatives.

If these structures are of a different status, it would not be surprising to find some discrepancy in the acquisition sequences of Double Objects, on the one hand, and Particles and Resultatives, on the other.

The following figures represent the distribution of subjects who have acquired a particular condition. Appearance of a number in one circle means that this number of subjects have acquired only this construction and neither of the others. A number in the intersection of two circles means that so many subjects have acquired both these constructions but not the third one. Finally, the figure in the middle represents the number of subjects who have acquired all three constructions.
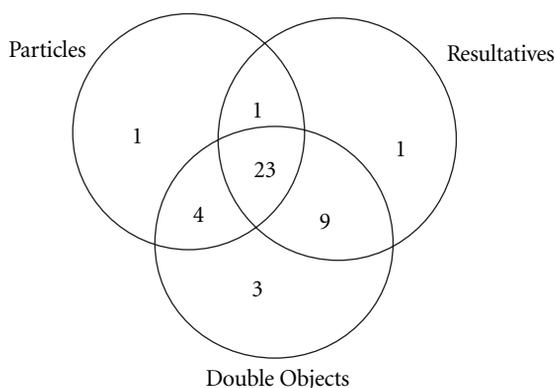
Figure 6.6 Number of individual Advanced subjects who have acquired one/two/three of the related constructions

As is evident from Figures 6.6 to 6.8, the number of subjects who have acquired Double Objects is higher than Resultatives, which in its turn is higher than Particles, but this difference is not statistically significant. The low proficiency subjects are obviously far from knowledge of the cluster, and successful acquisition seems more random than consistent at that level. The mid-level proficiency subjects display wide variation in individual performance, with the number of learners successful in acquiring the three constructions equal to the number of learners who have acquired only Resultatives and Double Objects, the two most numerous subsets of subjects. It is important to note that with advanced subjects, the three constructions appear together in 23 (or 55%) of the subjects in that group, which is already indicative of a strong trend.
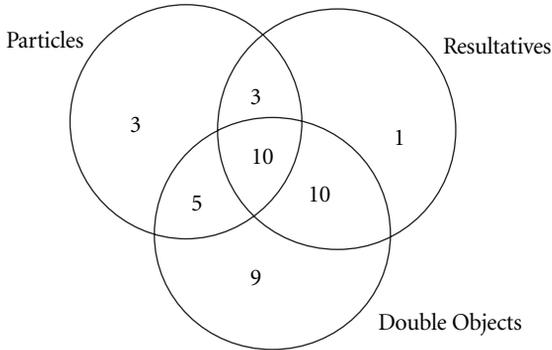
Figure 6.7 Number of individual High Intermediate subjects who have acquired one/two/three of the related constructions
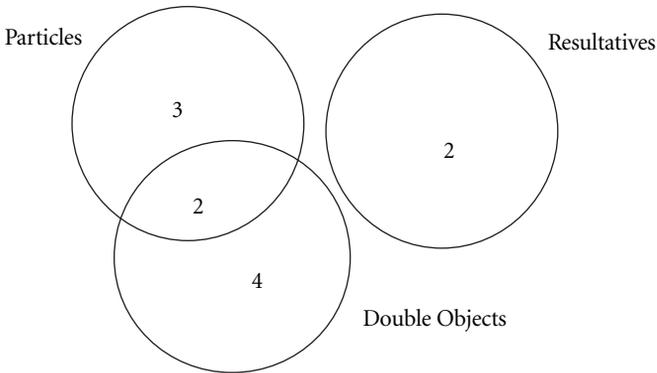
Figure 6.8 Number of individual Low Intermediate subjects who have acquired one/two of the related constructions

As reported in Chapter 5, however, the multiple regression procedure on the same data shows that any two of the constructions reliably predict the third. What is more, when proficiency in English is held constant, partial correlations reveal that all three related constructions are significantly correlated with each other. Thus, the variation reflected in Figures 6.6 to 6.8 is more apparent than real, and the available statistical procedures indicate that Particles, Resultatives, and Double Objects do cluster in SLA. However, it should be noted that the present study was not designed with the sole purpose of testing whether Particles, Resultatives, and Double Objects cluster in interlanguage, thus, the present

research design does not allow Hypothesis IV to be strongly supported.[9] For the time being and until further research, Hypothesis IV receives weak support.

In summary, all four specific hypotheses of the study were basically supported. Next, I will turn to the general hypothesis presented at the beginning of Chapter 5 and will discuss the nature of the triggering experience for the parameter.

6.4   Access to UG — in what way?

The general research question investigated in this book relates to whether adult L2 learners have access to UG and in what way. The results suggest that the acquisition of aspect and the related constructions in ESL acquisition by Slavic learners develops in a similar way to child first language acquisition, with the usual differences. Snyder (1995a, b) and Snyder and Stromswold (1997) have argued that all the complex-predicate constructions are significantly correlated in age of first appearance to warrant the conclusion that they appear together, thereby demonstrating acquisition of a whole parameter in English. Snyder (1995a) connects this parameter to the acquisition of the null telic morpheme. The present study has indicated that both the null telic morpheme and the related Complex Predicate constructions are successfully acquired by Bulgarian L2 learners of English. This addresses the first part of the general research question, or *whether adult learners have access to UG*. A number of researchers in the field have reached a consensus that *some* access to UG in adulthood is available (Bley-Vroman 1990; Clahsen and Muysken 1989; du Plessis et al. 1987; Gregg 1988, 1989; McLaughlin 1987; Schwartz 1987; White 1989b, 1992a, b, c).

The second part of the question, however, namely *in what way learners have access to UG*, is subject to disagreement among linguists working in the field, and that is why it is the main focus of this discussion and the main contribution of this book.

In Chapter 1, I outlined three relevant approaches to the access-to-UG hypothesis. First, the No Parameter Resetting Hypothesis (Bley-Vroman 1989, 1990; Tsimpli and Roussou 1991; Clahsen and Muysken 1989; Liceras *et al.* 1995; Clahsen and Muysken 1996) argues that access to UG in adulthood is available only through the native language of the learner. This implies that

---

principles of UG instantiated in the L1 can be used in the acquisition process, but parameters cannot be reset, since parameter resetting involves access to new parameter values, unused in the L1.

Secondly, the Direct Access Hypothesis (Epstein *et al.* 1996) proposes that access to UG in adulthood is unlimited. However, since this theory rejects transfer of parameter values from the L1, it argues for direct parameter setting in SLA.

Thirdly, the Full Transfer/Full Access Hypothesis (Schwartz and Sprouse 1994, 1996) argues for the whole L1 grammar as the initial state of L2 acquisition, with subsequent full access to unused parameter values in UG.

Which one of these three approaches is supported by the findings in these experimental studies? Both experiments reported here clearly demonstrated availability of parameter resetting in adulthood, arguing against the No Parameter Resetting Hypothesis. Both studies also showed that low proficiency learners entertain the L1 value of the parameter, *contra* the Direct Access Hypothesis. Note that the experiments were designed with those research questions in mind, and they test the predictions made by the three different approaches. The findings support the Full Transfer/Full Access Hypothesis, demonstrating both L1 parameter values in the initial stages of acquisition as well as successful resetting in advanced subjects.

6.5   The trigger for the telicity marking parameter

According to Lightfoot (1991), setting a parameter requires a "trigger consist[ing] of a haphazard set of utterances made in an appropriate context — utterances of the type that any child hears frequently. In other words, the trigger consists of *robust data* (emphasis mine) and includes no negative data." (1991:10). It may be assumed that the same kinds of triggers should operate for setting parameters in L1 and resetting them in L2 language acquisition.[10] With this definition in mind, I will briefly discuss the possible nature of the triggering experience for the telicity parameter as it relates to Slavic learners of English.

What is crucial for setting and resetting this particular parameter is observation of the extralinguistic situation. Extending Grimshaw's (1994) schematization of the problem of learning verb meanings, we can represent the learning experience as follows:

---

10.   Although there are proposals that the trigger would differ for FLA and SLA, e.g., Zobl and Liceras (1994) and Vainikka and Young-Scholten (1994).

Situation
Sentence ⟩ Observer ────────→ Aspectual interpretation of sentence
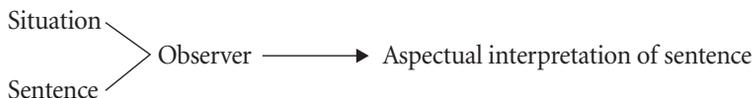
It is essential for the learner to interpret a scene or situation and then to match it with the sentence she hears. This necessity to match sentence and situation is particularly important for the telicity parameter because sentences signalling telic aspect in an atelic situation, for example, are not ungrammatical, but simply inappropriate. If we assume that L2 learners are sensitive to encoding telicity in language, then they ought to pay attention to and match situations and sentences until they notice and acquire the target properties of English. One candidate trigger (suggested by William Snyder) would be a sentence like *John baked that cake in thirty minutes*, with a verb in the simple past, matched to an event which is explicitly complete.

Another consideration in choosing telicity marking as a trigger is that all English sentences exhibit one or another telicity value. There are no aspectless sentences. Thus, the learner of ESL will be flooded with linguistic evidence for the resetting of the parameter, and the relevant triggering experience can be argued to be sufficiently robust and frequent, according to Lightfoot's criteria.

Let us also consider the possibility that the argument structure of Verb–Particles, Secondary Resultative Predicates, and Double Objects in English is the linguistic trigger necessary for acquiring aspect.[11] These three constructions should be salient enough, since they are unavailable in Slavic. Such a position is not incoherent, but still it seems untenable at this time. Particles and secondary predicates only optionally strengthen the null telic morpheme, and they are certainly less frequent in English than sentences with a dynamic verb and object or no object, the only condition for encoding (a)telicity.

Secondly, as the study showed, 25 out of a 122 subjects were found to have acquired aspect but not the related construction. It was hypothesized that this situation may be due to the more complex relationship between the null telic

---

11.   Logically, there is a third possibility, namely, that several potential triggers exist in the input. If an aspect-related construction serves as the trigger, then the learner becomes sensitive to the role of the direct object in English situation aspect at about the same time that she grasps the UG basis for the aspect-related constructions. If the trigger is more specific to the aspectual role of the direct object, then the English system of situation aspect is acquired earlier than the aspect-related constructions (as seems to have been the case for a majority of the Bulgarian-to-English subjects in this study. This was suggested to me by William Snyder, for which I am grateful.

morpheme, the property of productive N–N compounding, and complex predicates. If the null telic morpheme is a necessary but not sufficient condition for the appearance of Particles, Resultatives, and Double Objects, then it is unlikely that the argument structure of the related constructions is the trigger for the null telic morpheme.

A third consideration is based on anecdotal evidence and the author's ten-year experience as an EFL teacher. Verb–Particles and Secondary Predicates are not prominent at all in the teaching of English as a foreign language in Bulgaria, where the experiment was performed. Since most of the subjects had not travelled outside the country at the time, and had limited contact with English NSs, it can reasonably be supposed that they were exposed to fewer instances of the constructions under investigation than if they had learned English as a second language in an English-speaking country. Thus, since it is established that some of these learners have acquired the above constructions, they must have done so on the basis of very limited primary linguistic input. At the same time, if we accept that the simple English sentence together with observation of the situation is the trigger for the telicity marking parameter, the success of the Bulgarian learners is not so surprising.

6.6   Discussion of experimental tasks and materials

The experiment described in this book uses two innovative tests (the aspect test and the stories test), so, a few methodological considerations merit some discussion. Our main concern in testing subjects' aspectual interpretation is to present them with a telic or atelic situation. This can be done in many ways: with dolls enacting scenes, with video films, with pictures, and with text. I chose describing the situation with text, because the first two methods are more appropriate when studying children. Static pictures are now widely disfavoured in L1 studies, because they are poor at conveying temporal and aspectual information to children. Presenting pictures to adults is an easy way of describing a situation, but the results are heavily dependent on the pictures' quality and the clarity of what they represent. A production task with pictures or a video is certainly a very good way to test aspect and will be used in future research.

