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The Development of the Copula in Child English: The Lightness of *Be*

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The Development of the Copula in Child English: The Lightness of *Be*

Abstract

The goal of this dissertation is to account for the fact that young children acquiring English (around age 2 years) often produce utterances like (1), in which they omit a form of the copula, *be*.

(1) I in the kitchen. (cf. I am in the kitchen)

Children's production of forms like (1) is interesting for two main reasons: firstly, utterances like these do not occur in the input (adult English); secondly, children's omission of the copula adheres to a systematic pattern (their omission is neither across the board, nor haphazard). In particular, children do not omit the copula in utterances like (2).

(2) He's a dog. (@He a dog)

The difference between the constructions in (1) and (2) can be characterized in terms of a difference in the sorts of properties denoted by the respective predicates: a location such as *in the kitchen* is a temporary property of the subject; a predicate such as *a dog* denotes a permanent property of the subject. I argue that these predicates differ from each other both semantically and syntactically: "temporary" (stage-level) predicates contain additional functional structure (an AspP) that "permanent" (individual-level) predicates lack. Crosslinguistic support for this proposal is provided.

As for why children acquiring English ever produce forms like that in (1), I link this to the fact that non-finite main clauses are permitted in child English. I define finiteness in terms of a binding relation between an abstract Temporal Operator (T_{OP}) and a functional head in the structure. A main clause is finite only if Infl is bound by T_{OP} in CP. Certain grammars (among them child English) have the option that T_{OP} may bind Asp, if Asp is projected in the particular clause. However, this binding relation does not result in the clause being finite. Since Asp is projected in clauses with stage-level predicates, but not in clauses with individual-level predicates, it follows that stage-level predicates may occur in non-finite clauses while individual-level predicates occur with a finite clause. Coupled with the hypothesis that an overt copula is finite (it is inflected over 99% of the time) and an omitted copula indicates non-finiteness (independent support is provided), the pattern of copula omission and production in child English is accounted for.

Comments

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UNIVERSITY OF CALIFORNIA

Los Angeles

The Development of the Copula in Child English:

The Lightness of *Be*

A dissertation submitted in partial satisfaction of the
requirements for the degree of Doctor of Philosophy
in Linguistics

by

Misha Karen Becker

2000

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In memory of
 Vicki Fromkin, Teun Hoekstra,
 and Martin Honcoop

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The Development of the Copula in Child English:
The Lightness of *Be*

by

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University of California, Los Angeles, 2000
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The goal of this dissertation is to account for the fact that young children acquiring English (around age 2 years) often produce utterances like (1), in which they omit a form of the copula, *be*.

- (1) I in the kitchen.
(cf. I am in the kitchen)

Children's production of forms like (1) is interesting for two main reasons: firstly, utterances like these do not occur in the input (adult English); secondly, children's omission of the copula adheres to a systematic pattern (their omission is neither across the board, nor haphazard). In particular, children do not omit the copula in utterances like (2).

- (2) He's a dog.
(@He a dog)

Chapter 1 Introduction

Since Brown (1973) it is well-known that young children often omit grammatical morphemes from their speech, including verbal inflectional morphemes, auxiliaries and determiners. One of the morphemes children omit is the copula, *be*. For example, utterances such as (1) are found in the speech of English-speakers around age two.

- (1) I in the kitchen.
(cf. I am in the kitchen)

The fact that children produce sentences like (1) is interesting for two main reasons. Firstly, such utterances are not found in the linguistic input (i.e. the sentence in (1) is ungrammatical in adult English), so we must ask why these expressions are licensed by the child's grammar. Secondly, children's omission of the copula adheres to a systematic pattern: their omission of *be* is neither across-the-board nor of a haphazard nature. In particular, children tend not to omit the copula in utterances like (2).

- (2) He's a dog.
(@He a dog)¹

This dissertation is structured around the problem of accounting for (i) why children omit the copula at all (as in (1)), and (ii) why they omit it in the particular environments in which they do ((1) but not (2)).

¹ The '@' symbol indicates a form that is not attested in the data. As we will see in Chapter 3, utterances like *He a dog* are not completely unattested in child English, but they are comparatively rare.

The difference between the constructions in (1) and (2) can be characterized in terms of a difference in the sorts of properties denoted by the respective predicates: a location such as *in the kitchen* is a temporary property of the subject; a predicate such as *a dog* denotes a permanent property of the subject. I argue that these predicates differ from each other both semantically and syntactically: "temporary" (stage-level) predicates contain additional functional structure (an AspP) that "permanent" (individual-level) predicates lack. Crosslinguistic support for this proposal is provided.

As for why children acquiring English ever produce forms like that in (1), I link this to the fact that non-finite main clauses are permitted in child English. I define finiteness in terms of a binding relation between an abstract Temporal Operator (T_{OP}) and a functional head in the structure. A main clause is finite only if Infl is bound by T_{OP} in CP. Certain grammars (among them child English) have the option that T_{OP} may bind Asp, if Asp is projected in the particular clause. However, this binding relation does not result in the clause being finite. Since Asp is projected in clauses with stage-level predicates, but not in clauses with individual-level predicates, it follows that stage-level predicates may occur in non-finite clauses while individual-level predicates occur with a finite clause. Coupled with the hypothesis that an overt copula is finite (it is inflected over 99% of the time) and an omitted copula indicates non-finiteness (independent support is provided), the pattern of copula omission and production in child English is accounted for.

First let us clarify the second question: why should English-speaking children draw a grammatical distinction between the constructions in (1) and (2), especially when there is no prima facie difference in adult English? One hypothesis is that children's pattern of copula omission marks a semantic difference between these constructions. The semantic difference between (1) and (2) can be seen in the different sorts of properties denoted by the respective predicates. Locations (e.g. *in the kitchen*) tend to express temporary properties of things, while nominal predicates (e.g. *a dog*) tend to denote permanent or inherent properties.

This hypothesis (which I will argue is correct) is supported by crosslinguistic evidence: in several languages there is a grammaticized distinction between "permanent" and "temporary" properties. It should be noted that permanence and temporariness are properties of objects, states and events in the world, not of linguistic predicates themselves. (For example, the permanence of being human or having a particular gender is a biological, not a linguistic fact.) But the distinction marked in language is grammatical: the "permanent" vs. "temporary" meaning of predicates is a semantic property of the linguistic construction in which these predicates occur.

In English, the copula occurs with predicates of three syntactic categories: N, A, and P. We might define a space of properties, in each of the three non-verbal categories, that range from "more permanent" types of properties to "more temporary" types.

Table 1.1 Continuum of Properties Ranging from "Permanent" to "Temporary"

permanent	
NPs	PPs ²
species/kind (<i>a human</i>)	necessary locations (<i>in the known universe</i>)
gender/type (<i>a woman</i>)	locations of events (<i>the party is in the garden</i>)
nationality (<i>an American</i>)	locations of immobile things (cities/islands)
professions (a doctor)	locations of mobile things (people/objects)
stage of life (<i>a young/old woman</i>)	shape/color/size (<i>round, red, small</i>)
<i>neighbor</i>	stage of life (<i>young/old</i>)
<i>fugitive/contestant</i>	energy level/emotions (<i>tired, happy</i>)

temporary

That languages seem to mark a linguistic division (roughly) between predicates denoting "permanent" properties and predicates denoting "temporary" properties does not follow from any logical or empirical necessity. Accordingly, languages differ slightly from one another in exactly where they draw the dividing line between "permanent" and "temporary" properties. According to how a particular language draws this line, I will refer to predicates that denote "permanent" properties in that language as individual-level predicates, and to predicates that denote "temporary" properties as stage-level predicates (Carlson 1977). This terminology will be discussed in Chapter 2.

We can now make question (ii) above more specific: if children draw a semantic distinction between locative (stage-level) and nominal (individual-level) predicates, why does this distinction surface as the absence vs. presence of the copula? I account for this by

² Here I abstract away from non-locative PPs.

proposing, as in Kratzer (1995), that the semantic distinction between stage- and individual-level predicates corresponds to a syntactic distinction between these predicates. In particular, I propose that stage-level predicates project additional functional structure (an Event argument, E_P, and an aspectual projection, AspP) that is not projected by individual-level predicates. The presence of this functional structure licenses a null copula in child English, in a way to be specified in Chapter 3. The proposal that a null copula is licensed under certain syntactic conditions provides the answer to question (i) above, and the proposal that this syntactic condition is met in sentences like (1) but not (2) provides the answer to question (ii).

Throughout the thesis I will chiefly be concerned with predicative constructions in child English, although I will also briefly discuss existential and progressive constructions. Examples of these constructions are given in (3), and I will refer to these constructions by these labels throughout the thesis.

- | | | |
|-----|------------------------|---------------------------------|
| (3) | nominal predicative | John is a boy |
| | locative predicative | The book is on the table |
| | adjectival predicative | Mary is tall (individual-level) |
| | | Susan is tired (stage-level) |
| | existential | There is a man in the garden |
| | progressive | Bob is writing a novel |

In the remaining sections of this chapter I provide some background on the syntax of copular constructions and finiteness, and a summary of the other chapters in this dissertation.

1.1 The Relevance of the Copula to Syntax and Acquisition Theory

The question of what the copula is, and whether it is part of the predicate or not, has been considered for centuries by philosophers and philologists (most notably by Aristotle and Abelard; see the appendix of Moro (1997) for a history). In modern linguistic theory, syntactic phenomena associated with the copula and copular constructions have played (and continue to play) an important role in theories of phrase structure (Stowell 1978; Williams 1983; 1984) and other domains of syntax.³ Most relevant to our purposes here is the substantial role copular constructions play in analyses of what is known as the stage-level/individual-level contrast (Carlson 1977, among others).

As the etymology of its name suggests, the copula (from Latin *copulare* 'to link') serves to link the predicate to the subject. Since the copula does not contribute lexical meaning of its own, those who argue that the copula is a verb often argue that it is a verb of a special sort, for example a verb empty of semantic or syntactic features (Schütze 2000). I will argue, instead, that when the copula is finite it is not a verb at all (cf. Hoekstra 1994). It is simply the morphosyntactic reflex of a finite Infl node when no verb is present in the structure (in this sense it is "light").

With respect to the study of language acquisition, children's early use of the copula provides clear support for the theory of Universal Grammar (UG) and the theory that child grammar is constrained by UG. It does so in a number of ways. Firstly, inflected *be* is the

³ For example, the issue of how Case is assigned in nominal predicative and existential constructions raises problems for the theory of Case and licensing (discussed e.g. by Belletti 1988; Lasnik 1992; Lasnik 1995; Schütze 1997—see Appendix to Chapter 3). Another central question concerning the copula has been the question of whether the copula can act as a "pivot" around which either the subject or the predicate might raise (following Stowell's (1978) analysis of copular constructions as raising constructions). This question arises because there are certain copular sentences in which the canonical order of phrases may reverse (e.g. *Rodney is the best candidate* and *The best candidate is Rodney*) (Moro 1993; Heycock 1994; Heycock 1995; Moro 1997). Related questions are addressed with respect to the syntax of pseudoclefts (*What John is is silly*) in Higgins (1973) and Heggie (1988), and the syntax of identificational expressions (*The teacher is John*; e.g. (Rothstein 1987)).

most common "verb" (or verbal-inflectional item), and it is one of the most common words in spoken English (Kucera and Francis 1967). Thus, children frequently omit the copula in spite of its high frequency in the linguistic input, and this argues against the view that children simply repeat what they hear.

Secondly, the systematicity of the pattern with which children omit and produce the copula speaks to the constrained nature of children's grammars and argues against a view that children's grammars are unconstrained or random in nature.

Most importantly, children's acquisition of copular constructions supports the theory that early language learning is constrained by principles of learning *specific to grammar*, rather than generalized learning principles. The particular pattern with which children omit the copula indicates a grammatical distinction among different types of predicates: children tend to produce an overt copula with predicates that denote permanent properties, and they tend to omit the copula with predicates that denote temporary properties. This same grammatical distinction is made (and likewise marked in terms of the form or overtness of the copula) by a variety of unrelated adult grammars. This fact is significant in at least two respects. First, while various adult languages use a different form of the copula with permanent vs. temporary property denoting predicates, adult English does not. Thus, English-speaking children are producing a grammatical pattern that is not found in the input, and so this pattern must stem from innate properties of grammar. Secondly, the fact that the pattern of copula omission and production by English-speaking children does surface in other adult languages indicates that children's grammars are constrained by UG even at intermediate stages of development. That is, even while children continue to produce utterances that would be judged ungrammatical in the target language, their grammars conform to the principles of UG. Thus, the findings discussed in this dissertation provide strong support for the theory of UG and the theory of UG-constrained learning in language acquisition.

1.2 The Structure of Copular Constructions

1.2.1 *Be* is a Raising Verb

Many current accounts of the copula assume (following Stowell's (1978) account of *there*-insertion), that *be* is a raising verb that takes a small clause complement. Previous transformational accounts of *there*-insertion held that sentences like those in (4) were derived from the corresponding sentences in (5) by rightward movement of the indefinite DP and insertion of *there*:

- (4) There is a man in the garden.
 There are books on the table.
 (5) A man is in the garden.
 Books are on the table.

Stowell's (1978) important contribution was to analyze *be* as a raising verb, like *seem*. Thus the underlying form for both (4) and (5) type sentences is as in (6).

- (6) [e [is [a man [in the garden]]]]

In the case of *there*-insertion, no rightward movement is necessary: *there* is simply inserted in subject position (an empty pre-auxiliary NP position). In the non-*there*-insertion case, the NP is raised to fill the (underlyingly empty) subject position.

The raising analysis is able to capture a number of facts about existential constructions. For example, Stowell accounts for the fact that existential *there* sentences cannot be derived from NP *be* NP constructions:

- (7) a. A friend of mine is a real jerk.
 b. *There is a friend of mine a real jerk. Stowell (1978, ex. 14a-b)

1.2.2 The Structure of Small Clauses

According to Stowell, the ungrammaticality of (7b) follows from the subcategorization frame of *be*, a transitive (now thought to be unaccusative) verb that takes an NP "object", possibly followed by an AP, PP or gerundive verb, but not another NP. In other words, *be* has the subcategorization frames in (8a) but not (8b).

- (8) a. NP *be* {NP (+ AP/PP/V-ing)}
 b. *NP *be* {NP NP}

Note that *there* is analyzed as an NP; thus it is clear that in (7a) there are only two NPs, but in (7b) there are three (thus a violation of the projection principle).

Later, Stowell (1981) analyzed the postcopular phrase as a small clause, thus drawing the analogy between expressions like *I consider [John smart]* and *There is [a man in the garden]*. The regular copular sentences (*A man is in the garden*) are then formed by raising the subject NP of the small clause to matrix subject position. The raising analysis of *be* is now taken to be standard. Thus, copular sentences have the following structures:

- (9) a. [p John_i [r is [NP t_i [NP a boy]]]]]
 b. [p John_i [r is [AP t_i [AP tall]]]]]
 c. [p John_i [r is [PP t_i [PP in the garden]]]]]

The structures in (9) differ somewhat from more typical representations only in that they lack a VP projection. However, I will argue that the main clause present tense (finite) copula does not in fact raise from a V head, and that simple copular constructions such as those in (9) lack a VP.

Stowell's original proposal for the structure of Small Clauses was that they are simply bare lexical predication structures, containing a lexical subject and lexical predicate. In his view, they differ from main clauses in that they lack functional projections. However, more recently it has been proposed that SCs involve the projection of functional structure. Here I discuss Guéron & Hoekstra's (1995) proposal that all SCs involve the projection of an AgrP. I will also discuss Heycock's (1994) arguments against this type of position. She argues, instead, that all SCs are lexical adjunction structures that lack functional projections.

Guéron & Hoekstra propose that all SCs involve the projection of AgrP, based on their requirement that "each lexical projection [be] dominated by functional categories which provide the licensing domain of the lexical projection," (Guéron & Hoekstra 1995: 78). This view is in the spirit of Grimshaw's theory of Extended Projections (Grimshaw 1991), and Abney's (1987) proposal that the lexical category of NP is dominated by a functional DP projection. Guéron & Hoekstra's particular proposal is that each predication involves an Agr node. Thus, a lexical SC, which is a lexical predication structure, must involve an Agr projection. They analyze the SC predicate of *We considered John foolish* as in (10).

- (10) [John_i Agr [AP t_i foolish]]

In the structure in (10), the subject of the SC, *John*, is raised to the specifier of an Agreement phrase, which takes the AP [t_i foolish] as its complement.

Guéron & Hoekstra's proposal seems to be based on the parsimony of a universal requirement on licensing lexical projections via a functional category (Agr). They argue that predicates must be licensed, although this type of licensing is different from the sort of Case

licensing required by arguments. It seems to be a formal requirement on "connecting" the predicate to the subject via agreement (Guéron & Hoekstra 1995: 82).⁴

Heycock (1994) argues, instead, that SCs are selected directly by the verb of the main clause (e.g. *consider*) and are lexical adjunction structures. Thus, they never involve a functional projection. Heycock's argument against the analysis of SCs as projections of a functional head is that there is idiosyncrasy in the category of the SC predicate depending on the main clause verb. She notes the following sort of variation:

- (11) a. I consider Jenny a genius/*be unhappy/to be unhappy
 b. I made Jenny my assistant/?be unhappy/*to be unhappy
 c. I let Jenny *my assistant/be unhappy/*to be unhappy
 (Heycock 1994:95-96)

This is the sort of variation that should arise from selectional differences among the main verbs in (11) (i.e. if each of the verbs in (11) selected different lexical complements), but would be unexpected if all of the verbs in (11) selected the same functional projection as complement. Thus, Heycock concludes that (as in Manzini 1983) SCs are "adjunction structures, where the subject is Chomsky-adjoined to X" [XP]" (Heycock 1994: 100).

(A related issue is whether the subject of a SC is adjoined as sister to XP, or if the SC subject is the specifier of the SC projection, thus sister to X'. I believe this distinction is not critical to the discussion here; I assume that SCs involve adjunction of the subject to the lexical projection of the SC, but nothing I claim should ride on this assumption.)

I will argue in Chapter 3 that, depending on certain properties of the predicate, the SC can be either purely lexical (as argued by Heycock) or it may involve the projection of functional structure, along the lines of Guéron & Hoekstra. However, my account differs

⁴Both SCs and full clauses contain functional structure, according to Guéron & Hoekstra; the difference between them is that full clauses contain a Tense chain, while SCs lack a Tense chain.

from that of Guéron & Hoekstra in that I argue for a different functional projection from Agr (I argue it is Asp), and I do not project the SC subject in the specifier of the functional projection (rather, the SC subject is projected within the lexical SC and raises to SpecIP in main clauses).

1.3 Finiteness in Adult and Child Language

In English and many languages, main clauses must be finite. I define finiteness as in (12).

- (12) A clause is finite only if Infl is bound by the Temporal Operator (T_{OP}).

I take finiteness to be a property of clauses which obtains under the particular syntactic condition stated above: namely, when the node Infl is bound by the Temporal Operator (T_{OP}). T_{OP} is an abstract operator in CP that anchors the tense of the clause to the discourse. If a language contains inflectional morphology to mark tense (and/or agreement), finiteness is reflected by this morphosyntactic marking, either on the main verb (if one is present in the clause) or on an inflectional element in Infl, such as the copula.⁵ Non-finiteness is defined here simply as the absence of finiteness, and non-finite forms include infinitives, participles (present or past) and bare verbs. When the copula is the only verb in a main clause, it must be inflected as in (13a). In non-finite embedded clauses the copula appears in its uninflected

⁵We must leave open the possibility that (morpho-)syntactic tense/agreement features are not overtly expressed. This is because present tense main verbs in English sometimes display overt "finiteness" morphology and sometimes not, depending only on the person of the subject:

- (i) John loves/d Mary.
 (ii) I/you/we/they love Mary.

Assuming both (i) and (ii) are syntactically finite, we face the possibility that a null copula is simply a phonetically (or morpho-phonologically) covert Infl that nevertheless is syntactically finite. This is discussed in more detail below. I believe there is evidence against this view, which I discuss in §1.4.

form (as in (13b-c)); likewise the copula is uninflected if it occurs in a main clause with another inflected verb (as in (13d)). Since non-finiteness is the absence of finiteness, the absence of an inflected copula in a main clause (e.g. *is*), i.e. a null copula, is indicative of a non-finite clause (as in (13e)).

- (13) a. Rodney **is** a cat.
 b. Jim wants to **be** the leader.
 c. Paul saw Bill **be** rude to the waitress.
 d. Norman **is being** rude to the waitress.
 e. A mouse \emptyset under the table. (child English)

The issue of finiteness is important particularly in the domain of child language research. Child speakers of many languages go through a stage of development in which their main clause verbs are produced either as full infinitives (as in French, German and Dutch), or as bare, uninflected forms (as in English). This stage is often called the Root or Optional Infinitive stage (Pierce 1989; Weverink 1989; Wexler 1992; Rizzi 1994, among others). For children acquiring other languages, e.g. Italian and Spanish, such a stage of "non-finiteness" is virtually nonexistent (please see Hoekstra, Hyams et al. 1999 for an overview),⁶

Some examples of typical non-finite utterances by children are given in (14).

- (14) a. Hanna ein Blatt holen.
 Hanna a piece of paper get-inf
 "Hanna will get/is getting a piece of paper" (German, Becker 1995)
 b. Pas manger la poupée
 not eat-inf the doll
 "The doll is not eating" (French, Pierce 1992)
 c. Eve sit floor.
 (English, Brown 1973)

⁶ Although child speakers of Italian and Spanish do not seem to produce any non-finite main verbs, they may omit the auxiliary *be* in participial constructions (Lyon 1997; Capomigro to appear).

In child languages which display this phenomenon, during the stage of development in which one finds non-finite forms, one also finds finite forms, as in (15).

- (15) a. Rina braucht eins!
 Rina need-3sg one
 "Rina needs one" (German, Becker 1995)
 b. Elle a pas la bouche.
 she has not the mouth
 "She doesn't have a mouth" (French, Déprez and Pierce 1993)
 c. She cried.
 (English, Brown 1973)

When it comes to the copula, the issue of non-finiteness is more complex, because the copula would appear to have two non-finite forms: its uninflected overt form (*be*) and its null form (see footnote 4). That is, while main verbs have only the inflected and uninflected variants, the copula also has a null form. Questions then arise such as: Are the uninflected and null forms both non-finite variants of the finite copula? What is the syntactic difference between them? Why is it that children almost never produce an overt, uninflected copula as the only verb in main clauses (e.g. @*He be a dog*)?

It is important to consider carefully the syntactic status of the null copula. Children's productions of utterances with a null copula in main clauses might, for example, simply constitute cases of phonological omission (or production errors), such that the syntax of an overt-copula utterance and that of a null-copula utterance are the same (Shipley, Smith et al. 1969; Gleitman and Wanner 1982). I will argue against this view on the basis of evidence that children's pattern of copula omission appears to be determined by syntactic properties of the clause.⁷

⁷ However, I will also argue against the view that children's omission of functional morphemes, and the copula in particular, is due to the absence of the relevant functional projections (e.g. Radford 1988).

It is also important to consider the syntactic relationship between an overt, uninflected copula and a null copula in light of the fact that both forms occur in adult grammar. Thus, in adult grammar, the copula appears as an infinitive under control verbs (*Kaeto tried to be a movie star*), and in certain complements (*I consider John Wayne to be a hero*). Furthermore, *be* can occur as a bare verb under certain SC-selecting verbs (*Sally let Fred be the villain*). In some of these environments (e.g. SC complements of *consider*), the infinitival copula (along with *to*) may be omitted (thus: *I consider John Wayne a hero*). The question of why the infinitival copula may be omitted in some cases, and whether its omission vs. inclusion yields a difference in meaning, remain open questions (see Rothstein (1999) and Schütze (2000) for discussion).

In the following chapters, I will argue that children's null-copula forms should be analyzed as non-finite. Specifically, I will argue that a non-finite null copula results from the fact that English-speaking children employ a different mechanism for satisfying the temporal anchoring requirement than their parents. Moreover, I will argue that the (overt) uninflected copula heads a VP projection, while the finite and null forms of the copula are heads of IP. The analysis I provide accounts for why the copula is null in child English in the particular syntactic environments in which it is null, why it is overt where it is overt, and why it is finite when it is overt (i.e. why children do *not* produce an overt, uninflected copula).

1.4 Previous Work on the Copula in Child Language

In one of the earliest (and one of the most comprehensive) studies of first language development, Brown (1973) documents the findings of longitudinal studies he conducted with his students. The data consist of transcribed conversations (spontaneous speech), recorded over a period of a few years with three children called Adam, Eve and Sarah (a

somewhat shorter period of time in the case of Eve). The data are broken down into five developmental stages, each stage corresponding to a point of development at which all three children averaged a particular MLU (Mean Length of Utterance), measured in morphemes (as opposed to words; this method is fairly standard). Starting with Stage II, when the children began to use functional elements in their speech, Brown details the emergence of fourteen grammatical morphemes, including prepositions (*in, on*), inflectional endings and tense/aspect morphemes (e.g. progressive). Among the grammatical morphemes they studied at this stage was the emergence of *be*, both as a copula and as an auxiliary verb, and both in contracted and uncontracted form.

Brown's criterion for "acquisition" of morphemes was at least 90% use in obligatory contexts. According to this criterion, he found that across all three children, uncontractible copular *be* was the first type of *be* to be acquired. By "uncontractible" Brown meant occurrences where *be* could not have been contracted, e.g. after *this* (**this's*), the past tense copula (*was, were*) and in expressions such as *here/there it is* (**here it's*). Compared to other grammatical morphemes, uncontractible copular *be* ranked seventh, preceded by the present progressive, the prepositions *in* and *on*, the plural, past irregular verbs, and possessives.

After the uncontractible copula, uncontractible auxiliary *be* was acquired (i.e. reached the criterion of 90% use in obligatory contexts), followed by the contractible copula and finally contractible auxiliary *be*. Since Brown's ranking of the "order of acquisition" of these morphemes is based only on the point at which the morphemes reach criterion in the child's speech, the ranking does not tell us which form emerged first in speech, or what the omission rates in obligatory contexts were prior to reaching criterion. However, it is interesting to note that the degree to which the three children resembled each other in the order of acquisition of these 14 morphemes is striking: the rank-order correlation coefficient is above 0.85 between each pair of children.

In another longitudinal study, de Villiers & de Villiers (1972) found a nearly identical order of acquisition of the same 14 grammatical morphemes. One interesting difference between the de Villiers & de Villiers study and the Brown study is that the de Villiers's found that the contractible forms of both the copula and auxiliary *be* reached criterion before the uncontractible forms (using the same acquisition criterion as Brown). Brown argued, based on his results, that the omission of *be* in child English may be explained in the same way that Labov (1969) accounts for omissions of *be* in African-American English (AAE), namely, omitted *be* is the (phonologically-based) omission of a contracted occurrence of *be*. The de Villiers's result might indicate that this is not the right characterization, but they do not offer an alternative explanation.

I know of no studies that focus exclusively on the copula in language development, but there are studies of early language that consider children's production (or omission) of the copula as it relates to finiteness. For example, Hoekstra & Hyams (1998) show that English-speaking children's null-copula utterances pattern like their non-finite (main verb) utterances with respect to the presence/absence of a subject determiner. That is, they found that both finite main verbs and finite *be* occur with a subject with an overt determiner (e.g. *the boy dances/is happy*) and do not occur with a determiner-less subject (*@boy dances/is happy*). In contrast, both non-finite main verbs and null-*be* utterances may occur with either an overt or a null determiner (*(the) boy dance/∅ happy*). In addition, Hoekstra & Hyams find support for their claim in that null-*be* Wh-questions often lack an overt subject or subject determiner (e.g. *What cow/boy doing?*).

Schütze (1997) studied children's production of subject case marking and found that children almost never used a non-Nominative subject (Accusative or Genitive case pronoun) with an overt (tensed) copula or a main verb marked for present tense (-s); null copula and non-finite verb utterances occurred with both Nominative and non-Nominative subjects.

Thus, Schütze found utterances such as those in (16a-c), but (17)-type utterances were unattested.

- (16) a. I tired of clay (Nina 11); She drink apple juice (Nina 19)
 b. Her sick (Nina 13); My ate outside (Nina 10)⁸
 c. No # she's not up there (Nina 23); He has six (Nina 13)
- (17) @Her is tired; Him eats outside

For our purposes, what is significant in the data of both Hoekstra & Hyams (1998) and Schütze (1997) is that the overt/finite copula behaves like other finite main verbs, and the null copula behaves like other non-finite verbs in the relevant respects. Thus, there is independent support for the view that a clause containing a null copula is in fact non-finite. Any account under which a null copula clause is finite would have to explain independently the divergent behavior of clauses containing a null vs. overt copula.

1.5 Organization of the Thesis

As stated above, the main purpose of this thesis is to account for the pattern of copula omission in main clauses by children acquiring English. What I show in Chapter 3 is that the relevant pattern turns on a distinction between two semantic types of predicates: those that denote (tendentially) "permanent" properties vs. those that denote (tendentially) "temporary" properties. This contrast among predicates has been studied rather extensively in the literature and is often referred to as the stage-level/individual-level contrast. Thus, in order to account for children's omission of the copula, we must first understand the nature of this semantic contrast.

⁸For Schütze, past tense main verbs are compatible with non-Nominative subjects because past tense is not dependent on the expression of particular ϕ -features, something which is crucial to the presence of Accord in his system. Nominative case is possible only where Infl has Accord.

In the first part of Chapter 2 I discuss three (primarily semantic) accounts of the stage-/individual-level contrast: those of Carlson (1977), Kratzer (1989; 1995) and Chierchia (1995). Each account differs slightly from the others, and each brings important insights to understanding the relevant distinction. Although I will ultimately offer still a different account of the syntax of the stage/individual contrast, these three accounts provide essential background. In particular, from Carlson we gain perspective on some of the original intuitions behind (and arguments for) this semantic contrast. From Kratzer we take the argument that stage-level predicates project a Davidsonian Event argument in the structure (Davidson 1967), while individual-level predicates do not. I provide a summary of Chierchia's analysis for completeness; in my own analysis I will argue against his view that all predicates project an Event argument.

Since the discussion of the stage/individual contrast is at first limited to nominal and locative predicates, in the second part of Chapter 2 I extend the discussion of the stage/individual contrast to adjectival predicates (stage- and individual-level adjectives) and verbal predicates (eventive and stative predicates). We see in that section how the stage/individual distinction is realized in those domains, as well as some difficulties in extending it to those domains.

In the final section of Chapter 2, the discussion of the stage/individual distinction is again extended, this time to languages other than English. I describe how this semantic distinction surfaces in Spanish, Portuguese and Hebrew. In these sections, we see that there are crosslinguistic differences among languages both in exactly how the stage/individual distinction surfaces (i.e. unlike English, in these languages it is marked in terms of the form or presence of the copula in main clauses) and in exactly how the distinction itself is drawn: i.e., there are crosslinguistic differences in which predicates count as stage-level predicates and which count as individual-level predicates. This sort of crosslinguistic variation has sometimes been used to argue that the stage/individual distinction does not exist, as such, or

that the semantic-syntactic distinctions we find in various languages between "permanent" and "temporary" types of predicates is not really the stage/individual distinction. However, I will argue, ultimately, that the crosslinguistic patterns receive a unified explanation, and that the differences are superficial.

In Chapter 3 we turn to the child English data concerning the omission of the copula in predicative expressions, and my account of these data. The main result of my investigation (all data are spontaneous speech files taken from the CHILDES database, MacWhinney and Snow 1985) is that the copula tends to be overt with individual-level (nominal) predicates, and it tends to be null with stage-level (locative) predicates. The account I provide of this result has two parts. One part is the syntactic distinction I argue for between stage- and individual-level predicates. Drawing on Kratzer's claim that stage-level predicates project an Event argument but individual-level predicates do not, I argue that the Event argument is associated with (projects) a functional projection; this functional projection, which I argue to be an Aspect Phrase (AspP) is not projected in individual-level predicates. I provide evidence from adult grammars for the presence of AspP in stage-level predicates.

The second part of my analysis is the formal requirement of temporal anchoring, which I define as the need for the Temporal Operator in the C-domain (Top) to bind a functional head in the structure. The AspP in stage-level predicates provides a head in the structure that can be bound by Top. In §3.2.1.3 I discuss how this formal requirement captures the distribution of the copula in child English, and how we can account for the relevant difference between child and adult English (namely that the copula can be omitted in child English but not in the adult grammar).

After discussing some alternative analyses and their problems, I return to adjectival and verbal predicates and provide data concerning children's omission of the copula (or finiteness in the case of main verbs) with these sorts of predicates. Finally, we look at a

potential confound in the data and examine the correlation between the overtiness of the copula and properties of the *subject* (as opposed to the predicate).

In the fourth chapter we return to adult grammar and examine some of the consequences of the analysis in Chapter 3 for the languages we looked at in Chapter 2 (Spanish, Portuguese and Hebrew), as well as Russian and adult (standard) English. I show that the syntactic distinction between stage- and individual-level predicates shown in the non-English languages can be easily accounted for under the analysis provided in Chapter 3 for child English. Furthermore, we will look at constructions in adult (standard) English in which the uninflected copula (overt, non-finite *be*) alternates with a null copula. I will argue that the syntactic and semantic differences resulting from the overtiness of uninflected *be* support the view that uninflected *be* is a V head that projects an Event argument; the null copula, instead, is not a null V. In null-*be* constructions no VP is projected. In this section we will see evidence that the overt *finite* copula differs from the overt *uninflected* copula in that the finite copula is not a V head and does not project an Event argument.

Finally, I discuss briefly the copula in African American English (AAE), a dialect in which the copula may be null in main clauses and in which there is an invariant or uninflected form of the copula in main clauses. I show that the invariant copula in AAE, like the uninflected copula in standard English subordinate clauses, projects an Event argument (Green 2000).

Chapter 5 concludes the thesis with a summary of the main argument and a discussion of the remaining problems left open by the dissertation. I speculate also on some further directions the research described here might take in the future.

Chapter 2

Syntactic and Semantic Differences among Predicative Expressions

In this chapter we will focus on the ways in which nominal and locative predicates differ from each other. Initially, we will concentrate on Carlson's (1977) arguments for a semantic distinction between these two types of predicates. Carlson categorizes (most) locative predicates as belonging to the class of "stage-level" predicates, and all nominal predicates as belonging to the class of "individual-level" predicates. Stage-level predicates and individual-level predicates have particular semantic properties, which Carlson discusses. We will go through Carlson's main arguments with regard to these types of predicates.

Kratzer (1995) gives us a way of thinking about Carlson's semantic classification of predicates in terms of syntactic differences between these same types of predicates (nominal vs. locative predicates). Although I will ultimately argue for syntactic structures that differ somewhat from those proposed by Kratzer, Kratzer's framework gives us a way of characterizing syntactically the crosslinguistic differences we find in the form of the copula in different predicative constructions.

I would like to emphasize that in §2.1 I treat *only* nominal and locative predicates, and I explicitly exclude adjectival predicates. In §2.2.1, I will discuss the category of adjectives, and how adjectival predicates fit into the semantic and syntactic distinctions between nominal and locative predicates discussed in §2.1.

2.1 Arguments for the Stage-level/Individual-level Distinction

It is rather straightforward to draw a semantic distinction between nominal and locative predicates, which we can illustrate with the following intuitive example.

- (1) a. The object in front of me is a computer.
b. My computer is on my desk.

The property of being *a computer* is a permanent, indeed inherent property of the object in front of me. The fact that it is *on my desk* is an accidental, temporary property of it. This object, my computer, has always been a computer and will always be a computer, for as long as it exists. However, it has not always been on my desk, and it won't always be there: I might move it onto the floor, into the closet, or onto a different desk. Thus, in the example I just gave, the nominal predicate predicates a permanent, inherent property of the subject, while the locative predicate predicates a temporary, accidental property.

One way of thinking of this difference is to say that the predicates in (1a-b) are doing different things. Nominal predicates express set membership, or class inclusion ((1a) \Rightarrow The object in front of me is a member of the set of computers; *John is a man* \Rightarrow John is a member of the set of men). Set membership is typically a permanent, inherent, or stable property of the subject. In contrast, locative predicates do not introduce a set of which the subject is a member (i.e. the predicate [on my desk] does not denote a set). Rather, a locative predicate simply locates the subject in space. Given the basic assumption that objects may change their location but not their identity, in the prototypical case, locative predicates express a temporary, accidental, or transient property of the subject. It is easy to see that once one goes outside of the prototypical examples (as in (1)), the descriptive labels such as "permanent" or "temporary" are not sufficient to accurately characterize the difference

between nominal and locative predicates. That is, there can be nominal predicates that denote temporary properties (e.g. a person's status as a contestant holds only while the person is in fact in a contest) and locatives that denote permanent locations (cities and islands have permanent, or at least very stable locations). However, this rough semantic distinction will serve to support the intuitions behind the contrast between nominal and locative predicates in the prototypical cases. We will see how grammars mark a formal distinction between predicates along these lines.

2.1.1 Carlson: a semantic difference among predicates

Carlson (1977) drew a distinction between properties that apply to **individuals**, which he argued can be objects (a term meant to include all animate and inanimate objects) or kinds of things (which are often expressed by bare plurals, e.g. *birds*), and properties that apply instead to a spatio-temporal "slice" of an individual, which he called a **stage**.

A stage is conceived of as being, roughly, a spatially and temporally bounded manifestation of something.... An individual, then is (at least) that whatever-it-is that ties a series of stages together to make them stages of the same thing.
(Carlson 1977: 115)

Accordingly, properties are grouped into individual-level properties, those that apply to individuals, and stage-level properties, those that apply to stages. He further notes that "[m]ost prepositional phrases ... will be represented as applying to stages, and not directly to individuals. All predicate nominals, on the other hand, will be thought of as applying to

individuals and never to stages of individuals," (ibid: 130).¹ Stages are predicated of individuals via a "realization" function R . Thus, $R(a, b)$ means that a (a stage) realizes b (an individual). A sentence such as *John is in Boston* would then receive the following semantic form:

(2) John is in Boston: $\exists y[R(y, j) \ \& \ \text{in}(\text{Boston})(y)]$

This means that there is a stage "in Boston" that realizes the individual "John." That is, the property "in Boston" applies not to the individual, John, but to a stage, or a spatio-temporal "slice" of John. In contrast, a sentence such as *John is a linguist* does not involve the realization of an individual by a stage, but rather the direct application of a property, "linguist," to an individual. It has the semantic form in (3).

(3) John is a linguist: $L(j)$

Carlson's evidence for the dichotomy between stage-level and individual-level predicates comes from semantic and syntactic differences between the two types of predicates. For example, the expression in (4a) can have only a generic reading (Carlson uses the term "universal"): all dogs are mammals (it cannot mean that some dogs are mammals). The sentence in (4b), however, is ambiguous between the generic reading (all dogs are in the park) and the existential reading (some dogs are in the park²/ there are dogs in the park).

¹One PP predicate that is exclusively individual-level is *be from [Location]*, e.g. *Rodney is from Encino*. This PP predicate indicates the place where an individual originates or comes from, which of course cannot change and remains a property of the individual for the duration of the individual's existence. I will not deal with these PP predicates here.

²The determiner *some* is meant to be the unstressed *some* (sm), not the stressed *some*, which may have different semantic properties. I will not deal with this issue here.

- (4) a. Dogs are mammals. (generic only)
 b. Dogs are in the park. (generic or existential)

Furthermore, just as bare plural subjects with individual-level predicates cannot have an existential reading, existential sentences cannot have an individual-level predicate in the postcopular phrase.³

- (5) a. There are dogs in the park.
 b. *There are dogs chihuahuas.

This restriction on the lexical category of phrases in existentials was first discussed by Milsark (1974), from whom Carlson draws much of the inspiration for his own discussion of this topic.⁴

Another distinction that Carlson noted between stage- and individual-level predicates is the ability to occur in the complement of a perception verb. Stage-level, but not individual-level predicates can do this:

- (6) a. John saw Mary in the garden.
 b. *John saw Mary a teacher.⁵

³The incompatibility of the existential reading of the indefinite/bare plural subject with an IL predicate (as in (4a)) is accounted for by Kratzer (1995), as I will discuss below. However, Kratzer does not draw a connection between the ungrammaticality of (4a) and that of (5b), both of which show an incompatibility between existential interpretations and IL predication. As Chierchia (1995) points out, however, there is no general semantic incompatibility between existentials & IL predication, as *There are tall men around* is fine. Thus, the lack of an existential reading of (4a) and the ungrammaticality of (5a) are not due to a general incompatibility between individual-level predication and an existential interpretation, but rather some particular property/properties of the constructions themselves. We will return to the contrast in (5a-b) in §3.2.1.2.

⁴See also Stowell (1978) for discussion. Stowell, unlike Milsark, accounts for (5b) in terms of a selectional restriction on *be*: it cannot select a SC complement containing two NPs. Milsark accounts for (5b) in terms of a semantic restriction.

⁵Note that these constructions can take an NP predicate if *as* is inserted in the SC:

It is interesting to note that even "transitory" NP predicates, e.g. *a temporary employee, a newborn infant* pattern like the more typical "permanent" NP predicates in their syntactic behavior. And further, "permanent" locations (*in the known universe*) function just like their "temporary" location counterparts. Note the following data.

- (7) a. Babysitters are **temporary employees**. (generic only)
 b. ?A baby is **a newborn infant**. (generic only)
 (8) a. A unicorn is **in the known universe**. (existential or generic)
 b. Islands are **in the Pacific**. (existential or generic)⁶

The sentences in (7a) and (7b) do not tolerate an existential reading. (7a) cannot mean that there are some babysitters that are temporary employees, and (7b) cannot mean that there is some particular baby that is a newborn infant. Both (7a) and (7b) have definitional readings, and the oddness of (7b) comes from the fact that babies are not defined as newborn infants. For example, a six-month-old is still a baby but is no longer a newborn. Notice that the sentence improves dramatically if the subject is *a neonate* (*A neonate is a newborn infant*), where the predicate is indeed a defining property of the subject. Thus, like their more prototypical counterparts (NP predicates that are long-term properties), these NP predicates allow only a generic, and not an existential reading.

The locative predicative expressions in (8a) and (8b) permit an existential reading of their subjects, even though they indicate permanent locations.

(i) John saw Mary as the group's leader.
 (cf. *John saw Mary the group's leader)

This type of construction seems to involve a slightly different meaning of *see*, namely, to figuratively or mentally perceive, rather than to physically perceive.

⁶For some speakers, the existential reading is only marginally acceptable.

In Carlson's analysis, there are two distinct, homophonous verbs *be*. The *be* that occurs in individual-level predication (*John is a linguist*) is for Carlson semantically empty. It is simply "added" to the representation, although Carlson does not tell us why. The *be* that occurs in stage-level predication (*John is in Boston*), which Carlson calls *be₂*, performs a semantic function: it "has a translation that maps the [predicates] that apply to stages to sets of individuals that have stages that the [predicate] is true of." (Carlson 1977: 180). This quote from Carlson's discussion of *be₂* is taken from his discussion of stage-level adjectives (e.g. *available*), but his account of *be₂* applies to all stage-level predicates, and he assumes that PP predicates also occur with *be₂*.

Rather than assume that there are several different lexical items, all pronounced [be], I assume there is only a single item, *be* (see also Heggie 1988), but that stage-level predicates and individual-level predicates differ from each other structurally. (Again, when I use the terms "stage-level predicate" and "individual-level predicate", I am referring to semantic/syntactic properties of locative and nominal predicates, respectively, and I am not making any claims about adjectival predicates.) I will make this notion more precise in the next section, where we see a similar proposal by Kratzer.

I think that Carlson is essentially correct in saying that locative predicates apply to something spatio-temporal, to a "stage," whereas nominal predicates apply directly to an individual, to the subject. Carlson's characterization of the difference between nominal and locative predicates captures the non-prototypical cases (non-permanent nominal predicates and permanent locative predicates) in a straightforward way. Consider the case of predicates that denote a person's profession (*Reyes is a doctor*). These predicates denote long-term properties that are neither permanent nor inherent. If Reyes is a doctor, then the statement *Reyes is a doctor* is true and felicitous both when she is working at the hospital or in her practice, and also when she is sleeping, cooking or doing any other activity. Her property of being a doctor is not dependent on an **event** of doctoring. Similarly, the NP predicate

neighbor is not dependent on an event of neighboring: *Lucien is my neighbor* is true because Lucien lives upstairs from me, and the statement will be true even when he's at work or away on vacation.

There are a few apparently stage-level NP predicates which do not seem to behave like *doctor* or *neighbor* in the above sense: someone is a fugitive only when he or she is on the run. *John is a fugitive* will not be true either before he escapes or after he is caught. Similarly, *Bill is a contestant* is true only while Bill is in fact a contestant in a contest: it is not true before or after. Thus, one might say that NPs like *fugitive* and *contestant* are dependent on an event of running away or being in a contest. On the other hand, *Reyes is a doctor* is not true before she becomes a doctor or after she retires or changes professions. Thus, *fugitive* and *contestant* seem to behave differently only because one is normally a fugitive or a contestant only for a comparatively brief period of time. Additionally, the activities of running away or being in a contest seem to be all-consuming activities in the unmarked case: it is hard to imagine someone doing anything else while they are in the process of running from the authorities (*fugitive*) or answering questions on a game show (*contestant*). However, it is relatively easy to construct a context in which these typical scenarios don't apply. Consider a person who manages to evade capture for decades. This person assumes a new identity, living and working under this new identity. It would nevertheless be correct to say that this person was a fugitive for that entire period, even though he or she was not actually running anywhere for much of that period. If Bill is a contestant on a game show for 6 months because he keeps winning every time, then it is felicitous to say that Bill is a contestant for those 6 months, even though he's not actually on the show for the entire duration of that period. Thus, I think that the "short-term" NP predicates are not truly different from the more typical "long-term" NP predicates in applying to an individual, rather than a stage (or event).

Locative predicates, however, do seem to be tied to an event of being somewhere. Consider the case of London Bridge, a large and relatively stable object. It was in London from the time it was built, and then it was bought by an American millionaire and moved to Arizona. Thus, the statement *London Bridge is in London* is not true. If it were moved back to London, it would not be possible to say that it has been in London since it was built, because it was in fact in Arizona for a chunk of that time. The truth of the statement *London Bridge is in London* is dependent on the "eventuality" of being in London, i.e. it applies to a stage (/event), rather than an individual.

Returning to the linguistic representations of stage- and individual-level predicates, I think Carlson is correct in saying that there is an extra semantic operation (the "realization function") that is needed in order for a stage-level predicate (here: a locative predicate) to be applied to the subject, while individual-level predicates (nominal predicates) can apply directly. As we will see in Chapter 3, I will analyze Carlson's extra semantic operation as corresponding to extra syntactic structure: the syntactic projection of the event/interval/stage in the semantic representation.

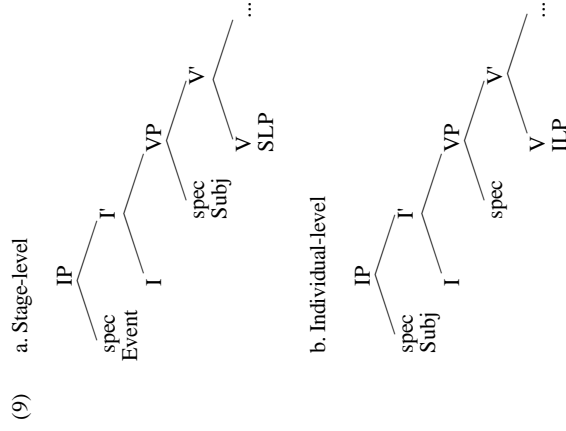
As we will see directly, Kratzer likewise argues that stage-level predicates have something "extra" in the structure that individual-level predicates lack. Let us now turn to Kratzer's argument, which gives us a framework for understanding the syntactic effects of the semantic stage-level/individual-level distinction.

2.1.2 Kratzer: more syntactic evidence for the SL/IL distinction

Kratzer (1989, 1995) describes her approach as being somewhat different in nature from Carlson's. She notes that while Carlson analyzed stage-level and individual-level predicates as applying to different sorts of things (stages and individuals, respectively), she

formalizes the stage-level/individual-level difference in terms of a *structural* difference between these two types of predicates. Her proposal involves the projection of a semantic "event" argument by certain types of predicates; in particular, only by stage-level predicates. My own interpretation of Kratzer's argument is that it is not entirely different from Carlson's idea: in essence, Kratzer proposes that individual-level predicates are predicated directly of the thematic subject (as does Carlson), while stage-level predicates are instead predicated of an event (Carlson: stage).

Specifically, Kratzer proposed that stage-level predicates project a Davidsonian Event argument (Davidson 1967) as their external argument. This argument denotes "events or spatiotemporal locations" (Kratzer 1995: 126; emphasis in original). Individual-level predicates do not project such an argument. The respective structures of stage- and individual-level expressions, according to Kratzer, are given in (9).



The projection vs. lack of projection of this argument has repercussions on the position of the thematic subject in the structure. Kratzer uses this difference between stage- and individual-level predicates in their projection of the Event argument to account for certain syntactic differences between the two types of predication.

For example, stage-level, but not individual-level predicates can be modified by a spatial or temporal modifier. I cite Kratzer's examples here (Kratzer 1995: 128).

- (10) Manon is dancing on the lawn.
- (11) Manon is dancing this morning.
- (12) Manon is a dancer.

In (10-11), the spatial modifier *on the lawn* and the temporal modifier *this morning* modify the event of dancing via the Event argument of the predicate (introduced as a spatiotemporal "location," a variable in the semantic representation). In (12), however, no event argument is projected by the predicate, and so there is no location variable in the semantics to allow modification by temporal and spatial modifiers.

- (13) *Manon is a dancer on the lawn/*this morning*.

The fact that spatial and temporal modifiers modify a predicate via an Event argument is also illustrated in the ambiguity of (14a) but not (14b):

- (14) a. ...weil fast alle Flüchtlinge in dieser Stadt umgekommen sind.
 since almost all refugees in this city perished are
 "...since almost all of the refugees in this city perished."
 "...since almost all the refugees perished in this city."

- b. ...weil fast alle Schwäne in Australien schwarz sind.
 since almost all swans in Australia black are
 "...since almost all swans in Australia are black."
 *"...since almost all swans are black (when they are) in Australia."

In (14a), the modifier *in this city* can modify either the refugees (in other words, "refugees of this city"), or the perishing event ("they perished in this city"). However, in (14b), the modifier *in Australia* can modify only the subject *swans*, since the predicate *black* does not introduce an Event variable. The sentence cannot mean that almost all swans are black *whenever* they are in Australia. (If it could mean that, then *black* would be a stage-level predicate.)

The location variable introduced by a stage-level predicate can be bound unselectively by a quantifier or adverb of quantification. Kratzer illustrates this with examples involving *when*-clause conditionals, in which the *when*-clause restricts the domain of a modal operator. *When*-clauses involve an implicit Q-adverb, *always*, which (unselectively) binds all free variables in its scope. Independently, there is a prohibition on vacuous quantification. Thus, the Q-adverb needs a variable to bind. Assuming (following Kamp 1981; Heim 1982) that an indefinite NP introduces a variable into the discourse representation, we can see that when a sentence contains either a stage-level predicate (*speak French*) or an indefinite NP (*a Moroccan*) in the scope of the Q-adverb, the sentence is good (15b,c). But when there is no variable introduced into the discourse representation, either by a stage-level predicate, or by an indefinite NP (i.e. when the sentence contains an individual-level predicate and no indefinite), the sentence is bad (as in (15a)). The Q-adverb, *always*, has no variable to bind. (Note: 'whenever' is the relevant reading of *when*)

- (15) a. *When Mary knows French, she knows it well.
 b. When a Moroccan knows French, she knows it well.
 c. When Mary speaks French, she speaks it well.

The semantic representations of the sentences in (15) are shown in (16).

- (16) a. *Always [knows(Mary, French)] [knows-well(Mary, French)]
 b. Always_x [Moroccan(x) & knows(x, French)] [knows-well[x, French]]
 c. Always₁ [speaks(Mary, French, 1)] [speaks-well[Mary, French, 1]]
 (from Kratzer 1995: 130)

We can see that Kratzer's dichotomy in (15) is not limited to a stative-eventive distinction, since when we use stage-level stative predicates (e.g. *in the garden*), they allow quantification by the implicit Q-adverb:

- (17) a. When Mary is in the garden, she drinks iced tea.
 b. *When Mary is a doctor, she wears a white coat.

Example (17b) could be forced to mean that whenever Mary is *working* as a doctor, she wears a white coat, but normally a person is thought to have a certain profession both when they are *working* and when they are not *working* (see end of §2.1.1 above). In other words, this reading of (17b) would force the predicate *a doctor* to be a stage-level predicate.

So far, we have seen evidence for Kratzer's claim that stage-level predicates project an Event argument, introduced in the semantics as a variable that can be unselectively bound. She makes the further claim that the Event argument is always projected as the *external* argument of the predicate. Kratzer (1995) follows Diesing (1988; 1992) in postulating different positions in the structure in which subjects can be generated: SpecVP (Kitagawa 1986; Kuroda 1988; Koopman and Sportiche 1991) and SpecP (canonical main clause subject position). By "subject" I mean the thematic subject of the verbal predicate (typically the DP bearing the Agent theta role assigned by the lexical verb). What determines the position in which the subject is generated is whether or not there is an Event argument. The correlation is as follows: if an Event argument is projected (i.e. if the predicate is stage-

level), then the Event argument is projected externally, in SpecIP. All other arguments (including the subject) are projected within VP. If no Event argument is projected (i.e. if the predicate is individual-level), then an external (thematic Agent) argument is projected in SpecIP, if there is one. If there isn't one, i.e. if the predicate is an unaccusative individual-level predicate, then there is no external argument (no argument is projected in SpecIP), and the internal/theme argument of the predicate is projected in VP. This is schematized in Table 2.1.

Table 2.1 The Position of the Subject with Stage- and Individual-level Predicates (after Kratzer 1995)

stage-level	unergative	[IP Ev [vp agent, theme]]
stage-level	unaccusative	[IP Ev [vp theme]]
individual-level	unergative	[IP agent [vp theme]]
individual-level	unaccusative	[IP e [vp theme]]

Adapted from Kratzer (1995: 136)

This structural difference between the position of subjects of stage-level as opposed to individual-level predicates allows us to capture two results, one regarding German and one regarding English.

In German subordinate clauses, the finite verb is the final constituent of the sentence. The (thematic) subject may occur directly after the complementizer, as in (18a), or other elements may intervene, as in (18b).

- (18) a. ...dass/weil Hans angekommen ist.
 that/because Hans arrived is
 "...that/because Hans has arrived."
 b. ...dass/weil gestern Hans angekommen ist.
 that/because yesterday Hans arrived is
 "...that/because Hans arrived yesterday."

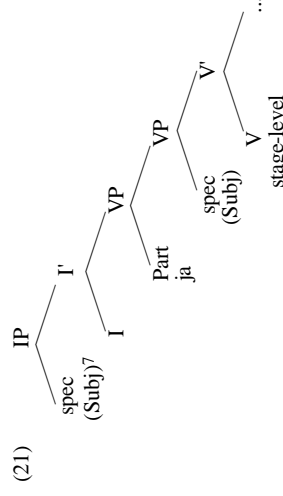
Diesing (1992) has argued that the particle *ja* is adjoined at the VP level, thus demarcating the left edge of the VP. In this way, we can see that if an argument appears before *ja*, then it is outside of VP, but if it occurs to the right of *ja*, then it is inside VP. The subject of a stage-level predicate may occur either above or below this particle, as in (19).

- (19) a. ... weil Berge **ja** sichtbar sind
 "... since mountains are visible"
 b. ... weil **ja** Berge sichtbar sind
 "...since mountains are visible"

However, the subject of an individual-level predicate can occur only above VP.

- (20) a. ...weil der Präsident **ja** intelligent ist
 "... since the president is intelligent"
 b. *...weil **ja** der Präsident intelligent ist
 "... since the president is intelligent"

The structures of (19-20) are given in (21-22).



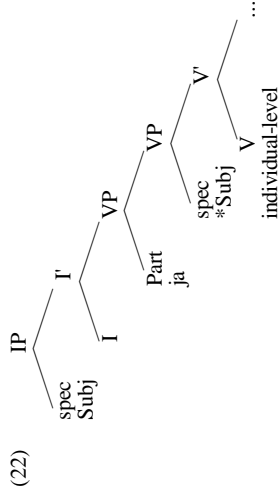
⁷Note that this is the position in which the Event argument is projected. My understanding of Kratzer's account is that the Event argument is present in SpecIP at a particular level of representation, but is not necessarily in that position at all levels. Thus, the thematic subject may appear in SpecIP at some level of representation (presumably S-structure), without interference from the Event argument. Alternatively, one must understand Kratzer as saying that stage-level predicates may project the Event argument but need not; in this case, the subject appears in SpecIP if the Event argument is not projected (and otherwise appears in another position). However, at least in English, all subjects must occur in SpecIP at S-structure.

Kratzer and Diesing make the (standard) assumption that the VP is closed under existential closure. That is, whatever is in the VP and below can receive an existential interpretation. Material outside the VP, i.e. in IP, is outside the scope of the existential quantifier and therefore is subject to binding only by the generic quantifier, which scopes over IP as well.

(23) Gen [IP ... [\exists [VP ...]]]

Thus, subjects in VP (i.e., subjects of stage-level predicates) can have an existential reading, while subjects in IP (i.e., subjects of individual-level predicates) must have a generic reading.

There are two main problems with Kratzer's proposal. These are not problems with her argument that stage-level predicates project an Event argument while individual-level predicates do not. Rather, they are problems with her argument that the Event argument is projected in SpecIP, the canonical main clause subject position. One problem is that according to her analysis, the thematic subject of certain predicates are generated in SpecIP, rather than in VP. Taking this view forces us to abandon the VP-Internal Subject Hypothesis (VISH) (Kitagawa 1986; Kuroda 1988; Koopman and Sportiche 1991). The VISH hypothesis, i.e. the hypothesis that the external (thematic) argument of a verb is projected within the lexical projection of the verb (either in the specifier of VP, or adjoined to VP), is empirically well-supported (see references above), as well as being conceptually desirable: Guéron & Hoekstra argue, in part based on VISH, that "all theta-roles are assigned within the maximal projection of the theta-assigning head" (G&H 1995: 77). Thus, the VISH is something we should not give up lightly. This is true particularly in the case of predicates: whereas one might argue, as was traditionally the view, that an unergative or transitive main verb like *know* projects its external argument directly in



Kratzer and Diesing account for this pattern in the following way. Stage-level predicates project an Event argument in SpecIP, so the thematic subject of the predicate is generated in SpecVP. The subject then has the possibility of raising to SpecIP (but is not required to do so), thus giving rise to two potential positions of the subject. In the case of individual-level predicates, however, the subject must be generated in SpecIP. Having never been projected in VP, it cannot then "lower" to that position, or reconstruct to it. Therefore, there is no possibility for the subject of an individual-level predicate to occur after *ja*, as shown in (20) above.

The English phenomenon that is accounted for by the difference in subject position between stage- and individual-level predicate constructions has to do with the ability of an indefinite or bare plural subject to have an existential reading. We already saw that subjects of stage-level predicates can have an existential reading, while subjects of individual-level predicates can have only a generic, or universal reading. The examples are repeated here in (4).

- (4) a. Dogs are mammals (generic only)
 b. Dogs are in the park (generic or existential)

SpecP, predicative expressions are raising constructions (see the discussion of Stowell 1978 in §1.2.1). Thus, in these types of constructions we have independent arguments for generating the thematic subject low in the structure, regardless of whether the predicate expresses a stage- or individual-level property.

A second problem with Kratzer's particular proposal has to do with what are called "lifetime effects." A lifetime effect is the phenomenon that an individual-level predicative expression, if placed in the past tense, seems to imply that the subject is dead or no longer exists. For example, (24) implies that Rover is dead.

(24) Rover was a dog.

Kratzer argues that this effect arises because the external argument of the predicate is always bound by Tense. Thus, in a past tense stage-level predicative (*John was in the garden*), it is the Event argument that gets placed in the past (i.e. the event of John's being in the garden is in the past). This is so because the Event argument is the external argument in this case. In a past tense individual-level predicative, it is the thematic subject that is the external argument, and so the thematic subject gets placed in the past. Thus, in (24), it is Rover that gets "placed in the past," by being bound by the past tense of the sentence, and since Rover himself is placed in the past, we get the implication that he no longer exists.

However, as noted by Jäger (1999) and Musan (1997), there are problems with Kratzer's account of lifetime effects, and there are independent ways of accounting for these effects. Jäger points out that our knowledge of the world has a significant effect on the implicature of nonexistence of the subject. For example, we easily understand (25a) to imply that the subject, Carthage, no longer exists. But note that this judgment is not unaffected by our knowledge of the fact that Carthage was destroyed. The same inference

(i.e. that the subject no longer exists) is not made in (25b), where we infer instead that it is the NP in the predicate (*the USSR*) that no longer exists.

- (25) a. Carthage was in Africa. (Jäger 1999: 77)
b. Riga was in the USSR. (*ibid*)

In fact, even with fairly prototypical individual-level predicates, such as *a doctor*, a past tense expression does not really imply that the subject is dead.

(26) Robert was a doctor.

A sentence such as (26) is true and felicitous in the situation where Robert is dead, but it is equally true (though somewhat less felicitous)⁸ in the situation where Robert either retired from being a doctor or changed professions.

Musan points out that there are contexts in which lifetime effects can be made to disappear. Note the following example.

(27) Yesterday I happened to be introduced to Robert and Natasha. Robert was a doctor, and Natasha was a journalist.

In the context of the first sentence in (27), the past tense of the second sentence not only does not imply that Robert and Natasha are dead, but it even doesn't imply that they have changed professions. Musan accounts for this shift in the presence of lifetime effects in terms of an implicit context variable, C, which is bound by an (empty) existential quantifier if no overt operator is present. Thus, in (27) the context is provided by the first sentence, and the second sentence is interpreted within this context, which is in past tense. Therefore,

⁸The imperfective past tense *used to be* is more natural in this case.

the past tense of the second sentence does not imply that Robert's being a doctor or Natasha's being a journalist is "over."

In (26), where the past tense individual-level predicative is uttered out of the blue, there is an implication that Robert's being a doctor is over, either because he is dead, or because he has changed professions. Musan accounts for this effect in terms of the Gricean maxim of informativeness. If a speaker is being maximally informative, then the use of the past tense indicates that Robert's being a doctor is in fact "over," and one way in which it might be over is if the subject no longer exists. Barring violations of this maxim, the implication goes through.⁹ Musan accounts, then, for the "lifetime effects" we get with individual-level predicates without appealing to the view that Tense always applies to the external subject position (SpecIP), as in Kratzer's analysis. Therefore, Musan does not need to argue that the Event argument, when projected, is always the external argument, i.e. in SpecIP.

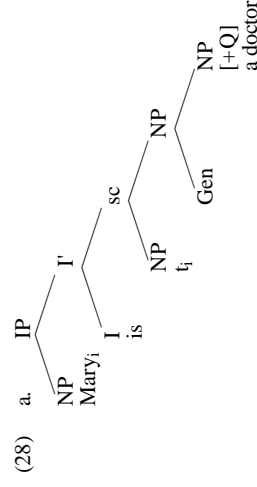
2.1.3 Chierchia: a neo-Davidsonian approach, and a generic account of IL predicates

Kratzer's approach to accounting for the difference between stage- and individual-level predicates is to say that only stage-level predicates project an Event argument, while individual-level predicates do not. In this regard, she includes all eventive verbs among stage-level predicates, and all stative verbs among individual-level predicates. Thus, according to Kratzer, a verb like *know* and a property like *a doctor* both fail to project an event argument, while a verb like *speak* and a property like *in the room* both project such an argument.

⁹Musan actually uses a different example, that of *being from America*, which is more permanent or inherent than *being a doctor*. I avoided this type of example because it is the one PP predicate that is unambiguously individual-level, and all other PP predicates I discuss here are arguably stage-level. I refer the reader to Musan (1997) for a more thorough discussion.

For completeness, I describe here a different theory of the projection of the Event argument, and, accordingly, a different account of the stage/individual distinction. Unlike Kratzer, Chierchia (1995) takes a "neo-Davidsonian" approach, which is that all predicates project a Davidsonian argument, which he calls a Situation argument. Similar semantic proposals that all predicates project a Davidsonian argument are adopted in Higginbotham (1983; 1985) and Parsons (1990).

Chierchia's main claim is that individual-level predicates, which he defines as being "permanent or tendentially stable," are inherently generic (see also Condoravdi 1992; Chierchia 1995: 176). The situation variable introduced by individual-level predicates must be bound locally by the generic operator (Gen), while the situation variable introduced by stage-level predicates (which he refers to as denoting "transient or episodic properties") need not be bound by this operator. For Chierchia, the Gen operator is adjoined to VP (or other relevant predicate category) and takes scope over the predicate. However, Chierchia also assumes that not only verbal predicates, but also nominal predicates (*a doctor*) project a situation argument. Chierchia's structure of an individual-level (nominal) predicative is the following (Chierchia 1995: 205)



The [+Q] feature in the predicative NP *a doctor* in (28a) seems to be a feature which must be bound (locally) by a Q-adverb or other quantificational operator, such as Gen. Chierchia notes that "the Davidsonian slot is filled by a variable ranging over states" (Chierchia 1995: 205); i.e. the *s* in (28b)—evidently Chierchia assumes this variable is projected in the semantic representation, but not in the syntactic representation. I will put aside other details of Chierchia's analysis and instead outline how he accounts for the various differences between individual- and stage-level predicates that Kratzer discusses. Recall that the main difference between Chierchia's and Kratzer's analyses is that for Kratzer only stage-level predicates project a Davidsonian argument, while for Chierchia, all predicates do.

One of the differences between stage- and individual-level predicates that Kratzer discussed was modifiability by spatial or temporal modifiers. I give Chierchia's examples here, but cf. examples (10-12) above from Kratzer.

- (29) a. ??John is a linguist in his car.
 b. ??John is intelligent in France.
 c. ??John knows Latin in his office.

(It is interesting to note that while Kratzer assigns sentences like those in (29) a * for ungrammaticality, Chierchia assigns them a ?? for very marginal acceptability. This difference in notation indicates that for Kratzer examples such as (29a-c) are syntactically ill-formed, while for Chierchia they are semantically ill-formed.)

Chierchia accounts for the oddness of the sentences in (29) by saying that "the generic quantifier present in the argument structure of [individual]-level predicates ranges over situations that are *arbitrarily* located. The introduction of a locative modifier clearly clashes with the fact that the location of i-level predicates is arbitrary, that is, unrestricted." (Chierchia 1995: 207, emphasis in original.) In other words, individual-level predicates

apply in arbitrary situations (events, locations, etc.), and so cannot be restricted in this regard.

Chierchia provides an account for the ungrammaticality of individual-level predicates in perception verb complements that is similar to his account of temporal/spatial modification. The gist of his argument is the following. A sentence such as (30)

- (30) *I saw [SC John tall]

means, essentially, that there was some situation or eventuality that I observed, and that observed situation was the generic situation of John being tall. Since John's tallness is clearly an observable or perceivable property, the problem is not an incompatibility between the main clause verb (*see*) and the meaning of the SC predicate. The problem is that if John's tallness holds as a generic property of John, it has no bearing on the situation being observed or perceived.¹⁰ Thus, John's property of being tall is "incapable of specifying or in any way narrowing down the nature of the observed situation" (ibid: 210). Chierchia considers this problem sufficient to induce ungrammaticality.

As for the inability of individual-level predicates to occur in existentials, Chierchia explains this phenomenon by arguing that the Generic operator (which binds the situation variable of the predicate) serves as a "strong determiner," rendering a generically construed predicate as incompatible in an existential coda (31a) for the same reason that definite determiners and strong quantifiers are banned here (31b-c). That is, (31a) is grouped with sentences such as (31b) and (31c), all of which clearly contrast with (31d).

¹⁰Chierchia's (1995) use of the term 'generic' is non-standard. In traditional usage, 'generic' can refer only to an expression containing an indefinite or bare plural subject and could not be used to refer to the interpretation of an expression with a definite subject, such as *John is tall*. Please see Krifka, et al. (1995) for a discussion of genericity.

2.1.4 Summary of §2.1

In §2.1 we have seen that nominal and locative predicates differ from each other semantically, and this semantic difference has been characterized by Carlson (1977) by means of the formal distinction between individual-level (nominal) and stage-level (locative) predicates. We also saw that there are some syntactic reflexes of the stage/individual distinction. In accounting for these differences, Kratzer (1995) proposed that stage- and individual-level predicates differ from each other structurally: stage-level, but not individual-level predicates project a Davidsonian Event argument as their external argument. As an alternative view, Chierchia (1995) argues that all predicates project a Davidsonian argument, but that in the case of individual-level predicates, this argument, a semantic "situation" variable, must be bound by a Generic operator.

In Chapter 3 we will see evidence from language acquisition in favor of the view that stage-level (in particular locative) predicates project an Event argument while individual-level (nominal) predicates do not, although the evidence will point us toward projecting the Event argument lower in the structure than Kratzer does. But first we will look at the domain of adjectives (§2.2), which introduce some complications for the stage-individual dichotomy indicated thus far. We will also look at the domain of main verbs, which exhibit a stative/eventive distinction that is often seen as a direct parallel to the individual-level/stage-level distinction. Following that, in §2.3 we will see some crosslinguistic evidence that the distinction made in English between stage- and individual-level predicates is also made in other adult grammars, and we will see how different languages draw the semantic distinction, and realize it syntactically, in various ways.

- (31) a. *There were [students protesting]
b. *There was [every student protesting]
c. *There was [the student protesting]
d. There were [students protesting]

Since (31d) contains an eventive verb, the predicate is stage-level and thus grammatical in this context.

Finally, Chierchia's treatment of the ban on individual-level predicates in *when*-clauses amounts to the (correct) observation that occurrence in a *when*-clause is simply a test for iterable predicates. Thus, stage-level properties that are non-iterable (e.g. *dead*, or eventive verbs such as *kill*, *break*) cannot occur in these contexts. (Recall that the relevant meaning of *when* is 'whenever'.)

- (32) a. ??When John is dead, his relatives miss him.
b. ??When John kills Frdo, he kills him cruelly. (Chierchia's (91a))

Individual-level properties are never iterable when predicated of a definite DP, so they naturally cannot occur in these contexts.

Chierchia's account provides an alternative to Kratzer's way of understanding the syntactic and semantic differences between stage- and individual-level predicates. In Chierchia's framework, the Neo-Davidsonian view that all predicates project an Event (or 'situation') argument is accommodated. Although I will not follow Chierchia's style of analysis in my own analysis of child English, it is helpful to keep alternative accounts in mind (see §3.2.2 for discussion). Moreover, Greenberg (1998) adopts Chierchia's approach in accounting for the pattern of copula omission in adult Hebrew, which bears a striking resemblance to the pattern of copula omission in child English.

2.2 Beyond nominal and locative predicates: the adjectival and verbal domains

Up to this point, I have explicitly avoided drawing the obvious connection between the stage-/individual-level distinction between nominal and locative predicates, and the stage-/individual-level distinction among different adjectives. The reason for this avoidance, as we will see directly, is that while there are some prototypical individual-level adjectives that behave like nominal predicates, and some prototypical stage-level adjectives that behave like locative predicates, there are many ambiguous and problematic cases.

I have also largely avoided extending the discussion of the stage-individual distinction among non-verbal predicates to the eventive/stative distinction among verbs (except in reference to some of Kratzer's examples). In §2.2.2 I will briefly discuss some of the arguments for saying that eventive verbs project an Event argument while stative verbs do not, as well as arguments that all verbs project an Event argument. I will also discuss the problem that stage-level locative and adjectival predicates are clearly stative, yet they arguably project an Event argument like eventive verbs.

2.2.1 Adjectival predicates

The stage-level/individual-level distinction can be applied to predicate adjectives as well as to the nominal and locative (PP) predicates we have seen so far. The class of adjectives can be divided among individual-level adjectives, e.g. *intelligent*, *fat*, or *tall*, and stage-level adjectives, e.g. *tired*, *sick* (in the sense of 'ill'), or *happy*. Most prototypical individual-level or stage-level adjectives behave (syntactically) just like the NP individual-level and PP stage-level predicates, respectively. Thus, (prototypical) stage-level adjectives can yield an existential reading of an indefinite or bare plural subject, and can occur in the

complement of a perception verb, in the coda of an existential, or in a *when*-clause. Prototypical individual-level adjectives cannot do any of these things.

(33) a. A basketball player is ill. (existential ok)

b. A basketball player is tall. (generic only)

(34) a. There are doctors available.

b. *There are doctors intelligent.