Of the two tasks that were devised for the experiment, the story task relied on describing a telic or an atelic situation explicitly and then asking subjects to choose, out of two sentences, the appropriate sentence that best refers to the story. It proved very difficult, indeed impossible, to describe a situation without

using direct objects. Once a type of direct object was used (bare plural or mass noun in the atelic case, a noun with a definite or indefinite article in the telic case), it was very easy for the subjects to notice the type of object used and to choose accordingly. Indeed, results showed that almost all subjects were 100% accurate on this task. A few subjects in the Low Intermediate group were inaccurate on telic but not on atelic stories. Overall, it can be concluded that this task is not appropriate for testing acquisition of telicity unless substantially revised.

The aspect task, on the other hand, proved quite appropriate for its purpose. It combined two simple clauses in a complex sentence, one of them establishing context without mentioning the object explicitly, and the other serving as the test clause. In judging the felicity of combination of the two clauses, subjects are not tapping metalinguistic knowledge but their actual aspectual interpretations. This task can be used successfully in many languages, as long as the VPs are chosen carefully to represent Incremental Themes (themes that are totally affected, e.g., consumed or brought into being, by the verbal action).

6.7   Summary of findings and directions for future research

The research described in this book is based on the proposal that the four phrase structure templates representing the four event types are language universals, projecting from the verb's lexical semantics and making reference to the properties of the object. Essentially similar verbal meanings across languages of the world will project similar structure. The parameterized distinctions between languages involve the structural positions of the functional category where situation aspect is calculated. It was argued that in English situation aspect is calculated in AspP, crucially depending on the object's cardinality. A specified cardinality object licences a telic interpretation, or a null telic morpheme (Snyder 1995a). In Slavic, on the other hand, the telic morpheme is not phonetically null but a preverb on the verbal form. It is situated in the PerfP aspectual head, one category above its position in English and thus c-commanding the object. This analysis was supported with evidence from VP-internal relative scope in English and Bulgarian, the interpretation of perfective and imperfective VPs under the scope of negation in Polish (de Swart and Verkuyl 1999), verbal markers of nominal boundedness in Russian (Filip 1993), and absence of aspectual ambiguity in Polish (Piñon 1993).

One important direction for future research is testing the ingredients of this analysis in other languages. For example, this chapter tentatively proposed another distribution of the null telic morpheme and the overt telic morpheme *se*, existing simultaneously in Spanish. The overt telic morpheme *se* cannot co-exist with an object of unspecified cardinality in the same sentence. But when *se* is not present, the object still brings forward a telic or atelic interpretation, just like in English. If Romance and other languages are subsumed under this analysis, the telicity marking parameter may turn out eventually to be a multi-valued parameter with more than one property involved. Since aspect is a language universal and every sentence without exception must calculate a value of the VP aspectual feature, investigating the aspectual properties and template configurations of different languages will contribute to the theory of syntax and the syntax–semantics interface.

Further research along these lines will also have to tease apart the three properties proposed separately by Snyder (1995a, b): the null telic morpheme, productive N–N compounding and Complex Predicates. In this book, N–N compounding was not investigated. Romance languages seem to differ in this respect, with Italian having a Particle and Resultative construction, and Spanish and French not having Complex Predicate constructions at all (Di Sciullo 1996). Future research may reveal more variation. If Snyder's proposals and my interpretation of the relations between the three properties are on the right track, then they make testable predictions for SLA. Subjects who have acquired the null telic morpheme and the related cluster must also have acquired the productive N–N compounding, the second necessary, but insufficient in itself, condition for the appearance of the cluster of Complex Predicates.

Another interesting possibility is investigating and comparing English learners of Spanish with English learners of Slavic. English learners will have to recognize the overt character of the Spanish telic *se* and the Slavic telic preverbs. Having their overtness in common, Slavic and Spanish telic morphemes differ in structural position. The Spanish telic morpheme is situated in the same functional projection as in English: AspP. Slavic aspectual morphemes are encoded one category above that position. The prediction will be that Spanish aspectual facts will be acquired more easily and accurately than Slavic facts by English native speakers.

Finally, the research reported in this book has implications and possible extensions to SLA classroom research. At least for Slavic learners of English, it may be interesting to investigate whether explicit teaching of the importance of the object's cardinality combined with explicit instruction in productive N–N

compounding will bring about the simultaneous appearance of the complex predicate constructions. Experimental groups may include subjects instructed in aspect only, subjects instructed in N–N compounding, and a group with combined instruction. Such research will throw additional light on the issue of positive evidence and pre-emption of L1 values in SLA.

6.8   Conclusion

The goal of this book was to present a detailed study of the SLA of situation aspect by Slavic speaking learners of English. The subtle differences in aspectual interpretation between English and Slavic sentences with bare plural and mass objects and the way aspect is marked in the two (groups of) languages were attributed to a parametric distinction between them. Some other possible values of this parameter of telicity marking and the nature of the triggering experience were discussed in Chapter 6.

   This book has argued for adult learners' access to UG using a new area of investigation: the parameter of telicity. The findings of the experimental studies constitute support for the Parameter Resetting in Adult L2 Acquisition Hypothesis and for the idea that learners employ the L1 value of a parameter as their initial analysis of the input. Thus, theoretical approaches like Principles and Parameters (Chomsky 1981, 1986) as an explanation of variation between languages and, within it, Full Transfer/Full Access (Schwartz and Sprouse 1994, 1996) as an explanation of L2 acquisition development, find additional support.

   The theoretical and methodological issues brought up in the book and their answers are an attempt at gaining a better understanding of the mental representation of language-specific syntactic knowledge in general and aspect, in particular. This is an area of investigation on the interface between syntax/morphology and semantics, and linguistic theory has a long way to go before formalizing it adequately. Acquisition research in this field within the UG framework is just starting, but the first steps suggest that it will be an exciting journey.

Appendix

Appendix A
Materials: The Cloze test

Please fill in the blanks in the following passage. Each blank must have one and only one word.

Joe came home from work on Friday. It was payday, but he wasn't _____ excited about it. He knew that _____ he sat down and paid his _____ and set aside money for groceries, _____ for the car and a small _____ in his savings account, there wasn't _____ much left over for a good _____.

    He thought about going out for _____ at his favourite restaurant, but he _____ wasn't in the mood. He wandered _____ his apartment and ate a sandwich. _____ a while, he couldn't stop himself _____ worrying about the money situation. Finally, _____ got into his car and started _____. He didn't have a destination in _____, but he knew that he wanted _____ be far away from the city _____ he lived.

    He drove onto a quiet country _____. The country sights made him feel _____. His mind wandered as he drove _____ small farms and he began to _____ living on his own piece of _____ and becoming self-sufficient. It had always _____ a dream of his, but he _____ never done anything to make it _____ reality. Even as he was thinking, _____ logical side was scoffing at his _____ imaginings. He debated the advantages and _____ of living in the country and _____ his own food. He imagined his _____ equipped with a solar energy panel _____ the roof to heat the house _____ winter and power a water heater. _____ envisioned fields of vegetables for canning _____ preserving to last through the winter. _____ the crops had a good yield, _____ he could sell the surplus and _____ some farming equipment with the extra _____.

    Suddenly, Joe stopped thinking and laughed _____ loud, "I'm really going to go _____ with this?"

Appendix B
Materials: The Aspect task

On the following pages is a list of sentences. Each sentence is actually a combination of two sentences connected with the help of the words 'and' or 'but'. All of these sentences are perfectly grammatical in English. Still, some of the combinations sound odd, or contradictory, as if these sentences do not go well together. I want you to concentrate on these combinations of sentences and indicate which of them do not make a perfect whole. Please rate these

combinations based on your feelings, and remember there are no right or wrong answers. Use the following scale, on which −3 means a very unnatural combination, 0 means not sure and +3 means a perfectly natural combination.

Here is an example:

I went to school by bus today and I bicycled all the way there.

(−3) −2   −1   0   +1   +2   +3

Mary met her friends after school and they went to the cinema.

−3   −2   −1   0   +1   +2 (+3)

Read each combination carefully before you answer. Think of them as sentences in spoken English, and judge them accordingly. Mark only one answer for each combination and do not go back and change your answers. Finally, please translate the underlined verb forms into Bulgarian.

Combinations of sentences

Allison <u>invited</u> James to a Chinese restaurant but James wasn't invited.
  −3   −2   −1   0   +1   +2   +3
Ann <u>sewed</u> clothes and from what I know, she still does.
  −3   −2   −1   0   +1   +2   +3
Antonia <u>worked</u> in a bakery and <u>made</u> a cake.
  −3   −2   −1   0   +1   +2   +3
Emily took very good care of her children and she <u>packed</u> them an elaborate lunch for school.
  −3   −2   −1   0   +1   +2   +3
Eva <u>shared</u> a room with her younger sister and they shared secrets as well.
  −3   −2   −1   0   +1   +2   +3
Ann-Marie was a dressmaker and she <u>sewed</u> children's clothes.
  −3   −2   −1   0   +1   +2   +3
George <u>read</u> all sorts of scientific books and he is still very interested in science.
  −3   −2   −1   0   +1   +2   +3
Jim was a good mechanic and he also <u>fixed</u> bikes.
  −3   −2   −1   0   +1   +2   +3
John <u>ate</u> the cake and he will eat the rest of it later.
  −3   −2   −1   0   +1   +2   +3
Julie was a dressmaker and she <u>sewed</u> a suit.
  −3   −2   −1   0   +1   +2   +3
Samantha went to look for a job in Southern California and she <u>found</u> a good one.
  −3   −2   −1   0   +1   +2   +3
Lisa's stepfather always <u>amused</u> her but she wasn't amused.
  −3   −2   −1   0   +1   +2   +3
Melissa <u>came</u> late to the party and Melissa did not show up at all.
  −3   −2   −1   0   +1   +2   +3

Mike <u>drew</u> a circle on a sheet of paper but the circle is only half-finished.
    −3 −2 −1 0   +1 +2 +3
Mr. Brown was a salesman and he <u>sold</u> used cars.
    −3 −2 −1 0   +1 +2 +3
My friends <u>went out</u> for a walk but my friends stayed at home.
    −3 −2 −1 0   +1 +2 +3
One weekend Helen's parents were away and she <u>invited</u> her friend over.
    −3 −2 −1 0   +1 +2 +3
Patricia was a shop-assistant and she <u>wrapped</u> purchases carefully.
    −3 −2 −1 0   +1 +2 +3
Mr. Smith <u>sold</u> cars and now he sells motorcycles.
    −3 −2 −1 0   +1 +2 +3
Penny took very good care of her children and she <u>packed</u> them elaborate lunches for school.
    −3 −2 −1 0   +1 +2 +3
Robert <u>drew</u> pictures of horses and now he has turned to drawing dogs.
    −3 −2 −1 0   +1 +2 +3
Roger <u>wrote</u> travel books about India and now he writes film scripts about India.
    −3 −2 −1 0   +1 +2 +3
Sally <u>had</u> a problem at the office and she <u>decided</u> to quit.
    −3 −2 −1 0   +1 +2 +3
Sharon worked in a bakery and <u>made</u> cakes.
    −3 −2 −1 0   +1 +2 +3
Mr. Jones was a salesman and he <u>sold</u> a used car.
    −3 −2 −1 0   +1 +2 +3
Samantha <u>returned</u> to pick up her purse but she didn't find it.
    −3 −2 −1 0   +1 +2 +3
Sarah and Tim were only acquaintances but now they have <u>become</u> a couple.
    −3 −2 −1 0   +1 +2 +3
Amanda was a shop-assistant and she <u>wrapped</u> a purchase carefully.
    −3 −2 −1 0   +1 +2 +3
Sue was out driving with her boyfriend and they <u>stopped</u> to fill up with gas.
    −3 −2 −1 0   +1 +2 +3
Susan <u>made</u> cakes for Christmas but now she only makes mince pies.
    −3 −2 −1 0   +1 +2 +3
Shirley <u>wrote</u> her project report and she will finish it tomorrow.
    −3 −2 −1 0   +1 +2 +3
The bank <u>loaned</u> Fred money for the car and they refused him a loan.
    −3 −2 −1 0   +1 +2 +3
The conversation <u>died</u> completely but the people in the room are still talking.
    −3 −2 −1 0   +1 +2 +3
The guy <u>talked</u> non-stop about himself and he was very modest.
    −3 −2 −1 0   +1 +2 +3
The Smiths <u>packed</u> their luggage but they still have a lot of luggage to pack.
    −3 −2 −1 0   +1 +2 +3

Tim <u>read</u> a book last night and he will read it to the end today.
    −3 −2 −1 0   +1 +2 +3

Tom <u>coloured</u> his picture but he will colour it completely tomorrow.
    −3 −2 −1 0   +1 +2 +3

Tom <u>went</u> out into the rain and it was completely dry outside.
    −3 −2 −1 0   +1 +2 +3

Umberto was a good mechanic and he <u>fixed</u> a bike.
    −3 −2 −1 0   +1 +2 +3

We had an arrangement to see a movie that night but then we <u>changed</u> our minds.
    −3 −2 −1 0   +1 +2 +3

Appendix C
Materials: The Grammaticality Judgement task

Speakers of a language seem to develop a 'feel' for what is a possible sentence, even when they have never been taught any particular rules. For example, in English, you might feel that the following sentences are possible

1. Mary is likely to win the race.
2. It seems that John is late.

whereas the next two do not seem possible.

3. Mary is probable to win the race.
4. John seems that he is late.

In this test you will read a series of sentences. We want you to concentrate on how you feel about these sentences. Native speakers of English often have different intuitions about such sentences, and there are no right or wrong answers. We want you to tell us for each one whether you think it is possible or impossible in English. Read each sentence carefully before you answer. If you think a sentence is good, circle G (grammatical) next to it. If you consider it a bad English sentence, circle U (ungrammatical). For each sentence, circle only ONE of the answers (either G or U) to show us what you think of this sentence. Do not go back and change your answers.

Virginia loves her son and two daughters happy.	G	U
This German cheese stinks me absolutely insane.	G	U
The strong sun baked the fields completely dry.	G	U
The phone rang the man in the silent house.	G	U
Margaret bought a Canadian picture book Mary.	G	U
Kramer and his girlfriend served dry martini the guests.	G	U
Kenny scrubbed all the apartment floors clean.	G	U
The office sent the whole new package Melinda.	G	U
The new red-haired girl seems up a good waitress.	G	U
The famous architect built them a beautiful house.	G	U
The dealer on the corner sold the newest model Jerry.	G	U

The boy dressed like Superman hit three people upset.	G	U
Sue sent her mother in Florida a birthday present.	G	U
Their colleague Jonathan remained a loser upset.	G	U
The wild party on the top floor shouted hoarse.	G	U
Steven nailed all the top floor windows shut.	G	U
This afternoon our guests drank the teapot dry.	G	U
Simon gave Jenny a red scooter and a red hat.	G	U
Sharon taught French the children in the neighbourhood.	G	U
Sean asked Molly some really tough questions.	G	U
The tall woman dressed in white drank herself.	G	U
Sam offered every one of the guests a cold drink.	G	U
Rebecca combed little Johnny's hair quite smooth.	G	U
Peter's classmates and school friends sang hoarse.	G	U
The tired tourists from Southern Italy walked sore.	G	U
Peter's brother smoked himself into the grave.	G	U
The neighbours talked us out of our crazy schemes.	G	U
Newman hates the janitor of his building down.	G	U
The native men and women waited out the crisis.	G	U
Peter took his new socks and shoes off.	G	U
The management closed the truck plant down.	G	U
Passers-by showed me the post-office on the corner.	G	U
My friend Janet thought through the problem.	G	U
The tourists from France walked their feet sore.	G	U
My new boyfriend resembles his mother down.	G	U
Ross needs a charming new girlfriend up.	G	U
Our friend from Quebec likes raspberries ridiculous.	G	U
Newman baked a lovely blueberry cheesecake his friends.	G	U
Natasha and her sister sneezed their handkerchiefs.	G	U
My sister Monica feels off like a queen.	G	U
Mort and his girlfriend drank themselves senseless.	G	U
Max pressed the crumpled newspaper pages flat.	G	U
Martha dried her socks and white blouse out.	G	U
The neighbours' small mean dog barked Mr.Smith.	G	U
The joggers in Central Park ran their Nikes.	G	U
Jeremy knew the answer of the problem off.	G	U
The hikers used up their supplies on the first day.	G	U
The happy children and parents laughed themselves.	G	U
My kids and their friends ate themselves sick.	G	U
John passed his mother the garlic salami dish.	G	U
Jillian laughed Timothy out of his patience.	G	U
His mother filled the car up at the gas station.	G	U
His dog Fido always chews on his shoes to tatters.	G	U
My friend Pamela feared the dinosaurs senseless.	G	U
Patrick knew the answers to all problems ready.	G	U
Jonathan and Mary-Ann sang themselves hoarse.	G	U

My father cut the big juicy watermelon open.	G	U
The veterans in the sanitarium hated the war angry.	G	U
George lent his last four hundred dollars his fiancee.	G	U
Every evening Elaine read a bedtime story her brothers.	G	U
Ethan knocked the vicious attacker unconscious.	G	U
Elizabeth told her brother Bob a rather scary story.	G	U
Donna and Sharon screamed their throats raw.	G	U
Diana drank down the juice from the red jug.	G	U
Christopher rubbed the tiredness out of his eyes.	G	U
Chloe threw her weeping sister another Kleenex.	G	U
George loves out eggplant and basil pizza.	G	U
Charlie wrote up the final version of the report.	G	U
All my friends like up expensive new shoes.	G	U
The couple from France danced their days away.	G	U
The clock on the wall ticked the baby awake.	G	U
The careful driver slowed the skidding car down.	G	U
Chandler remained down a bachelor in his heart.	G	U
Carmella faxed all the necessary documents Millie.	G	U
Bonnie brought a towel her mother in the pool.	G	U
Ben sponged all the walls of the bedrooms clean.	G	U
Becky promised Bill all the money in the world.	G	U
All her friends talked out of her crazy plans.	G	U
A party on the roof sounds a good idea out.	G	U
My roommate Chandler resembles his dog strange.	G	U

Appendix D
Materials: The Stories task

Please read the following stories carefully. Below each story you will see two sentences. Indicate which of the two sentences better describes the story. For example:

Andrew went into a butcher's shop. He wanted to buy some chicken for his dinner. In the shop he saw some very nice sausages. In the end, he bought sausages instead of chicken.

☐   Andrew bought chicken for his dinner.
☑   Andrew bought sausages for his dinner.

Indicate your answer by checking the box next to the sentence you have chosen. Please concentrate on the meaning of what you are reading and which sentence of the two is a reasonable statement, given the story.

Samantha worked in a bakery. The bakery sold bread as well as cakes and cookies. Samantha worked from early morning until late afternoon.

☐   Samantha made a cake.
☐   Samantha made cakes.

Joe was driving along a country road. He imagined living on a farm and growing his own food. Joe wanted to become a farmer but he had no idea how farming was done.

☐ Joe hated living in the country.
☐ Joe wanted to live in the country.

Mary was going to a birthday party. She had nothing to wear. She decided to make a new dress for herself. She worked very hard but in the end she looked very pretty in it.

☐ Mary sewed clothes.
☐ Mary sewed a piece of clothing.

Annie had been eating chocolate. She was surprised when everyone laughed at her. Her mother told Annie to look in the mirror to see the chocolate on her face.

☐ Annie's face had chocolate all over.
☐ Annie's mother had chocolate all over.

Mrs. Baker had a small antique shop on the Main street. She used to buy chairs, tables and pictures from the villages in the area. Then she sold them in her shop.

☐ Mrs. Baker sold furniture.
☐ Mrs. Baker sold her furniture.

Yesterday Samantha got up early. It was her son's birthday. She usually liked to surprise him for his birthday. She decided to surprise him with a birthday cake.

☐ Samantha made a cake.
☐ Samantha made cakes.

My brother is a tireless reader. He reads all day long. When he was 16 years old, he read all the French poetry books in the local library.

☐ My brother read French poetry.
☐ My brother read a book of French poetry.

Mr. Brown was completely broke. He had no money in the bank. He arranged a garage sale and sold all his furniture. In this way he was able to pay the rent.

☐ Mr. Brown sold furniture.
☐ Mr. Brown sold the furniture.

A friend of Bill's was robbed. Fortunately Bill recognized the thief. He went to a policeman. Bill was able to describe the thief.

☐ Bill saw a policeman.
☐ Bill saw the thief.

Robert was a very good mechanic. He was especially good at fixing cars. One year, he repaired every broken car and motorcycle in the neighbourhood for free.

☐ Robert repaired cars.
☐ Robert repaired a car.

Helen Barns worked for a law firm. Last week her boyfriend invited her to a party. She was sorry that she could not go. She had a big pile of legal documents to read. It took her the whole evening to read them all.

☐ Helen read a pile of documents.
☐ Helen read documents.

Susan used to have a problem. Every time she met someone she got nervous and forgot that person's name. Then she hoped that this person would somehow mention her or his name.

☐ Susan forgot her own name.
☐ Susan forgot the other person's name.

Anne was an accomplished organist. She studied at a famous conservatory. She gave concerts in churches and concert halls in front of big audiences. The music she played best was baroque music — fugues and toccatas.

☐ Anne played a baroque fugue.
☐ Anne played baroque music.

Julie was upset yesterday. When she came home from work she found that her roommate had broken her favourite chair. Luckily, she was able to repair it herself.

☐ Julie repaired a piece of furniture.
☐ Julie repaired furniture.

Bill met a friend he had not seen for a long time. The friend wanted to know everything about Bill. He asked Bill where he had been, what he was doing, how he felt.

☐ The friend asked Bill a lot of questions.
☐ Bill asked his friend a lot of questions.

Johnny and his father went for a walk. It started to rain. Johnny had a cold, so his father gave him a jacket and told him to put it over his head.

☐ Johnny covered his father with a jacket.
☐ Johnny covered himself with a jacket.

Tina came from a poor family. Her mother taught her to make everything with her own hands. She cooked, she cleaned, she even sewed her own dresses, blouses and skirts.

☐ Tina sewed clothes.
☐ Tina sewed a dress.

Sharon went to the daycare to pick her small son. The children were having an improvised party. Some parents sang and danced. Sharon played her favourite tune.

☐ Sharon played music.
☐ Sharon played a piece of music.

Appendix E
Sentences in Aspect task and mean responses of native speakers
(max. +3, min. −3)

Sentences by condition	N.Am.E. Contr.	Br.E. Contr.
Characteristic + Atelic Condition	**2.09**	**2.42**
Jim was a good mechanic and he fixed cars.	1.25	1.81
Sharon worked in a bakery and made cakes.	2.75	2.68
Penny took very good care of her children and she packed them elaborate lunches for school.	2.56	2
Mr. Brown was a salesman and he sold used cars.	2.25	2.81
Anne-Marie was a dressmaker and she sewed clothes.	1.625	2.62
Patricia was a shop-assistant and she wrapped purchases carefully.	2.125	2.56
Characteristic + Telic	**0.19**	**0.81**
Umberto was a good mechanic and he fixed a car.	0.68	0.81
Antonia worked in a bakery and made a cake.	0.625	1
Emily took very good care of her children and she packed them an elaborate lunch for school.	0.31	1.06
Mr. Jones was a salesman and he sold a used car.	0.43	1.56
Julie was a dressmaker and she sewed a suit.	−0.5	0.25
Amanda was a shop-assistant and she wrapped a purchase carefully.	−0.375	0.18
Atelic + Atelic	**2.02**	**1.81**
Robert drew pictures of horses and now he has turned to drawing dogs.	2.43	1.93
Susan made cakes for Christmas but now she only makes mince pies.	1.5	1.81
George read all sorts of scientific books and he is still very interested in science.	1.44	1.56
Mr. Smith sold cars and now he sells motorcycles.	2.56	2.5
Ann sewed clothes and from what I know, she still does.	1.68	2.625
Roger wrote travel books about India and now he writes film scripts about India.	2.5	1.81
Telic + Unfinished	**−2.05**	**−2.26**
Tom coloured his picture but he will colour it completely tomorrow.	−1.81	−2.125
Mike drew a circle on a sheet of paper but the circle is only half finished.	−2.18	−2.375