(35) a. John saw Mary drunk.

b. *John saw Mary intelligent.

(36) a. When Rodney is tired, he takes a nap.

b. *When Rodney is fat, he takes a nap.

Once we move beyond the prototypical cases, however, the mapping of the stage/individual distinction onto the domain of adjectives becomes less clear. There are adjectives that are not easily categorized, from an intuitive standpoint, as stage-level or individual-level. For example, in an expression such as *That's funny*, is *funny* a stage-level or individual-level predicate? Based only on intuition, it is difficult to tell. The expression *That's funny* might refer to the (probably transitory) act or event that was funny, or to the telling of a funny joke. In this sense, it seems stage-level. But one might look at it another way: perhaps 'funniness' is an inherent property of whatever event occurred, or of the joke that was told. In this other sense, *funny* seems individual-level.

In applying the syntactic tests we used above (existential reading of an indefinite subject, occurrence in an existential coda, occurrence in the complement of a perception verb), *funny* appears to pattern as an individual-level predicate.

(37) a. A comedian is funny. (generic only)¹¹

b. *There are movies funny.

c. *Mary saw Bill funny.

¹¹It seems hard to find a good context where *funny* might yield an existential reading of the subject in (37a). However, it is possible that, finding the appropriate context, this reading is available.

Again, it is unclear to me why an adjective like *available* should fail to occur in perception verb complements. It might be ruled out simply by the implausibility of observing someone's availability, although I don't believe that is the case. If I'm looking for someone to help me, and I see John standing around doing nothing, I am observing the fact that he is available. Jäger, who looks at these sorts of "outliers" (predicates that don't pass all of the traditional tests), does not give an account of why many stage-level predicates occur in perception verb complements, or why certain ones, like *available*, do not.

Going back to cases such as *funny*, there is a group of adjectives that behave in this way. These are adjectives such as *polite*, *mean*, *rude*, *nice*, *quiet*, or *noisy*. They tend not to be able to occur in perception verb complements and the coda of an existential; some of them allow an existential reading of an indefinite subject; they all can occur in a *when*-clause.

- (41) a. Students are polite. (generic only)
 b. *There are students polite.
 c. *Mary saw John polite.
 d. When John is polite, his mother is happy.
- (42) a. Children are quiet. (generic only)
 b. *There are children quiet.
 c. *Sue heard Bill quiet.
 d. When Pablo is quiet, his parents can get some sleep.

Note that in the environments where these adjectival predicates are ungrammatical (i.e., perception verb complement, existential coda), the sentence becomes fully grammatical if the verb *be* is inserted.

- (43) a. There are students being polite.
 b. Mary saw John be/being polite.
 c. There are children being quiet.
 d. Sue heard Bill ?be/being quiet.

But according to another test, the ability to occur in a *when*-clause, *funny* behaves like a stage-level adjective.

- (38) When Jay Leno is funny, his show is very good.

Even certain adjectives that are rather prototypically stage-level fail some of the tests for stage-levelhood. There are a number of stage-level adjectives that cannot occur in the coda of an existential, or at least occur only with some difficulty. For example, *?There are tables dirty* is not as natural as *There are children sick*. It improves, however, either with a conjoined predicate (*There are tables dirty and broken*), or with a modifier on the associate NP (*There are several tables dirty*) or on the predicate (*There are tables still dirty*). The reason for this improvement is not clear to me.¹²

There are also some stage-level adjectives that cannot occur in the complement of a perception verb, as pointed out by Jäger (1999).

- (39) *I saw John available.

Available is otherwise quite prototypical and is used in Diesing's (1992) often cited example of the difference in interpretation of indefinite subjects of stage-level vs. individual-level predicates:

- (40) a. Firemen are available. (existential or generic)
 b. Firemen are altruistic. (generic only)

¹²The improvement that comes from two conjoined APs might be linked to the fact that NP-internal modification is generally made possible by a conjoined modifier: *A man sick *(and depressed) came to visit* (Schütze, p.c.).

Interestingly, these are just the adjectives that can occur in the so-called "active *be*" construction (Partee 1977):

- (44) a. John is (just) being funny.
b. Karen is being polite (to her aunt).
c. The children are being quiet (for a change).

In the examples in (44), these adjectives clearly have a stage-level meaning: the subject is displaying the relevant property at a particular time. Without the progressive verb *being*, these same adjectives have a much more individual-level feel to them.

- (45) a. John is funny.
b. Karen is polite.
c. The children are quiet.

However, it is not entirely clear that these adjectives are truly individual-level, even in constructions like (45). For example, unlike more prototypical individual-level predicates, the adjectives in (45) can easily be modified by a temporal adverb, such as *always*.

- (46) a. John is always funny/polite/quiet.
a' John is always in the kitchen.
b. *John is always intelligent/tall.
b' *John is always a doctor.

I suspect that when predicated of a sentient being, these adjectives denote habitual properties. A habitual property may also be a characteristic property of someone. For example (45a) may mean that John is funny on many occasions, but he may also be

characteristically funny. (The reverse is not always true: there are characteristic properties, e.g. *tall*, which nevertheless are not habitual.)

Other adjectives that seem to have a dual personality are those such as *clever*. These adjectives are fairly clearly individual-level in the unmarked case. The sentence *Zoe is clever* could not normally be construed as expressing a stage-level property of Zoe. However, as Stowell (1991) points out, these adjectives can receive a stage-level interpretation in the following contexts.

- (47) a. Zoe was clever to hide the key.
b. It was clever of Zoe to hide the key.
c. Hiding the key was clever of Zoe.

Stowell argues that adjectival predicates like *clever*, which he refers to as mental property (MP) adjectives, have an optional Event argument, in addition to the obligatory "sentient" argument, i.e., the person who was clever in doing whatever they did. Notice that Zoe's cleverness in (47a-c) is not really a property of Zoe; these sentences do not entail that Zoe is a clever person.

The group of adjectives like *clever*, and the group of adjectives like *polite* partly overlap. Stowell includes *clever*, *stupid*, *unning*, *mean*, *nice*, *kind*, *farsighted*, *skillful*, *generous* and *imprudent* in his class of MP adjectives (he notes this is a partial list). Some of these, such as *mean*, *nice*, *kind*, *generous* and *imprudent* behave like *polite* in being able to occur in the active *be* construction (*John is being mean/nice/kind/generous/imprudent*). However, the others don't occur as easily in this construction. *John is being stupid* seems grammatical, but it seems to mean 'foolish', rather than 'lacking intelligence.' Admittedly, the difference in meaning between *stupid* 'foolish' and *stupid* 'lacking intelligence' is subtle and hard to defend. Other MP adjectives cannot occur at all in the active *be* construction: **John is being clever/cunning/farsighted/skillful*.

Most adjectives that can occur in the active *be* construction are also MP adjectives (*polite, nice, mean, kind*), but *funny, quiet* and *noisy* do not occur in the MP constructions.¹³

- (48) a. It was polite/nice/mean of John to wash his friend's car.
 a' John is being polite/nice/mean.
 b. *It was funny/quiet/noisy of John to tell a joke.
 b' John is being funny/quiet/noisy.

With respect to the traditional tests for stage-levelhood, Stowell's MP adjectives mostly behave like the *polite* class: they marginally allow an existential reading of an indefinite subject, cannot occur in a perception verb complement or existential coda, but do occur in a *when*-clause.

- (49) a. Lawyers are cunning/skillful. (generic only)
 b. *I saw Mary cunning/skillful.
 c. *There are students cunning/skillful.
 d. When Bill is cunning/?skillful, he gets what he wants.

I will follow Stowell in assuming that these predicates have an optional Event argument that they may project. I do not have an answer for why they cannot occur in perception verb complements or existential codas, however. If occurring in this position is dependent on the projection of an Event argument, then MP adjectives should be able to occur here. I leave this problem unresolved at this time.

¹³(48b) is grammatical with *funny* if *funny* is taken to mean 'weird'. It is not acceptable if used to describe the sort of thing that would make one laugh. (48b'), instead, only allow the latter meaning (not the 'weird' meaning).

2.2.2 The verbal domain: stative vs. eventive verbs

So far, we have looked at how the stage-level/individual-level distinction is realized in non-verbal predicates (nominal, adjectival and locative predicates). Nominal predicates are individual-level, (most) locative predicates are stage-level, and adjectival predicates are a mixed bag: some are clearly individual-level (*tall, intelligent, American*), some are clearly stage-level (*tired, ill, happy*), and others seem to go both ways (*polite, funny, clever, skillful*).

Verbal predicates, by which I mean main verbs, are also argued to divide among individual-level and stage-level verbs. This division runs roughly parallel to the division between stative and eventive (non-stative) verbs. In fact, Kratzer illustrates her account of stage- vs. individual-level predicates by contrasting the verbs *know* (stative) and *speak* (eventive).

- (50) a. I heard John speak French.
 a' *I saw/heard John know French.
 b. There are students speaking French.
 b' *There are students knowing French.¹⁴
 c. When John speaks French, he speaks it well.
 c' *When John knows French, he speaks it well.
 d. A Moroccan knows French/Moroccans know French. (generic only)
 d' A Moroccan speaks French/Moroccans speak French. (existential ok)

Kratzer does not explicitly address the constructions in (50a-b) (she addresses only the construction in (50c)), but they seem to show the predicted pattern. Kratzer's claim is, thus, that eventive verbs project an Event argument (like their non-verbal stage-level

¹⁴This construction might be ungrammatical simply because stative verbs cannot occur in the progressive (*John is knowing French). Thus, it is not clear whether the ungrammaticality of (50b') results from the presence of a stative verb in the existential coda or from the occurrence of a stative verb in progressive (C. Schütze, p.c.). We will return to this construction in §3.2.1.2.

counterparts), but some stative verbs do not (like their non-verbal individual-level counterparts).

Some stative verbs denote clearly stable properties, such as *know* (a *language*) and *resemble*. However, not all stative verbs denote a stable state. For example, verbs such as *love*, *hate*, *have* and *want* surely denote states that can come and go. One can see this in their ability to be modified by temporal modifiers. Observe the following contrasts:

(51) a. John had the ball three times during the game.

b. *I knew German three times last week.

(52) a. Pablo hated broccoli last week, but this week he loves it.

b. *Pablo resembled his father last week, but this week he resembles his mother.

Nevertheless, all eventive verbs (as far as I know), behave like stage-level predicates in all of the tests we have seen so far (see (50a-d) above).

Much like Kratzer, Enç (1991) argues that event verbs project a "time argument," which she takes to be an empty temporal NP, within the VP projection. Enç explicitly draws an analogy between her "time argument" and Kratzer's "Event argument." She further argues that this time argument must be bound, for example by a Generic or modal operator, or by a genuine tense. Coupled with her argument that there is no true present tense in English, Enç uses this reasoning to account for the fact that eventive verbs in present tense receive only a generic (habitual) interpretation and not an on-going one. A sentence such as

(53) Mary sings

is not interpreted such that a singing event (by Mary) is going on at the time of utterance, but rather that Mary sings in general, or habitually. Enç accounts for this fact by saying that the verb projects a time argument which must be bound by an operator. There is no modal

operator in the structure to bind it, and Enç argues that there is no tense (because the English "present tense" is vacuous). But there is a (covert) generic operator which binds it, yielding a generic interpretation of the event. (In contrast to the present tense, past denotes a real tense in English, so that a sentence such as *Mary sang* does receive a past eventive interpretation—the time argument is bound by a (past) Tense operator.)

Unlike eventive verbs, stative verbs may receive a "present tense" interpretation.

(54) Mary knows French.

(54) is not generic, but means that the predicate *knows French* holds at the time of utterance. According to Enç, this interpretation arises because stative verbs have a time argument that does *not* need to be bound by an operator. Thus stative verbs are free to be interpreted according to the "vacuous" present tense: the predicate simply holds at the time of utterance. Enç is forced to assume that stative verbs may project a time argument because they, like eventive verbs, can be interpreted as holding at an interval or moment before utterance time (cf. *Mary sang* (= Mary's singing event was before utterance time), *Mary believed John's story* (= Mary's believing state was before utterance time)).

In brief, Enç's view is that eventive verbs have a generic interpretation because their time argument must be bound by an operator, and since present tense is vacuous, there is no available "tense" operator in present tense. Thus, the time argument is bound by the covert Generic operator. Stative verbs, on the other hand, have an on-going reading because their time argument need not be bound. Since Enç takes the position that all verbs project a "time argument," and the difference between stative and eventive verbs resides in the need (vs. lack of need) for the argument to be bound, Enç appears to take a sort of hybrid view between Kratzer's view (that certain predicates project an Event argument and certain other predicates don't), and the neo-Davidsonian view (that all predicates project an Event argument). Enç

attempts to reconcile her account of the difference in the generic vs. on-going interpretation of eventive and stative verbs in present tense with Kratzer's claim that the class of predicates that project an Event argument includes *all* stage-level predicates, rather than just eventive main verbs. She concludes that the time argument of a stage-level stative predicate (e.g. *sick*) can, but need not be bound.¹⁵

(It is interesting to note that Enç and Chierchia end up with almost opposite claims: Enç claims that the "time argument" of all *eventive verbs* must be bound by the Generic operator (in the absence of a true tense or a modal operator), while Chierchia claims that the "situation argument" of all *individual-level predicates* must be bound by the Generic operator (because his claim is that all individual-level predicates are inherently generic). In a sense they are both right. Being intelligent can be seen as a generic property of John in *John is intelligent* (admittedly, this is a non-standard use of 'generic'), just as singing can be seen as a generic property of Bill in *Bill sings*.)

Aside from Enç, a number of people support the view that stative as well as eventive verbs take a Davidsonian argument (Event, situation, time, etc.). However, there are varying degrees of commitment as to the syntactic role of this argument. For instance, Parsons (1990) argues that all verbal predicates project a Davidsonian argument, but he considers it to be a purely semantic object, and not a syntactic object (Parsons, p.c.). As we saw above in §2.1.3 Chierchia (1995) also takes the view that all predicates project an Event (for him: Situation), but he also does not seem to believe that this argument is projected in the syntax (cf. (28a-b) above).

¹⁵Enç is forced to this conclusion, I think. If she were to say, instead, that the time argument of stage-level predicates like *sick* were obligatorily bound by the Generic operator, she would predict, incorrectly, that these predicates in present tense would have a generic reading (*Mary is sick* is not a generic expression). Thus, these stage-level statives behave like other statives in not needing the time/Event argument to be bound.

In the next chapter, I will show that positing the projection of an Event argument in the case of stage-level, but not individual-level predicates will help us account for the pattern of copula omission in child English.

Before leaving the verbal domain, I would like to point out that whether or not one assumes that stative predicates in general project an Event argument, the class of stage-level stative predicates (*tired*, *in the garden*) present a sort of paradox: they are stage-level and project an Event argument, like eventive verbs, yet they are clearly stative predicates. Thus, they are not made into eventive predicates simply by virtue of projecting an Event argument. Yet, they can be located in time and/or space (giving rise to their ability to be modified by spatial and temporal modifiers). I will continue to use the term "Event argument" to refer to the Davidsonian argument projected by stage-level predicates, although I assume the Event argument to be something that denotes an eventuality. I maintain that stage-level predicates such as *tired* or *in the garden*, differ from individual-level predicates such as *a doctor* or *intelligent*, in this respect.

2.2.3 Summary of §2.2

In this section, I have discussed how the stage-/individual-level distinction extends to adjectival and verbal domains. Whereas with nominal and locative predicates, the stage-/individual-level split divides one lexical category from another (it divides all nominal predicates from (almost) all locative predicates), it divides items within the lexical categories of adjectives and verbs from other items within the same category. All NP predicates are individual-level and all (relevant) PP predicates are stage-level, but there are both stage- and individual-level adjectives, and both stage- and individual-level verbs (the latter are commonly distinguished as eventive vs. stative verbs, respectively).

But we saw that the division among adjectives and among verbs is not as straightforward, in terms of the syntactic division, as it is between nominal predicates and locative predicates. That is to say, some adjectives pass some of the tests for stage-levelhood, but not others. In the case of verbs, a number of stative verbs are not really individual-level, in the sense that they denote properties that can come and go (e.g. *love*, *hate*, *want*). These categories contrast with nominal predicates, where even temporary property denoting NPs (e.g. *neighbor*) display syntactic behavior like other more prototypical (i.e. permanent property denoting) NP predicates. Likewise, even locatives that denote permanent locations (e.g. islands being *in the Pacific*) behave syntactically like locatives that denote temporary locations.

In §2.1 and §2.2 I have been concerned with the stage-/individual-level distinction as a phenomenon of English. In the next section, we will see the ways in which the stage-level/individual-level distinction surfaces in languages other than English. In the languages we will look at, this distinction shows up as a syntactic distinction in main clause predicates. In Spanish and Portuguese, the distinction is realized as a difference in the lexical form of the copula (*ser* with individual-level predicates; *estar* with stage-level predicates). In Hebrew, the distinction is realized as a difference in the overtiness of the copula (overt copula with "individual-level" predicates, null copula with "stage-level" predicates—my reasons for using quotation marks will become clear below).

Furthermore, we will see that these languages differ from one another, and from English, in *how* they discriminate stage- from individual-level predicates. That is, each of these languages has a slightly different set of predicates that would count as stage- or individual-level: what might count as individual-level in one language might count as stage-level in another. However, these differences in the "cutting up" of the picture are not at all random. In Chapter 1, we saw that there was an array of predicates in each lexical category, ranging from "very permanent" to "very temporary", and that the items along that range

form a continuum. The line dividing the top from the bottom of that continuum could be arbitrarily placed. In fact, what we'll see in the next section is that languages draw that line in slightly different places.

2.3 Crosslinguistic differences in the realization of the stage-/individual-level split

There are many domains of grammar in which languages vary slightly from one another. (Here I am, of course, ignoring lexical variation, which I take to be a largely superficial sort of variation.) For example, there is variation across languages—and, Kratzer (1995) suggests, instability within languages—in the set of verbs that are unaccusative. This can be seen in the differences between closely related languages, e.g. Italian and French (both auxiliary selection languages), in the class of verbs that take a form of *be* in forming the past participle, as opposed to *have*. For example, French uses *avoir* 'have' with the past participle of *croître* 'to grow' (*j'ai cru* = I have-Isg grown 'I have grown'), while Italian uses *essere* 'be' with the past participle of *creocere* 'to grow' (*sono cresciuto/cresciuta* = (I) be-Isg grown-masc./fem. 'I have grown').

The purpose of this section is to discuss the crosslinguistically robust pattern of distinguishing individual-level from stage-level predicates in terms of a difference in predicative (copular) constructions. What emerges from this investigation is that the syntactic marking of this semantic distinction is quite widespread, showing up in a variety of typologically unrelated languages.¹⁶ I will provide evidence that languages that mark this

¹⁶Although I restrict the discussion here to Spanish, Portuguese and Hebrew (and we will discuss Russian and African American English in Chapter 4), there are other languages that use different forms of the copula in the formation of predicative constructions. For example, Doherty (1996) argues that the Irish copula (which he distinguishes from a "substantive verb" meaning 'be') is overt only in individual-level predicates. Bambara, a Mande language, has several different copulas, each occurring with a particular predicate category. For example, *ka* occurs with AP, *don* with NP, and *bè* with PP (locative) predicates (Koopman 1992). Koopman analyzes the choice of copula as depending on selectional properties of Infl. Maasai, a Niger-Kordofanian language, also has different copulas depending on the predicate: *ra* 'to be something', *tif* 'to be somewhere'. With adjectival predicates, the *ra* copula is used, but it incorporates into

distinction in copular constructions show the following uniform pattern: stage-level predicates project extra functional structure, which is associated with the projection of a Davidsonian Event argument, and which may be associated with grammatical Aspect. Individual-level predicates do not project this extra structure.

In Chapter 1 (§1.1), I indicated a "space" of predicates of various lexical categories that ranged from "very permanent" to "very temporary", and I suggested that languages differ in where they draw the line to syntactically distinguish "more permanent" from "more temporary" properties. That space is repeated here in the following table.

Table 2.2 Continuum of Properties Ranging from "Permanent" to "Temporary"

permanent		
NPs	APs	PPs
species/kind (<i>a human</i>)	species/kind (<i>human</i>)	necessary locations (<i>in the known universe</i>)
gender/type (<i>a woman</i>)	gender/type (<i>female</i>)	locations of events (<i>the party is in the garden</i>)
nationality (<i>an American</i>)	nationality (<i>American</i>)	locations of immobile things (cities/islands)
professions (a doctor)	shape/color/size (<i>round, red, small</i>)	locations of mobile things (people/objects)
stage of life (<i>a young/old woman</i>)	stage of life (<i>young/old</i>)	
<i>neighbor</i>	energy level/emotions (<i>tired, happy</i>)	
<i>fugitive/contestant</i>		
temporary		

From what we have seen in the previous sections, adult English appears to divide up the space in the way indicated by the double line.

the predicate in some cases and so is not always overtly realized (Koopman, p.c.). Other languages use an overt copula only with particular predicates: Haitian appears to use an overt copula (*se*) only with DP predicates, as in equative constructions (DeGraff 1992); Chinese, as we will see in Chapter 3, uses an overt copula (*shì*) only with nominal predicates (Li and Thompson 1981). I have not studied in enough depth the structure of predicates in these languages to know whether the pattern of omission/lexical form of the copula depends on the "permanent/temporary" distinction made by the particular language. Certainly, there are other parameters along which languages can distinguish copulas: Japanese, for instance, distinguishes the copulas *aru* and *iru* on the basis of the animacy of the subject. In any event, there are many languages that distinguish the form or presence of the copula in predicates on the basis of (syntactic and/or semantic) properties of the predicate. Here I focus only on a subset of these languages that seem to mark the same sort of distinction in similar ways.

Table 2.3 Division of Individual- from Stage-Level Predicates in English

NPs	APs	PPs
species/kind (<i>a human</i>)	species/kind (<i>human</i>)	necessary locations (<i>in the known universe</i>)
gender/type (<i>a woman</i>)	gender/type (<i>female</i>)	locations of events (<i>the party is in the garden</i>)
nationality (<i>an American</i>)	nationality (<i>American</i>)	locations of immobile things (cities/islands)
professions (a doctor)	shape/color/size (<i>round, red, small</i>)	locations of mobile things (people/objects)
stage of life (<i>a young/old woman</i>)	stage of life (<i>young/old</i>)	
<i>neighbor</i>	energy level/emotions (<i>tired, happy</i>)	
<i>fugitive/contestant</i>		

In the following subsections, I will indicate how this space is divided by some non-English languages. At this point, I will be mainly concerned with giving a descriptive account of the form of the copula in stage- and individual-level predicative constructions in these languages. We will return to them in Chapter 4 and give a more in-depth account of these constructions there.

2.3.1 Spanish and Portuguese

Spanish and Portuguese distinguish stage-level from individual-level predicates in copular constructions. The distinction drawn in Spanish and Portuguese is quite close to the stage-level/individual-level distinction discussed above for English. But unlike English, Spanish and Portuguese mark the split by a lexical choice: they have two copulas, *ser* and

estar. *Ser* is used with individual-level predicates (permanent or inherent properties, as discussed above), and *estar* is used with stage-level predicates (temporary or accidental properties). (Sera (1992) gives some discussion of this phenomenon and cites Bello (1860), Bull (1965) and Roldan (1974) in connection with the characterization of *ser* as taking permanent/inherent property predicates and *estar* taking temporary/accidental property predicates.)

The *ser/estar* distinction falls in line, quite consistently, with the stage/individual distinction discussed in §2.1.1. *Ser* is used in all nominal predicative constructions (see (55a)), even when the subject is not permanently or inherently characterized by the set denoted by the predicate nominal (recall that nominal predicates always behave as individual-level predicates, according to Carlson's criteria, even if they do not denote a necessarily permanent property). For example, in the sentence in (55b), the verb *ser* is used even though there is a clear temporal restriction.

- (55) a. Juan es un hombre
 John ser-3sg a man
 "John is a man."
 b. Elisa fue reina por un día.
 Elizabeth ser-3sg-past queen for a day
 "Elizabeth was queen for a day."
 Sera (1992)

With adjectival predicates, the use of *ser* vs. *estar* adheres to an inherent/permanent vs. accidental/temporary property distinction. *Ser* is used with inherent or permanent properties, while *estar* (from Latin *stare* 'to stand') is used with accidental or temporary properties. An example is given in (56) (from Sera 1992).

- (56) a. Las manzanas son redondas
the apple-pl ser-3pl round-pl
"(The) apples are round."
b. Las manzanas están sucias
the apple-pl estar-3pl dirty-pl
"The apples are dirty."

Another clear example of the difference in meaning yielded by the choice of copula is given in (57), where the same adjective can yield correspondingly different meanings (also from Sera 1992).

- (57) a. Pepe es malo
Joe ser-3sg bad
"Joe is (morally) bad or naughty."
b. Pepe está malo
Joe estar-3sg bad
"Joe is sick, or ill."

In locative expressions there is an interesting difference in the uses of *ser* and *estar*, as well as an interesting difference between Spanish and Portuguese. Spanish draws a distinction between the locations of objects (mobile or not) and the locations of events. Although Spanish uses *estar* to express the location of an object (mobile or not), *ser* is used to express the location of an event. Examples are given in (58).

- (58) a. La gata **está**/*es en mi casa
the cat estar-3sg (*ser) in my house
"The cat is in my house."
b. Cuba **está**/*es en el Caribe
Cuba estar-3sg (*ser) in the Caribbean
"Cuba is in the Caribbean."
c. La fiesta **es**/***está** en mi casa
the party ser-3sg (*estar) in my house
"The party is in my house."

Sera (1992) accounts for this distinction by arguing that there is an ontological difference between events and objects in their relationship to spatial or temporal locations. Objects can in principle exist in various locations and still retain their identity. Even if an object is generally immobile, such as a city or an island, one might imagine a world in which the city is destroyed and rebuilt in another place, or the island is moved, using advanced technology or magical powers. However, the location of an event is an essential property of that event. If the event took place in another location, it would then be a different event. Objects and individuals are continuous in their existence across locations, while events are not. Thus a location does not constitute an essential property of an object or an individual, but it is essential to an event. According to this essential/accidental split, the use of *ser* and *estar* in Spanish locatives is consistent with the stage/individual split in adjectives, and the use of *ser* with all nominal predicates.

Like Spanish, Portuguese uses *ser* with the locations of events, as shown in (59).

- (59) A festa é/*está no jardim.
The party ser-3sg in-the garden.
"The party is in the garden."

(As an aside, it is interesting to note that you get a similar "lifetime effect" with locations of events that you get with nominal predicates: *The party was in the garden* normally implies that the party is over, not that it changed location. This is similar to individual-level predicates in past tense: *John was a man* seems to imply that John no longer exists. See discussion above in §2.1.2.)

However, unlike Spanish, Portuguese uses *ser*, or the lexical verb *ficar*, meaning 'to stay', with the permanent locations of objects. Thus, an expression of the location of an immobile object, e.g. a city, would require *ser* or *ficar* (but could not take *estar*):

estar is best accounted for in terms of an aspectual difference between the predicates these copulas take. Although I believe Schmitt is essentially correct in analyzing the *ser/estar* distinction as one that is aspectual in nature, I do not believe that this argument necessarily precludes the *ser/estar* split being a stage/individual split; that is, as I will argue in the next chapter, my own view is that the stage/individual distinction is based on a syntactic distinction between predicates, whereby stage-level predicates project an Asp(ect)P in the structure, while individual-level predicates do not. Thus, the distinction itself is, on some level, aspectual. In fact, Schmitt's argument for *ser* vs. *estar* as an aspectual, rather than stage/individual distinction, is based on the fact that the traditional tests for stage-levelhood (as outlined above in §2.1.2) are tests for iterative or imperfective aspect.

One of the counterexamples that Schmitt cites against analyzing the *ser/estar* split as individual/stage is that certain adjectives occur with *ser*, yet they can occur in a *when*-clause.

- (64) Sempre que Maria é rude/cruel, ela é mesmo rude/cruel.
Whenever Mary is rude/cruel, she is really rude/cruel.

That is, adjectives such as *rude*, *cruel*, *gentle*, *mean*, etc. occur with *ser*, even though they can have a non-individual-level meaning. However, recall (from §2.2.1) that these are exactly the adjectives that occur with so-called "active *be*" in English and are included in Stowell's (1991) "mental property" (MP) adjectives (e.g. *John is being rude/cruel/gentle/mean*; *It was rude/cruel/gentle/mean of John to call his friend*). Consistent with these facts, Portuguese uses *ser* as the progressive copula in the active *be* contexts:

- (65) Maria está sendo cruel
Maria estar-3sg ser-ger. cruel
"Maria is being cruel."

- (60) Paris fica/é/*está na França.
Paris is in France.
(61) Cuba fica/é/*está no Caribe.
Cuba is in the Caribbean.

There is other support for view that the *ser/estar* distinction reflects the individual/stage distinction from the interpretation of indefinite or bare plural subjects (cf. Kratzer's tests in §2.1.2 above). An indefinite or bare plural subject of *ser* must be generic, but the subject of *estar* can have an existential reading (these examples in Portuguese, from Schmitt 1992):

- (62) a. Bombeiros são/*estão altruístas
Firemen are (*estar) altruistic (generic only)
b. Bombeiros *são/estão disponíveis.
Firemen are (*ser) available (existential okay)

Also, predicates with *estar* may occur in a *when*-clause (which we saw above is a test for stage-levelhood according to Kratzer 1995), while (most) predicates with *ser* may not.

- (63) a. *Sempre que Maria é feliz, ...
whenever Mary is (ser) happy...
b. Sempre que Maria está feliz, ...
whenever Mary is (estar) happy...

Schmitt (1992) points out that there appear to be some inconsistencies in the generalization that *ser* predicates denote only individual-level properties and *estar* predicates denote only stage-level properties. Like Luján (1981) for Spanish, Schmitt challenges the view that the *ser/estar* split can be accurately accounted for in terms of the individual/stage-level contrast. Instead, she (again like Luján) proposes that the distinction between *ser* and

These adjectives also pass other tests for stage-levelhood: occurrence in a perception verb complement and an existential. (Recall, however, that the corresponding English adjectives are also grammatical in these contexts with an overt copula, and the Portuguese examples do involve an overt (*ser*) copula.)

- (66) a. Eu vi Maria ser cruel (para com os gatos)
 I saw Maria be cruel (to the cats)
 b. Há mulheres sendo cruéis.
 There are women being cruel.

Given the hybrid patterns we found in English with these exact adjectives, I do not consider their behavior in Spanish/Portuguese to constitute counter-evidence to the claim that the *ser/estar* distinction reflects the individual/stage contrast. We will return to these and related issues in §4.1.1.

Based on the foregoing discussion, Spanish seems to divide individual-level from stage-level predicates in the following way.

Table 2.4 Division of Individual- from Stage-Level Predicates in Spanish

NPs	APs	PPs
species/kind (<i>a human</i>)	species/kind (<i>human</i>)	necessary locations (<i>in the known universe</i>)
gender/type (<i>a woman</i>)	gender/type (<i>female</i>)	locations of events (<i>the party is in the garden</i>)
nationality (<i>an American</i>)	nationality (<i>American</i>)	locations of immobile things (cities/islands)
professions (a doctor)	shape/color/size (<i>round, red, small</i>)	locations of mobile things (people/objects)
stage of life (<i>a young/old woman</i>)	stage of life (<i>young/old</i>)	
<i>neighbor</i>	energy level/emotions (<i>tired, happy</i>)	
<i>fugitive/contestant</i>		

The main difference between Spanish and Portuguese, as we saw above, was that in Spanish, locations of immobile objects (i.e. permanent locations) behave like stage-level predicates, while in Portuguese, locations of immobile objects behave like individual-level predicates. Thus, Portuguese differs minimally from Spanish in its "dividing up" of the aspectual space, shown here:

Table 2.5 Division of Individual- from Stage-Level Predicates in Portuguese

NPs	APs	PPs
species/kind (<i>a human</i>)	species/kind (<i>human</i>)	necessary locations (<i>in the known universe</i>)
gender/type (<i>a woman</i>)	gender/type (<i>female</i>)	locations of events (<i>the party is in the garden</i>)
nationality (<i>an American</i>)	nationality (<i>American</i>)	locations of immobile things (<i>cities/islands</i>)
professions (<i>a doctor</i>)	shape/color/size (<i>round, red, small</i>)	locations of mobile things (<i>people/objects</i>)
stage of life (<i>a young/old woman</i>)	stage of life (<i>young/old</i>)	
<i>neighbor</i>	energy level/emotions (<i>tired, happy</i>)	
<i>fugitive/contestant</i>		

2.3.2 Hebrew

In past and future tense copular constructions in Hebrew, the copula is argued to be a verb (Doron 1983; Rapoport 1987). It is always overt, and it agrees in person, number and gender with the subject, like all main verbs. Some examples of forms of the past and future tense copula are illustrated in (68-69) (from Greenberg 1998).

- (68) dani haya xaxam
 Dani cop-3sg.past wise
 "Dani was wise."
 (69) dani yihye xaxam
 Dani cop-3sg.fut wise
 "Dani will be wise."

The Hebrew verbal copula (as in (68-69)), however, does not have a present tense form. The lexical item that occurs in Hebrew present tense copular constructions, functioning as a copula, is argued to be non-verbal (Doron 1983; Rapoport 1987; Rothstein 1995). It is identical in form to the 3rd person personal pronoun (*hu* 3m.sg, *hi* 3f.sg, *hem* 3m.pl, *hen* 3f.pl) but is argued to be the "realization of agreement features ... located in Infl" (Greenberg 1994: 10), and it can be shown to occupy a higher position in the syntax than the (past/future) verbal copula. The verbal and non-verbal copula occupy different positions with respect to negation, shown in (70-71) (these examples are taken from Greenberg 1994).

- (70) a. Dani (hu) lo more
 Dani (3ms) neg teacher
 *Dani lo hu more
 Dani neg is teacher
 "Dani is not a teacher."
 (71) a. *Dani haya lo more
 Dani be-past-ms neg teacher
 Dani lo haya more
 Dani neg be-past-ms teacher
 "Dani was not a teacher."

I will refer to the present tense "copula" as Pron, following Doron (1983) and many others, although I take it to be, grammatically speaking, a copula (following Berman and Grosu 1976; Doron 1983; Rapoport 1987).

In contrast to the past and future tenses, in present tense predicative constructions the "copula" (Pron) is omitted in some cases. Whether or not it is omitted depends on the

particular predication relation between the predicate and the subject. If the predicate expresses an inherent or definitional property of the subject, Pron is obligatorily overt.^{17, 18}

- (72) 'orvim *(hem) Sxorim
ravens 3m.pl black
"Ravens are black."
(73) ha-kli ha-ze *(hu) patiS
the tool the this 3m.sg hammer
"This tool is a hammer."
(74) ha-xaya ha-zot *(hi) zebra
the animal the this 3f.sg zebra
"This animal is a zebra."
(Greenberg 1994: 22-24)

If the predicate does not express an inherent or definitional property of the subject, Pron is not obligatorily overt, and in some cases it is obligatorily null.

- (75) Dani (*hu) me'od 'ayef ha-yom
Dani 3m.sg very tired the day
"Dani is very tired today."
(76) tir'e! Sara (?hi) mitaxat la-'ec
look Sara 3f.sg under the tree

¹⁷Accounts of the overtiness of Pron in Hebrew that do not depend on the "inherentness" of the predicate are offered in Doron (1983), Rapoport (1987) and Rothstein (1995). According to these accounts, Pron is overt when the post-copular phrase is referential, as in identity/equative constructions (*Dani *(hu) mar cohen* 'Dani is Mr. Cohen'), and Pron is null if the post-copular phrase is predicative. The obligatory overtiness of Pron with referential post-copular NPs is argued for on the basis of the theta-criterion (Doron 1983), the need for Case (Rapoport 1987), or the need to create a syntactic predication structure (Rothstein 1995). Greenberg shows that these accounts are unable to account for the many cases in which Pron is optionally overt, the cases in which it is obligatorily overt even though the post-copular NP is non-referential, and cases in which Pron is obligatorily overt even though the post-copular phrase is not an NP at all (e.g. "permanent" locations, which are PPs).

¹⁸In all examples below, except where indicated, I adopt the grammaticality judgments of Greenberg (most examples are taken from Greenberg 1994, 1998). There is a minor amount of disagreement among speakers in some of these judgments. Most of the disagreement arises as to the acceptability of an overt copula in environments where Greenberg judges the copula optionally overt. I will not deal with this inter-speaker variation here. Greenberg notes repeatedly that she has consulted with various informants, so I take her judgments to be reliable.