John ate the cake and he will eat the rest later.	−1.75	−2.25
The Smiths packed their luggage but they still have a lot of luggage to pack.	−2.06	−2.43
Tim read a book last night and he will read it to the end today.	−2.06	−1.875
Shirley wrote her project report and she will finish it tomorrow.	−2.43	−2.5

Appendix F

Table 1 Statistics of difference on conditions C+T versus C+A

Groups of subjects	df	F	p
Am.English controls	1,30	38.08	$p < .0001$
Br.English controls	1,30	42.95	$p < .0001$
Advanced	1,86	47.10	$p < .0001$
High intermediate	1,92	20.70	$p < .0001$
Low intermediate	1,66	4.56	$p = .03$

Table 2 Statistics of difference on conditions T+U versus A+A

Groups of subjects	df	F	p
Am.English controls	1,30	446.6	$p < .0001$
Br.English controls	1,30	359.5	$p < .0001$
Advanced	1,86	200.45	$p < .0001$
High intermediate	1,92	105.19	$p < .0001$
Low intermediate	1,66	20.31	$p < .0001$

Table 3 Mean judgement on Aspect Task

Condition	AmECont	BrECont	Adv.	HighInt	LowInt	F	df
C+T	0.19^a	0.81	0.41^b	0.48^c	1.48^{abc}	5.8**	4,152
	(1.1)	(0.79)	(1.13)	(1.45)	(0.81)		
C+A	2.09	2.41	2.00	1.75	1.94	1.36 ns	4,152
	(0.54)	(0.57)	(1.03)	(1.25)	(0.96)		
T+U	-2.05^a	-2.25^b	-2.11^c	-1.88^d	-0.68^{abcd}	8.07**	4,152
	(0.63)	(0.70)	(0.99)	(1.15)	(1.94)		
A+A	1.95^a	2.03^b	1.30	0.84^{ab}	1.07	4.81*	4,152
	(0.41)	(0.57)	(1.25)	(1.41)	(1.17)		

* $p < .001$, ** $p < .0001$
Means that differ according to Scheffé are co-superscripted. SDs are given in brackets.

Table 4 Mean performance correct on Translation Task

Condition	Advanced	HighInt	LowInt	*F*	*df*
C+T	0.90[a]	0.90[b]	0.37[ab]	56.9**	2,101
	(0.15)		(0.32)		
C+A	0.89	0.76	0.77	3.741*	2,101
	(0.17)	(0.26)	(0.22)		
T+U	0.88[a]	0.79[b]	0.51[ab]	18.95**	2,101
	(0.13)	(0.25)	(0.33)		
A+A	0.80	0.70	0.64	3.135*	2,101
	(0.25)	(0.28)	(0.25)		

* $p < .05$, ** $p < .0001$
Means that differ according to Scheffé are co-superscripted. SDs are given in brackets.

Table 5 Mean differences of the control groups on GJ Task

	Am.E. Controls	Br.E. Controls
Condition A–Gr	93 (9)[ab]	83 (17)[ab]
Condition A–UGr	99 (3)[bc]	99 (3)
Condition C–Gr	98 (4)	90 (14)[a]
Condition C–UGr	97 (6)[c]	99 (3)
Condition D–Gr	99 (3)[a]	94 (8)[bc]
Condition D–UGr	97 (10)	99 (3) [c]

Means that differ according to Scheffé are co-superscripted (differences are along vertical lines).

Table 6 Mean differences of the subject groups on GJ Task

	Advanced	High intermediate	Low intermediate
Condition A–Gr	71 (21)[ab]	66 (19)[a]	69 (18)[ab]
Condition A–UGr	85 (21)[b]	72 (27)	48 (25)[b]
Condition C–Gr	74 (20)[cd]	60 (26)[bc]	54 (23)[ac]
Condition C–UGr	85 (13)[d]	78 (20)[c]	52 (16)
Condition D–Gr	86 (11)[ac]	84 (18)[ab]	71 (15)[cd]
Condition D–UGr	86 (13)	80 (21)	48 (21)[d]

Means that differ according to Scheffé are co-superscripted (differences are along vertical lines).

Table 7 Mean accuracy on related constructions: Between-group differences

Condition	AmContr	BrContr	Adv.	HighInt	LowInt	F	df
A-Gr	93[abc]	83	71[a]	66[b]	69[c]	7.78*	4,150
	(9)	(17)	(23)	(19)	(18)		
A-UGr	99[abc]	99[def]	85[ad]	72[be]	48[cf]	6.40*	4,150
	(3)	(3)	(21)	(27)	(25)		
C-Gr	98[abc]	90[de]	74[af]	60[bd]	54[cef]	15.28*	4,150
	(4)	(14)	(23)	(26)	(23)		
C-UGr	97[ab]	99[cde]	85[cf]	78[adg]	52[befg]	41,52*	4,150
	(6)	(3)	(12)	(20)	(16)		
D-Gr	99[abc]	94[d]	84[ae]	83.8[bf]	71[cdef]	16.13*	4,150
	(3)	(8)	(13)	(16)	(15)		
D-UGr	97[ab]	99[cd]	88[e]	80[acf]	48[bdef]	40.40*	4,150
	(1)	(3)	(12)	(21)	(20)		

* $p < .0001$
Means that differ according to Scheffé are co-superscripted. Differences are along horizontal lines. SDs are given in brackets.

Table 8 Implicational table of related constructions

Subject #	Group	Particle	Resultative	DoubleObj
58	Low Int	–	–	–
81	Low Int	–	–	–
62	Low Int	–	–	–
75	Low Int	–	–	–
74	Low Int	–	–	–
82	Low Int	–	–	–
77	Low Int	–	–	–
15	Low Int	–	–	–
63	Low Int	–	–	–
72	Low Int	–	–	–
79	Low Int	–	–	–
78	Low Int	–	–	–
30	Low Int	–	–	–
69	Low Int	–	–	–
70	Low Int	–	–	–
71	Low Int	–	–	–
64	Low Int	–	–	–
56	Low Int	–	–	–
59	Low Int	–	–	–
66	Low Int	–	–	–
61	Low Int	–	–	–
65	Low Int	–	–	–
109	Low Int	–	–	–
73	High Int	–	–	–

Subject #	Group	Particle	Resultative	DoubleObj
83	High Int	−	−	−
108	High Int	−	−	−
20	High Int	−	−	−
84	High Int	−	−	−
67	Low Int	+	−	−
17	Low Int	+	−	−
104	Low Int	+	−	−
102	High Int	+	−	−
97	High Int	+	−	−
127	High Int	+	−	−
126	Advanced	+	−	−
110	Low Int	−	+	−
85	Low Int	−	+	−
119	High Int	−	+	−
12	Advanced	−	+	−
60	Low Int	−	−	+
76	Low Int	−	−	+
55	Low Int	−	−	+
107	Low Int	−	−	+
95	High Int	−	−	+
98	High Int	−	−	+
6	High Int	−	−	+
51	High Int	−	−	+
80	High Int	−	−	+
129	High Int	−	−	+
8	High Int	−	−	+
99	High Int	−	−	+
13	High Int	−	−	+
24	Advanced	−	−	+
57	Advanced	−	−	+
106	Advanced	−	−	+
27	High Int	+	+	−
10	High Int	+	+	−
91	High Int	+	+	−
49	High Int	+	+	−
103	High Int	−	+	+
28	High Int	−	+	+
112	High Int	−	+	+
92	High Int	−	+	+
9	High Int	−	+	+
36	High Int	−	+	+
88	High Int	−	+	+
118	High Int	−	+	+
7	High Int	−	+	+
33	High Int	−	+	+
4	Advanced	−	+	+
11	Advanced	−	+	+
120	Advanced	−	+	+

Subject #	Group	Particle	Resultative	DoubleObj
94	Advanced	−	+	+
121	Advanced	−	+	+
31	Advanced	−	+	+
89	Advanced	−	+	+
35	Advanced	−	+	+
93	Advanced	−	+	+
16	Low Int	+	−	+
111	Low Int	+	−	+
101	High Int	+	−	+
1	High Int	+	−	+
54	High Int	+	−	+
40	High Int	+	−	+
48	High Int	+	−	+
44	Advanced	+	−	+
47	Advanced	+	−	+
25	Advanced	+	−	+
52	Advanced	+	−	+
86	High Int	+	+	+
90	High Int	+	+	+
21	High Int	+	+	+
2	High Int	+	+	+
3	High Int	+	+	+
14	High Int	+	+	+
115	High Int	+	+	+
37	High Int	+	+	+
130	High Int	+	+	+
19	High Int	+	+	+
32	Advanced	+	+	+
100	Advanced	+	+	+
113	Advanced	+	+	+
22	Advanced	+	+	+
29	Advanced	+	+	+
41	Advanced	+	+	+
50	Advanced	+	+	+
114	Advanced	+	+	+
23	Advanced	+	+	+
34	Advanced	+	+	+
43	Advanced	+	+	+
46	Advanced	+	+	+
68	Advanced	+	+	+
42	Advanced	+	+	+
87	Advanced	+	+	+
123	Advanced	+	+	+
96	Advanced	+	+	+
105	Advanced	+	+	+
117	Advanced	+	+	+
122	Advanced	+	+	+
38	Advanced	+	+	+

Subject #	Group	Particle	Resultative	DoubleObj
39	Advanced	+	+	+
45	Advanced	+	+	+

References

Aksu-Koç, A. 1979. Aspect and Modality in the Child's Acquisition of the Turkish Past Tense. Unpublished PhD thesis, University of California at Berkeley.

Aksu-Koç, A. 1988. *The Acquisition of Aspect and Modality: the Case of Past Reference in Turkish*. Cambridge, UK: Cambridge University Press.

Amberber, M. 1993. "The Causative-Inchoative alternation and event structure". Paper presented at the Canadian Linguistic Association Annual Conference, Carleton University, Ottawa.

Amberber, M. 1996. Transitivity Alternations, Event Types and Light Verbs. Unpublished PhD thesis, McGill University.

Andersen, R. 1989. "The acquisition of verb morphology". Los Angeles: University of California. Published in Spanish as La adquisición de la morfología verbal. *Lingüística*, 1, 1989.

Andersen, R. 1991. "Developmental sequences: The emergence of aspect marking in second language acquisition". In *Crosscurrents in Second Language Acquisition and Linguistic Theories*, T. Huebner and C. A. Ferguson (eds), 305–324. Amsterdam: John Benjamins.

Andersen, R. and Shirai, Y. 1994. "Discourse motivations for some cognitive acquisition principles". *Studies in Second Language Acquisition* 16: 133–156.

Andersen, R. and Shirai, Y. 1996. "Primacy of aspect in language acquisition". In *Handbook of Second Language Acquisition*, W. Ritchie and T. Bhatia (eds), 527–570. San Diego: Academic Press.

Anderson, M. 1977. "NP-preposing in noun phrases". In *Proceedings of NELS 8,* M. J. Stein (ed.), 12–21. Amherst, MA: GSLA.

Antinucci, F. and Miller, R. 1976. "How children talk about what happened". *Journal of Child Language* 3: 169–189.

Baker, M. 1988. *Incorporation*. Chicago: Chicago University Press.

Baker, M. 1997. "Thematic roles and syntactic structure". In *Elements of Grammar: Handbook of Generative Syntax*, L. Haegeman (ed.), 73–137. Dordrecht: Kluwer.

Bardovi-Harlig, C. 1992. "The relationship of form and meaning: A cross-sectional study of tense and aspect in the interlanguage of learners of English as a second language". *Applied Psycholinguistics* 13: 253–278.

Bardovi-Harlig, C. and Bergström, A. 1996. "The acquisition of tense and aspect in second language and foreign language learning: Learner narratives in English (SL) and French (FL)". *Canadian Modern Language Review* 52 (2): 308–330.

Bardovi-Harlig, C. and Reynolds, D. W. 1995. "The role of lexical aspect in the acquisition of tense and aspect". *TESOL Quarterly* 29: 107–131.

Beard, R. 1996. "Base rule ordering of heads in nominal compounds". Paper presented at the 1996 Meeting of the LSA, San Diego, CA, January.

Behrens, H. 1993. Temporal Reference in German Child Language: Form and Function of Early Verb Use. PhD dissertation, University of Amsterdam, Amsterdam, the Netherlands.

Bhatt, R. and Hancin-Bhatt, B. 1996. "Phrase structure acquisition and the status of CP in early adult syntax". Paper presented at the Second Language Research Forum, University of Arizona.

Bickerton, D. 1984a. "The language bioprogram hypothesis". *Behavioral and Brain Sciences* 7: 173–188.

Bickerton, D. 1984b. "The language bioprogram hypothesis and second language acquisition". In *Language Universals and Second Language Acquisition*, W.E. Rutherford (ed.), 141–161. Amsterdam: John Benjamins.

Bickerton, D. 1988. "Creole languages and the bioprogram". In *Linguistics: The Cambridge Survey*, vol. 2, F.J. Newmeyer (ed.), 268–284. Cambridge, UK: Cambridge University Press.

Birdsong, D. 1989. *Metalinguistic Performance and Interlinguistic Competence*. New York: Springer Verlag.

Bley-Vroman, R. 1983. "The comparative fallacy in interlanguage studies: The case of systematicity". *Language Learning* 33: 1–17.

Bley-Vroman, R. 1989. "What is the logical problem of foreign language learning?". In *Linguistic Perspectives on Second Language Acquisition*, S. Gass & J. Schachter (eds), 41–68. Cambridge: Cambridge University Press.

Bley-Vroman, R 1990. "The logical problem of foreign language learning". *Linguistic Analysis* 19: 56–104.

Bley-Vroman, R. and Yoshinaga, N. 1991. "Broad and narrow constraints on the English dative alternation: Some fundamental differences between native speakers and foreign language learners". In *University of Hawai'i Working Papers in ESL* 11: 157–199. University of Hawai'i at Manoa.

Bloom, L. and Harner, L. 1989. "On the developmental contour of child language: A reply to Smith and Weist". *Journal of Child Language* 16: 207–216.

Bloom, L., Lifter, K. and Hafitz, J. 1980. "Semantics of verbs and the development of verb inflection in child language". *Language* 56: 386–412.

Bolander, M. 1988. "Is there any order? On word order in Swedish learner language". *Journal of Multilingual and Multicultural Development* 9: 97–113.

Bonneau, J., Bruhn-Garavito, J. and Libert, A. 1994. "Strengthening AgrO". Talk given at the 1994 Annual meeting of the LSA, Boston.

Bonneau, J., Bruhn-Garavito, J. and Libert, A. 1995. "Feature checking and English particles". In *Proceedings of the 1995 Annual Meeting of the Canadian Linguistic Association*, Toronto Working Papers in Linguistics.

Borer, H. 1994. "The projection of arguments". In *Functional projections*, E. Benedicto and J. Runner (eds), 19–47. *UMass Occasional Papers in Linguistics 17*. Amherst, MA: GLSA.

Borer, H. 1998. "Deriving passive without theta roles". In *Morphology and its Relation to Phonology and Syntax*, S. Lapointe, D. Brentari and P. Farrell (eds), 60–99. CSLI Publications.

Borer, H. and Grodzinsky, J. 1986. "Syntactic cliticization and lexical cliticization: the case of Hebrew dative clitics". In *The Syntax of Pronominal Clitics. Syntax and Semantics*, vol. 19, H. Borer (ed.), 175–217. San Diego: Academic Press.

Borer, H. and Wexler, K. 1992. "Biunique relations and the maturation of grammatical principles". *Natural Language and Linguistic Theory* 10: 147–189.

Bowerman, M. 1978. "The acquisition of word meaning: An investigation into some current conflicts". In *Development of Communication*, N. Waterson and C. Snow (eds), 263–287. New York: John Wiley and Sons.

Bowerman, M. 1982. "Evaluating competing linguistic models with language acquisition data". *Quaderni di Semantica* 3: 5–66.

Brecht, R. 1984. "The form and function of aspect in Russian". In *Issues in Slavic Morphosyntax*, Michael Flier and R. Brecht (eds), 9–33. *UCLA Slavic Studies, vol. 10*, Columbus, Ohio: Slavica Publishers.

Brinton, L. 1988. *The Development of English Aspectual Systems.* Cambridge, UK: Cambridge University Press.

Bronckart, J. P. and Sinclair, H. 1973. "Time, tense, and aspect". *Cognition* 2: 107–130.

Brown, C. 1993. "The role of the L1 grammar in the L2 acquisition". In L. White and J. Matthews (eds), *McGill Working Papers in Linguistics, Special Issue on language Acquisition*, 9 (1&2): 180–210.

Brown, C. and Matthews, J. 1993. Acquisition of segmental structure. In *McGill Working Papers in Linguistics, Special Issue on Language Acquisition*, 9 (1&2): 46–76., L. White and J. Matthews (eds).

Brown, R. 1973. *A First Language: the Early Stages.* Cambridge, MA: Harvard University Press.

Carrier, J. and Randall, J. 1992. "The argument structure and syntactic structure of resultatives". *Linguistic Inquiry* 23: 173–234.

Chen, D. 1996. L2 Acquisition of English Psych Predicates by Native Speakers of Chinese and French. Unpublished PhD thesis, McGill University.

Chomsky, N. 1973. "Conditions on transformations". In *A Festschrift for Morris Halle,* Stephen R. Anderson and Paul Kiparsky (eds), 232–86. New York: Holt, Rinehart, and Winston.

Chomsky, N. 1975. *Reflections on Language.* New York: Random House.

Chomsky, N. 1981a. *Lectures on Government and Binding.* Dordrecht: Foris.

Chomsky, N. 1981b. "Principles and parameters in syntactic theory". In *Explanations in Linguistics: The Logical Problem of Language Acquisition*, N. Hornstein and D. Lightfoot (eds), 32–75. London: Longman.

Chomsky, N. 1986a. *Knowledge of Language.* New York: Praeger.

Chomsky, N. 1986b. *Barriers.* Cambridge, MA: MIT Press.

Chomsky, N. 1993. "A minimalist program for linguistic theory". In *The View from Building 20*, K. Hale and J. Keyser (eds), 1–52. Cambridge, MA: MIT Press.

Chomsky, N. 1995. *The Minimalist Program.* Cambridge, MA: MIT Press.

Chomsky, N. 1999. "Derivation by phrase". *MIT Occasional Papers in Linguistics,* Number 18, 1–43, Cambridge, MA: MiTWPL.

Chung, S. and Timberlake, A. 1985. "Tense, aspect, and mood". In *Language Typology and Syntactic Description*, vol. III, T. Schopen (ed.), 202–258. Cambridge: Cambridge University Press.

Clahsen, H. and Hong, U. 1995. "Agreement and null subjects in German L2 development: New evidence from reaction-time experiments". *Second Language Research* 11 (1): 57–87.

Clahsen, H. and Muysken, P. 1986. "The availability of Universal Grammar to adult and child learners: A study of the acquisition of German word order". *Second Language Research* 2: 93–119.

Clahsen, H. and Muysken, P. 1989. "The UG paradox in L2 acquisition". *Second Language Research* 5: 1–29.

Clahsen, H. and Muysken, P. 1996. "How adult second language learning differs from child first language development. Commentary on Epstein et al". *Behavioral and Brain Sciences* 19 (4): 721–723.

Clahsen, H., Hong, U. and Sonnenstuhl-Henning, I. 1996. "Grammatical constraints in syntactic processing: Sentence matching experiments in German". *The Linguistic Review* 12: 5–33.

Clark, A. 1989. *Microcognition: Philosophy, Cognitive Science, and Parallel Distributed Processing*. Cambridge, MA: MIT Press.

Clifton, C. and Frazier, L. 1989. "Comprehending sentences with long-distance dependencies". In *Linguistic Structure in Language Processing*, G. Carlson and M.K. Tanenhaus (eds), 273–317. Dordrecht: Kluwer.

Comrie, B. 1976. *Aspect*. Cambridge, UK: Cambridge University Press.

Cook, V. 1976. "A note on indirect objects". *Journal of Child Language* 3: 435–437.

Cresswell, M. 1985. *Modification*. Dordrecht: Kluwer.

Cziko, G.A. and Koda, K. 1987. "A Japanese child's use of stative and punctual verbs". *Journal of Child Language* 14: 99–111.

Dahl, O. 1985. *Tense and Aspect Systems*. Oxford: Blackwell.

Davidson, D. 1967. "The logical form of action sentences". *The Logic of Decision and Action*, In N. Rescher (ed.), 1980, 81–120. Pittsburgh. Also in *Essays on Actions and Events*, 3rd edition, 105–122. Oxford: Clarendon Press.

Demuth, K. 1996. "Collecting spontaneous production data". In *Methods for Assessing Children's Syntax*, D. McDaniel, C. McKee and H. Smith Cairns (eds), 3–22. Cambridge, MA: MIT Press.

Den Dikken, M. 1995. *Particles: On the Syntax of Verb–Particle, Triadic, and Causative Constructions*. New York: Oxford University press.

Depraetere, I. 1995. "On the necessity of distinguishing between (un)boundedness and (a)telicity". *Linguistics and Philosophy* 18: 1–19.

de Swart, H. and Verkuyl, H. 1999. Tense and Aspect in Sentence and Discourse, posted on the web at http://esslli.let.uu.nl/Courses/swart/hh.pdf

Di Sciullo, A.-M. 1996. "Verbal structures and variation". Paper presented at the 26th Linguistic Symposium on Romance Languages (LSRL XXVI), Mexico City, March.

Dietrich, R., Klein, W. and Noyau, C. 1995. *The Acquisition of Temporality in a Second Language*. Amsterdam: John Benjamins.

Dowty, D. 1979. *Word Meaning and Montague Grammar*. Dordrecht: Reidel.

Dowty, D. 1991. "Thematic proto-roles and argument selection". *Language* 67 (3): 547–619.

du Plessis, J., Solin, D., Travis, L. and White, L. 1987. "UG or not UG, that is the question: A reply to Clahsen and Muysken". *Second Language Research* 3: 56–75.

Duffield, N. and Prevost, P. 1996. "The psycholinguistics of clitic placement". In *Proceedings of ESCOL 1996*, A.D. Green and V. Motapanyane (eds), 94–104.

Enç, M. 1991. "The semantics of specificity". *Linguistic Inquiry* 22: 1–26.

Epstein, S., Flynn, S. and Martohardjono, G. 1996. "Second language acquisition: theoretical and experimental issues in contemporary research". *Behavioral and Brain Sciences* 19 (4): 677–714.

Eubank, L. 1993/94. "On the transfer of parametric values in L2 development". *Language Acquisition* 3: 183–208.

Eubank, L 1996. "Negation in early German-English interlanguage: More Valueless Features in the L2 initial state". *Second Language Research* 12 (1): 73–106.

Fantuzzi, C. 1993. "Core grammar and the acquisition of verbal aspect". In *Chicago Linguistic Society 29, vol. 2, Parasession on the Correspondence of Conceptual, Semantic and Grammatical Representations*, K. Beals et al. (eds), 125–138. Chicago: CLS.

Filip, H. 1993. "Aspect and the interpretation of nominal arguments". In *Papers from the 28th Regional Meeting of the Chicago Linguistic Society*, 139–158. The University of Chicago.

Filip, H. 1994. "Aspect and the semantics of noun phrases". In: *Tense and Aspect in Discourse*, Co Vet and Carl Vetters (eds), 227–255. The Hague: Mouton de Gruyter.

Finer, D. and Broselow, E. 1986. "Second language acquisition of reflexive binding". In *Proceedings of NELS 16*: 154–168. Amherst, MA: GLSA.

Fischer, S. 1971. The Acquisition of Verb–Particle and Dative Constructions. Unpublished PhD thesis, MIT.

Flashner, V. 1982. *The English Interlanguage of Three Native Speakers of Russian: Two Perspectives*. Unpublished MA thesis, UCLA.

Flier, M. and Timberlake, A. (eds). 1984. *The Scope of Slavic Aspect*. UCLA Slavic Studies, vol. 12. Columbus, Ohio: Slavica Publishers.

Flier, M. and Brecht, R. (eds). 1984. *Issues in Slavic Morphosyntax*. UCLA Slavic Studies, vol. 10. Columbus, Ohio: Slavica Publishers.

Flynn, S. 1987. *A Parameter-Setting Model of L2 Acquisition*. Dordrecht: Reidel.