- "Look! Sara is under the tree."
(77) ha-'is ha-ze (hu) more
the man the this 3m.sg teacher
"This man is a teacher."
(78) ha-'ec (hu) gavoha
the tree 3m.sg tall
"The tree is tall."
(Greenberg 1994: 21)
(Greenberg 1994: 31)
(S. Armon-Lotem, p.c.)

It is interesting to note that while in languages such as English, Spanish and Portuguese the predicates [tall] and [a teacher] are individual-level, these predicates do not require overt Pron in Hebrew. We will return to this fact shortly.

As first discussed by Rubinstein (1968) and Bendavid (1971) (cited in Greenberg 1994), in the environments where Pron is optionally overt there is a difference in meaning between the overt Pron and null Pron variants. One example of this difference is given in (79).

- (79) a. Dani xole
Dani sick = temporary
"Dani is sick." (has a cold)
b. Dani hu xole (anush)
Dani cop sick (terminal) = permanent
"Dani is terminally ill."¹⁹

Some overt/null Pron alternations yield a much more subtle difference in meaning.

- (80) a. ha-Samayim hem kxulim
the sky 3m.pl blue
b. ha-Samayim kxulim
the sky blue

¹⁹Interestingly, the addition of the copula in (10b) does not quite yield an individual-level reading, i.e. it does not imply mental illness (normally taken to be individual-level), but rather a *permanent* illness. This example and judgment are due to Sharon Armon-Lotem (p.c.).

both (a) and (b) = "The sky is blue."

(Greenberg 1994: 54)

The difference in meaning between (80a) and (80b) is that (80a) is a general statement about the color of the sky, i.e. that it is blue (as opposed to some other color, e.g. red or yellow). (80b), instead, is a statement about the clarity of the sky at the moment of speech, i.e. that it is not overcast. Thus, the version of (80) with overt Pron predicates an inherent property of the subject, while the version of (80) with null Pron predicates a (possibly) momentary property of the subject.²⁰

Although Berman (1978) and Rapoport (1987) claim that there is no semantic difference between overt vs. null Pron sentences when the predicate expresses an individual-level property (e.g. (80)), Greenberg argues that there is a subtle difference in meaning, even with predicates such as [tall] or [a teacher] (cf. (77-78) above). Example (77) with null Pron means simply that the subject has the property of being a teacher. It does not imply that teaching is the subject's lifelong profession, and thus it is compatible with the scenario in which the subject has recently become a teacher and intends to keep the job only for a short time, turning then to another profession. With overt Pron, the sentence means that the subject is "born a teacher" so to speak, i.e. someone who has a gift for teaching, so that this property is somehow inalienable. In example (78) with null Pron, the sentence means that these particular trees happen to be tall. With overt Pron the sentence means that the trees in question are of a species of tree that is always tall, e.g. giant Redwoods.²¹

²⁰ In view of Carlson's treatment of stage-level predicates as requiring a "realization function" to map them onto the subject, it is somewhat surprising that Hebrew requires an overt copula in precisely the environments in which the predicate can be applied directly to the subject, namely with individual-level predicates. In other words, if stage-level predicates require something extra in order to be applied to the subject, it is surprising on this view that Hebrew predicates contain something extra (overt Pron) only in individual-level predicates.

²¹ It is not clear to me what the difference in meaning would be between overt and null Pron in a sentence like *Dani (hu) gavoha* 'Dani is tall' (S. Armon-Lotem, p.c.). Tallness is a stable property and is individual-level in English, Spanish and Portuguese, yet it is not a property that holds for an individual's entire life

Having shown that the presence/absence of Pron in the optional cases turns on whether the predicate denotes an inherent or definitional property of the subject, it is clear why Pron is obligatorily overt in cases such as (72-74) above. Consider an example such as (73) above, repeated here.

(73) ha-kli ha-ze *(hu) patiS
the tool the this 3m.sg hammer
"This tool is a hammer."

It is difficult, if not impossible, to imagine the object referred to by *ha-kli ha-ze* 'this tool' changing so that it is no longer a hammer. If it did, it would not be the same object (or it would be destroyed, thus no longer existing). Thus, it is intuitively clear that in these examples, the predicates denote an inherent or definitional property of the subject and thus require overt Pron. Predicates that are ambiguous between an inherent and a non-inherent reading (e.g. 'the sky is blue', 'this man is a teacher', 'the tree is tall') may occur with overt or null Pron.

As for the cases in which Pron is obligatorily null, Greenberg argues that these are cases in which an inherent or definitional reading of the predicate is blocked. These cases arise, for example, when the predicate is modified by a "specific" temporal adverb (Greenberg's term) such as *ha-yom* 'today', *'axšav* 'now' or *ha-boker* 'this morning' (cf. (75) above). Thus, even if a predicate that is normally individual-level is modified by a specific temporal adverb, Pron must be null.

(81) Rina (*hi) yafa ha-boker
Rina 3f.sg pretty the morning

(i.e. one is not tall as an infant). Thus, I can imagine that 'tall' could be analyzed as a non-inherent property. But if it is analyzed as non-inherent (which must be so in Hebrew, since it can occur without overt Pron), I do not see what interpretation would result from using 'tall' with overt Pron.

"Rina is pretty this morning." (Greenberg 1994: 120)

If the predicate is modified by a "generic" temporal adverb (e.g. *ba-bkarim* 'in the morning'), overt Pron is not ungrammatical (though, it seems, not perfectly acceptable).

- (82) Rina (?hi) yafa ba-bkarim
Rina 3f.sg pretty in mornings
"Rina is pretty in the morning." (Greenberg 1994: 120)

Moreover, Pron may not occur overtly if the predicate would not naturally hold as an inherent property of the subject. In (76) (*tir'e!* Sara (??hi) *mitaxat la-ec* 'Look! Sara is under the tree') Pron must be null because it is not the case, according to our world knowledge, that a person has an inherent location. While people and movable objects do not have permanent locations, immovable objects normally do (by definition). In Hebrew, predicates denoting permanent locations must occur with overt Pron.

- (83) tel-aviv (?)(hi) be-yisrael
Tel Aviv 3f.sg Israel
"Tel Aviv is in Israel." (Greenberg 1994: 156)

Recall from §2.3.1 that in Portuguese (unlike Spanish) permanent locations (locations of immobile things) behave like individual-level properties.

Hebrew null Pron sentences pass some of the tests discussed in §2.1 for stage-levelhood. Like (most) English stage-level predicates, in Hebrew only null Pron sentences can be modified by spatial and temporal modifiers and can occur in a *when*-clause.

- (84) a. Rina (*?hi) 'asuka ha-boker
Rina 3f.sg busy the morning
"Rina is busy this morning."

- b. ha-hgadam Selxa (*hem) meluslasim ha-yom!
the clothes yours 3m.pl dirty the day
"Your clothes are dirty today!" (Greenberg 1994: 107)

- (85) a. kSe-dani (??hu) nexmad, kef lithyot 'ito
when Dani 3m.sg nice fun to be with him
"When Dani is nice, being with him is fun." (Greenberg 1994: 108)
b. kSe-alisa me-erec ha-pla'ot (??hi) gvoha, kaSe la le-hitkofef
when Alice from wonder land 3f.sg tall hard for her to bend
"When Alice from wonderland is tall, it's hard for her to bend."
(Greenberg 1994: 109)

However, not all predicates that can occur with null Pron in matrix clauses can occur under perception verbs. In perception verb complements, Hebrew bars individual-level predicates that can easily occur with null Pron in main clauses.

- (86) ra:iti 'et Rani 'erom/ba-gan/*rofe/*inteligenti
saw.1.sg acc Rani naked/in-the-garden/*doctor/*intelligent
"I saw Rani naked/in the garden/a doctor/intelligent."
(cf. Rani (hu) rofe/intelligent)

Thus, apart from the exclusion of individual-level predicates from perception verb complements (86), the Hebrew facts suggest that Hebrew divides "permanent" from "temporary" properties in the following way.

Table 2.6 Division of Individual- from Stage-Level Predicates in Hebrew

NPs	APs	PPs
species/kind (<i>a human</i>)	species/kind (<i>human</i>)	necessary locations (<i>in the known universe</i>)
gender/type (<i>a woman</i>)	gender/type (<i>female</i>)	locations of immobile things (cities/islands)
nationality (<i>an American</i>) ²²	nationality (<i>American</i>)	locations of events (<i>the party is in the garden</i>)
professions (<i>a doctor</i>)	shape/color/size (<i>round, red, small</i>)	locations of mobile things (people/objects)
stage of life (<i>a young/old woman</i>)	stage of life (<i>young/old</i>)	
<i>neighbor</i>	energy level/emotions (<i>tired, happy</i>)	
<i>fugitive/contestant</i>		

2.4 Summary of Chapter 2

The goal of this chapter was twofold: in part, it was meant to outline some formal accounts of the stage-level/individual-level distinction, and to provide evidence that this semantic distinction is reflected in the syntax. Secondly, this chapter gave a glimpse of the ways in which different languages may reflect syntactically the semantic distinction between stage- and individual-level predicates. We saw that English marks the stage/individual distinction in various constructions discussed by Kratzer, but not in terms of a difference in the form of the copula in main clause predicates. Hebrew draws a distinction between essential and non-essential properties (or generic and non-generic, according to Greenberg 1998) in the overtness of the copula, and Spanish and Portuguese draw a distinction

²²Hebrew requires an overt Pron with nationality predicates: these are usually expressed with a PP predicate: *Rani* **(hu) mi-yazan* 'Rani is from Japan'. (H. Borer, p.c.)

between stage- and individual-level predicates in the lexical choice of the copula. As we will see in Chapter 4, in each case the relevant phenomena can be accounted for in terms of the projection of extra functional structure just above the predicative small clause in stage-level predicates. I take this extra structure to be the syntactic location of the Event argument.

A summary of the phenomena discussed here, regarding the form of the copula in stage- vs. individual-level predicates, is given in Table 2.7.

Table 2.7 Crosslinguistic Patterns of Marking the Permanent vs. Temporary Property Distinction in Predicative Constructions

Language (distinction)	Predicate: individual-level	Predicate: stage-level
Hebrew (generic/nongeneric)	overt copula (<i>hu</i>)	null copula
Spanish (individual/stage)	<i>ser</i>	<i>estar</i>
Portuguese (individual/stage)	<i>ser</i>	<i>estar</i>

In the next chapter, we turn to the form of the copula in early child English. We will see that like adult speakers of the languages we saw in §2.3, child speakers of English draw a distinction between individual-level and stage-level predicates in main clause copular constructions, and they mark this distinction in terms of the form (overtness) of the copula. We will account for children's patterns of use and omission of the copula by means of the projection of an Event argument in a functional projection above the small clause, in the case of stage-level (locative) predicates. The nature of this "extra" projection, and its location in the structure will be explored in more detail.

The Copula in Predicative Constructions

In Chapter 2, we saw evidence for a semantic and syntactic distinction between nominal and locative predicates (and certain adjectival predicates) in English: locatives are stage-level predicates and project an Event argument in the structure, while nominal predicates are individual-level predicates, which do not project an Event argument. We also saw that the semantic distinction that adult English draws between individual-level ("more permanent") and stage-level ("more temporary") predicates is drawn in other adult grammars, but in slightly different ways. In Spanish, Portuguese and Hebrew, the syntactic reflex of the semantic (stage-/individual-level) distinction shows up as a difference in either the form or the overtness of the copula. In the present chapter, we will see that although adult English does not mark the stage-level/individual-level distinction in terms of the form of the copula in main clause predicates, child English *does*. In this chapter, we will be mainly concerned with children's production of predicative expressions, and in accounting for the pattern of copula omission we find in these expressions.

As noted in Chapter 1, predicative constructions are the canonical type of copular construction. They contain a DP subject and a nominal (NP)¹, adjectival (AP) or locative

¹I indicate the postcopular nominal phrase as NP rather than DP because DPs (but not NPs) are referring expressions, and predicates do not refer. There is evidence that nominal predicates are syntactically different in at least some respects from nominal arguments, which are DPs. For example, predicative nominal clitics in Italian and French fail to show gender and number agreement (in contrast to argument clitics), and predicate nominals are generally assumed not to refer (and hence do not need abstract Case). Insofar as gender/number agreement and referentiality are taken to be properties of DPs, the null hypothesis seems to be that predicative nominals are not full DPs (see Heggie (1988) for discussion). Additionally, in many (if not most) Romance and Germanic languages, predicate NPs occur without a determiner (e.g. *Hans ist (*ein) Student* 'H. is a student'). This issue does not play a role in the remainder of the thesis.

(PP) predicate. In English main clauses, predicates are always formed with an overt copula. Some examples of predicative expressions in English are given in (1).

- (1) types of predicates
- | | | |
|---------------------------|--------------------------|--------------------|
| a. nominal predicative | John is a man | (individual-level) |
| b. locative predicative | The book is on the table | (stage-level) |
| c. adjectival predicative | Sally is tall | (individual-level) |
| | Bill is sick | (stage-level) |

There are other types of PP predicates besides locative PPs that can occur in predicates, e.g. *John is under the weather/out of commission/in a coma*. These sorts of non-locative PPs do not occur in the child data I examined, and I will not consider them here. Henceforth, when I refer to PP predicates, I mean only locative PP predicates. I also abstract away from (definite) nominal predicates that can be modified by temporal adverbs, thus yielding a "temporary" reading (e.g. *John is the teacher today*).

The data I present here concern the use of the copula in predicative constructions by children acquiring (standard) American English. I will show that children draw a distinction between nominal (individual-level) and locative (stage-level) predicates. They mark the former type with an overt, inflected copula but tend to omit the copula with the latter type. First, I will focus only on nominal and locative predicates, in which the pattern is clearest (the children whose transcripts I studied are quite uniform in their omission pattern of the copula in these constructions)—I will return to adjectival predicates in §3.2.3.1.

My analysis of children's use of the copula in nominal and locative predicates appeals to the structural difference between stage- and individual-level predicates that we saw justified in Chapter 2. In particular, I argue for an analysis in which locative (stage-level) predicates, which project an Event argument, involve an additional layer of functional structure (an Asp(ect) P(phrase)) projected by the Event argument. Individual-level (nominal)

predicates lack this extra functional structure and are instead purely lexical predication structures. I will correlate the presence of this functional structure with the absence of an inflected copula in children's speech. The relation between this structure and the omission of the copula has to do with the formal requirement of temporal anchoring in main clauses, a requirement which I define in §3.2.1.3.

Having analyzed nominal and locative predicatives, I move on to adjectival predicatives. As discussed in §2.2.1, adjectives can be split among stage- and individual-level adjectives. However, in contrast to the (relative) uniformity across children in their rates of overt *be* in NP and PP predicatives, we find greater inter-child variation in the rate of overt *be* between stage-level and individual-level AP predicatives. I discuss possible reasons for the variation. In addition to adjectival predicatives, I also discuss extensions of my analysis to other related phenomena in child English: the rate of finiteness marking on main clause main verbs (the so-called Root Infinitive phenomenon; Rizzi 1994, Wexler 1994), and the rate of overt/inflected auxiliary *be* in progressives. Finally, an alternative account of children's pattern of copula omission, an account based on properties of the subject, is discussed and ruled out as the primary factor in copula omission.

3.1 Predicatives in Child English

It is well-known that when children begin to form sentences (strings of at least two words, containing an overt or non-overt subject and a predicate), they are prone to leave out certain sentential elements from their speech (Brown 1973). The omission of subjects by children acquiring non-null-subject languages has been well documented (e.g. (Hyams 1986)). Also well-studied is children's omission of determiners (Clahsen, Eisenbeiss et al. 1996; Hoekstra, Hyams et al. 1997; Hoekstra, Hyams et al. 1999) and verbal inflectional

morphology (Clahsen 1986; Radford 1988, i.a.; Weverink 1989; Clahsen and Penke 1992; Pierce 1992; Verrips and Weissenborn 1992; Poeppel and Wexler 1993).

Overt verbal tense or agreement marking, or other inflectional morphology in main clauses (e.g. auxiliary verbs), is often taken to be indicative of the presence of finiteness (e.g. Hoekstra, Hyams & Becker 1997, 1999, Poeppel & Wexler 1993, Schütze 1997), and I concur with this view. As noted in Chapter 1, finiteness obtains under a particular syntactic condition (that of the Temporal operator, *Top*, binding *Inf*), and it is indicated morphologically by the presence of formal tense or agreement features if such morphology exists in the particular language. If a language contains tense/agreement morphology, then the absence of such morphology in required contexts (indicated by an absence of inflectional verbal morphology or by the presence of an infinitival verb) is indicative of non-finiteness of the clause. Non-finiteness might be understood either as the presence of a [-finite] tense feature, or as the absence of tense features altogether (this is often called "underspecification," cf. Clahsen, Eisenbeiss et al. 1996; Hoekstra, Hyams et al. 1997). Since children's non-finite verbs are true morphological infinitive forms in many child languages (e.g. *-en* in German and Dutch, *-en/-ir/-re* in French), some researchers have referred to this period of main clause non-finiteness as the Root or Optional *Infinitive* stage (Rizzi 1994; Wexler 1994). As I show in the present chapter, during this stage of verbal non-finiteness in linguistic development in child English (see §3.2.3.2), the copula, *be*, is often omitted. I will argue that null-*be* clauses in child English are non-finite (cf. Hoekstra and Hyams 1998, who argue for this view on the basis of *wh*-questions), and I will show that omission of the copula is not uniform across predicative constructions. Rather, it is omitted at different rates depending on the type of predication construction in which it occurs.

In this section, I restrict my attention to children's production and omission of the copula in nominal and locative predicative constructions. As noted in Chapter 1, I follow

Stowell (1978, 1981) in assuming that predicative constructions are raising constructions. This means that the subject in (2a) is generated in a postcopular Small Clause (SC), and raises to the main clause subject position (SpecIP) by S-structure, the surface level of representation (i.e. the level that feeds the logical and phonetic components of grammar, cf. Chomsky 1981).² The derivation of (2a) is shown in (2b).

- (2) a. John is a teacher.
 b. [IP John_i [_i is [NP t_i [NP a teacher]]]]]

As a first approximation, we can postulate the same structure for a locative predicative (although I will argue below that we want to distinguish them), but with a PP small clause instead of a nominal (NP) one. This is illustrated in (3a-b).

- (3) a. Sally is in the yard.
 b. [IP Sally_i [_i is [PP t_i [PP in the yard]]]]]

My reasons for assuming that the copula does not project a VP in main clause predicatives will become clear in Chapter 4. For now I will simply stipulate that finite *be* is inserted in Infl and does not raise from a V head.

3.1.1 Method

Now let us turn to the child English data. Here I give a brief overview of the children examined in §3.1.2, and the method of coding their data. More detailed information about

²Although I use the term S-structure, I do not believe my analysis is incompatible with formulations of syntactic representations along the lines of the Minimalist Program (Chomsky 1993; Chomsky 1995), in which the level of S-structure is argued not to exist.

the children's rates of overt *be* and verbal finiteness at each data point is given in the Appendix to the dissertation.

All of the data are taken from the CHILDES database (MacWhinney and Snow 1985). I coded all utterances that either contained, or appeared to lack, the verb *be*.

Table 3.1. Children Examined in this Study:
 Files, Ages, MLU, Number of *be* Utterances

child (source)	file range	age range	MLU range (avg.)	no. <i>be</i> contexts
Nina (Suppes 1973)	07-13	2;0-2;2	2.79-3.43 (2.98)	471
Peter (Bloom 1970)	06-11	2;0-2;3	2.26-3.33 (2.84)	785
Naomi (Sachs 1983)	35-68 ³	2;0-2;7	2.61-3.66 (3.09)	555
Adam (Brown 1973)	10-28 ⁴	2;7-3;4	2.23-4.12 (3.38)	792
Eve (Brown 1973)	15-20	2;1-2;3	3.7-4.57 (4.03)	566

As indicated in Table 3.1 the ages of four of the five children (all but Adam) cover a similar range: roughly starting at 2;0 and extending a few months. Adam's files come from a later period (chronologically speaking), but he has a similar MLU (Mean Length of Utterance)⁵ to that of the first four children listed. Only Eve has a much higher MLU than the other children. As we will see below, Eve shows a rather different pattern of copula omission from that of the other children, although, contrary to what her high MLU would suggest, her pattern of copula use is *not* more adult-like.

³Files 63-67 were not coded. All other files, 35-68 inclusive, are included in this count.

⁴Only files 10, 15, 18, 20, 25, 27 and 28 were coded (file 30 was also coded but is excluded here; see Table 3.2).

⁵Mean Length of Utterance is the average length of a child's utterance, measured in morphemes (Brown 1973). The number is calculated over the first 100 utterances in each transcript. For criteria and other details about this measure, please see Brown (1973). MLU is frequently used in the acquisition literature to measure "linguistic age" as opposed to chronological age; however its utility is disputed.

Though the number of files varies greatly for each child, the length of each file also varies greatly. Peter's files are extremely long (averaging over 1300 utterances per file), while Naomi's are extremely short (ranging from 33 to 589 utterances per file). The total number of predicative utterances examined for each child was similar (cf. Table 3.1). The earliest file for each child was determined as the first file in which all relevant types of copular constructions appeared (nominal, adjectival and locative predicatives, progressives, and existential expressions). For all children except Adam and Eve, at this point the average rate of overt *be* (pooled across constructions) was at least 40% (for Adam, his rate of overt *be* was between 20-30% until file 27; for Eve until file 20). The upper bound on files was determined as the last file containing a low rate of overt *be* in locatives (low means below 50%).⁶ Three of the children showed a rather dramatic jump to a higher rate of overt *be* in this construction at a certain point, as shown in Table 3.2, and this point was used as the upper bound.⁷

Table 3.2. Change in Rate of Overt *be* in Locatives at Last File

child	last analyzed file	first excluded file
Nina	(file 13) 23.1%	(file 14) 58.3%
Peter	(file 11) 42.9%	(file 12) 78.9%
Adam	(file 28) 0%	(file 30) 80% ⁸

⁶Additional later files from Nina were coded and included in initial analyses (files 14-16 and file 20). These files were included initially because her rate of overt *be* in locatives drops again in file 20 (to 33%). However, this later "dip" is most likely an isolated phase, since files 14-16 and file 23 contain much higher rates of overt *be* in locatives (avg. 55.9% and 61.1%, respectively). Files 19 and 21 were not examined and should be in the future.

⁷Eve's last file was the last available file in the database (file 20), and she showed a different pattern of copula omission from that of the other children (see §3.1.2 below). Naomi's last file (68) was not determined in a principled way, and it is possible that she continues to produce a low rate of overt *be* in locatives beyond this point.

⁸Adam's file 29 was not coded.

The reason for using this criterion as the upper bound will become clear in §3.1.2. Briefly, the reason is that once the rate of overt *be* in locatives reaches this higher point, it comes so close to the rate of overt *be* in nominal predicatives that the previous difference in omission rate is lost.

All child utterances were coded if they contained a form of *be*, or if they would require *be* if spoken by an adult (cases of omitted *be*). In addition, I coded all multi-word utterances containing a main verb in order to check for the rate of main verb finiteness (see §3.2.3.2). The coding itself was done by reading through all utterances in each of the indicated files (in total over 35,600 utterances)⁹, searching for utterances that contained any form of the verb *be*, or in cases of omission, utterances that were probable cases of an omitted copula. The number of coded utterances totalled about 6500 (about 8300 including the files that were later excluded—please see footnotes 6 and 9).

Exact repetitions (imitations) of adult utterances were not counted; neither were children's repetitions of their own utterances if the repetitions followed in direct succession. That is, only the first utterance of a type was counted if the child produced multiple tokens of the same type, unless the child produced other material in between the utterance tokens. Repetitions were not counted because these utterances might not have been truly generated by the child's grammar. Utterances containing only a single NP, AP or PP were not counted as cases of copula omission (e.g. *on the table* would not be counted as an utterance lacking both a subject and the copula; such utterances were not coded at all). These utterances were excluded because they may have been elliptical expressions; in other words, it is possible that the child had not intended a full clause. Since the point here was to compare children's main clause utterances with adult main clause utterances, potentially elliptical expressions had to be excluded.

⁹This count includes utterances from files that were coded but later excluded, such as Nina's files 14-16 and file 20, Eve's files 1, 5, 8-10 and 13, and Adam's file 30.

Table 3.3. Average Rate of Overt *be* in Children's Nominal and Locative Predicative Constructions ((n) = total)¹⁰

child	predicate nominal	predicate locative ¹¹
Nina	74.1% (143)	14% (115)
Peter	81.2% (401)	26.7% (90)
Naomi	89.7% (102)	38.1% (31)
Adam	44.4% (303)	4.9% (26)
Eve	39.8% (206)	54.8% (33)
avg. % overt <i>be</i>	65.8%	27.7%

Figure 3.1 provides a graphic depiction of the data in Table 3.3.

The types of copular constructions that were coded include predicatives (copula *be*; *John is a boy-type expressions*), progressives (auxiliary *be*; *John is leaving*), existential expressions (*there is a toy over there*), and deictic expressions (*here is my book*). In Chapter 3 I will only deal with predicative utterances and progressives (§3.2.3.2); existential and deictic expressions will be discussed in the Appendix to this chapter (see end of Chapter 3).

Yes-No questions were not coded, mainly to reduce the number of independent factors that might affect the overt rate of *be* (as Yes-No questions involve a slightly different structure than declaratives—the auxiliary/copula raises around the subject). *Wh*-questions with *be* were coded but not included in the present analysis, for the same reason that Yes-No questions were excluded. Interrogatives will not be discussed in this thesis.

In the case of locative expressions (e.g. *Mommy (is) in the kitchen*), cases of probable *be*-omission were not counted as null-*be* locatives if they appeared to be reduced relative clauses or cases of postnominal PP modification. For example, the expression *the book on the table* might have as its target *The book is on the table*. However, it might also be an elliptical form of *I want the book (that is/to be) on the table*, or *I see the book (that is) on the table*, in which case there is no inflected copula in the corresponding adult English form. If the context suggested that the child's expression had as its target one of these types of expressions, the child's utterance was not coded as a null-*be* locative.

3.1.2 Results

The copula is omitted in nominal and locative predicatives, but its rate of omission differs vastly in these two constructions. The average rates of an overt copula in nominal and locative predicative constructions, for five children, are given in Table 3.3.

¹⁰In this and all subsequent tables the number in parentheses (n) denotes the total number of relevant constructions, out of which the proportion (%) of overt-*be* cases is given as a percent. In other words, n represents the denominator. In the present case, for example, Nina has produced 143 nominal predicative utterances, 74.1% of which contained an overt copula. In all tables in this chapter, I have averaged the percentages of overt *be* across files (in Nina's case, across files 7-13). This was done to avoid treating all of the files (data points) for a given child as if they were from a single large file. Thus, the average percentage takes into account potential changes in development across time.

¹¹This category includes PP locatives, e.g. *in the kitchen*, as well as adverbial locative phrases such as *there* (as in, *My toy is (over) there*).

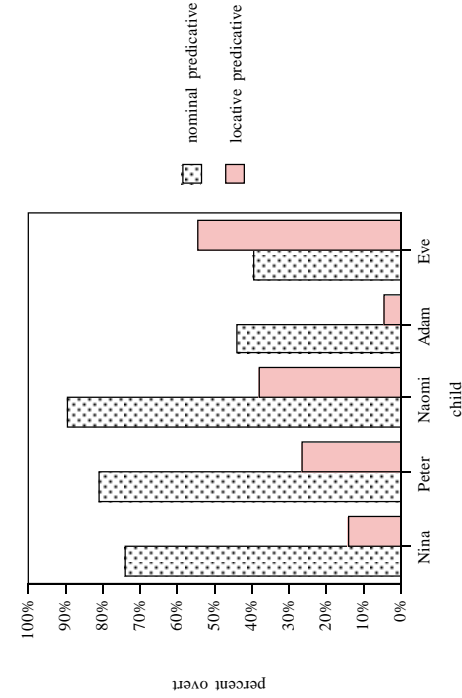


Figure 1. Percent Overt *be* in Nominal and Locative Predicatives

As is apparent in Table 3.3 and Figure 3.1, Nina, Peter and Naomi show the same pattern: the copula is largely overt in cases of nominal predication, but it is largely omitted in locative predicatives. Adam's rates of overt *be* are considerably lower than those of Nina, Peter and Naomi, but his rates are uniformly lower. In other words, Adam shows the same contrast as Nina, Peter and Naomi, but his rate of overt *be* is depressed in both (nominal and locative) categories. It may be significant in this respect that Adam displays some patterns found in African American English (e.g. "invariant *be*", see Chapter 4), a dialect which permits omission of the copula in main clauses in the adult grammar.¹² These issues will be discussed in Chapter 4.

Eve shows a radically different pattern in her rate of overt *be* in nominal and locative predicatives, as compared to the other four children. She produces an overt copula more

¹²Brown (1973) claims that Adam neither speaks nor is exposed to AAE, but T. Roeper (p.c.) suggests that Adam does show some traits of AAE in his speech. We will return to this issue in Chapter 4, §4.3.

often in locatives than in nominal predicatives. Eve's overall rate of overt *be*, across all copular construction types (predicatives, existentials, deictic expressions), is considerably lower than that of Nina, Peter and Naomi (although Eve's average rate is only slightly lower than Adam's). Pooling across all copular constructions, Eve's average rate of overt *be* is 41.6%, while for Nina, Peter and Naomi the rate of overt *be* is 57.5%, 58.1% and 67.4%, respectively (Adam's is 44.6%). Interestingly, Eve's overall low rate of overt *be* cannot be linked to a lower MLU than the other children. In fact, Eve's MLU is considerably higher (cf. Table 3.1).

Because Eve's pattern of omission of the copula are so different from that of the other four children, I will not consider Eve's data further.¹³ Removing Eve's data from the average rates of overt *be* in Table 3.3, then, we derive the averages given in Table 3.4.

¹³ The skeptical reader might object that by excluding Eve's data, I am merely removing the potential counterexamples to the pattern shown by the other children (and thus ignoring potential problems for my analysis). However, I defend my exclusion of Eve's data: since children display some idiosyncrasy in their linguistic development, I would not expect all children to display exactly the same pattern of copula omission. Moreover, Eve shows other developmental differences from the other children; in particular, she has a rather high MLU even at such a young chronological age (at age 2;1 her MLU is 4.16 morphemes per utterance). Thus, her exclusion is warranted on independent grounds. The inclusion of Eve's data would prevent us from seeing the systematicity shown by the other children studied here, and I believe there is sufficient merit in abstracting away from certain differences if it allows us to discover systematic patterns.

Table 3.4. Average Rate of Overt *be* in Children's Nominal and Locative Predicates, Excluding Eve

child	nominal predicate	locative predicate
Nina	74.1% (143)	14% (115)
Peter	81.2% (401)	26.7% (90)
Naomi	89.7% (102)	38.1% (31)
Adam	44.4% ¹⁴ (303)	4.9% (26)
avg. % overt <i>be</i>	72.4%	20.9%

(It should be borne in mind that Adam's rates of overt *be* in these constructions bring down the averages for both construction types, but it makes a bigger difference in the case of nominal predicates. Without Adam's figures, the average rate of overt *be* in nominal predicates is **81.7%**, and the average in locatives is **26.3%**.)

The category of "nominal predicates" in Tables 3.3 and 3.4 includes those utterances whose subject is a personal pronoun, proper name, expletive (*it*) or demonstrative (*this, that*)^{15,16}. Some typical examples of children's nominal predicates are given in (4).

¹⁴Adam's average rate of overt *be* in nominal predicates is brought down somewhat by his rate of overt *be* with demonstrative subjects (*this, that*). In these constructions, Adam's rate of overt *be* is only 47%, while his rate of overt *be* with non-demonstrative subjects (personal pronouns or proper names) is about 61%. For Nina, Peter and Naomi, the rate of overt *be* is around 80% both with demonstrative and non-demonstrative subjects.

¹⁵There were some productions involving plural demonstrative pronoun subjects (*these, those*). Such utterances were included in the count, but there were very few of them overall.

¹⁶There were virtually no cases of nominal predicates with common noun (Det+N) subjects. The only case I found was Adam's utterance *cow name Adam*, which from the context seemed to mean "The cow's name is Adam." Under this interpretation, the expression might be an equative, if the name *Adam* is understood to be referential. Also, the expression is, of course, ambiguous and could be intended as the NP *a cow named Adam*.

- (4) a. *ADA: de sun is lightning. (Adam 25)¹⁷
 b. *NIN: he's a dog. (Nina 7)
 c. *PET: Patsy's a girl. (Peter 11)
 d. *NAO: she's a crocodile. (Naomi 2;3)

Some examples of children's locatives are given in (5).

- (5) a. *PET: my pen down there. (Peter 6)
 b. *NIN: I in the kitchen. (Nina 10)
 c. *NAO: Eric at Cathy house. (Naomi 2;4)
 d. *ADA: he way up dere [there]. (Adam 20)

As can be seen in the examples in (4) and (5), children produce nominal predicates that denote the label, or other inherent/permanent property of the subject, and their locative predicates denote the temporary locations of movable objects. Inherent and permanent properties are syntactically individual-level in Spanish, Portuguese and Hebrew, and temporary locations of movable objects are syntactically stage-level in Spanish, Portuguese and Hebrew. Thus, children's nominal and locative predicates seem to fall at the extremes of the temporal continuum discussed in Chapters 1 and 2.

Recall from the discussion in Chapter 2 that locations of things may be permanent or temporary, and that in some languages, permanent locations behave syntactically like individual-level properties (Hebrew, Portuguese), while in other languages, permanent locations behave syntactically like stage-level properties (Spanish, English). However, the children in these transcripts never talked about permanent or inherent locations of objects (e.g. the locations of cities or islands), nor did they talk about the locations of events

¹⁷The number after the child's name in parentheses indicates the number of the file from which the utterance was taken. It does not represent a number of tokens. In the case of Naomi, her files were so extremely short that I consolidated several files according to her age in months. Therefore, the source of her utterances is indicated by age rather than file number.

3.2 Analysis

(syntactically individual-level in Spanish). They only talked about the locations of movable objects (typically toys and people).

Thus, we cannot tell on the basis of these data whether children are making a distinction according to the grammar of Hebrew, Spanish, or Portuguese, or something else. Experimental work is needed to tease apart the finer distinctions. For example: would children tend to use an overt or null copula with "nonpermanent" nominal predicates, such as *neighbor*? Would children tend to use an overt or null copula with "permanent" locative predicates, such as the location of their house, or their city? And what is the relationship between children's conception of the "permanence" or "temporariness" of properties, and their grammatical encoding of those properties along the temporal continuum? These are important questions, which I cannot answer without an experimental investigation of what children do with those predicates that do not fall at the extremes of the continuum. In the conclusions chapter I suggest some avenues for further research in this direction.

With respect to the *form* of the copula when it is overt, it will be significant for my analysis (see below) that the copula is nearly always inflected (which indicates a finite clause). That is, children produce agreeing forms of the copula such as *is*, *am*, *are*, but they almost never produce the form *be* in matrix contexts. The rates of inflected *be* are shown in Table 3.5.

Table 3.5. Percent of Overt *be* Cases that are Inflected

child	% finite <i>be</i>
Nina	100% (231)
Peter	100% (577)
Naomi	99.7% (338)
Adam	97.3% (299)
average	99.25%

How can we account for the grammatical distinction that English-speaking children make between nominal and locative predicates? More specifically, the questions we should answer are:

- Why do children use an overt and inflected copula specifically in the case of nominal predicates, and why do they omit the copula specifically with locative predicates?
- Why do English-speaking children mark this distinction in this way given that this particular way of marking the distinction is not found in the input?
- What is the relevance of finiteness, i.e., why is the copula always inflected (indicating finiteness) when it is overt?
- Finally, what does children's pattern of copula omission tell us about the structure of adult English predicates?

This final question will be addressed only partially in this chapter, and more fully in the next chapter.

To recapitulate briefly the discussion in the previous chapter, the semantic distinction between stage-level and individual-level predicates shows up in various grammars as a syntactic (structural) distinction between expressions containing these two types of predicates. In English, this distinction shows up in the following contrasts. I repeat the relevant examples from Chapter 2.

- (6) modification by a spatial/temporal modifier
- Manon is dancing on the lawn/*this morning*.
 - ??Manon is a dancer on the lawn/*this morning*.

(7) occurrence in a *when*-clause

- a. When Mary is sick, she calls her doctor.
- b. ??When Mary is tall, she calls her doctor.

(8) existential interpretation of an indefinite/bare plural subject

- a. Dogs are mammals. (generic only)
- b. Dogs are in the park. (generic or existential)

(9) occurrence in a perception verb complement

- a. John saw Mary in the garden.
- b. *John saw Mary a teacher.

(10) occurrence in an existential

- a. There are dogs in the park
- b. *There are dogs chihuahuas

Kratzer (1995) argues that the structural distinction between stage- and individual-level predicates is based on the projection or non-projection of a Davidsonian Event argument: stage-level predicates project this argument, while individual-level predicates do not. She accounts for the effects in (6-8) by appealing to the presence vs. absence of the Event argument in the structure. In (6), it is the Event argument that gets modified by the spatial or temporal modifier. In (7), it is the semantic variable of the Event argument that must be bound by the ALWAYS quantifier in the *when*-clause (see discussion in Chapter 2).

In both of these cases, it suffices for Kratzer's account that the Event argument be *somewhere* in the structure; its precise location in the structure is not critical. However, in (8), Kratzer's account turns on her projection of the Event argument in SpecIP, and her claim that the subjects of individual-level predicates (those with no Event argument) are generated in this position. What I will argue is that there is good evidence for another analysis of these structures, according to which the Event argument is not in SpecIP, but rather in a lower position (the complement of Asp⁰). Under the analysis I propose, we are able to capture all of the facts in (6-10), and we can explain at the same time why English-

speaking children tend to produce an overt (and finite) copula in those nonverbal predicative structures that *lack* an Event argument.

3.2.1 The Structural Location of the Event Argument and Temporal Anchoring in Main Clauses

My account of children's pattern of copula omission has two main ingredients. One is the fact that locative (stage-level) predicates and nominal (individual-level) predicates involve different syntactic structures. As argued in Chapter 2, stage-level predicates project an Event argument, while individual-level predicates do not. In this section I will argue that the Event argument is selected by the head of an Aspect projection (AspP). The other main ingredient in my analysis is the notion that all main clauses must be temporally anchored. The requirement of temporal anchoring is a formal requirement, which I define below in §3.2.1.3.

First, I will go through some arguments for projecting the Event argument as the complement of an aspectual projection (AspP).

3.2.1.1 The Event argument is associated with AspP

Defining the location of the Event argument in the structure is not straightforward, because the Event argument itself is an abstract object whose existence was originally proposed on semantic grounds (Davidson 1967). A number of linguists would argue, in fact, that the Event argument is not a syntactic object at all and thus is not represented in the syntax (Parsons, p.c., Stabler, p.c.), but rather is a purely semantic object. I will follow Kratzer in adopting the view that the Event argument is indeed a syntactic object, but I will differ from Kratzer in where I place the Event argument in the syntactic structure.

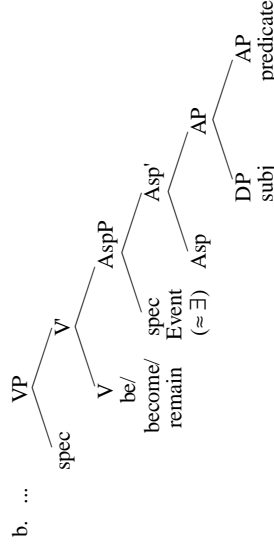
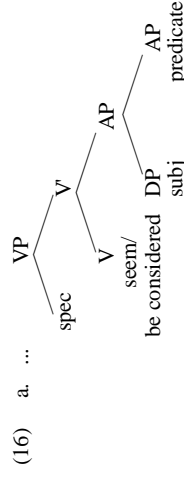
Instead of placing the Event argument in SpecIP, I will argue that it should be placed lower in the structure: between the IP projection and the lexical core of the sentence, the VP/SC domain. Adult English provides evidence for this proposal. Additionally, as we will see in Chapter 4, there is crosslinguistic support for my account from Spanish (Luján 1981), Portuguese (Schmitt 1992) and Russian (Matushansky 2000). Let us now turn to the evidence from adult English.

The projection of Asp(ect)P between the lexical SC and the VP has been proposed by various researchers, most notably McClure (1993), Travis (1992), Borer (1998), and Demirdache & Uribe-Extebarria (to appear). Heycock (1995) also argues for the projection of AspP in this position in certain raising constructions. This extra position is required on her account in order to account for inversion phenomena in raising constructions. Specifically, she notes that certain raising verbs (in addition to *be*) allow predicate inversion, while others do not. This asymmetry is illustrated in (11)-(15).

- (11) a. John is the culprit. (canonical order)
- b. The culprit is John. (inverted order)
- (12) a. What to do next remains the real problem. (canonical)
- b. The real problem remains what to do next. (inverted; Heycock's (23))
- (13) a. At this point, John becomes our real problem. (canonical)
- b. At this point, our real problem becomes John. (inverted; Heycock's (24))
- (14) a. His attitude seems the worst problem.¹⁸ (canonical)
- b. *The worst problem seems his attitude. (inverted; Heycock's (19b))
- (15) a. His attitude was considered the worst problem. (canonical)
- b. *The worst problem was considered his attitude. (inverted; Heycock's (20b))

¹⁸Heycock notes that this sentence is rather marginal for many speakers of American English, while it is quite acceptable to most speakers of British English. However, even for speakers of American English, there is a clear contrast between the canonical and the inverted examples, with the inverted structure being markedly worse.

Heycock proposes that *seem* and *be* considered select only a lexical SC complement, while *be*, *become* and *remain* select an AspP, which in turn selects a lexical SC. The extra structure in the complement of *be*, *become* and *remain* provides a position through which the predicate may move (otherwise the movement would violate the Minimal Distance principle (Chomsky 1993; see also Den Dikken 1993; 1995)).¹⁹ Her structures are the following:



Heycock argues that in a structure containing an AspP, an Event argument may (but need not) be projected in the specifier of AspP. If the Event argument is projected, the (thematic) subject of the SC is then projected below this Event argument, inside the lexical

¹⁹Heycock assumes that the Event argument may or may not be projected in SpecAspP (it is not clear on what basis it may/may not occur), so presumably the predicate can raise only if the Event argument is *not* projected, but if the position is made available by the projection of AspP. This is not discussed in Heycock (1995).

SC. Heycock assumes that the Event argument is associated with an existential quantifier (\exists), so that variables introduced in the complement of Asp may be bound by the existential quantifier (and hence receive an existential interpretation). In other words, a raising verb like *be*, *become* or *remain* always selects an AspP but there may or may not be an Event argument projected in the specifier of that projection; if there is an Event argument projected, any variables (introduced by indefinites or bare plurals, for example) in the scope of Asp will be existentially quantified over. If there is no Event argument in SpecAspP, or if there is no AspP (as is the case with *seem* or *be considered*) a variable introduced in the SC will not receive an existential interpretation, but rather a generic one (in this case the variable is bound by the Generic operator).²⁰

Thus, the (indefinite/bare plural) subject of a *seem*-type complement can only have a generic reading, while the (indefinite/bare plural) subject of a *be/become/remain*-type complement can either receive a generic reading or an existential one. I illustrate with the following examples (taken from Heycock 1995: 233).

- (17) a. Firemen seem available. (generic reading only)
 b. Firemen are/became/remain available. (generic or existential reading ok)

This difference in the interpretation of the subject in (17a-b) supports the view that *seem* does not select an AspP, but *be*, *become* and *remain* do (with the added assumption that the Event argument in SpecAspP is associated with an existential operator). Crucially for Heycock, the projection vs. lack of projection of AspP (and hence the possibility of projecting an Event argument) depends solely on the selectional properties of the raising verb, not on the semantic properties of the predicate, i.e. whether it contains a stage- or

²⁰Crucially, the dependency goes in the direction: Event argument only if AspP; i.e., the assumption is that in the absence of AspP, there is no existential operator to quantify over the SC.

individual-level predicate. Thus, *seem* and *be considered* select a lexical predicate whether the predicate is stage- or individual-level, and likewise, *be*, *become* and *remain* select an AspP whether the predicate is stage- or individual-level. While I have nothing in particular to say about the raising verbs *seem*, *be considered*, *become* or *remain*, I will argue that *be* may select either an AspP or a lexical SC, depending on whether the predicate contains a stage- or individual-level property.

By adopting Heycock's account (plus the modification that *be* can take either a lexical predicate or an AspP), we are able to account for the differences in the interpretation of indefinite/bare plural subjects of stage- vs. individual-level predicates, the phenomenon discussed originally by Kratzer (cf. (8) above) and Diesing (1988, 1990). Yet, we are able to get around the problems, discussed in Chapter 2, stemming from Kratzer's association of the Event argument (and thematic subjects of individual-level predicates) with the SpecIP position. In the next section, we will see further evidence that stage-level predicates involve the projection of AspP, and we will see a way of accounting for the other syntactic differences between stage- and individual-level predicates (i.e. perception verb complements and existentials, cf. (9-10) above).²¹

3.2.1.2 Evidence from English perception verb complements

Felser (1999) argues convincingly that perception verb complements, or PVCs, which admit only stage-level predicates (see Chapter 2, and (9) above) contain an AspP as

²¹Heycock's choice of the label Aspect for the projection of the Event argument is admittedly dubious. There does not seem to be any substantial reason to refer to it as an Aspect Phrase, aside from the fact that Aspect is generally thought to be the functional projection that is closest, syntactically, to VP (Baker 1988; Ouhalla 1991). But she does not provide any evidence that it is in fact associated with grammatical (or lexical) aspect. However, there seems to be evidence for this view from English perception verb constructions (Felser 1999) as we will see in §3.2.1.2, as well as strong arguments from Russian and Portuguese (see §4.1).

the highest projection. According to Felser, the AspP hosts a Davidsonian Event argument in its specifier position and dominates a lexical (VP or SC) predicate.

Felser distinguishes two types of PVC: Infinitival Perception Verb Complements (IPVCs) and Participial Perception Verb Complements (PPVCs), exemplified in (18).

- (18) a. We saw John draw a circle. (IPVC)
b. We saw John drawing a circle. (PPVC)

She argues that the nonfinite complement clause in each case in (18) constitutes a "reduced" clausal constituent: a constituent larger than just VP, but less than a full clause, i.e. not containing a TP or CP projection. That PVCs are not full clauses (CP) is shown by the fact that they do not permit complementizers:

- (19) *We saw that John draw/drawing a circle.

That PVCs are not TPs is shown by the absence of *to*-infinitives, where infinitival *to* is assumed to be an element occurring in the T⁰ position (Emonds 1976; Chomsky 1986; Pollock 1989):²²

- (20) *We saw John to draw a circle.

Thus, PVCs do not project all the way to TP or CP, yet they are not simply lexical VP projections. Rather, they involve one layer of functional structure above the VP, namely AspP. The most obvious reason to project an extra layer of structure is that the predicate in the PVC must project an Event argument. (As I will discuss below, PVCs are limited to

²²A *to*-infinitive in a PVC is possible only with certain (individual-level) predicates (e.g. *We saw John to be the real winner*), and when the PVC is passivized (e.g. *John was seen to draw a circle*). These constructions exclude a direct perception reading (here *see* means 'find or judge').

eventive verbs and stage-level non-verbal predicates, both of which project an Event argument; cf. discussion of Kratzer's account in Chapter 2.) But Felser provides other evidence in support of her claim. One piece of evidence for this claim is that PVCs may contain (non-thematic) *there* subjects, as in (21).

- (21) I wouldn't like to see [there be so many mistakes] (Felser's (30b), p. 101)

Given that *there* is non-thematic, it cannot be generated within the VP (or vP) projection, and so must be inserted at a higher level within the PVC. This fact argues for a subject (specifier) position outside of VP in PVCs.

Based on this evidence (the occurrence of non-thematic *there* in PVCs and the need to project an Event argument--see Felser (1999) for further arguments), Felser argues for the existence of an extra layer of functional material in PVCs above VP, but which is not TP (see (20) above) or CP (see (19) above).

Now let us address the nature of this extra functional layer of structure. Perception verbs typically select an eventive, rather than a stative predicate. Compare the following:

- (24) a. I saw John draw a circle.
b. *I saw John know the answer/love Mary.

It is also true that most stative verbs denote mental properties (*know*) or emotions (*love*), which are not normally observable. However, there is a clear difference in the grammaticality of the following expressions, where the meanings of the verbs are very similar, one being eventive (*enjoy*) and the other stative (*like*).

- (25) a. (From across the room,) I watched John enjoy his banana split.
b. *(From across the room,) I watched John like his banana split.

That *enjoy* is an eventive verb, while *like* is stative, can be seen in the fact that *enjoy*, but not *like*, can occur in progressive form (occurrence in progressive aspect is a test for eventivity).

- (26) a. John is enjoying his banana split.
 b. *John is liking his banana split.^{23,24}

Having analyzed PVCs as AspP, Felser further argues that the Event argument of the eventive verb in the PVC is projected in the specifier of AspP. One problem with the logic of this argument is that if the specifier of AspP is needed to host other elements, e.g. expletive *there*, as in (21) above, then it cannot also be occupied by the Event argument. Kratzer faces a similar problem in claiming that the Event argument is in SpecIP, and that the thematic subject of a stage-level predicate raises to this position at S-structure. Likewise, Heycock's claim that the Event argument is "associated" with an existential quantifier appears to suggest that they both occur in SpecAspP. We can avoid these problems by projecting the Event argument as the complement to the head of AspP, as in (27).²⁵

²³ *Like* can occur as a progressive verb in the following context: *I'm liking this book more and more*. It is well-known that stative verbs in general can occur in this context, cf. *Mary is resembling her mother more and more*. See (Smith 1997); also attributed to Zucchi (1998) by Rothstein (1999).

²⁴ It should be noted that stative verbs appear to be able to occur in PVC contexts in progressive form, as in (ib).

(i) a. *We saw three books contain long bibliographies. (Felser's (175a), p. 65)

b. We saw three books containing long bibliographies. (Felser's (174a), p. 65)
 Such expressions, however, have the structure of reduced relative clauses. Felser argues that in expressions such as (ib), the object of the verb *see* is the DP *three books*, rather than the event(uality) of three books containing long bibliographies. For further arguments and discussion, please see Felser (1999: 65ff.). We will return to this point shortly.

²⁵ It is not immediately obvious whether the Event argument should be thought of as a head (X⁰), or a maximal projection (XP). Since it is never phonetically overt, we cannot test for its exact position in the structure. That it is referred to as an "argument" seems to suggest that one should think of it as an XP, thus occupying a specifier position. However, it is not entirely clear that it is a syntactic "argument" in the same way as argument DPs, for example. Acknowledging that this matter should be investigated further, I propose to project the Event argument as EvP, complement of Asp⁰.

- (27) ...[AspP [Asp' [EvP [SC/VP ...]]]

In this structure, the Event argument is EvP, whose head selects the lexical SC or the VP (it selects a VP if the predicate is verbal; it selects SC if the predicate is non-verbal).

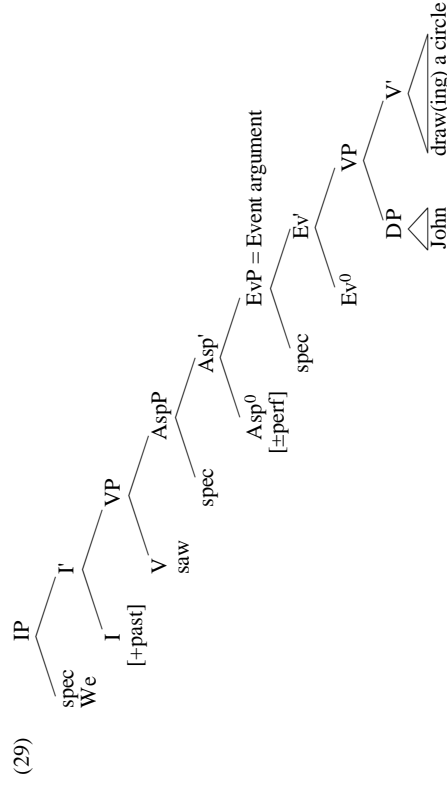
Returning to the nature of the AspP projection, since the verb in a verbal PVC may occur either in progressive form or as a bare verb, Felser suggests that the Asp head contains a [\pm prog(ressive)] feature. However, I propose a slight modification of her account. I believe that PVCs are better characterized as containing a [\pm perf(ective)] feature in Asp, rather than a [\pm prog] feature. Progressive verbs have imperfective aspect ($[-$ perf]), in that they denote the process of an event (imperfective aspect, according to Comrie (1976) that has to do with the internal temporal structure or process of an event). For example, the progressive verb *eating* in *John is eating a sandwich* denotes the process of sandwich-eating. English bare (non-progressive) verbs, instead, are perfective (Giorgi and Pianesi 1996). Defining the progressive/non-progressive distinction for verbs in PVCs as perfective vs. imperfective corresponds to a clear interpretive difference between IPVC and PPVC predicates, as noted by Felser herself. One of the diagnostics used to distinguish perfective from imperfective predicates is that predicates with perfective aspect imply that the event reaches completion. Predicates with imperfective aspect do not imply a completion of the event. This semantic difference can be seen clearly in the following contrast.

- (28) a. I saw her drowning but I rescued her.
 b. #I saw her drown but I rescued her. (Felser: 77)

The PPVC in (28a) is clearly imperfective, as there is no implication that the drowning event is completed (it is compatible with the conjoined clause stating that the

drowning event was interrupted by a rescue). The IPVC in (28b), in contrast, cannot be followed by such a clause: the IPVC implies that the drowning event reaches completion.

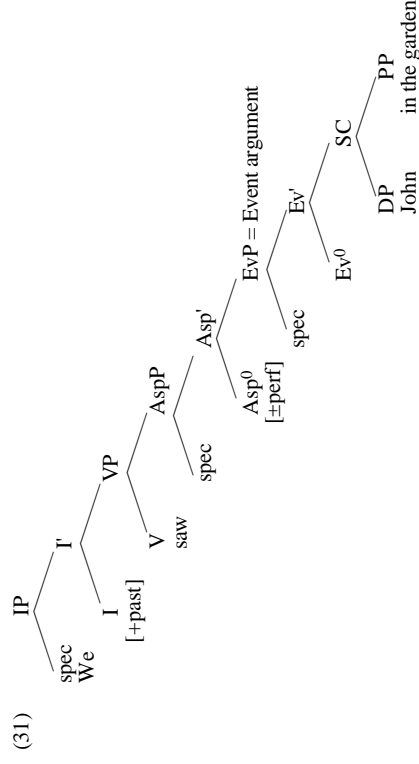
Thus, I propose that the Asp head in the PVC be specified for $[\pm\text{perf}]$. We now have the following structure for a PVC with an eventive verb in the complement. (The Event argument is the EvP phrase.)



We are now in a position to relate Felser's structures for PVCs to the fact that stage-level, but not individual-level predicates occur in this environment: if stage-level predicates project an AspP, but individual-level predicates are purely lexical, and if perception verbs take an AspP as complement, then it follows that stage-level predicates will be able to occur here, but individual-level predicates will not.

- (30) a. ...[see [AspP [Asp' [EvP [PP John in the garden]]]
 b. *...[see [NP John a doctor]]²⁶

The structure of a non-verbal PVC (*We saw John in the garden*) is the same as the structure of the verbal PVC in (29). For completeness, I give it here in (31).



In this section, we have seen further evidence from perception verb constructions that stage-level predicates project an AspP projection, while individual-level predicates do not (they involve only a lexical SC).

At this point, we have accounted for all but one of the distinctions between stage- and individual-level predicates we saw in Chapter two and at the beginning of this chapter.

²⁶Of course, *see* and other perception verbs must be able to take a DP complement, as in *I saw John*, *I heard the music*, etc. If we assume, as I do here, that nominal SC predicates are NPs and not DPs, then we may draw the selectional distinction according to this categorial distinction: *see* selects either DP or AspP, but not NP (see footnote 1).

1. The fact that stage-level predicates can be modified by temporal or spatial modifiers and can occur in *when*-clauses is accounted for by Kratzer's claim that the Event argument introduced by stage-level predicates is a semantic variable that can be unselectively bound.

(6) modification by a spatial/temporal modifier

- a. Manon is dancing on the lawn/*this morning*.
 - b. ??Manon is a dancer on the lawn/*this morning*
- (7) occurrence in a *when*-clause
- a. When Mary is sick, she calls her doctor.
 - b. ??When Mary is tall, she calls her doctor.

2. The existential reading of indefinite/bare plural subjects of stage-level (but not individual-level) predicates is accounted for by Heycock's claim that the Event argument in AspP is associated with an existential quantifier, and the further assumption (from Kratzer) that only stage-level predicates are associated with an Event argument.

(8) existential interpretation of an indefinite/bare plural subject

- a. Dogs are mammals. (generic only)
- b. Dogs are in the park. (generic or existential)

3. That perception verb complements (PVCs) are limited to stage-level predicates is accounted for by Felser's analysis of PVCs as AspPs with a lexical SC complement, and the claim that stage-level predicates project an AspP.

(9) occurrence in a perception verb complement

- a. John saw Mary in the garden.
- b. *John saw Mary a teacher.

We should still account for why stage-level, but not individual-level predicates can occur in the coda of an existential. This contrast is repeated here:

- (10)
- a. There are dogs in the park.
 - b. *There are dogs chihuahuas.

I believe we can extend Felser's analysis of PVCs to account for the contrast in (10a-b) as well. Note that when a verbal predicate occurs in the coda of an existential, the verb must occur in progressive aspect (and hence, it must be an eventive verb, since stative verbs cannot be progressive).

- (32)
- a. There are students protesting
 - b. *There are students protest
 - c. *There are students know/knowing the answer.²⁷

Thus, we might simply extend Felser's analysis of PPVCs to the sentence in (32a), such that the complement of *there*+copula is an AspP with an Event argument in SpecAspP. Analogously, an existential sentence such as (10a), the structure of which is given in (33b), would contain an AspP as the complement to *there*+copula.

- (33)
- a. [IP there [I' be [AspP [Asp' [-perfl] [EvP [vp students protesting]]]]]]
 - b. [IP there [I' be [AspP [Asp' [±perfl] [EvP [sC dogs [pp in the park]]]]]]

Let us consider these two structures in more detail. Note first that Asp is specified as [-perfl] in (33a). A possible explanation for this is as follows. As pointed out to me by N. Hyams (p.c.), Giorgi & Pianesi (1996) analyze English bare verbs as inherently perfective

²⁷Certain stative verbs, e.g. *feel* and *see*, can occur in this context (only in progressive form): *There are students feeling sick; There are people seeing the smoke from the crash* (Schütze, p.c.). However, it is also not clear that these verbs are purely stative: *John is feeling sick* is fully acceptable, suggesting that *feel* can also be eventive (recall that occurrence in progressive form is a test for eventivity); Likewise, *see* can occur in progressive form in main clauses, although the context has to be carefully constructed: *The baby is seeing the snow for the first time* (Schütze, p.c.).

([+perf]). They argue further that a perfective predicate cannot be predicated of a "punctual", or here-and-now event (this is how they account for the fact that English present tense eventive verbs do not have a here-and-now reference). Guéron (1995) analyzes existential *there* as a pronoun that denotes a time and place, i.e. it anchors the expression to the here and now. Thus, if existentials denote a here-and-now, or punctual event, then they will be incompatible with a perfective predicate. A progressive verb, however, is imperfective and so is compatible with an existential expression.

Let us now focus on the structure in (33a), which is the proposed structure of (32a). However, the sentence in (32a) is ambiguous between an "eventuality" reading and a reduced relative clause (or secondary predication) reading. On the "eventuality" reading, the existence of a student-protest eventuality is being asserted, whereas on the reduced relative clause reading, the existence of students (who were protesting) is asserted. Since the two interpretations are truth-conditionally equivalent, it is difficult to determine whether (33a) is the only correct structure for (32a), or whether there is also a structure in which the associate NP (*students/dogs*) forms the primary predicate, and the verbal/locative phrase forms a secondary predicate on the associate.²⁸

PPVCs with a relativizable subject are similarly ambiguous (cf. footnote 25). The relevant example is given in (34).

- (34) We saw a man drawing a circle.
 = we saw [the event of a circle-drawing, done by a man]
 = we saw [a man, who was drawing a circle]

As discussed above, PPVCs can be disambiguated through the use of either a bare verb (i.e. by creating an IPVC, thus: *We saw a man draw a circle*, which cannot have the

²⁸See Milsark (1974) for arguments that existential codas and perception verb complements have different structures. See also Williams (1983, 1984) for arguments for a "flat" structure in existentials.

reduced relative clause reading), or through the use of a non-relativizable SC subject (thus: *We saw John drawing a circle*, which likewise cannot have a reduced relative clause reading). But existentials do not permit either of these alterations: (i) a bare verb is never possible, as in (32b), and (ii) existentials never tolerate proper nouns in the "associate" NP position. That is, the sentence in (35) is ungrammatical because of the "definiteness effect" in English (definite DPs cannot occur in the "associate" position of an existential except on the so-called "list reading"; **There was John in the room* (see Milsark 1974 for discussion; Ward and Birner 1995; McNally 1998).

- (35) **There was John drawing a circle.*

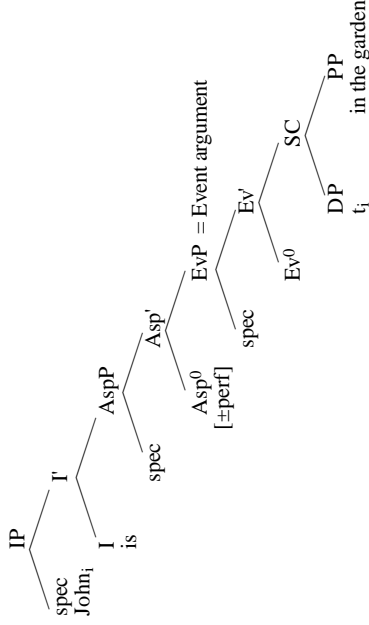
One possible way to disambiguate existential sentences between the "eventuality" reading and the reduced relative clause reading is through testing for what existential assertion is implied in the sentence. That is, in a sentence such as *There was a man leaving*, the existence of a man seems to be implied (i.e., *there was a man leaving* implies *there was a man*). However, in *There is a book missing from the shelf*, the existence of the book is not implied (Chomsky 1986). Thus, the associate NP *a book* is not modified by *missing from the shelf* as in a secondary predication or relative clause type of structure (in other words, the sentence does not have the same existence implication as *There was a book*). Rather, the whole phrase *a book missing from the shelf* seems to be predicated of the existential *there is*.

While certain participles (e.g. *missing*) seem to allow disambiguation in this way, there does not seem to be a way to disambiguate the two readings with verbal, adjectival or locative predicates in the existential coda. *There were students protesting* does imply the existence of students, as does *There were students tired* or *There were students in the garden*.

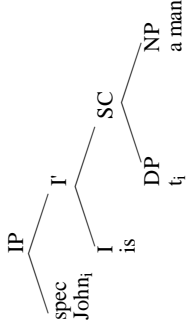
To conclude this subsection, there is evidence that stage-level predicates are associated with an Event argument, which projects an AspP in the structure. This approach to the structure of stage- vs. individual-level predicates allows us to account for the various differences between these two types of predicates, as discussed in Chapter 2 and the beginning of §3.2.1. In particular, Heycock accounts for the differences in the interpretations of indefinite or bare plural subjects of stage- vs. individual-level predicates. Felser accounts for the restriction of perception verb complements (PVCs) to stage-level predicates. I showed that we might be able to extend Felser's account to existentials (which allow only stage-level predicates in the coda), but that it was impossible to disambiguate Felser's structure (containing an AspP) from a reduced relative clause structure with certain types of predicates (verbs and locative expressions).

Extending the analysis of SC stage- and individual-level predicate structures to the main clause, I propose the structures of main clause stage- and individual-level predicates given in (36a-b).

(36) a. stage-level predicate



b. individual-level predicate



In Chapter 4 we will return to the account of stage-level predicates as containing an AspP, and we will see that there is crosslinguistic support for this analysis.

3.2.1.3 Temporal Anchoring

At the beginning of §3.2.1 I noted that there were two main ingredients in my analysis of children's omission of the copula in predicates. The first ingredient is the argument for a structural difference between stage- and individual-level predicates. I have analyzed nominal predicates as individual-level and locative predicates as stage-level, where stage-level, but not individual-level predicates project a Davidsonian Event argument (EvP) in the complement of Asp⁰.

The second ingredient is an account of the connection between the structural difference between stage- and individual-level predicates and the presence vs. absence of the copula in child English. In other words, we must now explain the connection between the presence of the Event argument and AspP and the lack of an overt copula in child English, and conversely, between the lack of an Event argument and AspP and the presence of an overt, finite copula in child English. I argue in this section that this connection emerges from conditions on temporal anchoring in main clauses.

I define temporal anchoring as the binding of a functional syntactic head (a non-lexical X^0)²⁹ by the Temporal operator (T_{OP}), located in the C-domain. I also make the assumption that temporal anchoring is required in all indicative main clauses.³⁰

(37) Temporal anchoring:

- (i) A main clause is temporally anchored if a (particular) syntactic head is bound by the Temporal operator (T_{OP}) in C.³¹
- (ii) The requirement for (main clause) temporal anchoring is satisfied by either (a) or (b).
 - (a) T_{OP} binds Asp
 - (b) T_{OP} binds Infl

Intuitively speaking, the requirement for main clause temporal anchoring is the reason main clauses are finite in many languages, including adult English. It is a formal requirement that can be satisfied by the binding of Infl by the Temporal operator (option (b)), resulting in grammatical "finiteness". Finiteness is often indicated morphologically through formal tense (or agreement) features realized on a verb or functional element in Infl, such as an auxiliary, modal or copula. I submit that the temporal anchoring requirement is a universal requirement for main clauses. However, the requirement may be satisfied in

²⁹By "functional" or "non-lexical" I simply mean a head that is not of category N, V, A or P. Functional categories typically contain closed-class items which provide structural meaning, but not content meaning to the sentence (Ouhalla 1991).

³⁰I am not sure what to say about non-indicative clauses. For example, in so-called Mad Magazine sentences (What? Me worry?? see Akmajian 1984; Schütze 1997, l.a.), subjunctive and imperative clauses, temporal anchoring might be satisfied by the binding of an empty Infl by a Modal operator in the C-domain. Alternatively, perhaps the temporal anchoring requirement simply does not apply in non-indicative mood clauses. Henceforth, my comments on temporal anchoring will apply only to indicative main clauses.

³¹What I call the Temporal operator is referred to as a "Tense operator" by Enç (1987) and Guéron & Hoekstra (1995). I intend to refer to the same syntactic object. I use slightly different terminology because the Temporal operator, as we will see, refers to non-deictic temporal properties of the predicate (aspect) in addition to tense, which is deictic. Enç (1987) argues that this operator is in C, i.e. the head of CP. Guéron & Hoekstra (1995) argue, instead, that it is in SpecCP. I remain neutral with respect to this issue, claiming only that the Temporal operator is somewhere in the C-domain. I take this position to be relatively uncontroversial.

different ways across languages: in some languages, both options (a) and (b) are available, while in other languages only option (a) or option (b) is available. If the requirement is satisfied by option (a), i.e. binding of Asp, the clause is not finite.³²

In a language such as adult English, only option (b) is available for fulfilling the temporal anchoring requirement: Infl is bound by T_{OP} regardless of whether AspP is projected in the structure. In a main clause with a main verb predicate, e.g. *John kissed Sue*, or *Mary knows French*, temporal anchoring is indicated by the past tense or "present tense" -s marking on the verb, which I take to mark finiteness.³³ Whether one assumes that the -ed and -s morphemes are generated in Infl and lowered onto the verb, as in the Affix Hopping model (Chomsky 1965), or whether they are inserted in the representation affixed to the verb already, as in the Minimalist Program (Chomsky 1995), I assume their occurrence is indicative of the fact that the Infl node is bound by the Temporal operator.³⁴

Likewise in an individual-level predicative expression, such as *Mary is a doctor*, Infl is bound by the Temporal operator. Since there is no verb in the structure to carry a finiteness feature, finiteness is spelled out via an inflected copula. In a stage-level predicative, such as *John is in the garden*, both heads (Infl and Asp) are projected in the structure. However, Infl must be bound by T_{OP} (this is the only available option for adult

³²I state the temporal anchoring requirement as an 'if' implication, rather than the stronger 'if and only if', because I would like to leave open the possibility that there is some way to satisfy the requirement other than options (a) and (b). As we will see below, there are languages in which Tense is either absent entirely (e.g. Chinese), or it is not specified in certain tenses (e.g. Russian present tense predicates). If the temporal requirement is indeed a universal requirement, and if there is reason to think that these languages do not contain AspP in every main clause, then there must be some other way to satisfy the requirement.

³³See Hoekstra & Hyams (1996) and Kayne (1989) for arguments that the English "present tense" -s marks Number agreement rather than Tense, and see Enç 1987 for arguments that English "present" is not a real tense.

³⁴The actual morpheme that conveys grammatical finiteness, i.e. -finite Tense, may be null (-0). That is, a verb such as *eat* with a non-3sg subject (e.g. *I/you/we/they eat*) is finite, even though there is no audible Tense morpheme.

English), and as in the case of the individual-level predicative, the result is an overt (and inflected) copula. The structure of predicates in adult English is that given in (38).

- (38) a. individual-level:
 [CP TOP_i [IP subject_i [_T be+fin_j [_{SC} t_i predicate]]]]
 b. stage-level:
 [CP TOP_i [IP subject_i [_T be+fin_j [_{ASpP} [_{ASp'} [_{EvP} [_{Ev'} [_{SC} t_i predicate]]]]]]]]

In child English, in contrast, both options (a) and (b) are available, but the choice of option (a) or (b) is determined by the structure of the particular expression. If there is an Asp head in the structure it is bound by TOP (option (a) is used); thus, it is ungrammatical in child English for TOP to bind Infl in a structure in which Asp is projected. When Asp is bound by TOP, Infl does not bear any finiteness features or morphemes. I claim that on the basis of some general notion of economy, if Infl need not be specified for finiteness, then it will not be. ³⁵ Thus, in the case of stage-level predicates there is an Asp in the structure, and so Infl will not be finite. As predicted by this analysis, the copula is overt (and inflected) in only 20.9% of children's locatives. I assume that the 20.9% of locatives with an overt copula, i.e. the cases that are counterexamples, arise in the child's speech as a result of a transitional effect of the child grammar (in which binding Asp by TOP is grammatical, and binding of Infl is ungrammatical, when Asp is projected) becoming more like the adult grammar (in which binding Asp by TOP is ungrammatical).

³⁵ Although Infl need not be bound by TOP when Asp is present, I assume nonetheless that IP is projected in the structure. I assume this because, as we will see below, the subject must raise to SpecIP (the evidence has to do with case assignment and the position of the subject with respect to Negation). However, if Asp is bound by TOP, then Infl will simply be unspecified, i.e. lacking in formal finiteness features.

If there is no Asp in the structure, as is the case in individual-level predicates, ³⁶ then option (b) must be exercised: the only head available for binding by TOP is Infl, and when Infl is bound by TOP, the clause is finite. The only way to express finiteness on a non-verbal predicate is through an inflected copula. The copula expresses no lexical meaning, i.e. it does not assign theta-roles, it is only a carrier of Tense or Agreement features. It serves only to convey finiteness in the clause. Thus, individual-level predicates will tend to occur with a finite Infl. The structure of predicates in child English is given in (39).

- (39) a. individual-level:
 [CP TOP_i [IP subject_i [_T be+fin_j [_{SC} t_i predicate]]]]
 b. stage-level:
 [CP TOP_i [IP subject_i [_T [_{ASpP} [_{ASp'} [_{EvP} [_{Ev'} [_{SC} t_i predicate]]]]]]]]

Recall from §3.1 that *be* is overt and finite in 72.4% of nominal predicates (81.7%, excluding Adam). Accounting for the counterexamples in this case (i.e. individual-level predicates with null *be*) is somewhat more difficult than accounting for the stage-level predicates with overt *be*. I am forced to assume either that there is another head in the structure that is bound by TOP and satisfies the temporal anchoring requirement, but does not get realized overtly, or that these are true production errors. The notion that children's non-adult productions are caused by production errors (e.g. memory overload, processing difficulty) has been suggested by P. Bloom (1990; 1993) (and Valian 1991). ³⁷

³⁶ I assume also that ASpP is not inserted in the structure if it is not projected by the predicate.