Flynn, S. 1996. "A parameter-setting approach to second language acquisition". Chapter 4 in *Handbook of Second Language Acquisition*, Ritchie, W. and T. Bhatia (eds), 121–215. San Diego: Academic Press.

Flynn, S. and Martohardjono, G. 1991. "How critical is age in adult second language acquisition". Paper presented at the annual meeting of the American Association for the Advancement of Science, Washington, DC.

Flynn, S. and Martohardjono, G. 1994. "Mapping from the initial state to the final state: the separation of universal principles and language specific properties". In *Syntactic theory and First Language Acquisition: Crosslinguistic Perspectives*, vol. 1, B. Lust, M. Suner, J. Whitman (eds), 319–336. Lawrence Erlbaum Associates.

Fodor, J. 1989. "Empty categories in sentence processing". *Language and Cognitive Processes* 3: 155–209.

Fodor, J. A. 1970. "Three reasons for not deriving 'kill' from 'cause to die'". *Linguistic Inquiry* 1: 429–438.

Freedman, S. and Forster, K. 1985. "The psychological status of overgenerated sentences". *Cognition* 19: 101–131.

Fukui, N. and Speas, M. 1986. "Specifiers and projection". *MIT Working Papers in Linguistics* 8: 128–172.

Gass, S. 1996. "Second language acquisition and linguistic theory: The role of language transfer". In *Handbook of Second Language Acquisition,* W. C. Ritchie and T. K. Bhatia (eds), 317–345. San Diego, CA: Academic Press.

Gass, S. and Selinker, L. (eds). 1992. *Language Transfer in Language Learning.* Amsterdam: John Benjamins.

Gerhardt, J. 1988. "From discourse to semantics: The development of verb morphology and forms of self-reference in the speech of a two-year old". *Journal of Child Language* 15: 337–393.

Giorgi, A. and Longobardi, G. 1991. *The Syntax of Noun Phrases: Configuration, Parameters and Empty Categories.* Cambridge, UK: Cambridge University Press.

Giorgi, A. and Pianesi, F. 1997. *Tense and Aspect.* Oxford: Oxford University Press.

Glass, G. and Hopkins, K. D. 1996. *Statistical Methods in Education and Psychology.* Boston: Allyn and Bacon.

Green, G. 1973. "A syntactic syncretism in English and French". In *Issues in Linguistics*, B. Kachru et al. (eds), 257–278. Urbana, IL: University of Illinois Press.

Gregg, K. 1988. "Epistemology without knowledge: Schwartz on Chomsky, Fodor, and Krashen". *Second Language Research* 4: 66–80.

Gregg, K. 1989. "Second language acquisition theory: The case for a generative perspective". In *Linguistic Perspectives on Second Language Acquisition*, S. Gass and J. Schachter (eds), 15–40. Cambridge: Cambridge University Press.

Grimshaw, J. 1990. *Argument Structure.* Cambridge, MA: MIT Press.

Grimshaw, J. 1994. "Lexical reconciliation". *Lingua* 92: 411–430.

Grimshaw, J. and Rosen, S. 1990. "Knowledge and obedience: The developmental status of Binding Theory". *Linguistic Inquiry* 21: 187–222.

Gropen, J., Pinker, S., Hollander, M., Goldberg, R. and Wilson, R. 1989. "The learnability and acquisition of the dative alternation in English". *Language* 65: 203–257.

Gruber, J. 1965/76. *Lexical Structures in Syntax and Semantics.* Amsterdam: North Holland.

Haegeman, L. 1991. *Introduction to Government and Binding Theory.* Oxford: Blackwell.

Håkansson, G. Forthcoming. "Typological markedness in action in the classroom: some observations on the acquisition of German in Swedish schools". To appear in *Language Learning.*

Hale, K. 1996. "Can UG and L1 be distinguished in L2 acquisition?" Commentary to Epstein et al, *Behavioral and Brain Sciences* 19 (4): 728–730.

Hale, K. and Keyser, J. 1987. "A view from the middle". *Lexicon Project Working papers*, 10. Center for Cognitive Science, MIT.

Hale, K. and Keyser, J. 1992. "The syntactic character of thematic structure". In *Thematic Structure: Its Role in Grammar*, I. M. Roca (ed.), 107–143. Berlin: Foris.

Hale, K. and Keyser, J. 1993. "On argument structure and the lexical expression of syntactic relations". In *The View from Building 20*, K. Hale and J. Keyser (eds), 53–109. Cambridge, MA: MIT Press.

Halle, M. and Marantz, A. 1993. "Distributed Morphology and the pieces of inflection". In *The View from Building 20*, K. Hale and J. Keyser (eds), 111–176. Cambridge, MA: MIT Press.

Harbert, W. 1995. "Binding Theory, Control, and *pro*". In *Government and Binding Theory and the Minimalist Program,* G. Webelhuth (ed.), 177–240. Oxford: Blackwell.

Harley, H. 1995. *Subjects, Events and Licensing,* unpublished PhD thesis. Cambridge, MA: MIT Working Papers in Linguistics.

Higginbotham, J. 1985. "On semantics". *Linguistic Inquiry* 16 (4): 547–593.

Higginbotham, J. 1989. "Elucidations of meaning". *Linguistics and Philosophy* 12: 465–518.

Hilles, S. 1986. "Interlanguage and the pro-drop parameter". *Second Language Research* 2: 33–52.

Hilles, S. 1991. "Access to Universal grammar in second language acquisition". In *Point Counterpoint: Universal Grammar in the second language,* L. Eubank (ed.), 305–338. Amsterdam: John Benjamins.

Hinrichs, E.W. 1985. A Compositional Semantics for Aktionsarten and NP Reference. Unpublished PhD thesis, Ohio State University.

Hoekstra, T. 1988. "Small clause results". *Lingua* 74: 101–139.

Hoekstra, T. and Mülder, J. 1990. "Unergatives as copular verbs". *The Linguistic Review* 7: 1–79.

Hyltenstam, K. 1977. "Implicational patterns in interlanguage syntax variation". *Language Learning* 27: 383–411.

Jackendoff, R. 1972. *Semantic Interpretation in Generative Grammar.* Cambridge, MA: MIT Press.

Jackendoff, R. 1983. *Semantics and Cognition.* Cambridge, MA: MIT Press.

Jackendoff, R. 1990. *Semantic Structures.* Cambridge, MA: MIT Press.

Jakobson, R. 1957. *Shifters, Verbal Categories and the Russian Verb.* Cambridge, MA: Harvard University, Russian language project, Department of Slavic languages and Literature.

Jelinek, Eloise. 1995. "Quantification in Straits Salish". In *Quantification in Natural Languages*, Emmon Bach, Eloise Jelinek, Angelika Kratzer and Barbara Partee (eds), 541–601. Dordrecht: Kluwer Academic Publishers.

Jelinek, Eloise. 1998. "Voice and transitivity as functional projections in Yaqui". In *The Projection of Arguments,* Miriam Butt and Wilhelm Geuder (eds), 195–224. CSLI Publications.

Johnson, K. 1991. "Object positions". *Natural language and Linguistic Theory* 9: 577–636.

Juffs, A. 1996. *Learnability and the Lexicon.* Amsterdam: John Benjamins.

Kabakčiev, K. 1984. "The article and the aorist/imperfect distinction in Bulgarian: an analysis based on cross-language aspect parallelisms". *Linguistics* 22 (1): 77–83.

Kanno, K. 1996. "The status of a non-parametrized principle in the L2 initial state". *Language Acquisition* 5 (4): 317–334.

Kayne, R. 1984. *Connectedness and Binary Branching.* Dordrecht, Foris.

Kenny, A. 1963. *Action, Emotion, and Will.* London/New York: Routledge and Kegan Paul.

Kitagawa, Y. 1986. Subjects in Japanese and English. Unpublished PhD dissertation, University of Massachusetts, Amherst.

Klein, W. and Perdue, C. 1997. "The Basic Variety (Or: Couldn't Natural Languages Be Much Simpler?)". *Second-Language-Research* 13 (4): 301–347.

Koizumi, M. 1993. "Object agreement phrases and the split VP hypothesis". In *Papers on Case and Agreement I*, Bobaljik, J. and C. Phillips (eds), MITWPL vol. 18, 99–148. Cambridge, MA: MITWPL.

Koizumi, M. 1995. *Phrase Structure in Minimalist Syntax*, PhD Thesis. Cambridge, MA: MIT Working Papers in Linguistics.

Koopman, H. and Sportiche, D. 1991. "The position of subjects". *Lingua* 85: 211–258.

Krifka, M. 1989. *Nominalreferentz und Zeitkonstitution: Zur Semantik von Massentermen, Individualtermen, Aspektklassen.* Munchen: Wilhelm Fink.

Krifka, M. 1992. "Thematic relations as links between nominal reference and temporal constitution". In *Lexical Matters*, Sag, I. and A. Szabolcsi (eds), Palo Alto: CSLI.

Kučera, H. 1983. "A semantic model of verbal aspect". In *American Contributions to the Ninth International Congress of Slavists, vol. 1: Linguistics*, Flier, M. (ed.), 171–184. Columbus, Ohio.

Kuroda, Y. 1988. "Whether we agree or not". In *The Second International Workshop on Japanese Syntax*, William Poser (ed.), Stanford University, CSLI.

Lakoff, G. 1970. *Irregularity in Syntax.* New York: Holt, Reinhart and Winston.

Lakoff, G. 1987. *Women, Fire and Dangerous Things: What Categories Reveal about the Mind.* Chicago, IL: Chicago University Press.

Lakshmanan, U. 1991. "Morphological uniformity and null subjects in child second language acquisition". In *Point Counterpoint: Universal Grammar in the Second Language.* L. Eubank (ed.), 389–410. Amsterdam: John Benjamins.

Larson, R. 1988. "On the double object construction". *Linguistic Inquiry* 19: 335–391.

Larson, R. 1990. "Double objects revisited: a reply to Jackendoff". *Linguistic Inquiry* 21: 589–632.

Lebeaux, D. 1988. Language Acquisition and the Form of the Grammar. Unpublished PhD thesis, UMass, Amherst.

Levin, B. and Rappoport Hovav, M. 1995. *Unaccusativity.* Cambridge, MA: MIT Press.

Liceras, J. 1989. "On some properties of the 'pro-drop' parameter: Looking for missing subjects in non-native Spanish". In *Linguistic Perspectives on Second Language Acquisition*, S. Gass & J. Schachter (eds), 109–133. Cambridge: Cambridge University Press.

Liceras, J., Diaz, L. and Maxwell, D. 1995. "Topic-drop versus pro-drop: Some evidence from the Spanish L2 of Chinese, English, French, German, Japanese, and Korean speakers". Paper presented at GASLA, 1995, CUNY, New York.

Lightfoot, D. 1991. *How to Set Parameters: Arguments from Language Change.* Cambridge, MA: MIT Press.

Lin, Y.W. 1993. "Object Expletives, Definiteness Effects and Scope Interpretations". Unpublished ms, UMass, Amherst, MA.

Link, G. 1983. "The logical analysis of plural and mass terms: a lattice-theoretical approach". In *Meaning, Use and Interpretation of Language*, R. Bäuerle, C. Schwarze and A. von Stechow (eds), 302–323. Berlin: Mouton.

Macgreggor-Kozlowska, M. 1999. "Syntactic and semantic operations within the two domains of the aspectual structure of Polish". Unpublished ms, McGill University.

Maclachlan, A. 1989. "The morphosyntax of Tagalog verbs: the inflectional system and its integration with derivational morphology". *McGill Working Papers in Linguistics* 6: 65–84.

Mahajan, A. 1990. The A/A-bar Distinction and Movement Theory. Unpublished PhD thesis, MIT.

Marantz, A. 1993. "Implications of asymmetries in double object constructions". In *Theoretical Aspects of Bantu Grammar*, S. Mchombo (ed.), Palo Alto, CA: Stanford University.

Martohardjono, G. 1991. "Universal aspects in the acquisition of a second language". Paper presented at the 19th Boston University Conference on Language Development, Boston University.

Martohardjono, G. 1993. Wh-movement in the Acquisition of a Second Language: a Cross-linguistic Study of Three languages With and Without Movement. Unpublished PhD thesis, Cornell University.