³⁷ Another possibility that will not be explored in depth here is that there is another head in the structure besides Infl and Asp that can satisfy temporal anchoring by being bound by TOP. I do not know what this third X⁰ would be, but it may be required independently to account for temporal anchoring in languages that lack a copula entirely in certain tenses (e.g. Russian), and languages that lack tense (e.g. Chinese; see below).

Note that not only is the copula "non-finite" in child English stage-level predicates, where I take non-overtness of the copula as a sign of non-finiteness, but the copula is absent entirely. That is, the copula does not occur overtly in its uninflected form (*be*) when Asp is bound by Top; rather it is not lexically realized at all. Children do not produce forms such as *I be tired/in the kitchen* (they produce such forms less than 1% of the time; see Table 3.5). The reason the copula does not surface as *be* in stage-level predicates is that *be* heads a VP projection (it is a V head), and there is no VP in a simple main clause predicative such as *I am in the kitchen*. The inflected copula (*am, is, are*), in contrast, is a head of Infl/Tense. I distinguish the categories of the inflected and uninflected copula (*is, etc. vs. be*) because the uninflected copula seems to project a Davidsonian Event argument, while the inflected copula does not show this behavior. Syntactic and semantic differences between the inflected copula and the uninflected copula *be* (but also *been, being*) will be discussed in Chapter 4.

The crucial difference between child and adult English (i.e. between (38) and (39)), then, is that in child English (39b) the Asp head may be bound by the Temporal operator, whereas in adult English (38a-b), Infl is always bound, yielding a finite clause (and thus an inflected copula) in both individual- and stage-level predicates.

3.2.1.4. Temporal anchoring in tenseless languages

The definition of temporal anchoring I give in (37) suggests that there might be languages that exercise only option (a), i.e. binding of Asp by Top, and never binding of Infl. Such languages would never have tensed main clauses, since binding of Asp by Top does not result in tense marking (according to my definition). In fact, a language that seems to behave this way is Mandarin Chinese. Chinese lacks morphological tense entirely ((Smith 1997); but see Déchaine [1993 #140] for arguments that Chinese—and other morphologically tenseless languages—nevertheless project TP). Instead Chinese has a

complex system of aspectual markers and marks deictic temporal meaning through the use of temporal adverbs (*zuotian* 'yesterday', *mingtian* 'tomorrow'). All clauses have some kind of grammatical aspect ("viewpoint aspect" in Smith's (1997) terms): perfective, imperfective or neutral aspect.³⁸

There are a number of issues raised by the application of the definition in (38) to Chinese that I am unable to address adequately at this time, but I will mention them here for completeness. One issue is that of how (and whether) temporal anchoring is satisfied in Chinese individual-level predicates. That is, since binding of Infl is not an option in Chinese, is there an Asp in individual-level predicates, just as with stage-level predicates, that gets bound by Top? Smith's claim that all clauses in Chinese contain grammatical aspect seems to imply that even individual-level predicates are aspectual (and therefore contain AspP, assuming there is a one-to-one relationship between expressing aspectual meaning and projecting AspP in the structure). If this is the case, then Chinese does not violate the (presumably universal) requirement on temporal anchoring in individual-level predicates; it merely differs from languages such as English in that its individual-level predicates project an AspP.

However, there is some evidence that Chinese individual-level predicates are not aspectual. One such piece of evidence is that the aspectual suffix *-zhe*, which expresses imperfective aspect, can only occur with stage-level predicates (Smith 1997). The marker *-zhe* seems to be incompatible with individual-level predicates for the same reason *-ing* in English is incompatible with stative predicates: these aspectual markers (Chinese *-zhe* and English *-ing*) must occur with a predicate that denotes an event with internal stages.³⁹ Smith

³⁸Smith (1997) notes that in some cases, the aspect of a sentence may not be overtly marked. Nevertheless, she argues that all sentences contain aspectual meaning.

³⁹See also Landman (1992) and Rothstein's (1999) discussion of Landman on the English progressive and why it cannot occur with stative predicates.

notes that "... *-zhe* presents the internal stages of events in a static manner" (Smith 1997: 273). It is intuitively clear that individual-level predicates do not denote eventualities that contain "internal stages", since they denote states that hold indefinitely, or as an inherent property. Thus, this characterization of the incompatibility of *-zhe* with individual-level predicates seems consistent with the idea that individual-level predicates lack aspect. Aspect, according to Comrie (1976), relates to the internal temporal structure of events or eventualities.

Furthermore, while the (perfective) aspectual marker *-le* is compatible with both stage- and individual-level predicates, this suffix yields an inchoative meaning of the predicate (i.e. it implies a change of state; the property comes to hold). In this sense, individual-level predicates with *-le* do not seem to be truly individual-level in that context.

Thus, despite Smith's claim that all Chinese clauses are aspectual, there is suggestive evidence in favor of the view that Chinese individual-level predicates lack AspP. If this conclusion is correct, these expressions either violate the temporal anchoring requirement (lacking both of the heads, Infl and Asp, that could satisfy the requirement), or they satisfy it via some third, yet undefined option. I suggest a tentative solution to this problem below.

Another issue that becomes relevant is the presence of the copula in certain Chinese predicates. In the discussion thus far, I have taken an overt copula in a main clause to be nothing but a tense marker, the result of Top-binding Infl. According to this view, we would predict there to be no copula in Chinese. However, Chinese does require an overt copula (*shi*) with nominal predicates (Liu, p.c.). (An overt copula is ungrammatical with locative and adjectival predicates—regardless of whether the adjective denotes a stage- or an individual-level property.) But since the copula is not finite (recall that I take finiteness to be the specification of tense or agreement features, and Chinese has no tense or agreement), the Chinese copula does not seem to be the spell-out of Infl bound by Top, thus contrasting with the English copula.

Li and Thompson (1981) note that the Chinese copula *shi* is used as an affirmative marker, as in the following pair.

- (40) a. ta méi qián
 3_{sg} not-exist money
 "S/He doesn't have any money."
 b. ta shì méi qián
 3_{sg} be not-exist money
 "It's true that s/he doesn't have any money." (Li & Thompson 1981: 151)

As an affirmative marker, *shi* might head a Σ P (Gleitman 1969; Laka 1993), where Σ P is argued to be the projection of affirmation/negation markers. It is possible, then, that Σ^0 , like Infl and Asp, can be bound by Top to satisfy the temporal anchoring requirement, and this is how nominal predicates in Chinese are anchored. Nevertheless, this solution leaves unexplained how individual-level *adjectival* predicates are anchored (as stated above, these expressions do not occur with an overt copula in Chinese).

A final item worth speculating on relates to the semantic difference between the binding of Infl vs. Asp by Top. The binding of Infl by the Temporal operator should give rise to a deictic temporal reference, as grammatical tense is deictic: it locates an event or eventuality with respect to the Speech Time, or in the case of non-main clauses, with respect to a Reference Time given in another clause (Comrie 1976; Stowell 1995; Stowell 1996). A priori, binding of Asp by Top should not give rise to a deictic temporal meaning, since Aspect is not deictic. Rather, it relates to the internal temporal organization of an eventuality (Comrie 1976).⁴⁰ Events and stage-level states, i.e. predicates that project AspP, normally imply the existence of a temporal "bound" on the event/state (e.g. a starting point and/or an

⁴⁰In other work it is argued that Aspect involves a temporal relation between two eventualities (Klein 1995; Demirdache and Uribe-Etxebarria 1997), but its relation between an eventuality and the moment of speech time is only indirect.

ending point). Perhaps what gets temporally anchored when Top binds Asp is one of these temporal bounds on the predicate.

3.2.1.5 Summary of §3.2.1

At this point we have provided an account of the pattern of copula omission and production we find in child English (data from §3.1.2). Nominal (individual-level) and locative (stage-level) predicates differ from each other structurally: nominal predicates are purely lexical predicates, while locatives project additional functional structure (EvP and AspP). This structural difference between the two types of predicates surfaces as a difference in the overtness of the copula in child English because of the different options available in child English for satisfying a formal requirement on the temporal anchoring of main clauses. This requirement can be satisfied by the binding of Asp by the Temporal operator (Top), an option that does not yield finiteness, *if* there is an Asp in the structure. If the structure lacks Asp the requirement must be satisfied by binding Infl, an option which does yield finiteness. Finiteness in the non-verbal clause is realized through an inflected copula. Thus, we account for the fact that children produce an inflected copula with individual-level predicates, but they omit the copula with stage-level predicates.

Now we will look at some alternative accounts of the child English data and the shortcomings of these accounts.

3.2.2 The Stage-level/Individual-level Distinction Revisited: Alternative accounts

3.2.2.1 A Functional Perspective

There are two ways of viewing the stage-level/individual-level distinction according to which the child English data seem surprising. A functional approach might predict that

stage-level predicates would require an overt copula in order to specify the tense of the clause. That is, since stage-level predicates are typically temporary, or at least hold for bounded amounts of time, they can occur naturally in past, present or future tense clauses. For example, all variations of *John is/was/will be in the garden* are felicitous. Individual-level predicates, instead, would tend to have a null copula according to this view, because their tense is more predictable: they are only natural in the present tense (*John is/?was/?will be a man*).⁴¹

In fact, individual-level predicates in past tense tend to imply that the subject no longer exists, while past tense stage-level predicates do not have this implication. As we discussed in §2.1.2, stage-level predicates tend to hold for a portion of the subject's lifetime, so that the subject can continue to exist even if the property no longer holds. Thus, stage-level predicates may be placed in the past tense, without yielding an implication that the subject no longer exists. This is illustrated in (41) (see also the discussion of "lifetime effects" in §2.1.2).

The sentence in (41a), which involves a prototypical individual-level predicate, implies that John is dead. Sentence (41b), which involves a prototypical stage-level predicate, has no such implication.

- (41) a. John was a man.
b. John was in the garden.

If the copula is overt in order to mark a tense distinction, it would be more natural for stage-level predicates to occur with a tensed copula, since a tensed (finite) copula locates the predicate in a particular tense. Individual-level predicates should not require a tensed

⁴¹The sentence *John will be a man* becomes felicitous if it is made clear that one is referring to a child, e.g. *John will be a man when he grows up*.

copula, since normally they cannot be "located" with respect to tense, i.e. present would be the default tense in this case. For example, given an utterance such as *He a dog*, or *That a toy*, it would be clear that the sentence was intended as being in present tense, since *He was/will be a dog*, or *That was/will be a toy* would be quite marked expressions.⁴² In contrast, expressions like *I in the kitchen* are ambiguous: they could easily be intended to have past, present or future tense. Thus, the functional view that a tensed copula is used to disambiguate tense makes the incorrect prediction. The fact that children actually produce a tensed copula in nominal predicatives (*He's a dog*), but not in locatives (*I in the kitchen*) suggests that the copula is *not* used by children to disambiguate tense. That is, the copula is overt and inflected for formal reasons, not functional reasons, in child English.

There is, however, also a formal perspective from which children's pattern of copula omission is surprising. In Chapter 2 I argued, following Kratzer, that stage-level predicates involve some "extra structure" that individual-level predicates do not. Specifically, they project an Event argument in the structure, and the Event argument is projected in the specifier of an AspP. One might predict that the head of this "extra structure" should get spelled out as the copula. This might be because the extra structure that gets projected in stage-level predicates is functional (AspP), and the copula might be analyzed as a functional head (it does not contribute contentful meaning, it does not assign theta-roles). According to this view, predicates with this extra structure (stage-level predicates) should appear *with* the copula, while predicates without extra structure (individual-level predicates) should appear *without* the copula.

There is evidence from adult English that this point of view is quite reasonable. There are certain constructions in which the addition of *be* yields a "more stage-level"

⁴²At least, the future tense expressions are pragmatically odd, and the past tense expressions seem to imply that the subject is dead or destroyed, as noted above.

interpretation, as compared to the same sentence without *be*. These constructions will be examined in more depth in Chapter 4, but I will give the relevant examples here.

- (42) a. John is polite.
 b. John is being polite.

In (42b) we have an example of the so-called "active *be*" construction (Partee 1977). While (42a) means that John is a polite person, that is, he generally behaves in a polite way in any given situation, (42b) implies that he is behaving in a polite way in a particular situation, and possibly this is unusual for him. (Actually, no implication about his typical behavior is made; polite behavior may or may not be typical of John, but crucially, it is *not necessarily* typical for him.)

A similar contrast, shown in (43a-b), is discussed by Rothstein (1999).

- (43) a. Her upbringing made Sue polite.
 b. Bill made Sue be polite.

The sentence in (43a) means that Sue's upbringing resulted in her becoming a polite person. In (43b), on the other hand, the meaning is that Bill forced Sue to act in a polite way. As in (42b), there is no implication in (43b) that politeness is a general property of Sue.

Thus, we see that there is evidence from adult English that the addition of the copula (*being* or *be*) can, in certain cases, induce a stage-level reading of the predicate. Rothstein (1999) in fact argues that the function of *be* is to turn an adjectival predicate, which denotes a state, into a verbal predicate, which denotes an event. One can see how such a view would be consistent with the idea that the copula is the spell-out (pronunciation) of the head of the "extra" structure that is associated with the Event argument of stage-level predicates.

Importantly, however, the occurrences of the copula in (42-43) are *uninflected* forms of *be*. I propose that the present tense *inflected* copula (*am, is, are*) and the *uninflected* copula (*be* or *being*) differ with respect to their projection of an Event argument/AspP: in non-finite clauses and constructions, an overt *uninflected* copula introduces an Event argument and thus appears to induce a stage-level reading of the predicate. In other words, *uninflected be* has lexical/semantic content as would a main verb. Crucially, however, the *inflected* copula does not have this function.⁴³ The *inflected* copula does not have lexical content, and it does not introduce an Event argument. This can be seen in adult English main clause predicates.

(44) John is a doctor.

In (44), the predicate *a doctor* does not receive a stage-level reading simply by virtue of the presence of the copula (i.e. the overt copula in (44) does not induce a stage-level reading of the predicate). One might still argue that the copula, *inflected* or *uninflected*, always introduces an Event variable, and that a sentence like that in (44) and a locative expression like *John is in the garden* both involve the projection of an Event argument. This is essentially the Neo-Davidsonian view (see §2.1.3), namely that *all* predicates project an Event argument. According to this view, the syntactic and semantic differences that we have seen exist between stage- and individual-level predicates do not derive from the presence vs. absence of an Event argument, but rather from some other difference (e.g. for Chierchia, the differences relate to whether the Event argument is bound by the Generic operator or not; see §2.1.3). However, if we follow this route, we lose the structural difference between

⁴³ In main clauses the "stage-level meaning" of stage-level expressions (e.g. *John is in the garden*) comes from the presence of EvP and AspP in the structure, not the presence of the copula, which is simply the spell-out of finite Infl. This distinction that I make between the *inflected* and the *uninflected* copula will be examined in greater detail in the next chapter.

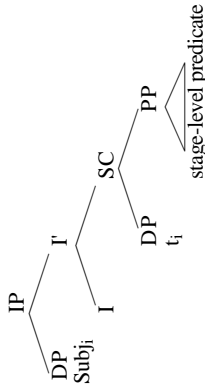
nominal (individual-level) and locative (stage-level) predicates. Moreover, I do not see a straightforward way in which an account in terms of a Generic operator would explain why children produce an overt, *inflected* copula only in the case of predicates whose event variable is bound by the Generic operator. (Let me add that I am concerned here only with the syntactic representation; if an Event or Situation variable is indeed projected by (non-verbal) individual-level predicates in the semantic structure, that would not bear on my analysis.)

The view that the *inflected* copula is the spell-out of the additional functional structure projected by stage-level predicates makes the incorrect prediction that children should use an overt copula with stage-level predicates, rather than individual-level predicates. Therefore, while I would agree with Rothstein that an *uninflected* overt copula in a main or small clause does seem to be associated with an Event argument (and corresponding AspP), I argue that an *inflected* copula is not the pronunciation of this structure.

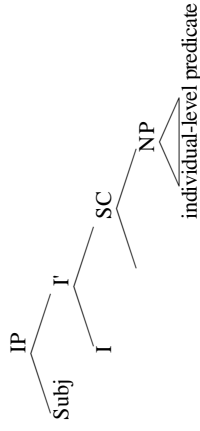
3.2.2.2 Children's Subjects of Stage-level Predicates Don't Raise to SpecIP

Another alternative to my analysis we should consider concerns the structural location of the Event argument, and consequently, the position of the thematic subject in the structure. As discussed in §2.1.2, Kratzer places the Event argument in SpecIP, and she distinguishes between the underlying positions of subjects of stage- vs. individual-level predicates. Subjects of stage-level predicates are generated in SpecVP (or in the SC in the case of predicates) and then raise to SpecIP, while subjects of individual-level predicates are generated in SpecIP. Kratzer's structures for stage- and individual-level expressions are given here, modified to include a SC instead of VP predicate (since I assume that main clause predicates do not contain VP).

(45) a. Stage-level⁴⁴

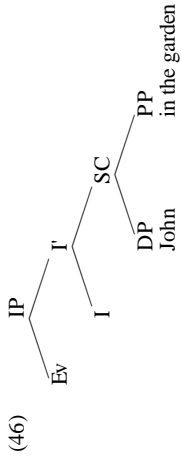


b. Individual-level



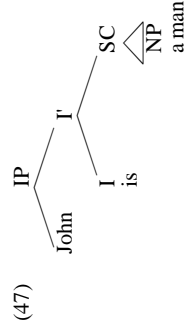
It has been argued that children's structures may be incomplete or "truncated" (Rizzi 1994), so that unlike in adult grammar, subjects in children's main clauses need not raise as high as SpecIP (i.e. there is an assumption that the IP projection may not be available). Instead, according to this idea children's subjects are lower in the structure, i.e. in the VP or SC domain (see also Radford 1988). Thus, one might argue that in the case of child English, subjects of stage-level predicates may remain low in the structure even at the level of S-structure, with the Event argument in SpecIP, while subjects of individual-level predicates are always in SpecIP. Arguing along these lines, one might propose that the child's structure of a locative predicative looks like that in (46).

⁴⁴I assume that the Event argument in SpecIP is displaced by the raised subject at S-structure/spell-out. Kratzer is not explicit about how this happens. For Kratzer, however, it is crucial that the Event argument be interpretable in SpecIP, and that the subject be interpretable in its base-generated position at LF.



With the additional factor that the inflected copula needs to be in a spec-head configuration with the (thematic) subject in order to check ϕ features, one could claim that the copula is not overt in children's stage-level predicatives because the subject is too low in the structure. That is, the subject remains in the SC, and there is no position that the copula could occupy such that it would be in a spec-head configuration with the subject.

As for nominal predicatives, these structures would involve generation of the subject in SpecIP (à la Kratzer).⁴⁵ SpecIP is available as a position for the subject in this case, not being occupied by an Event argument. We can see how it would follow that children use an overt (inflected) copula in this case: the subject is in SpecIP, and the subject and copula are in a spec-head relationship. The copula can occur in Infl, where it appears in inflected form. The child's structure of individual-level predicatives would just be the adult English structure, as in (47).



⁴⁵One could also argue that the subject of an individual-level predicate is generated low in the structure and then raises. However, it is crucial for Kratzer's analysis that the subject *not* be able to reconstruct to the predicate-internal position at LF. If the subject of an individual-level predicate is generated low and then raises, one would have to employ some mechanism of preventing reconstruction of the subject to that position later in the derivation. I am not sure what would prevent its reconstruction.

that languages may differ parametrically as to which lexical categories can be predicates. In a language such as English, only V is a predicate, according to Chierchia, so that all other lexical categories would require the addition of a V (*be*) to become predicates. In a language such as Russian (in which present tense predicates uniformly lack a copula) all lexical categories (N, V, A, P) are predicates. Heggie (1988) argues that non-V categories are universally non-predicative and require a copula (which for her works like "a λ -operator ... to create a derived predicate out of any phrasal category" (Heggie 1988: 121, footnote 28)). Where languages differ parametrically is in whether or not the copula is required to be overt. Thus, in a language like English, the copula must always be overt; in a language like Russian it is not overt.

Déchaïne (1993) notes two problems with a category-based approach of this sort. One problem concerns the question of whether languages must choose between V vs. all lexical categories as the possible predicative categories, or whether a given language might have, say, V and P as predicative categories, but not N or A. Déchaïne suggests that the latter possibility should be available in principle, but that such combinations of predicative categories (i.e. more than just V but not all lexical categories) are not attested.⁴⁷

Based on the data I have shown here it would seem, according to a categorial view, that in child English, V and P are predicative (and hence do not require a copula) but N is not (hence requires a copula). If it were true that child English was the only language attested in which V plus only one other category (P) were predicative, this would be a surprising fact (according to the hypothesis that child grammar is governed by principles that govern adult grammars).

⁴⁷More accurately, Déchaïne states (p. 311) that in Haitian the categories V, P and N are predicative, but that Haitian does not actually contain an independent category A, so that the set of predicative categories in Haitian is equal to the set of all lexical categories for that language. Similarly, the languages Nootka, Kwakw'ala and Haisla (in the Wakashan family; cf. Bach 1989, 1992) have V and N as predicative categories. But these languages do not contain A or P as separate categories.

The general implication of this type of view is that children's subjects of locative predicates are low in the structure, i.e. inside the SC and not in the canonical matrix subject position, SpecIP. However, there is some evidence that children's subjects of stage-level predicates are "high" in the structure: high enough to be assigned Nominative case (as in (48)), and high enough to occur above sentential Negation (*not*) (as in (49)).

- (48) a. I in the kitchen. (Nina 10)
 b. He on a horse. (Nina 13)
- (49) a. It not in bag. (Adam 20)
 b. I not tired from my games.⁴⁶ (Adam 20)

There were very few utterances of these types (utterances with a pronominal subject that shows the Nominative-Objective case distinction or with *not* negation), too few to provide conclusive evidence on this matter.

3.2.2.3 The Copula is a "Predicativizer"

A third alternative account of why the copula tends to be overt with nominal predicates but not with locative predicates would be to say that nominal predicates are "not predicative enough" to be applied to a subject. They need something extra to make them into predicates, and a copula serves this purpose. Locative predicates, instead, would be sufficiently predicative in their own right and could be applied directly to the subject (note: this is the opposite of Carlson's (1977) view; see §2.1.1). This type of approach has been proposed in Chierchia (1984) and Heggie (1988) to account for differences across languages in whether an (overt) copula is required in predicates. Chierchia (1984) claims

⁴⁶This utterance is obviously not a locative predicative, but involves a stage-level adjective. We will return to adjectival predicates in §3.2.3.1.

Déchaîne's other argument against the categorial view is that it does not explain the following asymmetry: all languages permit bare (non-verbal or non-inflected) predicates in embedded clauses, but not all languages permit bare predicates in main clauses. That is, languages such as English do not allow null-copula predicates in main clauses, but null-copula *embedded* clauses are grammatical. The hypothesis that the presence/absence of the copula with certain lexical categories depends solely on parametric variation across languages does not account for this sort of asymmetry across clause types. Please see Déchaîne (1993: 310ff.) for discussion.

3.2.3 Extending the Analysis to Other Constructions in Child English

The analysis offered in §3.2.1 of the omission pattern of the copula in child English allows us to make the further prediction that other constructions that involve an AspP projection, e.g. stage-level adjectives, eventive main verbs (which project an Event argument), and verbs in the present progressive aspect, may also tend to occur in non-finite clauses in child English. This prediction does seem to be borne out, although the children in this study show quite diverse rates of finiteness in these constructions, unlike their more uniform behavior with nominal and locative predicates. Here I discuss the rates of finiteness in these constructions.

3.2.3.1 Adjectival predicates

As discussed in §2.2.1, the stage-/individual-level contrast between locative and nominal predicates carries over to the adjectival domain, where we can distinguish stage-level adjectives (e.g. *tired*, *ill*, *happy*) from individual-level adjectives (e.g. *intelligent*, *tall*, *Brazilian*). Stage-level adjectives, like locatives, are analyzed as projecting an Event argument in SpecAspP. Thus, the prediction is that just as in the case of locatives, we should

find that children omit the copula with stage-level adjectives (using the option of binding Asp to satisfy temporal anchoring), but they should produce an overt, inflected copula with individual-level adjectives.

The overall split between finding an overt copula with individual-level adjectives and a null copula with stage-level adjectives is weaker than the overt/null split we found between nominal and locative predicates, and there is more variation across children in their realization of this split. However, I will try to argue that this variability (and relative weakness of the result) is due to an inherent messiness in applying the stage/individual distinction to the category of adjectives, rather than simple messiness in the data itself.

Pooling across types of adjectives, the children in my study (except for Eve) are quite uniform. Their average rate of overt *be* in adjectival predicates is given in Table 3.6.

Table 3.6. Average Rate of Overt *be* in Children's Adjectival Predicates

	adjectival predicates
Nina	53.5% (62)
Peter	42.2% (116)
Naomi	59.8% (93)
Adam	42.9% (115)
Eve	19.7% (71)
avg. incl. Eve	43.6%
avg. excl. Eve	49.6%

As before, because Eve shows such a markedly different pattern, I exclude her data henceforth. For comparison with the rate of the overt copula with nominal and locative predicates, I give the rate of overt *be* for all three types of predicates in Table 3.7.

Table 3.7. Average Rate of Overt *be* in Children's Predicative Constructions, By Type

	nominal predicates	locative predicates	adjectival predicates
Nina	74.1% (143)	14% (115)	53.5% (62)
Peter	81.2% (401)	26.7% (90)	42.2% (116)
Naomi	89.7% (102)	38.1% (31)	59.8% (93)
Adam	44.4% (303)	4.9% (26)	42.9% (115)
avg. % overt <i>be</i>	72.4%	20.9%	49.6%

However, when we divide children's predicate adjectives into stage-level adjectives (e.g. *tired*) and individual-level adjectives (e.g. *big*), we find differences among the children. These figures are given in Table 3.8.

Table 3.8. Rate of Overt *be* with Stage- vs. Individual-Level Adjectival Predicates

child	% overt <i>be</i> with SL/IL adjectives	
	individual-level adjectives	stage-level adjectives
Nina	75.2% (24)	49.5% (38)
Peter	60% (29)	39.8% (87)
Naomi	93.5% (29)	52% (64)
Adam	44.4% (35)	43.3% (80)
average	68.3%	46.2%

Figure 3.2 depicts the data from Table 3.8.

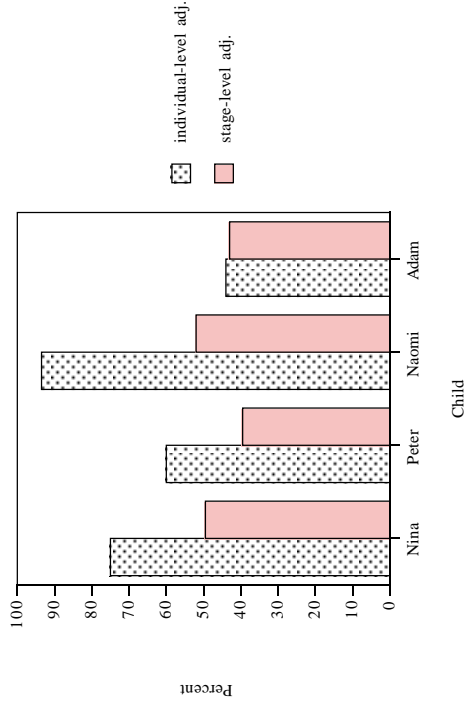


Figure 3.2. Percent Overt *be* in SL and IL Adjectival Predicates

Examples of children's adjectival predicates (with stage- and individual-level adjectives) are given in (51).

- (51) a. *PET: this empty. (Peter 10)
 b. *PET: this is orange. (Peter 10)
 c. *NIN: her thirsty. (Nina 13)
 d. *NIN: Mommy's little. (Nina 11)
 e. *NAO: you warm enough. (Naomi 62)
 f. *NAO: your head is green. (Naomi 68)

Overall, there is a greater tendency to find an overt copula with individual-level adjectives than with stage-level adjectives, and 3 of the children show a trend in this direction. However, only Naomi shows a statistically significant distinction between stage- and individual-level adjectives (Mann-Whitney U test, $p = 0.01$). This result tells us that while Naomi's distinction between stage- and individual-level predicates extends to the

domain of adjectives in her grammar, there are (at least) other factors involved in the grammars of the other children.

There are a number of complicating factors in the domain of adjectives. One factor that could complicate the domain of adjectives is that while the prototypes are straightforwardly classified as either stage- or individual-level (*tired*, *intelligent*), many adjectives are more difficult to classify. As we saw in §2.2.1, there are several adjectives that appear to be individual-level (at least, according to the relevant syntactic tests, e.g. failure to occur in a perception verb complement or in an existential coda), yet they can take on a stage-level meaning in contexts such as the "active *be*" construction (*John is being mean*, cf. *John is mean*), or in Stowell's (1991) "mental property" (MP) contexts (*John was mean to hit Bill/It was mean of John to hit Bill*).

We also saw that there were stage-level adjectives that failed to occur in certain very typical stage-level contexts. For example, *available* is fairly prototypical for a stage-level adjective. It can occur in existentials and *when*-clauses, and its indefinite or bare plural subject can receive an existential interpretation.

- (52) a. There are firemen available.
b. When John is available, he helps out.
c. Firemen are available. (existential reading ok)

However, *available* cannot occur in a perception verb complement (**I saw John available*). There are several other adjectives that fail to occur in a perception verb complement, or at least, they do not sound very natural in this context: *present*, *cold/warm* (for optimal naturalness, temperature terms must be tested with *feel*, not *see/hear*).⁴⁸ I am unsure what

⁴⁸The adjective *tired* also seems slightly unnatural in a PVC: *?I saw John (extremely) tired (yesterday)*. I would not consider this sentence ungrammatical, and its acceptability does improve with extra modification, as noted by the modifiers in parentheses. I will continue to consider *tired* as a rather prototypical stage-level adjective.

the exact restriction is on which stage-level adjectives can occur in this environment. It may be partly a semantic restriction (e.g. perhaps availability is not truly observable), but I believe this is not the only factor, since presence is surely observable, and temperature (with respect to *cold/warm*, as above) can be felt.

Another problem with applying the stage-/individual-level distinction to the adjectival domain is that while many stage-level adjectives refer to transitory properties (*sick*, *tired*, *happy*), stage-level properties are not necessarily transitory. In fact, there are a few unambiguously stage-level adjectives that do not have a transitory meaning, e.g. *dead* (*broken* might also be a non-transitory property, depending on the item that is broken and whether it could be fixed or not). Thus, the stage- or individual-level distinction does not correspond cleanly to a semantic distinction between transitory and non-transitory properties. If children draw the stage-/individual-level distinction primarily on the basis of semantic characteristics of the predicate (e.g. permanence vs. transience), the category of adjectives might prove difficult to distinguish.

One final reason we might not be surprised by the lack of a clear stage-/individual-level distinction among adjectives is that the child's grammar might interpret the stage-/individual-level distinction as a categorial distinction between NP predicates (all individual-level) and PP predicates (nearly all stage-level). This may well be an option made available by UG, given that there are languages that distinguish predicates on the basis of category, employing a different form of the copula with NP, AP and PP predicates, respectively (e.g. Bambara; see §2.3, footnote 16).

As for child English, if the relevant contrast drawn is between stage- and individual-level predicates (rather than by the lexical category of the predicate), the AP category is split in this respect. The child's grammar cannot make a *categorial* characterization of adjectives as stage- or individual-level. Instead, children must learn for each adjective whether it is stage- or individual-level, on the basis of the adjective's meaning. The need for lexical

learning of adjectives might contribute to both the variation among children in their omission pattern of the copula with adjectives, and also to the relative weakness of the contrast between stage- and individual-level adjectives in children's predicatives.

We have seen that the stage-/individual-level split among adjectives does not reduce to the semantic distinction between transient and non-transient properties. Rather, there seems to be a confluence of semantic and syntactic factors that determine the set of adjectival predicates that are stage- or individual-level. Yet there are many adjectives that appear to be "prototypical": they denote transient or relatively short-term properties, and they behave like stage-level predicates according to the different tests we discussed at length above (occurrence in a perception verb complement, occurrence in the coda of an existential, allowing an existential reading of an indefinite or bare plural subject). If adjectives are classified as stage-level in the child's grammar on the basis of whether the adjective denotes a transient property, although this would not accurately capture the entire set of adjectives linguists would classify as stage-level, it would nevertheless capture the prototypes. Thus, we might expect children to begin using these prototypical sorts of adjectives at an early stage, using less prototypical stage-level (and individual-level) adjectives only later.

Indeed, the adjectives used by children in the transcripts I have studied tend to be prototypically stage- or individual-level adjectives. Common stage-level adjectives include *tired* (e.g. *me tired* (Naomi 2:0), *I tired* (Nina 11)) *clean* (e.g. *my clean* (Adam 20)), *empty* (e.g. *this empty* (Peter 10)). Common individual-level adjectives were color and size terms (e.g. *that's blue* (Peter 10), *and it's green* (Naomi 2:1), *it's big* (Nina 10)). However, children also use some non-prototypical adjectives even at this early stage: *cold/hot* (does not occur in a perception verb complement: **I felt the water cold/hot*), *hard* ('difficult'; depends on what the subject is), *nice*, *funny* (these can occur in 'active *be*' contexts).

A further conjecture we can make is that if adjectives are classified as stage- or individual-level on an item-by-item basis, we would expect a given child to consistently use

an overt or null copula with a particular adjective (Schütze, p.c.). On the basis of the transcript data analyzed here, the results are inconclusive. In some cases, children consistently used a particular adjectival predicate with an overt or a null copula. For example, Nina consistently produced *tired* and *cold* with a null copula:

- (53) Nina 11: Oh, I tired; I tired; I tired of clay
 Nina 10: Nina cold; ocean cold; Nina cold; ocean cold there⁴⁹

Naomi consistently used *okay* with a null copula:

- (54) Naomi 2:1: him okay; flower okay; dinner okay; that okay

However, other occurrences of adjectival predicates were inconsistent in their occurrence with a null vs. overt copula:

- (55) Adam 25: I'm tired; I not tired now
 it's alright; I alright
 Naomi 2:0: Georgie's face dirty; you're so dirty
 Nina 13: Leila was sick; Leila sick
 her ok; her's ok (these two alternate repeatedly)
 he home; he's home

Peter shows similar patterns to those of the other children. Impressionistically, there seems to be less variability in the overtness of *be* among individual-level adjectives, but there is still some variation there too (*Mommy's pink*, *that pink* (Nina 10)). It is not clear what should be concluded from these alternations. Perhaps children at this stage of development have not

⁴⁹The adjective *cold* was coded as a stage-level adjective in all of these occurrences. In most cases, temperature adjectives referred to the sensation of temperature to a person (as in *I feel cold*). Although the ocean's temperature might be a different sort of predicate, I consistently coded *cold/warm* as stage-level.

fully acquired the stage-/individual-level classification of even some prototypical adjectives. The source of the variation in the overtness of the copula might be determined through experimental work.

3.2.3.2 Stative vs. eventive main verbs

During the stage of development we have been discussing so far, i.e. the stage in which children omit the copula in (certain) predicative constructions, children also fail to mark finiteness in main verbs. In Table 3.9, I give the rate of finiteness on all main verbs, alongside the rate of overt *be* in copular constructions. In the case of main verbs, only those utterances containing an overt or implied 3sg subject were counted. This is done because it is impossible to tell whether an expression such as *I/you/we/they dance* contains a finite or non-finite verb. It is possible to tell only with verbs with 3sg subjects, since only these verbs require an overt *-s* morpheme to agree with the subject (past tense main verbs were rare and were not included). However, for copular constructions, expressions with any type of subject were counted, since *be* is always inflected (in both adult and child English), regardless of the subject (*am, is, are*). (In the Appendix, I give the rates of finite main verbs at each data point, for each child.)

Table 3.9. Rate of Overt *be* and Rate of Finite Main Verbs

child	% ov. <i>be</i> nominal	% ov. <i>be</i> locative	% finite main V
Nina	74.1% (143)	14% (115)	10.5% (211)
Peter	81.2% (401)	26.7% (90)	58.5% (295)
Naomi	89.7% (102)	38.1% (31)	56.7% (110)
Adam	44.4% (303)	4.9% (26)	42.6% (169)
Eve	39.8% (206)	54.8% (33)	59.8% (82)
average (incl. Eve)	65.8%	27.7%	45.6%
average (excl. Eve)	72.4%	20.9%	42.1%

With the exception of Nina, whose rate of finite main verbs is extremely low (below 11%), all of the children, including Eve, produce finite main verbs around 50% of the time (42.6%-59.8%). Thus, for Peter, Adam and Naomi, the rate of finite main verbs falls in between the rate of overt *be* in nominal predicatives and in locatives. For Eve, the rate of finite main verbs is higher than either of the rates of overt *be*, and for Nina, the rate of finite main verbs is lower than either of the rates of overt *be*.

The data in Table 3.9 are depicted in Figure 3.3.

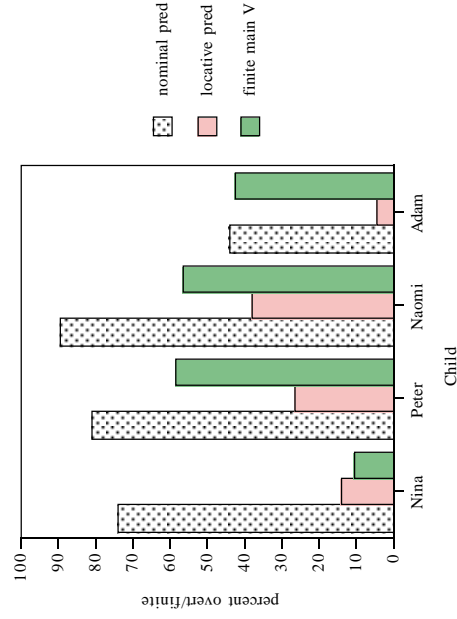


Figure 3.3. Percent of Overt *be*/Finite Main Verb

As discussed in §2.2.2, there are differences among verbs that parallel the stage-/individual-level difference we find between non-verbal predicatives: most stative verbs are categorized as individual-level, while eventive verbs are categorized as stage-level (Enç 1987, Kratzer 1995). Correspondingly, Kratzer distinguishes between the predicates *know French*

and *speak French* the same way she distinguishes the predicates (*be*) a *doctor* from (*be*) in *the garden*.⁵⁰ If the child English grammar places a finiteness requirement on all individual-level predicates, then this requirement should be met in the verbal domain (i.e. with stative verbs) as well as in the non-verbal domain (nominal predicates, individual-level adjectival predicates).

Although there is evidence for such a finiteness restriction on stative main verbs in child German and Dutch (Wijnen 1997; Becker and Hyams 1999) there does not seem to be any such restriction in child English (Ud Deen 1997; Hoekstra and Hyams 1998). In the speech of Nina and Naomi, there is a relatively small difference between the rate of finiteness with eventive and with stative verbs. I chose to examine the main verb utterances of Nina and Naomi as a sample, because these two children have very different overall rates of finite main verbs from each other in the relevant files.⁵¹ However, neither of these two children showed a large difference in the rate of finiteness between stative and eventive verbs. Their data are given in Table 3.10.⁵²

⁵⁰ There are some stative main verbs that are not clearly individual-level. For example, *hear*, *want*, and *have* (in the sense of 'possess') can all occur in *when*-clauses and can be modified by temporal modifiers:
 (i) When Rex hears a siren, he howls. / Norman heard his favorite song on the radio this morning.
 (ii) When John wants an ice cream, he cries till he gets it. / Sally wanted a bicycle last week.
 (iii) When Mary has \$5 in her pocket, she buys \$5 worth of gum. / Mary has a car now, but when she moves she'll sell it.
 That these verbs are stative, not eventive, is shown by the fact that they do not occur in progressive form (**I'm hearing a siren*/**John is wanting ice cream*/**Bill is having a car*). (Possibly there are contexts in which *hear* can occur in progressive form, but in many cases it is quite marked.) In general, however, stative verbs behave like non-verbal individual-level predicates (??*Mary knows French in the morning*, etc.).

⁵¹ Because of time limitations I did not examine the eventive/stative distinction in main verbs for all four children.

⁵² The number of eventive verbs is equal to the number of telic verbs plus the number of atelic verbs; there are other nonstative verbs that were not coded as telic/atelic because I could not tell whether they were telic or atelic. Thus, this is a more conservative count than it would have been if I had included the unclear cases.

Table 3.10. Rate of Finiteness for Eventive vs. Stative Main Verbs in English

	eventive	stative
Nina	11.8% (86)	7% (59)
Naomi	52.1% (57)	77.8% (26)

Unlike Nina, Naomi does show a greater tendency to produce finite stative verbs than finite eventive verbs. However, the difference in her rate of finiteness for stative vs. eventive verbs is not nearly as striking as that found in the German and Dutch data. For German-speaking children, only 36% of their eventive verbs are finite, while 95% of their stative verbs are finite (a 59% difference). For Dutch-speaking children, 16% of their eventive verbs are finite, while 79% of their stative verbs are (a 63% difference).⁵³ In comparison, Naomi shows only a 25.7% difference in the rate of finiteness between eventive and stative main verbs.

It is not clear, given my analysis, why Nina and Naomi do not show (much of) a difference in their rate of finiteness between eventive and stative verbs (but see Hoekstra & Hyams 1998 for a proposal).⁵⁴ In the case of Nina, who produces very few finite verbs (of either type), one might argue that all verbs project an Event argument. Thus, assuming that the Event argument is selected by the head of AspP (see above), then there will be an Asp⁰ in the structure for the T_{OP} to bind. According to the definition given in (37) above, in child grammar, when Asp is bound by T_{OP} the clause need not be finite.

⁵³ The figures for Dutch and German are taken from Wijnen (1997; for Dutch) and Becker & Hyams (1999; for German).

⁵⁴ Like Nina and Naomi, Adam and Eve fail to show a difference in the rate of finiteness between eventive and stative verbs (Ud Deen 1997, Hoekstra & Hyams 1998b, Hyams 2000).

Recall from Chapter 2 that there are arguments from Chierchia (1995) and Higginbotham (1983), among others, in favor of the view that all verbal predicates project an Event argument. Under this sort of account, the lack of a finiteness distinction in Nina's grammar between eventive and stative verbs is not surprising. However, we are forced to distinguish verbal from non-verbal predicates in this respect (i.e. all verbal predicates project an Event argument, but not all non-verbal predicates do). Moreover, it then remains to be explained why Naomi produces finite eventive and stative verbs at such a high rate, why this finiteness split among stative and eventive verbs *does* appear in child Dutch and German,⁵⁵ and why Adam and Peter produce non-finite main verbs at such a higher rate than null-*be* locatives (cf. Table 3.9 and Figure 3.3). I leave these issues unresolved at this point.

3.2.3.3 Auxiliary *be* in progressives

The third main clause context in which we expect to find non-finiteness in child English is progressive constructions, e.g. *John is running*. These expressions are expected to occur without finiteness (i.e. with a null auxiliary *be*) at about the same rate as locatives, because progressive verbs should be associated with a grammatical aspect projection (progressive being a type of aspect).⁵⁶ The children in my study do omit *be* in progressives,

but not as frequently as in locatives (with the exception of Eve, who omits *be* more frequently in progressives than in locatives). These data are given in Table 3.11.

Table 3.11. Rate of Overt Copular *be* and Auxiliary *be*

child	% ov. <i>be</i> nominal	% ov. <i>be</i> locative	% ov. aux. <i>be</i>
Nina	74.1% (143)	14% (115)	35.2% (113)
Peter	81.2% (401)	26.7% (90)	36.3% (168)
Naomi	89.7% (102)	38.1% (31)	49.8% (248)
Adam	44.4% (303)	4.9% (26)	23.6% (302)
Eve	39.8% (206)	54.8% (33)	10.5% (214)
average (incl. Eve)	65.8%	27.7%	31.1%
average (excl. Eve)	72.4%	20.9%	36.2%

For all children except Eve, the rate of overt (and inflected) auxiliary *be* in progressives is higher than the rate of overt, inflected copular *be*. But the difference in the rates varies across children. For Naomi and Peter there is only a difference of about 10% between their rates of overt *be* in locatives and overt auxiliary *be* in progressives. For Nina and Adam the difference is somewhat greater: Nina shows a 21.2% difference in the overtness rate of *be* in locatives vs. progressives, and Adam shows an 18.7% difference.

Figure 3.4 shows the data in Table 3.11.

⁵⁵A very similar pattern is also found in adult Russian, i.e. eventive verbs may occur as root infinitives, but stative verbs may not. The relevant examples are the following, due to Avrutin (1997).

(i) Carevna xoxotat
princess to-laugh
"The princess started to laugh (after something funny happened)"
(ii) *Carevna znat' anglijskij
princess to-know English
These "princess" sentences are limited to eventive verbs (even stative verbs that might not be truly individual-level, e.g. *xotet'* 'want' cannot occur here), and the meaning of the infinitive must be 'start to V'. Adult French has a similar construction, although it is archaic (e.g. ...*et Jean de rire*, but "...*et Jean de comprendre Langlais*; Sportiche, p.c.).

⁵⁶Progressives with null *be*, like copular constructions with null *be*, are analyzed as non-finite, on par with non-finite (bare) main verbs (cf. Hoekstra & Hyams 1998b, Wexler 1994, Schütze 1997, i.a.).

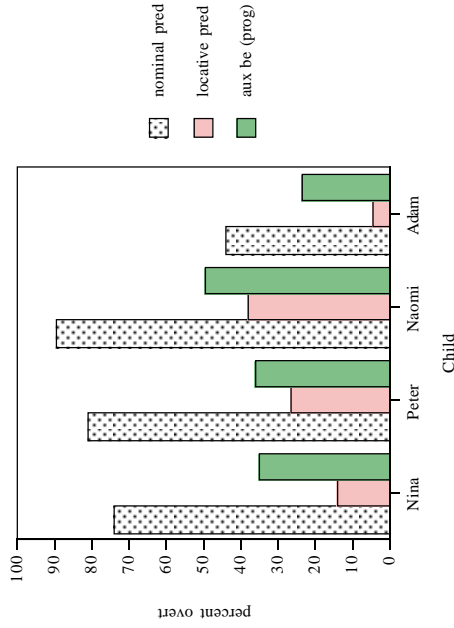


Figure 3.4. Percent overt *be* in progressives and progressives

I do not have a good explanation for the variability among children in the rate of overt (finite) auxiliary *be* in progressives, although, aside from Eve, it does not seem to be much greater than the variability in children's omission of *be* in locatives.

Note that according to my account both progressives and locatives project an Event argument and AspP, and thus are predicted to show roughly the same rate of finiteness. A possible reason for the overall higher rate of finiteness in progressives than locatives is that progressives contain pronominal subjects at a higher rate than locatives do (this is true for all four children; on average, progressives occur with a pronominal subject 15% more of the time than locatives do), and as we will see in the following section, pronominal subjects tend to occur with an overt copula. (This is also true specifically in the case of progressives: progressives with a pronominal subject have a higher rate of overt *be* than progressives with a non-pronominal subject.)

3.3 A Potential Confound: The Overtness of *Be* and the Form of the Subject

There is a potential confound in the data that might lead to a different interpretation of children's patterns of omission of the copula. We saw in §3.1 that children use an overt copula with nominal predicates, but they omit the copula with locative predicates. This pattern was interpreted as an effect of different properties of the respective *predicates*. However, it is worth examining the possibility that children's omission of the copula better correlates with properties of the *subject*.

Nearly all of children's nominal predicates occur with a pronominal subject. That is, the subject is either a personal pronoun (e.g. *he, she, etc.*), a demonstrative pronoun (e.g. *this or that*), or the pronoun *it*. The pronoun *it* might be a personal pronoun, referring to an inanimate object, or an expletive, used in so-called "weather" constructions (*it's raining*), or in "presentational" contexts (*it's John (at the door/on the phone)*). (Children use all three types of *it*.) Locative predicates, on the other hand, have a weaker tendency to occur with a pronominal subject in the child data. These predicates are more likely to occur with a full DP subject (i.e. a proper noun or a common noun, with or without a determiner). Children's rates of pronominal (as opposed to full DP) subjects with nominal, adjectival and locative predicates are given in Table 3.12.

Table 3.12. Percent of Predicates Having a *Pronominal* Subject

child	nominal predicate	adjectival predicate	locative predicate
Nina 7-13	100% (143)	79% (62)	63.5% (115)
Peter 6-11	99.5% (401)	95.7% (116)	61.1% (90)
Naomi 2;0-2;5	100% (102)	83.9% (93)	67.7% (31)
Adam 10-28	99% (303)	84.3% (115)	46.2% (26)
average	99.6%	85.7%	59.6%

Table 3.13. Rate of Overt *be* with
Pronominal vs. Proper Noun Subjects

	pronoun subject	proper N subject
child		
Nima	61% (111)	33.6% (26)
Peter	62.3% (193)	33.6% (27)
Naomi	69.6% (242)	70.3% (47)
Adam	40.7% (435)	15.7% (25)

Peter also shows the same finiteness distinction with subjects of main verbs (in multi-word, 3sg subject utterances): in sentences with a pronominal subject, 74.1% of his main verbs are finite; with proper noun subjects, only 32.2% of Peter's main verbs are finite. The other children do not show this same distinction with main verbs.

However, there is conclusive evidence against the idea that the presence of a pronominal subject is the reason for the high rate of overt *be* in nominal predicatives. This evidence can be seen in Naomi's rates of overt *be* specifically with adjectival and locative predicates. As we can see in Table 3.14, Naomi produces an overt copula *more* often with a non-pronominal subject (than with a pronominal subject) in adjectival predicatives, and she produces an overt copula at the same rate in locatives, regardless of whether the subject is a pronoun or a non-pronominal DP.

Table 3.14. Percent Overt *be* in AP and PP Predicatives
with Pronoun vs. Non-Pronoun Subjects

Naomi	pronoun subject	non-pronoun subject
% overt <i>be</i> with	NP predicate 89.7% (102)	n/a
	AP predicate 63.6% (66)	73.3% (15)
	PP predicate 50% (6)	50% (10)

Table 3.12 shows that while nominal predicatives almost exclusively contain pronominal subjects (and they do so exclusively in the case of 2 children), pronominal subjects are less common with adjectival and locative predicatives (though they still occur more than 50% of the time, except in the case of Adam's locatives). Adjectival and locative predicatives thus contain more proper noun and common noun subjects than nominal predicatives do. Could it be, then, that children simply prefer to use an overt copula with a pronominal subject than a non-pronominal subject, and this is why we find a higher rate of overt *be* in nominal predicatives?

It is possible that there is an association between pronominal subjects and finiteness that is playing a role in the overtness of the copula. Hoekstra & Hyams (1998a) and Hoekstra, Hyams & Becker (1997; 1999) predict a correlation between finiteness and the specification of Number agreement within the DP projection of the subject, realized by an overt determiner or pronoun. Their analysis hinges on the presence of "finiteness" in D (for Hoekstra et al., specificity is taken to be a kind of nominal finiteness and is realized by an overt subject determiner). According to Hoekstra et al., Infl should agree in finiteness with the subject DP through spec-head agreement, and hence an overt pronoun or determiner in the subject (i.e. "finiteness" in the nominal domain) should co-occur with finiteness in the verbal domain.⁵⁷

Indeed, if we look across all copular constructions, there is a tendency in the data of 3 of the 4 children (all but Naomi) to find a higher rate of overt *be* with pronominal than proper noun subjects (proper noun subjects are used as a comparison point for the pronominal subjects). These figures are shown in Table 3.13.

⁵⁷ Although Hoekstra & Hyams' and Hoekstra et al.'s analysis does not distinguish pronominal from proper noun subjects, we might extend their account to argue that pronouns, but not proper names, contain a finiteness feature, by virtue of the fact that pronouns are functional elements, like determiners (Abney 1987).

Adam, who produces a small number of nominal predicates with a non-pronominal subject (3/303, or 1%), shows a similar pattern to Naomi. Adam's data are given in Table 3.15.

Table 3.15. Adam's Rate of Overt *be* in Nominal, Adjectival and Locative Predicates, by Subject Type

Adam	pronoun subject	non-pronoun subject
% overt <i>be</i> with	NP predicate ~44.4% (300)*	66.7% (3)
	AP predicate 44.6% (74)	55.6% (18)
	PP predicate 16.7% (6)	7.1% (14)

*Adam's rate of overt *be* with NP predicates with pronoun subjects was not recalculated. Taking away the 3 cases of non-pronominal subject NP predicates would change the average rate only very slightly.

Adam's and Naomi's data illustrate conclusively that the overtness of the copula is not dependent on the presence of a pronominal subject. In adjectival predicates, for example, the copula is more likely to be overt with a non-pronominal than a pronominal subject. Therefore, I conclude that the prevalence of pronominal subjects in nominal predicates is not the reason for the high rate of overt *be* in nominal predicates, and furthermore, that the relatively lower rate of pronominal subjects in locatives is not the reason for the low rate of overt *be* in locatives.

One might wonder nevertheless why it is that children use pronominal subjects at such a higher rate in nominal predicates than in other types of predicates. I believe the reason has to do with influences from the discourse context. When one looks carefully at adults' expressions spoken immediately before children's nominal predicates, they are often questions as to the identity of an object. For example, in the following exchanges between Peter and the investigators (Lois (LOI) and Patsy (PAT)), Peter is prompted for an object's label and responds with a nominal predicate.

- (56)
- a. *PAT: and what's that?
*PET: huh # **it's a girl.** (Peter 11)
 - b. *PAT: who's that?
*PET: huh # **it's a man.**
*PAT: is that a man?
*PET: right ## are there any girls in this book? (Peter 11)
 - c. *LOI: what's that [= dress]?
*PET: **it's a shirt.**
*PAT: it's a shirt. (Peter 11)
 - d. *PAT: what's that?
*PET: **it's a spoon.**(Peter 11)

It would be unnatural for Peter to have answered any of these questions with a sentence containing a full DP subject, as in *What's that? That spoon is a spoon.* Children's locative expressions, instead, are much more likely to come out of the blue, as in the following conversations with Adam and Nina.

- (57)
- a. *ADA: d(o) you wan(t) me stole ?
*MOT: I want you to steal ?
*ADA: stole .
*ADA: Mommy # **my head down here** (Adam 20)
 - b. *MOT: careful .
*ADA: xxx .⁵⁸
*ADA: I go [?] off de hat hat .
*ADA: **something else in your bag .** (Adam 27)

⁵⁸ In CHAT, the format in which files are transcribed on CHILDES, the string 'xxx' indicates that a word was unintelligible (MacWhinney and Snow 1985).

- c. *MOT: hear the waves ?
 *ADA: what waves ?
 *ADA: I like dat .
 *ADA: Mommy # a ship in (th)ere . (Adam 28)
- d. *MOT: there we go .
 *MOT: what happened ?
 *NIN: don't touch .
 *NIN: chair in that # box . (Nina 10)
- e. *NIN: hi xxx .
 *NIN: here you .
 *MOT: do you have a pretty playpen ?
 *NIN: man in that . (Nina 10)

As we can see in these examples, children's locatives seem to be produced more or less spontaneously, not as responses to direct prompting. In this type of situation, it is more natural from a pragmatic perspective to produce a full DP subject. A pronominal subject can be used felicitously only when its referent is clear from the discourse. If Adam or Nina were to have used a pronoun in their utterances in (57a-e), their interlocutor would have not known (most likely) what it was they were referring to.⁵⁹ We predict, then, that children hear more cases of *What's that?* than *Where's X?* I am not aware of studies on this issue, and I have not looked for the relative frequencies of these *wh*-questions in the adult speech in the transcripts discussed here.

Finally, I will very briefly address the issue of contraction of the copula. As is apparent from the examples that I have given of children's predicative utterances, children contract the copula a large proportion of the time. Since children produce predicatives only in main clauses, the copula is always contractable except where ruled out by phonological

⁵⁹I acknowledge that children are reported to use pronouns in exactly this way, i.e. without an obvious referent (Karmiloff-Smith 1979). However, I have no other explanation for why children would tend to use full DP subjects with locative predicates.

factors, in particular, where the subject is the word *this* (**this's*). In adult English, there are additional environments where contraction of the copula is not permitted, for example *John is taller than Mary is/*'s*. However, the children in this study did not produce any such expressions.

Since children contract the copula almost globally (i.e. almost whenever it is overt), one might suggest that children do not actually analyze the /z/ on *she's*, *he's*, *Mommy's*, or the /s/ on *it's* or *that's* as a separate morpheme. Possibly, children simply analyze the sequences *she* ([Si]) and *she's* ([Si:z]) as being phonological variants of the same word. However, if this were really the case, then we would expect children's omission of the copula to be random, and not contingent on any properties of the predicate. Furthermore, although one finds an overt copula somewhat more frequently, overall, with pronominal subjects than with non-pronominal subjects, it is not the case that children contract only with pronominal subjects. Rather, they contract with all types of subjects. Some examples of a contracted copula with non-pronominal subjects are given here:

- (58) a. Georgie's under there . (Naomi 2;0)
 b. Daddy's at school . (Peter 10)
 c. Patsy's a girl . (Peter 11)

It is quite unlikely that children misanalyze *Georgie* and *Georgie's* as being synonyms. If that were the case, one would expect names with an -s suffix to show up also with main verbs (e.g. *Georgie's eat*). Although these expressions occur occasionally, they are quite rare: Naomi produced a total of 2 such cases (*Georgie's drink juice* and *kitty's stand up*), and the other children never produced such utterances. There were a handful of cases for each child in which a pronoun with contracted *is* occurred with a bare main verb

(e.g. *he's run*). But again, these expressions are relatively rare⁶⁰, and it is impossible to tell if they involve an unanalyzed pronoun-copula subject, or an omitted *-ing* progressive. It also cannot be reasonably argued that children do not "hear" the copula, or are not sensitive to it. Even though it is a relatively small element (when contracted, only a single fricative, sometimes unvoiced), we know that children are sensitive to phonetic material on a level of minute detail (Jusezyk 1997, and sources cited there), and that they are sensitive to other unstressed function morphemes from an early age (Gerken and McIntosh 1993).⁶¹

Another possibility, pointed out to me by Carson Schütze is that children analyze forms such as *Georgie's* as two morphemes but store them as a single item in the lexicon. Perhaps it is easier, in terms of processing load, to produce a single stored item than to generate a form by combining two items stored separately. I will not pursue this option in depth here.

I conclude that children's pattern of omission of the copula conforms to a clear pattern that is governed by grammatical conditions on the *predicate*. Children tend to omit the copula with stage-level predicates, but not with individual-level predicates. I also showed that although children produced a pronominal subject with nominal (individual-level) predicates more often than with locative (stage-level) predicates, subject type (pronominal vs. non-pronominal) was not a better predictor of copula overtness than predicate type (stage- vs. individual-level). That is, pronominal subjects did not robustly correspond to occurrences of an overt copula, and non-pronominal subjects did not robustly correspond to omissions of the copula. Rather, the apparent correlation between pronominal subjects and

⁶⁰They seem to be somewhat more common in Adam's data than in that of the other children (Brown 1973).

⁶¹ Yet another possibility is that, rather than failing to hear the copula, children simply fail to produce it, i.e. its omission is due to a production problem.

nominal predicates, and between non-pronominal subjects and locatives, was shown to be linked to discourse conditions.

3.4 Summary of Chapter 3

Abstracting away from the complications of predicate adjectives, we can form the generalization that at a particular stage of linguistic development, children acquiring English tend to produce an overt copula when the predicate denotes an individual-level property, but they tend to omit the copula when the predicate denotes a stage-level property. This pattern is accounted for in terms of a structural difference between stage- and individual-level predicates, and in terms of two options for fulfilling the formal requirement of temporal anchoring in main clauses.

By way of concluding, let us return to the questions posed at the beginning of §3.2 and see how they were answered in this chapter.

- Why do children use an overt and finite copula specifically in the case of nominal predicates, and why do they omit the copula specifically with locative predicates?

As argued in Chapter 2, nominal predicates are individual-level, and locative predicates are stage-level. There is a structural difference between stage- and individual-level predicates such that stage-level predicates project an Event argument, which in turn projects an AspP projection. Individual-level predicates lack these layers of functional structure. An overt, finite copula is required for formal reasons in the structures that lack AspP (individual-level predicates).

The formal requirement that the copula be overt when the structure lacks AspP is the temporal anchoring requirement. It is defined as a requirement on the binding of a head (Infl or Asp) by the Temporal operator (T_{OP}) in the C-domain. If possible, the requirement

is fulfilled by binding Asp, which does not yield grammatical finiteness. If this option is not available, the requirement is satisfied by binding Infl, which yields finiteness (e.g. a finite main verb or an auxiliary verb). If no verb is present in the structure, finiteness is realized through the copula.

- Why do English-speaking children mark this distinction in this way given that this particular way of marking the distinction is not found in the input?

Children have two options for satisfying the temporal anchoring requirement: Top can bind Asp or Infl. Only the option of binding Infl yields finiteness. These options for satisfying the requirement are provided by UG. Adult English, in contrast to child English, has only one option for satisfying temporal anchoring: Top must bind Infl, even if Asp is present in the structure.

The difference between child and adult English with respect to the overtness of the copula reduces to the fact that child English employs a different option for satisfying temporal anchoring in stage-level predicates than adult English. In becoming adult speakers of English, then, children must learn that the option of binding Asp by Top is not available in the grammar. This shift must be made on the basis of the evidence that both stage- and individual-level main clause predicates involve an inflected copula. Once the child "notices" this in the input, i.e. that stage-level predicates must occur with an overt copula in main clauses, the child's grammar will shift from binding Asp to binding Infl in these contexts.⁶²

⁶² In fact, the child's grammar will then shift to binding Infl in all main clauses. I do not know why the evidence that stage-level predicates must contain an overt copula gets noticed by the child at this intermediate stage of language development and not from the beginning, since presumably the input itself does not change. But this problem presents itself for many theories of language development. It might be accounted for in terms of the child's biological and conceptual maturation, although this notion needs to be refined and made explicit.

- What is the relevance of finiteness, i.e., why is the copula always finite when it is overt?

As noted above, the copula is overt in individual-level predicates as a reflex of Top binding Infl. This binding relation yields grammatical finiteness, which, in a non-verbal clause, can only be expressed by an overt copula. Since Infl bound by Top is finite, the copula is finite (it is finite over 99% of the time in child English, cf. Table 3.5).

- Finally, what does children's pattern of copula omission tell us about the structure of adult English predicates?

This question was addressed only partially in this chapter. Adult English main clause predicates do not differ structurally from children's main clause predicates. The only difference between them is in how the temporal anchoring requirement may be satisfied. However, there are small clause predicative constructions in adult English in which the copula appears to be optionally overt. We will take a look at these constructions, and what they mean for the present analysis of main clause predicates, in the next chapter.

What is particularly interesting about children's production and omission of the copula is that children mark the stage/individual distinction in terms of *the form of the copula in main clauses*. This manner of marking the stage/individual distinction is unlike what we find in adult English (where the copula is always overt and has the same lexical form, regardless of the predicate type), but it is remarkably similar to the manners in which certain other adult languages mark this contrast, e.g. Spanish and Portuguese (where the lexical form of the copula differs), or Hebrew (where the copula is overt or null, depending on the predicate type). Thus, we can augment Table 2.7 at the end of Chapter 2 to include child English:

Table 3.16. Crosslinguistic Patterns of Marking the Permanent vs. Temporary Property Distinction in Predicative Constructions

Language	Predicate: individual-level	Predicate: stage-level
Child English	overt copula (<i>be</i>)	null copula
Hebrew	overt copula (<i>hu</i>)	null copula
Spanish	<i>ser</i>	<i>estar</i>
Portuguese	<i>ser</i>	<i>estar</i>

In the next chapter, I return to adult grammar and develop some of the consequences of my analysis of child English for a set of constructions in adult standard English, as well as for adult African American English and certain English-based creoles. I also return to the languages we examined in Chapter 2 and discuss support for my analysis from analyses of copular constructions in these languages.

Appendix to Chapter 3

The Copula in Existential Expressions

Given that existential constructions are restricted to containing stage-level (or eventive) predicates in their coda (see §3.2.1), and given that children's stage-level predicates tend to occur without an overt copula (§3.1.2), we might predict that children's existentials, where they occur, would tend to occur without the copula. This turns out not to be the case. Here I briefly discuss children's production of existentials (e.g. *There is a mouse under the table*) and their omission of the copula in these constructions.

Existential expressions assert the existence of something, often with a location or other attribute specified in the "coda" (a term due to Milsark 1974). In a sentence such as *There is a mouse under the table*, the NP *a mouse* is known as the "associate", and the apparent Small Clause *a mouse under the table* is the coda. The expression of a location for the associate is not necessary; e.g. *There are some problems with your analysis* (a non-locative PP), *There are some workers protesting/tired of being poorly treated* (VP or AP), *There are many ways to solve this problem* (IP coda), *There is a god* (no location or other attribute in the coda, or it is implicit; my impression is that this last construction is rather uncommon).

The syntax of existential constructions continues to serve as a rich source of research and debate, as it has for many decades. A thorough treatment of this construction would require a whole dissertation in itself; the reader is referred to Milsark (1974), Stowell (1978), Chomsky (1986) and Moro (1997) and references cited in those comprehensive

works. Instead, this appendix is intended only as a brief (and necessarily incomplete, given the topic) discussion of children's omission of the copula in existentials.

3A.1 Data and analysis

The child data examined here come from the same files discussed and analyzed in Chapter 3. Please see §3.1.1 and the Appendix(ices) for details about the children and method of coding.

In Table 3A.1 I give the average rate of overt *be* in existential expressions as compared to nominal and locative predicatives, for each of the children.

Table 3A.1 Children's Average Rate of Overt *be* in Existential Expressions¹

child	existentials	nominal pred.	locative pred.
Nina	88.9% (15)	74.1% (143)	14% (115)
Peter	87.1% (31)	81.2% (401)	26.7% (90)
Naomi	84% (25)	89.7% (102)	38.1% (31)
Adam	60% (5)	44.4% (303)	4.9% (26)
Eve	52.4% (21)	39.8% (206)	54.8% (33)
average (w/ Eve)	74.5%	65.8%	27.7%
average (w/out Eve)	80%	72.4%	20.9%

Some examples of children's existential utterances are given in (1-5).²

¹Since Adam's rates of overt *be* are lower than those of Nina, Peter and Naomi (as in the case of predicatives; see §3.1.2), I also give the average rates of overt *be* for only Nina, Peter and Naomi: 86.7% in existentials.

²It is interesting to note that children's existentials often fail to have an overt locative (or other attributive) phrase in the coda. I noted earlier that this type of existential (exemplified by *There is a god* above) might be somewhat rare in adult English. The locative phrase may be implicit, or the lack of a locative phrase in the coda may indicate that these expressions are actually deictic (e.g. *There's my hat* which cannot be

- (1) *NIN: there's a light.
- (2) *NAO: there some for Mommy. (Naomi 2;0)
- (3) *PET: there's a wheel. (Peter 10)
- (4) *ADA: dere [there] some boots. (Adam 10)
- (5) *EVE: there's another hat. (Eve 17)

There are two things one notices immediately about the figures in Table 3A.1. One is that the number of existential utterances is quite small, as compared to predicatives (in particular as compared to the nominal predicatives). I do not know the reason for this difference. Existentials may also be less frequent in adult English, but I have not checked for this. The second thing to notice is that the average rate of overt *be* in existentials is relatively high: for all children (except for Eve), the rate of overt *be* in existentials is much higher than in locative predicatives (from 45% to 75% higher), and it is at least as high as in nominal predicatives (although for Naomi is it slightly—5%—lower). The high rate of overt *be* in existentials will be discussed below.

As I argued in Chapter 3 (§3.2.1.2), existentials involve an Event argument, which projects AspP, in the coda. Thus, the structure of an existential is that in (6) (repeated from (34b) in §3.2.1.2).

- (6) [p there [r be [AspP [Asp' [-perf] [EvP EV [sC dogs [pp in the park]]]]]]]

The presence of EvP and AspP in an existential coda was argued to be the reason why only stage-level predicates may occur in this syntactic environment and individual-level are excluded. Furthermore, it was argued that children acquiring English omit the copula in environments in which AspP is projected. The head Asp can be bound by the Temporal

existential since the post-copular DP is definite) rather than existential. We will return to deictic expressions below.

operator (TOP) in the C-domain, thus satisfying the temporal anchoring requirement. Since Infl is not bound by TOP in this case, the clause does not realize a finite copula (please see discussion in §3.2.1.3). Given these arguments, we would expect children to also omit the copula in existentials, since presumably in these structures the Asp head is bound by TOP to temporally anchor the clause.

As seen in Table 3A.1 above, this prediction is not borne out: the copula is generally *not* omitted in existentials. Recall, however, that the fact that the overt copula is not needed when AspP is projected does not imply that an overt *be* is ungrammatical in clauses containing AspP (in child English). Rather, it is absent in stage-level predicatives because it is merely more economical not to bind Infl if Asp can be bound by TOP instead (by hypothesis; see §3.2.1.3). But if there were some other syntactic condition that required finiteness features to be expressed in Infl, then the copula would be overt. Thus, I propose that the overtness of *be* in children's existentials is due to another syntactic requirement in these constructions: the need to license the associate NP. (Note that since the post-copular phrase in a predicative is a predicate, not an argument, the copula is not needed to license those phrases.)

As mentioned above, the problem of how the associate NP in an existential gets licensed is a long-standing problem in syntactic theory. The associate NP arguably needs licensing (abstract Case in Chomsky (1986) and much other work), since it is an argument (referential), not a predicate. Lasnik (1995) argues that the associate NP in an existential must be licensed independent of *there* (i.e. not through Case transmission from *there*), and what licenses the associate is *be*. Belletti (1988) makes a similar argument, which Lasnik draws on in large part. Belletti's claim is that the associate NP receives inherent partitive case from *be*.³ Crucially, it is the (unaccusative) verb *be*, for Belletti, which assigns case to the

³Partitive case is marked morphologically in some languages, e.g. Finnish, but Belletti claims it is available universally. Being an inherent (as opposed to structural) case, partitive carries semantic meaning,

associate NP; the associate does not receive case via transmission from *there*, as argued by Chomsky (1986), among others; see also Chomsky (1993) for a somewhat different account.

Following the general premise of Lasnik and Belletti that the associate NP must be licensed independently from *there*, and that it is licensed directly by *be*, we can assume that the copula is overt in child English existentials because it is needed to license the associate.

3A.2 Potential problems

Although the Lasnik/Belletti type of approach to *be* in existentials seems to account well for the data in Table 3A.1, there are a couple of caveats worth noting. One is that there are some serious difficulties in judging whether a given utterance is truly an existential expression. Another (perhaps related) issue is that the copula is overt somewhat less often in a similar construction (deictic expressions).

In coding children's spontaneous utterances as existentials, it is difficult to tell whether such utterances are actually deictic expressions, since both existential and deictic expressions can be of the form *there* [NP [XP]].⁴ There are some differences between them: deictic expressions assert the (deictic) location of something (i.e. the location with respect to the speaker/interlocutor as spatial reference point), rather than the existence of something. A deictic expression may begin with *there* (as do existentials), but it may also begin with *here* (which existentials may not). Moreover, a deictic expression may have a definite post-copular DP (e.g. *There/here is John/the car*), while existentials require the

that of 'some (of) NP', and Belletti links this meaning of a partitive-marked NP to the definiteness restriction on English existentials (partitive NPs must be indefinite). But see Law (1996) for arguments against this view.

⁴ The *there* in deictic expressions is stressed, while in existentials it is unstressed. However, when working with corpus data, this information is not available.

post-copular DP to be indefinite (in English). Nevertheless, expressions beginning with *there* and containing an indefinite postcopular NP are ambiguous between deictic and existential expressions.

Accordingly, the utterances such as those in (1-5) above were coded as existentials simply on the basis of the fact that they began with *there* (not *here*), and the associate was indefinite rather than definite. But the difference in meaning between *there's a wheel* as an existential as opposed to a deictic expression is subtle and not possible to discern from the context provided in transcripts. Some examples of children's utterances that were coded as deictic, instead of existential, are given in (7-11).

- (7) *NIN: there's Mommy's chair.
- (8) *NAO: here-'s Jenko-'s lollipop. (Naomi 2;1)
- (9) *PET: here's another one. (Peter 10)
- (10) *ADA: here fork. (Adam 10)
- (11) *EVE: there my cow. (Eve 18)

In order to determine whether children's "existentials" are truly existential or rather deictic, controlled experimental work must be done (see also footnote 2).

A second problem relates to the relatively high rate of overt *be* in existential expressions. In particular, there may be cases of existentials in which both *there* and the copula are omitted, such that the utterance appears to be simply a locative predicative expression lacking *be*. An example of such a case is given in (12).