Martohardjono, G. and J. Gair. 1993. "Apparent UG inaccessibility in second language acquisition: misapplied principles or principled misapplications?". In *Confluence: Linguistics, Second Language Acquisition and Speech Pathology*, F. Eckman (ed.), 79–103. Amsterdam: John Benjamins.

Mazurkewich, I. 1984. "The acquisition of the dative alternation by second language learners and linguistic theory". *Language Learning* 34: 91–109.

Mazurkewich, I. 1988. "The acquisition of infinitive and gerund complements by second language learners". In *Linguistic Theory in Second Language Acquisition*, S. Flynn and W. O'Neil (eds), 127–143. Dordrecht: Kluwer.

Mazurkewich, I. and White, L. 1984. "The acquisition of the dative alternation: Unlearning overgeneralizations". *Cognition* 16: 261–283.

McCawley, J. D. 1968. "Lexical insertion in a transformational grammar without deep structure". In *Papers from the Fourth Regional Meeting of the Chicago Linguistic Society*, B. J. Darden et al. (eds), 71–80. Chicago: CLS.

McClure, W. 1994. Syntactic Projections of the Semantics of Aspect. Unpublished PhD Thesis, Cornell University.

McConnell-Ginet, S. 1982. "Adverbs and logical form: a linguistically realistic theory". *Language* 58: 144–184.

McLaughlin, B. 1987. *Theories of Second Language Learning*. London: Edward Arnold.

Meisel, J. M., Clahsen, H. and Pienemann, M. 1981. "On determining developmental stages in natural second language acquisition". *Studies in Second Language Acquisition* 3: 109–135.

Miagawa, S. 1991. *Scrambling and Case Realization*. Cambridge, MA: MIT Press.

Miagawa, S. 1993. "Case, agreement, and ga-no conversion". In *Japanese/Korean Linguistics*, S. Choi (ed.), 221–235. CSLI/Standford University.

Montrul, S. 1997. "The L2 acquisition of dative experiencer subjects". *Second Language Research* 13 (3): 264–298.

Moreno, J. C. 1993. "'Make' and the semantic origins of causativity: a typological study". In *Causatives and Transitivity*, B. Comrie and M. Polinsky (eds), 155–164. Amsterdam/ Philadelphia: John Benjamins.

Mourelatos, A. P. D. 1978. "Events, processes, and states". *Linguistics and Philosophy* 2: 415–434.

Nishida, C. 1994. "The Spanish reflexive clitic *se* as an aspectual class marker". *Linguistics* 32: 425–458.

Noonan, M. 1992. Case and Syntactic Geometry. Unpublished PhD dissertation, McGill University.

O'Neill, R., Cornelius Jr, E. T. and Washburn, G. N. 1991. *American Kernel Lessons: Advanced Students' Book*. New York: Longman.

Osgood, C. and Zehler, A. 1981. "Acquisition of bitransitive sentences: Prelinguistic determinants of language acquisition". *Journal of Child Language* 8: 367–384.

Parsons, T. 1990. *Events in the Semantics of English*. Cambridge, MA: MIT Press.

Partee, B. 1991. "Adverbial quantification and event structures". In *Proceedings of the Seventeenth Annual Meeting of the Berkeley Linguistic Society*, 439–456. University of California at Berkeley.

Pesetsky D. 1995. *Zero Syntax*. Cambridge, MA: MIT Press.

Phinney, M. 1987. "The pro-drop parameter in second language acquisition". In *Parameter Setting*, T. Roeper and E. Williams (eds), 221–238. Dordrecht: Reidel.

Pi, C. T., Slabakova, R. and Uesaka, M. 1997. "Evidence for telicity and boundedness in syntax". Paper presented at the Annual Conference of the Linguistic Association of Great Britain, April, Edinburgh.

Pinker, S. 1984. *Language Learnability and Language Development*. Cambridge, MA: MIT Press.

Pinker, S. 1989. *Learnability and Cognition: the Acquisition of Argument Structure*. Cambridge, MA: MIT Press.

Piñón, C. 1993. "Nominal reference and the imperfective in Polish and English". *Proceedings of NELS*, 383–397.

Platzack, C. 1996. "The initial hypothesis of syntax". In *Generative Perspectives on Language Acquisition*, H. Clahsen (ed.), 369–414. Amsterdam: John Benjamins.

Poletto, C. 1992. "The aspect projection: An analysis of the *passé surcomposé*". In *Proceedings of the XVIIth Meeting of Generative Grammar,* 289–311. Turin: Rosenberg and Sellier.

Pustejovsky, J. 1988. Event Semantic Structure. Unpublished ms, Brandeis.

Pustejovsky, J. 1991. "The syntax of event structure". *Cognition* 41: 47–81.

Radulović, L. 1975. Acquisition of Language: Studies of Dubrovnik Children. Unpublished PhD thesis, University of California, Berkeley.

Rispoli, M. J. V. and Bloom, L. 1985. "Incomplete and continuing: Theoretical issues in the acquisition of tense and aspect". *Journal of Child Language* 12: 471–474.

Ritchie, W. C. and Bhatia, T. K. (eds). 1996. *Handbook of Second Language Acquisition*. San Diego: Academic Press.

Rizzi, L. 1986. "Null subjects and the theory of pro". *Linguistic Inquiry* 17: 501–557.

Robison, R. E. 1990. "The primacy of aspect: Aspectual marking in English interlanguage". *Studies in Second Language Acquisition* 12: 315–330.

Robison, R. E. 1995a. "The aspect hypothesis revisited: A cross-sectional study of tense and aspect marking in interlanguage". *Applied Linguistics* 16: 344–370.

Robison, R. E. 1995b. "Verb inflections in native speaker speech: Do we mean what we think?". In *The Development of Morphological Systematicity: A Cross-Linguistic Perspective*. H. Pischwa and K. Maroldt (eds), 199–224. Tübingen: Günter Narr.

Roeper, T., Lapointe, S. Bing, J. and Tavakolian, S. 1981. "A lexical approach to language acquisition". In *Language Acquisition and Linguistic Theory*, S. Tavakolian (ed.), 35–58. Cambridge, MA: MIT Press.

Rosch, E. 1973. "On the internal structure of perceptual and semantic categories". In *Cognitive Development and the Acquisition of Language*, T. E. Moore (ed.), 111–144. New York: Academic Press.

Rosch, E. 1978. "Principles of categorization". In *Cognition and Categorization,* E. Rosch and B. B. Lloyd (eds), 27–48. Hillsdale, NJ: Erlbaum.

Rosch, E. and Mervis, C. 1975. "Family resemblances: studies in the internal structure of categories". *Cognitive Psychology* 7: 573–605.

Ross, J. R. 1973. "A fake NP squish". In *New Ways of Analyzing Variation in English*, C. J. N. Bailey and R. Shuy (eds), 96–140. Washington, DC: Georgetown University Press.

Ryle, G. 1949. *The Concept of Mind*. London.

Sachs, J. 1983. "Talking about the there and then: the emergence of displaced reference in parent-child discourse". In *Children's Language,* vol. 4, K. E. Nelson (ed.), 1–28. Hillsdale, NJ: Erlbaum.

Schachter, J. 1989. "Testing a proposed universal". In *Linguistic Perspectives on Second Language Acquisition*, S. Gass & J. Schachter (eds), 73–88, Cambridge: Cambridge University Press.

Schachter, J. 1990. "On the issue of completeness in second language acquisition". *Second Language Research* 6: 93–124.

Schachter, J. 1996. "Maturation and the issue of Universal Grammar in second language acquisition". In *Handbook of second language Acquisition,* W. Ritchie and T. Bhatia (eds), 159–189. San Diego: Academic Press.

Schmitt, C. 1996. Aspect and the syntax of noun phrases. Unpublished PhD dissertation, University of Maryland at College Park.

Schumann, J. 1982. "Simplification, transfer and relexification as aspects of pidginization and early second language acquisition". *Language Learning* 32: 337–366.

Schwartz, B. and Tomaselli, A. 1990. "Some implications from an analysis of German word order". In *Issues in Germanic Syntax*, W. Abraham, W. Kosmeijer and E. Reuland (eds), 251–274. Berlin: de Gruyter.

Schwartz, B. and Sprouse, R. 1994. "Word order and nominative case in non-native language acquisition: a longitudinal study of (L1 Turkish) German interlanguage". In *Language Acquisition Studies in Generative Grammar*. T. Hoekstra and B. D. Schwartz (eds), 317–368. Amsterdam: John Benjamins.

Schwartz, B. and Sprouse, R. 1996. "L2 cognitive states and the Full Transfer/Full Access hypothesis". *Second Language Research* 12: 40–72.

Schwartz, B. 1987. "The epistemological status of second language acquisition". *Second Language Research* 2: 120–159.

Selinker, L. 1972. "Interlanguage". *International Review of Applied Linguistics* 10: 209–231.

Shipley, E. F., Smith, C. S. and Gleitman, L. R. 1969. "A study in the acquisition of language: free responses to commands". *Language* 45: 322–342.

Shirai, Y. 1990. The Defective Tense Hypothesis: Is There a Distributional Bias in the Input? Unpublished ms, Applied Linguistics, UCLA.

Shirai, Y. 1991. Primacy of Aspect in Language Acquisition: Simplified Input and Prototype. Unpublished PhD thesis, UCLA.

Shirai, Y. 1993. "Inherent aspect and acquisition of tense/aspect morphology in Japanese". In *Argument Structure: Its Syntax and Acquisition*, H. Nakajima and Y. Otsu (eds), 185–211. Tokyo: Kaitakusha.

Shirai, Y. and Andersen, R. 1995. "The acquisition of tense-aspect morphology: A prototype account". *Language* 71 (4): 743–762.

Simpson, J. 1983. "Resultatives". In *Papers in Lexical Functional Grammar*, L. Levin, M. Rappaport and A. Zaenen (eds), 143–157. Indiana University Linguistics Club, Bloomington, IN.

Slabakova, R. 1995. "Bulgarian *se* and aspect". Paper presented at SCIL VII, University of Connecticut, April.

Slabakova, R. 1997a. "How light is a light verb". In *Proceedings of WCCFL XV, 1996*, B. Agbayani and Sze-Wing Tang (eds), 487–504.

Slabakova, R. 1997b. "Bulgarian preverbs: Aspect in phrase structure". *Linguistics* 35 (4): 673–704.

Slabakova, R. 2000. "L1 transfer revisited: The L2 acquisition of telicity marking in English by Spanish and Bulgarian native speakers". *Linguistics* 38 (4), 739–770.

Slabakova, R. and Uesaka, M. 1995. "A better solution of the perfective paradox". Talk given at the Workshop on Facts and Events in the Semantics of Natural Language, ITC-IRST, 28–30 August, Trento, Italy.

Slobin, D. I. 1985. "Crosslinguistic evidence for the language-making capacity". In *The Crosslinguistic Study of Language Acquisition, vol. 2, Theoretical Issues*, D. I. Slobin (ed.), 1157–1249. Hillsdale, NJ: Erlbaum.

Smith, C. S. 1997 [1991]. *The Parameter of Aspect*. 2nd edition, Dordrecht: Kluwer.

Smith, C. S. 1980. "The acquisition of time talk: relations between child and adult grammars". *Journal of Child Language* 7: 263–278.

Smith, C. S. and Weist, R. M. 1987. "On the temporal contour of child language: A reply to Rispoli and Bloom". *Journal of Child Language* 14: 387–392.

Snyder, W. 1995a. "A neo-Davidsonian approach to resultatives, particles and datives". In *Proceedings of NELS 25*, J. Beckman (ed.), 457–471. University of Pennsylvania, GLSA.

Snyder, W. 1995b. *Language Acquisition and language Variation: the Role of Morphology*, PhD Thesis. Cambridge, MA: MIT Working papers in Linguistics.

Snyder, W. 1996. "The acquisitional role of the syntax-morphology interface: Morphological compounds and syntactic complex predicates". In *Proceedings of the 20th Annual Boston University Conference on Language Development*. A. Stringfellow et al. (eds), 728–735. Somerville, MA: Cascadilla Press.

Snyder, W. 1997. "On the relationship between syntax and word-formation: Evidence from language acquisition". Talk given at McGill university, 6 March.

Snyder, W. and Stromswold, K. 1997. "On the structure and acquisition of the English dative construction". *Linguistic Inquiry* 28 (2): 281–317.

Speas, M. 1990. *Phrase Structure in Natural Language*. Dordrecht: Kluwer.

Sportiche, D. 1990. Movement, Agreement, and Case. Unpublished ms, UCLA.

Stephany, U. 1981. "Verbal grammar in modern Greek early child language". In *Child Language: an International Perspective*, P. S. Dale and D. Ingram (eds), 45–57. Baltimore: University Park Press.

Stromswold, K. 1989. "Using naturalsitic data: methodological and theoretical issues (or How to lie with naturalistic data)". Paper presented at the 14th Annual Boston University Conference on Language Development.

Stromswold, K. 1996. "Analyzing children's spontaneous data". In *Methods for Assessing Children's Syntax*, D. McDaniel, C. McKee and H. Smith Cairns (eds), 23–53. Cambridge, MA: MIT Press.

Sybesma, R. 1992. *Causatives and Accomplishments: the Case of Chinese Ba*. Doctoral dissertation, University if Leiden. (HIL dissertations 1).

Taylor, J. R. 1989. *Linguistic Categorization: Prototypes of Linguistic Theory*. Oxford: Oxford University Press.

Tenny, C. 1987. Grammaticalizing Aspect and Affectedness. Unpublished PhD thesis, MIT.

Tenny, C. 1994. *Aspectual Roles and the Syntax-Semantics Interface*. Dordrecht: Kluwer.

Tenny, C. 1996. "Review of *A Theory of Aspectuality* by H. Verkyul, 1993". *Language* 72 (1): 121–126.

Thomas, M. 1991. "Universal Grammar and the interpretation of reflexives in a second language". *Language* 67: 211–239.

Travis, Lisa. 1984. Parameters and Effects of Word Order Variation. Unpublished PhD dissertation, Massachusetts Institute of Technology.

Travis, L. 1992. Inner Aspect and the Structure of VP. *Cahiers Linguistique de l'UQAM*. 1: 130–146.

Travis, L. 1994. "Event Phrase and a theory of functional categories". In *Proceedings of the 1994 Canadian Linguistic Association Meeting at the University of Calgary,* P. Koskinen (ed.), 559–570, Toronto Working Papers in Linguistics.

Travis, L. 1995. "Binding categories, event structure, and l-syntax vs. s-syntax". Paper presented at the workshop "Clausal Architecture: Temporal, Aspectual and Verbal Projections", University of Bergamo, Italy, November.

Travis, L. 1999a. "The l-syntax/s-syntax boundary: Evidence from Austronesian". In *Formal Issues in Austronesian Linguistics,* Ileana Paul, Vivianne Phillips and Lisa Travis, (eds), 167–194. Dordrecht: Kluwer Academic Publishers.

Travis, L. 1999b. *Event Structure in Syntax*. Ms, McGill University.

Travis, L. forthcoming. *Inner Aspect* (working title). Dordrecht: Kluwer.

Tsimpli, I. M. and Roussou, A. 1991. "Parameter resetting in L2?". *UCL Working Papers in Linguistics* 3: 149–169.

Uesaka, M. 1994. Psych Predicates in Japanese from the View of Aspect. Unpublished ms., McGill University.

Uesaka, M. 1996. The *te-i-ru* Construction in Japanese: Interaction between Aspect and Syntax. Unpublished MA thesis, McGill University.

Vainikka, A. and Young-Scholten, M. 1994. "Direct access to X' theory: evidence from Korean and Turkish adults learning German". In *Language Acquisition Studies in Generative*

Grammar: Papers in Honour of Kenneth Wexler from the GLOW 1991 Workshops, T. Hoekstra and B.D. Schwartz (eds), 265–316. Amsterdam: John Benjamins.

Vainikka, A. and Young-Scholten, M. 1996. "Gradual development of L2 phrase structure". *Second Language Research* 12 (1): 7–39.

Valian, V. 1991. "Syntactic subjects in the early speech of American and Italian children". *Cognition* 40: 21–81.

van Hout, A. 1996. *Event Semantics of Verb Frame Alternations: A Case Study of Dutch and its Acquisition*. PhD thesis, Tilburg University.

van Hout, A., Randall, J. and Weissenborn, J. 1993. "Acquiring the unergative–unaccusative distinction". In *The Acquisition of Dutch*. M. Verrips and F. Wijnen (eds), *Amsterdam Series in Child Language Development* 1: 79–120, University of Amsterdam.

Van Valin, R. 1990. "Semantic parameters of split intransitive". *Language* 66: 221–260.

Vendler, Z. 1967. "Verbs and Times". *Philosophical Review* 56: 143–160.

Verkuyl, H. 1972. *On the Compositional Nature of the Aspects*. Dordrecht: Reidel.

Verkuyl, H. 1989. "Aspectual classes and aspectual composition". *Linguistics and Philosophy* 12: 39–94.

Verkuyl, H. 1993. *A theory of Aspectuality*. Cambridge: Cambridge University Press.

Verkuyl, H. 1999. "Tense, aspect, and aspectual composition". In *Topics in South Slavic Syntax and Semantics*. M. Dimitrova-Vulchanova and L. Hellan (eds), 125–162. Amsterdam: John Benjamins.

Wagner, L. 1997. "Acquiring viewpoint aspect one level at a time". Institute for Research in Cognitive Science Report 97–01, University of Pennsylvania.

Weist, R.M., Wysocka, H., Witkowska-Stadnik, K., Buczowska, E. and Konieczna, E. 1984. "The defective tense hypothesis: on the emergence of tense and aspect in child Polish". *Journal of Child Language* 11: 347–374.

Wenzell, V.E. 1989. "Transfer of aspect in the English oral narratives of native Russian speakers". In *Transfer in Language Production*, H.W. Dechert and M. Raupach (eds), 71–97. Norwood, NJ: Ablex.

Werner, H. and Kaplan, B. 1963. *Symbol Formation: An Organismic-Developmental Approach to Language and the Expression of Thought*. New York: John Wiley.

White, L. 1985. "The pro-drop parameter in adult second language acquisition". *Language Learning* 35: 47–62.

White, L. 1986. "Implications of parametric variation for adult second language acquisition: An investigation of the 'pro-drop' parameter". In *Experimental Approaches to Second Language Learning*, V. Cook (ed.), 55–72. Oxford: Pergamon Press.

White, L. 1987. "Children's overgeneralization of the dative alternation". In *Children's Language*, vol. 6., K. Nelson and A. van Kleeck (eds). Hillsdale, NJ: Erlbaum.

White, L. 1989a. "The principle of adjacency in second language acquisition: do L2 learners observe the subset principle?". In *Linguistic Perspectives on Second Language Acquisition*, S. Gass & J. Schachter (eds), 134–161. Cambridge: Cambridge University press.

White, L. 1989b. *Universal Grammar and Second Language Acquisition*. Amsterdam: John Benjamins.

White, L. 1991a. "Adverb placement in second language acquisition: some effects of positive and negative evidence in the classroom", *Second Language Research* 7: 133–161.

White, L. 1991b. "The verb-movement parameter in second language acquisition". *Language Acquisition* 1: 337–360.

White, L. 1992a. "Long and short verb movement in second language acquisition". *Canadian Journal of Linguistics* 27: 273–286.

White, L. 1992b. "On triggering data in L2 acquisition: A reply to Schwartz and Gubala-Ryzak". *Second Language Research* 8: 120–137.

White, L. 1992c. "Subjacency violations and empty categories in L2 acquisition". In *Island Constraints*, H. Goodluck and M. Rochemont (eds), 445–464. Dordrecht: Kluwer.

White, L. 1995. Class notes. McGill University.

White, L. 1996a. "Universal Grammar and second language acquisition: Current trends and new directions". In *Handbook of Second Language Acquisition,* W. Ritchie and T. Bhatia (eds), 85–118. San Diego: Academic Press.

White, L. 1996b. "The tale of the Ugly Duckling (or the coming of age of SLA research)". In *The 1995 BUCLD Proceedings*, 1–17. Cascadilla Press.

White, L. 1997. Class notes, McGill University.

Wierzbicka, A. 1968. "On the semantics of the verbal aspect in Polish". In *To Honor Roman Jakobson: Essays on the Occasion of his Seventieth Birthday*, 2231–2249. The Hague: Mouton.

Williams, E. 1984. "There–Insertion". *Linguistic Inquiry* 15: 131–153.

Zobl, H. 1982. "A direction for contrastive analysis: the comparative study of developmental sequences". *TESOL Quarterly* 16: 169–183.

Zobl, H. and Liceras, J. 1994. "Functional categories and acquisition orders". *Language Learning* 44: 159–180.

Index

In the series LANGUAGE ACQUISITION AND LANGUAGE DISORDERS (LALD) the following titles have been published thus far or are scheduled for publication:

1. WHITE, Lydia: *Universal Grammar and Second Language Acquisition.* 1989.
2. HUEBNER, Thom and Charles A. FERGUSON (eds): *Cross Currents in Second Language Acquisition and Linguistic Theory.* 1991.
3. EUBANK, Lynn (ed.): *Point Counterpoint. Universal Grammar in the second language.* 1991.
4. ECKMAN, Fred R. (ed.): *Confluence. Linguistics, L2 acquisition and speech pathology.* 1993.
5. GASS, Susan and Larry SELINKER (eds): *Language Transfer in Language Learning. Revised edition.* 1992.
6. THOMAS, Margaret: *Knowledge of Reflexives in a Second Language.* 1993.
7. MEISEL, Jürgen M. (ed.): *Bilingual First Language Acquisition. French and German grammatical development.* 1994.
8. HOEKSTRA, Teun and Bonnie SCHWARTZ (eds): *Language Acquisition Studies in Generative Grammar.* 1994.
9. ADONE, Dany: *The Acquisition of Mauritian Creole.* 1994.
10. LAKSHMANAN, Usha: *Universal Grammar in Child Second Language Acquisition. Null subjects and morphological uniformity.* 1994.
11. YIP, Virginia: *Interlanguage and Learnability. From Chinese to English.* 1995.
12. JUFFS, Alan: *Learnability and the Lexicon. Theories and second language acquisition research.* 1996.
13. ALLEN, Shanley: *Aspects of Argument Structure Acquisition in Inuktitut.* 1996.
14. CLAHSEN, Harald (ed.): *Generative Perspectives on Language Acquisition. Empirical findings, theoretical considerations and crosslinguistic comparisons.* 1996.
15. BRINKMANN, Ursula: *The Locative Alternation in German. Its structure and acquisition.* 1997.
16. HANNAHS, S.J. and Martha YOUNG-SCHOLTEN (eds): *Focus on Phonological Acquisition.* 1997.
17. ARCHIBALD, John: *Second Language Phonology.* 1998.
18. KLEIN, Elaine C. and Gita MARTOHARDJONO (eds): *The Development of Second Language Grammars. A generative approach.* 1999.
19. BECK, Maria-Luise (ed.): *Morphology and its Interfaces in Second Language Knowledge.* 1998.
20. KANNO, Kazue (ed.): *The Acquisition of Japanese as a Second Language.* 1999.
21. HERSCHENSOHN, Julia: *The Second Time Around – Minimalism and L2 Acquisition.* 2000.
22. SCHAEFFER, Jeanette C.: *The Acquisition of Direct Object Scrambling and Clitic Placement. Syntax and pragmatics.* 2000.
23. WEISSENBORN, Jürgen and Barbara HÖHLE (eds.): *Approaches to Bootstrapping. Phonological, lexical, syntactic and neurophysiological aspects of early language acquisition. Volume 1.* 2001.
24. WEISSENBORN, Jürgen and Barbara HÖHLE (eds.): *Approaches to Bootstrapping. Phonological, lexical, syntactic and neurophysiological aspects of early language acquisition. Volume 2.* 2001.
25. CARROLL, Susanne E.: *Input and Evidence. The raw material of second language acquisition.* n.y.p.
26. SLABAKOVA, Roumyana: *Telicity in the Second Language.* 2001.