- (12) *NIN: stove there. (Nina 10)

The expression in (12) could be intended as *There's a stove there* (which, incidentally, is what Nina's mother says in response to Nina), i.e. an existential with omitted *there is*, or it

could be intended as *A/The stove is there*, which would be simply a locative without *be*. All utterances like (12) were counted as null-*be* locatives. If, instead, these expressions were counted as existentials, the figures would change quite dramatically. The rate of overt *be* in existentials would drop, and the rate of overt *be* in locatives would rise, as shown in Table 3A.2 (compare with the figures in Table 3A.1).

Table 3A.2 Rate of Overt *be* if Potential Null-*there+be* Expressions are Counted as Existentials

child	existential	locative
Nina	18.6% (70)	25% (60)
Peter	37% (73)	40% (45)
Naomi	61.8% (34)	47.6% (21)
Adam	15% (20)	18.2% (11)
Eve	38.5% (26)	57.1% (28)

A final problem I will mention is that if one looks at the rate of overt *be* in existential as opposed to deictic expressions (distinguished on the basis of the presence of *here* as opposed to *there*, or the definiteness of the post-copular DP), children tend to produce an overt copula at a somewhat higher rate in existentials than in deictic expressions. I give the figures for comparison in Table 3A.3.

Table 3A.3 Children's Average Rate of Overt *be* in Existential vs. Deictic Expressions

child	existentials	deictic expressions
Nina	88.9% (15)	56.8% (40)
Peter	87.1% (31)	67.2% (58)
Naomi	84% (25)	68.8% (32)
Adam	60% (5)	41.9% (31)
Eve	52.4% (21)	59.1% (22)
average (w/ Eve)	74.5%	58.8%
average (w/out Eve)	80%	58.7%

Again with the exception of Eve, the children produce an overt copula roughly 20% more in existentials than in deictic expressions (about 30% more in Nina's case). It is not immediately clear why the copula is overt less frequently in deictic expressions than existentials. In both cases the post-copular DP is referential and therefore must be licensed. If *be* licenses the associate in an existential, then it would be predicted to license the post-copular DP in a deictic expression as well (barring other constraints on the construction). However, given the relatively small difference in overtness rate, and given the problems noted above in coding spontaneous utterances as existential vs. deictic, I leave this now as a point of information and will not speculate further on reasons for the difference.⁵

⁵ Another potential confound in determining the overtness rate of the copula in both existential and deictic constructions is that *there's* might be an unanalyzed whole in child grammar. If so, it is difficult to know whether a word like *there's* contains a copula according to the child's grammar.

Consequences of the Analysis for Adult Grammar

Having provided an analysis of the production and omission of the copula in child English, I return now to the adult grammar. I discuss how the analysis of child English in Chapter 3 can be used to account for some of the crosslinguistic phenomena with respect to the copula we saw in §2.3. Additionally, I return to some constructions in adult standard English that were not discussed in detail in previous chapters: the "active *be*" construction (e.g. *John is being polite*) and Small Clause complements of *make* (e.g. *John made Mary (be) polite*). I will argue that these constructions in adult English provide support for my conjecture (made in §§3.1 and 3.2.2) that the finite copula and the non-finite copula head different projections (IP and VP, respectively). I will also briefly address free adjuncts ((*Being clean-shaven*). *John might impress the dean*), which show a semantic alternation based on the stage-/individual-level contrast. However, I demonstrate that the presence/absence of the copula in free adjuncts does not mirror the presence/absence of the copula in other constructions discussed in this thesis.

Following the discussion of these constructions in adult standard English, I turn to the form of the copula in adult African American English (AAE), which not only permits omission of the (inflected) copula in certain main clauses (Labov 1969), but also contains an uninflected, or "invariant" copula, *be*, in main clauses (Fasold 1969; Green 1993; Green 2000). Invariant *be* carries a "habitual" meaning, to be discussed, and it shows syntactic behavior distinct from that of the inflected copula. I will show how the distinct behavior of

inflected and invariant *be* in AAE fits in with the analysis I gave of the child standard English copula in Chapter 3.

4.1 The Aspect Projection in Copular Constructions: Crosslinguistic Support

The account of copular constructions in child English given in Chapter 3 was built upon evidence from adult English for a structural difference between stage-level and individual-level predicates. We also saw at the end of Chapter 2 that certain non-English adult languages mark a syntactic distinction between stage- and individual-level predicates in the form (lexical form or overtress) of the copula. At this point, let us return to some of those languages and examine the evidence for the projection of AspP with stage-level predicates. We will also look at how the presence vs. absence of AspP in the structure might account for the differences in the form of the copula (or case marking on the predicate, as in Russian).

4.1.1 Portuguese (and Spanish)

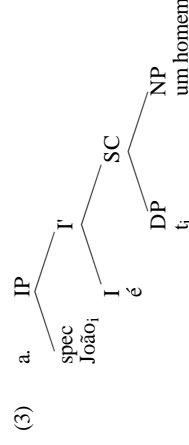
Recall from the discussion in §2.3.2 that in the prototypical cases, the copula *ser* occurs with nominal and individual-level adjectival predicates, while *estar* occurs with locative and stage-level adjectival predicates. We will begin the discussion by concentrating on Portuguese.

- | | | | | | |
|-----|----|--------------|-----------------------------------|---------------------------|--------------|
| (1) | a. | Bombeiros | são/*estão | altruístas/voluntários. | (Portuguese) |
| | | Los bomberos | son/*están | altruístas/voluntários. | (Spanish) |
| | | Firemen | are(<i>ser</i> /* <i>estar</i>) | altruistic/volunteers. | |
| | b. | Bombeiros | *são/estão | disponíveis/no jardim. | (Portuguese) |
| | | Los bomberos | *son/están | disponibles/en el jardín. | (Spanish) |
| | | Firemen | are(<i>ser</i> / <i>estar</i>) | available/in the garden. | |

Just as in English, the subject in (1a) receives only a generic reading, while the subject in (1b) can have either an existential or a generic reading. Furthermore, predicates that normally take *estar* can occur in perception verb complements and existentials, as in (2).¹

- | | | | |
|-----|----|---|--------------|
| (2) | a. | Eu vi metalúrgicos ansiosos/em greve. | (Portuguese) |
| | | Vi metalúrgicos ansiosos/en huelga. | (Spanish) |
| | | I saw steelworkers anxious/on strike. | |
| | b. | Há metalúrgicos ansiosos/em greve. | (Portuguese) |
| | | Hay metalúrgicos ansiosos/en huelga. | (Spanish) |
| | | There are steelworkers anxious/on strike. | |

According to the analysis given in Chapter 3, we would predict that predicates that occur with *estar* are associated with the projection of EvP and AspP, while predicates that occur with *ser* involve purely lexical predication. The structures are as follows.

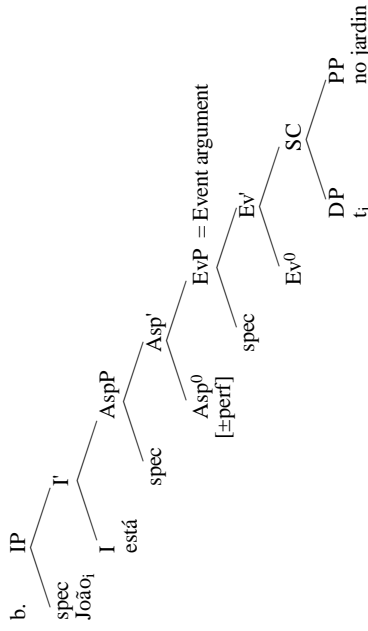
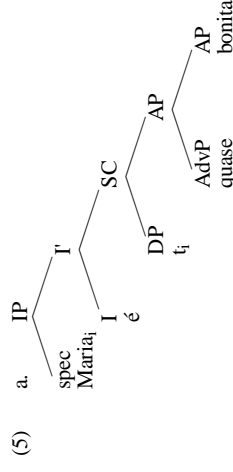


¹The constructions in (2) can also contain individual-level adjectives in the SC (e.g. *Eu vi metalúrgicos egoístas/voluntários* 'I saw steelworkers selfish/volunteers' is grammatical). However, I believe this is due to a conflation in Portuguese and Spanish: like many other Romance languages, Portuguese and Spanish permit postnominal modifiers, so that *metalúrgicos ansiosos/egoístas* 'anxious/selfish steelworkers' is a grammatical DP. The NP *voluntários* 'volunteers' also seems to be able to function as an adjective in these contexts (Santos, p.c.). In Portuguese, but not Spanish, even NPs that cannot be construed as adjectives (e.g. *professores* 'teachers') can occur in this construction (Portuguese: *Eu vi/Há metalúrgicos professores*; Spanish: **Vi/Hay metalúrgicos profesores* 'I saw/there are steelworkers teachers'); I do not know why this construction is licit in Portuguese, but it certainly warrants further study.

be more subtle, as in the example below in (4). In this minimal pair of predicatives, the adverb *quase* 'almost' modifies the adjective itself in a *ser*-predicate (thus, *quase bonita* means 'sort of pretty'), but it modifies the eventuality of the predicate in an *estar*-predicate (thus, *quase bonita* means 'not pretty yet').

- (4) a. A Maria é quase bonita.
The Maria is almost pretty
"Maria is sort of pretty."
(*quase* modifies adjective)
- b. A Maria está quase bonita
The Maria is almost pretty
"Maria is not pretty yet."
(*quase* modifies event of becoming pretty)

The difference in meaning between (4a) and (4b) is predicted by the structures in (3). Given the structures in (3a-b), then, we can postulate the structures in (5a-b) corresponding to (4a-b).



Consistent with this proposed structural difference between *ser* and *estar* predicatives, Schmitt (1992) argues that in Portuguese predicatives that take *estar* (stage-level predicates; see §2.3.1) are aspectual, while predicates that occur with *ser* (individual-level predicates) are not aspectual. Although Schmitt does not define the term "aspectual" explicitly, we can understand an aspectual predicate to be one that relates to the temporal structure or constituency of an eventuality.² Thus, if a predicate is aspectual, it relates to the temporal structure of some event (e.g. it may relate to substages of the event, to the endpoints of the event, etc.). If a predicate is not aspectual, there is nothing in the syntactic structure of the predicate relating to the temporal constituency of the eventuality.

The difference in aspectual structure results in a difference in meaning between *ser*-predicates and *estar*-predicates. As we have seen in previous chapters, the general difference in meaning between stage-level and individual-level predicates is that of "temporary" vs. "permanent" properties, respectively (broadly speaking). The difference in meaning can also

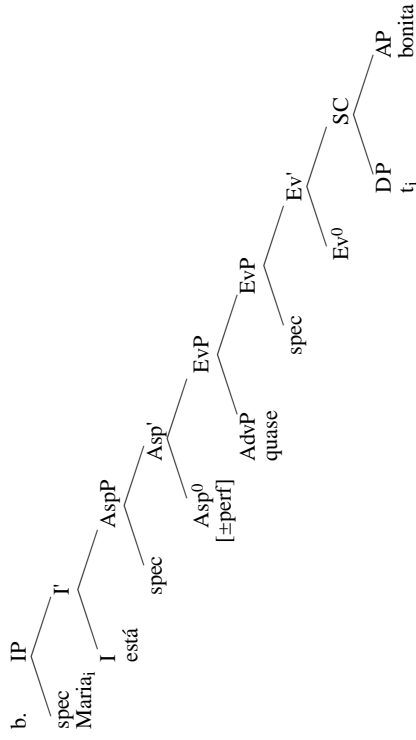
²I generally follow Comrie (1976) who defines aspect as being "concerned ... with the internal temporal constituency of [a] situation" (Comrie 1976: 5).

Crucially, however, I assume that *ser* and *estar* occur in the same position in the structure, namely in Infl. At least, I assume *estar* is not the head of AspP. That *estar* is not actually part of the aspectual predicate, but rather selects it, is shown by the fact that *estar* cannot occur in the non-finite contexts in which one finds stage-level predicates (precisely the kind of predicate that occurs with *estar* in main clause contexts), namely in perception verb complements and existentials.

- (6) a. Eu vi metalúrgicos (*estarem) ansiosos/em greve.
 I saw steelworkers (*being) anxious/on strike
 b. Há metalúrgicos (*estando) ansiosos/em greve.
 There are steelworkers (*being) anxious/on strike

As in adult English, Portuguese main clauses always bear tense/agreement marking on the verb, a morphological indication of finiteness. That is, whether the sentence contains *ser* or *estar*, the sentence is finite (*ser* and *estar* both inflect for Tense/Agreement). Therefore, I assume that, like English, Portuguese employs only Option 2 of the temporal anchoring requirement: Infl must be bound by the Temporal operator (Top) in CP. The *ser/estar* distinction, then, does not result from a difference between Infl vs. Asp being bound by Top, but rather from a selectional difference between the two copulas, as discussed above.⁴

⁴Another possible analysis of the child English data is suggested by this claim (Schütze, p.c.). In particular, one might argue that children acquiring English have two distinct copulas, as in Spanish and Portuguese, and that only one of the two copulas deletes. However, if we consider the copula in adult English to be a single lexical item (i.e. that the *is* in *John is a doctor* and *John is in the garden* is a single lexical item), then children acquiring English would have to "unlearn" a lexical distinction between the copula of stage- vs. individual-level predicates. I am not sure how children would unlearn this distinction on the basis of positive evidence.



As for why one finds *ser* in certain predicatives and *estar* in others, I assume that this alternation arises because of selectional differences between the two copulas. One may think of this either in a "top-down" sense, so that *ser* selects a lexical SC while *estar* selects AspP (which selects EvP), or in a "bottom-up" sense. Under the bottom-up view, if the lexical SC projects directly to Infl, Infl will contain *ser*; if the SC projects first to an EvP, which projects AspP, and then it is AspP that projects Infl, then Infl will contain *estar*. In either case, one would have to assume that Infl may contain different features (or sets of features), so that Infl with the feature [+ser] (or [-aspect]) is projected by (or selects) a lexical SC and spells out as *ser*, and Infl with the feature [+estar] (or [+aspect]) is projected by (or selects) AspP and spells out as *estar*. I tend to think of the structures in terms of "top-down" selection, but I believe this issue is theoretical, and the better of the two approaches cannot be decided by the empirical issues we are addressing.³

³Another possibility is that *estar* is the spell-out of the complex head Asp+Infl (through incorporation of Asp into Infl), in the spirit of recent theories that *have* is the spell-out of P+Infl (i.e. incorporation of P into Infl/be); cf. Freeze (1992), Kayne (1993), Den Dikken (1995), Becker (1997), among others. I am

4.1.2 Hebrew

As discussed in §2.3.2, in Hebrew present tense predicates the "pronominal" copula (*hu* in masculine singular; referred to as Pron) is overt in some cases and null in others. It is obligatorily overt in generic expressions (kind-denoting, in the sense of Carlson 1977) and expressions of inherent or essential properties. Pron is obligatorily null with predicates whose meaning blocks or disallows an inherent property reading, and it is optionally overt with predicates that might potentially denote either an inherent or a non-inherent property (e.g. non-generic individual-level predicates, stage-level predicates not modified by a "specific" spatial or temporal modifier, such as 'now'). Some illustrative examples from Chapter 2 are repeated here.

- (7) ha-kli ha-ze *(hu) pati:S
 the tool the this 3m.sg hammer
 "This tool is a hammer."
- (8) Dani (*hu) me'od 'ayef ha-yom
 Dani 3m.sg very tired the day
 "Dani is very tired today."
- (9) a. ha-Samyim hem kxulim
 the sky 3m.pl blue
 b. ha-Samayim kxulim
 the sky blue
 both (a) and (b) = "The sky is blue."
 (Greenberg 1994: 54)

The cases of obligatorily overt or null *hu* are accounted for straightforwardly by the analysis given in Chapter 3. Just as in English, stage-level expressions (as in (8)) project an AspP, the head of which can be bound by Top to satisfy the temporal anchoring requirement on main clauses. As in child English, the copula may be omitted in these cases. Generic

It is relatively straightforward to extend this analysis of *ser* and *estar* in Portuguese to the *ser* and *estar* distinction in Spanish. (Recall from §2.3.1 that the only substantial difference between Spanish and Portuguese with respect to *ser* and *estar* is that Portuguese uses *ser* to express permanent locations—locations of immobile objects—while Spanish uses *estar* in these expressions.)

Luján (1981) argues for an aspectual distinction between *ser* and *estar* predicates in Spanish. However, Luján's account differs from Schmitt's in that Luján argues that *ser* and *estar* express different types of aspect (as opposed to one copula being aspectual and the other non-aspectual). Specifically, she proposes that *ser*-predicates express imperfective aspect, and *estar*-predicates express perfective aspect. Luján uses the term "imperfective" to mean "roughly ... 'durative'" in more traditional usage (cf. Comrie 1976), and she intends 'perfective' to mean "roughly ... 'punctual'" (Luján 1981: 206, footnote 10).

The intuition behind Luján's characterization of the *ser/estar* aspectual split seems to be that predicates that occur with *estar* (stage-level predicates) normally occur for limited or bounded amounts of time (hence are "more punctual"), while predicates that occur with *ser* (individual-level) normally occur for long or unlimited amounts of time (hence "more durative"). However, stage-level predicates are not truly perfective, where perfectivity has to do with the closure of an event: a sentence like *John is in the garden* does not denote a closed event or state.

To summarize, the *ser/estar* distinction in Spanish and Portuguese is accounted for by the analysis proposed in Chapter 3 for child English. *Ser* and *estar* differ from each other in their selectional properties: *ser* selects a lexical SC predicate, while *estar* selects an AspP whose head selects an EvP. The presence of the Event argument in a predicate that occurs with *estar* yields the stage-level properties of the predicate. There is evidence, as discussed above, for an aspectual difference between predicates that occur with *ser* vs. *estar*.

expressions (a subset of individual-level expressions) have no AspP, so Infl must be bound by T_{OP} to satisfy temporal anchoring; a bound Infl yields an overt copula: *hu*.

With respect to the optional Pron cases, non-generic individual-level expressions (e.g. *John is tall/a doctor*) appear to optionally project an AspP, thereby allowing Pron to be omitted. However, if Greenberg's (1994) judgment is correct that the presence of Pron in the optional cases yields a difference in meaning (i.e. it forces an inherent or definitional reading of the property), then the optional overt/null Pron cases behave as expected. Recall from §2.3.2 that Hebrew draws the line between "temporary" and "permanent" property predicates in a somewhat different way from English, Spanish or Portuguese. Instead of distinguishing, roughly speaking, long-term from short-term sorts of properties, Hebrew draws the line between essential, inherent or definitional sorts of properties and non-essential (accidental) or non-inherent properties.⁵

We can now understand Hebrew's distinction between "temporary" and "permanent" properties described in §2.3.2 with respect to the overtness of Pron: predicates that denote a non-essential property project an Event argument (EvP), which in turn projects AspP. In this case, Asp⁰ is available to satisfy the temporal anchoring requirement and Pron is not overt (where overt Pron, like English finite *be*, is the spell-out of Infl bound by T_{OP}). Predicates that denote an essential or definitional property do not project an Event argument, and thus Asp is not available in the structure. Infl must be bound by T_{OP}, and this results in overt Pron.

The analysis given above for null- and overt-Pron predicates in Hebrew (extended from the account given for child English) leads to the conclusion that null-Pron predicates

⁵ I consider this difference between Hebrew and, for example English to be of a grammatical, not a conceptual nature. That is, I would not argue that Hebrew speakers conceptualize certain properties, such as the property of tallness, differently than English- or Spanish-speakers do. Rather, Hebrew happens to draw the line between "permanent" and "temporary" predicates in a slightly different way from English (and Spanish and Portuguese). But this sort of crosslinguistic difference is unsurprising, since the linguistic distinction between "permanent" and "temporary" predicates does not derive from a logical necessity.

in Hebrew are non-finite. I have defined finiteness as the grammatical reflex of T_{OP} binding Infl, but not of T_{OP} binding Asp. When T_{OP} binds Asp the clause is non-finite, where non-finiteness is defined as the absence of finiteness. Contra this conclusion, Shlonsky (1997) argues that null-Pron main clauses in Hebrew are tensed and simply lack an overt copula.⁶ That is, he argues that "the present tense of the verb *be* is phonetically unexpressed but syntactically represented" (Shlonsky 1997: 39). His argument is as follows. The present tense form of main verbs is identical to the participle form; present tense verbs bear no morphological tense features. For example, the verb *kotev* in (10) is the so-called benoni form of the verb meaning 'write' (benoni refers to a present or participial verbal form that bears number and gender agreement morphology, but no tense morphology). It can occur as a participle with an auxiliary, as in (10a), or it can occur without an auxiliary, as in (10b), yielding a present tense meaning.

- (10) a. Dani haya kotev sipurim
 Dani be-past-3msg. write-m.sg stories
 "Dani was writing/used to write stories."
 b. Dani kotev sipurim
 Dani write-m.sg stories
 "Dani writes/is writing stories."

Shlonsky argues that the verb *kotev* 'write' has the same syntactic properties in both (10a) and (10b). In both constructions, the verb itself is not tensed, and the tense of the clause is provided by a tensed element in Infl/T. The difference between (10a) and (10b) is that the element in Infl/T is overt in (10a), but null in (10b). He argues that the same analysis applies to non-verbal predicates. Thus, null-Pron predicates such as (8) above involve a tensed, but phonetically unrealized Infl/T.

⁶ Shlonsky does not actually use the term *finite*, but I take his use of the term *tensed* to mean about the same thing, i.e. an Infl or T node containing tense features.

4.1.3 Russian

In Russian present tense copular sentences, the copula is always null, and the nominal or adjectival predicate always bears Nominative case.^{7,8} However, in the past tense, the copula is always overt (cf. Kondrashova 1995; Kondrashova 1996; Matushansky 2000). What is interesting for our purposes is that the case marking on the nominal or adjectival predicate may vary in past tense predicatives, and it does so along similar lines to the stage-/individual-level split we have seen evidence of so far.

A nominal or adjectival predicate may bear either Nominative or Instrumental case, but the difference in case marking corresponds to a difference in the meaning of the predicate. Nominative case implies that the property holds permanently or is an inherent property, while Instrumental case implies that the property is non-permanent or non-inherent. (The following examples are taken from Pereltsvaig (1999); see also Bailyn & Rubin (1991), Déchaine (1993), Neidle (1988).)

- (11) a. Oleg byl durakom.
Oleg-Nom was fool-Instr
"Oleg was a fool." (sometimes he'd behave like a fool)
b. Oleg byl durak.
Oleg-Nom was fool-Nom
"Oleg was a fool." (he was always a fool; implies he is dead)
- (12) a. Pjatno bylo krasnym.
spot was red-Instr

⁷The copula is obligatorily overt only in (present tense) existentials and alienable possessives, and I will not deal with these constructions here. I am not sure the obligatory absence of the copula in present tense predicatives can be straightforwardly accounted for under my analysis, but I will not attempt an investigation here. Please see Kondrashova (1996) for discussion.

⁸The DP inside a PP locative predicate receives case from the P itself and thus is not relevant to us (NP and AP predicates do not have a similar kind of case marker, and so it is not immediately obvious how they are assigned case).

If null-Pron predicatives are finite in Hebrew, i.e. if they involve binding of Infl by T_{OP}, what is the syntactic difference between null-Pron and overt-Pron predicatives? I will sketch a couple of possible solutions here, although the details remain to be worked out.

One possibility is that Infl in Hebrew has two possible (syntactically equivalent) morphological variants: overt Pron (*hu*) and nothing (\emptyset). The only difference between overt-Pron and null-Pron would be morpho-phonological, not syntactic or semantic. But this type of approach seems to be inconsistent with Greenberg's observation that there is a semantic difference in the meaning of the predicate between overt- and null-Pron predicatives. Moreover, it remains unclear under this analysis why Pron is ever overt, i.e. why it is required to be inserted in those constructions in which it is obligatory if Infl bound by T_{OP} can be phonetically null.

Another possibility is that overt Pron (*hu*) in Hebrew is a different sort of thing from the overt copula in child English. For example, perhaps overt Pron is the syntactic reflex of a Generic operator, rather than a Temporal operator, binding Infl. This might account for the fact that generic expressions require an overt Pron, while certain non-generic expressions containing "permanent" property predicates do not (e.g. *Dani (hu) gavoha* 'Dani is tall'). However, "genericity" would need to be defined such that definitional properties are generic ('a hammer', cf. (7) above) but non-definitional permanent properties ('tall') are not.

In either of these cases, by analyzing null-Pron predicatives as containing a finite Infl (an Infl bound by T_{OP}) we lose the connection between the phenomenon of null-Pron in Hebrew and null-*be* in child English. I believe this connection should not be given up lightly. Therefore, I maintain my analysis that null-Pron predicatives satisfy temporal anchoring by T_{OP} binding Asp, not Infl, and therefore are "non-finite" according to the definition of finiteness adopted here.

"The spot was red." (and then it changed color)

- b. Pjatno bylo krasnoe.
spot was red-Nom
"The spot was red." (as long as there was a spot, it was red)

Clearly, the distinction being made in Russian is not exactly the same as the stage vs. individual-level distinction we found in English, Spanish or Portuguese, since in English, Spanish and Portuguese, NP predicates (*a fool*) are always individual-level. Nevertheless, Russian distinguishes permanent/inherent from non-permanent/non-inherent properties in the examples above.

Matushansky (2000) shows that there are a variety of syntactic differences between Nominative-marked and Instrumental-marked predicative expressions. For example, a predicate marked with Instrumental case is subject to *wh*-extraction, scrambling, extraction out of an embedded clause, and SC inversion. I give her examples here.

- (13) Wh-extraction
- a. Kakim uitelem byl Makarenko?
What teacher-Instr was Makarenko
"What kind of teacher was Makarenko?"
- b. *Kakoj uitel' byl Makarenko?
What teacher-Nom was Makarenko?

(14) Scrambling

- a. Velikim poetom byl Pushkin.
[Great poet]-Instr was Pushkin
"Pushkin was a great poet."
- b. *Velikij poet byl Pushkin.
[Great poet]-Nom was Pushkin

(15) Extraction out of embedded clauses

- a. Ja znaju, to Sasha byl muzykantom
I know that Sasha-Nom was musician-Instr
"I know that Sasha was a musician."
a'. Kem/em ty znaesh', to Sasha byl?

Who/what-Instr; do you know that Sasha-Nom was t_i

"Who/what do you know that Sasha was?"

- b. Ja znaju to Sasha byl muzykant.
I know that Sasha-Nom was musician-Nom
"I know that Sasha was a musician."
b'. *Kto/to ty znaesh', to Sasha byl?
Who/what-Nom; you know that Sasha-Nom was t_i

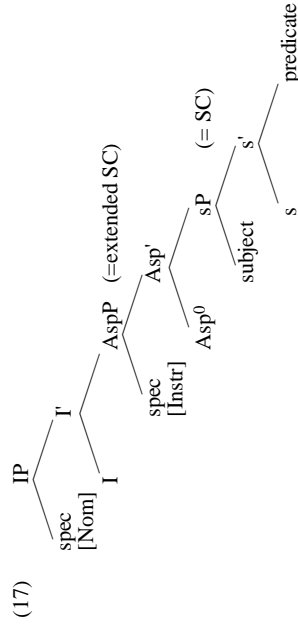
Only Instrumental case marked NP predicates are permitted in SC complements, and they may invert with the SC subject (as in (16a-b)). Nominative case marked NPs are not permitted in SC complements in either the canonical or the inverted order (as in (16c)).

- (16) a. Ja sitala Gumilëva xoroSim poetom
I considered Gumilëv-Acc good poet-Instr
"I considered Gumilëv a good poet."
b. Ja sitala xoroSim poetom Gumilëva
I considered good poet-Instr Gumilëv-Acc
"It was Gumilëv whom I considered to be a good poet."
c. *Ja sitala Gumilëva xoroSij poet/xoroSego poeta
I considered Gumilëv-Acc good poet-Nom/Acc

Matushansky argues, on the basis of these syntactic asymmetries and the extraction possibilities for Instrumental-marked NP predicates, that Instrumental predicates are associated with an additional functional projection, an extended projection of the SC. This extended projection is responsible both for checking Instrumental case and for the possibility of extraction. That is, the position in which Instrumental is checked is exactly the position which provides an "escape hatch" for the predicate to move out of the SC. Nominative, unlike Instrumental, is checked through case agreement.⁹ Matushansky labels

⁹Case agreement is not possible if the structure giving rise to Instrumental case checking (i.e., the extra functional projection) is present in the structure.

this extended projection an AspP because of its association with perfective aspect in Russian (see below). In (17) I give (a slightly adapted form of) Matushansky's proposed structure for Russian predicatives.



The extended projection of the SC is linked to Aspect because of the striking overlap in the distribution of Instrumental case and perfective aspect ([+perfective]). That is, both Instrumental case and perfective aspect are grammatical in past tense (and correspond to particular meanings; cf. (11-12) above), ungrammatical in present tense and permitted (and preferred over Nominative and imperfective, respectively) in future tense. Furthermore, Instrumental case marked predicatives seem to be aspectual in that they are compatible with predicatives that are explicitly marked (via a "super-lexical" affix, Matushansky 2000: 112) for either perfective and imperfective aspect, while Nominative case-marked predicatives are not grammatical when the copula bears explicit (suffixed/prefixed) aspect marking. This is shown in (18).

- (18)
- a. Ja pobyła zavedujuSej/*zavedujuSajja dva tSasa
 I was-Perf manager-Instr/*Nom two hours
 'I was a manager for two hours.'
- b. Ja byvala zaveduhuSej/*zaveduhuSajja, no redko
 I was-Impf manager-Instr/*Nom but rarely
 'I have been a manager, but rarely.'

- c. Ja byla zaveduhuSej/zaveduhuSajja dva tSasa/no redko
 I was manager-Instr/Nom two hours/but rarely
 'I was a manager for two hours./I have been a manager, but rarely.'
 (adapted from Matushansky (19-20))

In the unmarked case (18c), both Nominative and Instrumental case marking on the predicate are grammatical, but there is a difference in aspectual meaning, accordingly: the Instrumental-marked predicate is perfective and the Nominative-marked predicate is imperfective (see translations above, taken from Matushansky).

Thus, Matushansky's analysis of the case distinction in Russian past tense copular constructions is compatible with the analysis given in §3.2 for child English. Instrumental predicatives, which yield a temporary reading of the predicate (cf. (11)-(12) above) are argued to be associated with an Aspect projection. Nominative predicatives, which yield an "essential" or "permanent" sort of reading of the predicate, are argued to lack this extra functional structure, containing a purely lexical predicate instead.

4.2 Adult English: Uninflected *Be* Projects an Event Argument

Thus far we have been concerned with the copula only in stage- and individual-level *main* clauses where, in adult English, the copula must occur in inflected form (if it is the only verb in the clause). It is inflected because in adult English Infl must be bound by Top to satisfy the temporal anchoring requirement, which results in a finite clause. Finiteness is expressed morphologically through a tensed copula since there is no other verb in the clause to bear inflectional morphology.

However, I have alluded to the fact that there are syntactic environments in adult English in which the copula may be omitted (cf. §3.2.2). These environments are not main clauses and hence are not subject to the temporal anchoring requirement. Let us turn now to

these environments, where the presence of the copula seems to yield a stage-level interpretation.

4.2.1 Make Complements

There are two constructions in which a (normally) individual-level predicate occurs with the copula (*be*), and the predicate takes on a "temporary" or stage-level sort of meaning. That is, the meaning of the predicate shifts from denoting a property that holds generally to denoting a property that is asserted to hold only at the time of utterance (or the time referred to by the utterance) and does not necessarily apply in other contexts.

One of these syntactic environments is the complement of causative *make*. In this context the presence of *be* seems to yield a stage-level reading of a normally individual-level predicate. An example is shown in (19).

- (19) a. Her upbringing made Mary polite.
b. Her teacher made Mary be polite.

The interpretation of sentence (19a) is that because of the way Mary was brought up, she is a polite person. Politeness has become an integral property of Mary, hence it is individual-level (cf. *Mary is polite*, an individual-level expression¹⁰). In (19b) the meaning is that her teacher forced Mary to act in a polite way, hence politeness is a property that

¹⁰It is interesting that in the past tense, e.g. *Mary was polite*, the predicate is ambiguous between a stage- and an individual-level reading. In my judgment, *Mary was polite* can mean that she was a polite person (and now either no longer exists, or has become a generally rude person), or that she was behaving politely on a particular occasion. In this chapter (and in the thesis in general) I will be concerned only with present tense predicatives in English. Differences among the tenses in the behavior of the copula and the projection of the Event argument may be linked to the fact that the English present is argued not to be a tense at all (Eng 1987). I leave this matter open at present.

applies only to the relevant situation (or 'stage', in Carlson's terms), and so it is a stage-level property of Mary.

Rothstein (1999) provides an account of the semantic contrast between (19a) and (19b) in terms of a distinction she draws between verbal and non-verbal Small Clauses. Her basic premise is that adjectival predicates denote states, while verbal predicates denote eventualities. She argues that *be* (a verb) is the sort of thing that maps a state-denoting predicate (*polite*) onto an eventuality-denoting predicate (*be polite*). To quote Rothstein, "The AP *polite* denotes the politeness property, and the VP expression *be polite* denotes the set of eventualities that instantiate the politeness property." (Rothstein 1999: 363).

The set of predicates that can occur in a *make* complement with *be* is quite limited. These predicates largely denote behavioral properties or other properties that can be "controlled" (in the non-technical sense) by the subject. In addition to the stage-level interpretation of the predicate, another notable property of this construction is that the SC subject of a *make* complement with *be* tends to have an agentive interpretation (cf. (19b)). According to Rothstein, the agentive reading of the subject follows from the lexical aspect of the verbal predicate.

In particular, Rothstein argues that the agentivity of the subject in this construction comes from the fact that the *be*+AP construction shifts the (lexical) aspect of the predicate from state (for Rothstein, all AP predicates denote states) to activity or accomplishment (following Vendler 1967). According to Dowty (1979), subjects of activity predicates (e.g. *run*) normally have an agentive interpretation, and subjects of accomplishment predicates (e.g. *write a letter*) may also have this reading. Such is the case with (18b): Rothstein argues that the predicate *be polite* denotes an activity, and thus the subject has an agentive meaning.¹¹

¹¹Rothstein notes that *be polite* might also denote a state. However, she claims that interpreting this predicate as a state would violate the Gricean maxim of manner, i.e. the maxim that things should be said

features must be expressed and there is no verb in the clause to bear them (e.g. when Infl is bound by T_{OP} to satisfy the temporal anchoring requirement, and there is no main verb in the structure, as in a main clause predicative).

Thus, the structure of *make* complements is as in (20).

- (20) a. [IP John [VP [V' made [SC Mary polite]]]]
 b. [IP John [VP [V' made [_{ASpP} [E_{VP} [VP Mary_i [V' be [_{AP} t_i polite]]]]]]]]¹²

That *be* in *make* complements is not in Infl is supported by the fact that *make* does not select an IP complement, but rather something smaller (cf. **I made John to leave*, where *to* is in Infl). In the next section we will see further support for the view that uninflected *be* is a V⁰ that projects an Event argument.¹³

4.2.2 Active *be*

Another construction in which the presence of the copula seems to yield a stage-level predicate is the so-called "active *be*" construction (Partee 1977). This construction involves the progressive copula (*being*), preceded by the (inflected) auxiliary *be* and followed by a nominal or adjectival predicate. Some examples are given in (21b) and (22b) below.

¹²I have placed the SC subject, *Mary* in SpecVP, although I do not have a principled reason for doing so. I assume that it must raise out of the lower lexical SC ([*Mary* polite]) around the verb *be*. But I do not know whether it remains in a VP projection or raises higher, e.g. to SpecAspP.

¹³I am not sure whether the past participle of *be*, namely *been*, projects an Event argument like *be* and *being* or not. It is compatible with both individual-level and stage-level predicates (*John has been intelligent/a sports enthusiast*) *all his life*; *John has been [sick/in Florida] for a week*). In this sense it is like the inflected copula, which does not itself project an Event argument. Moreover, when it occurs with an individual-level predicate the subject does not have an agentive meaning; in this sense it is unlike uninflected *be/being*. I leave this issue for future research (see also footnote 6 on different tenses).

An important element of Rothstein's account is that *be* projects an Event argument. Given Kratzer's link between the presence of the Event argument in the structure and stage-level meaning (cf. §2.1.2), it makes sense to think of *make* complements with *be*, which have a stage-level meaning, as involving an Event argument. But this connection between *be* and the Event argument may seem troubling in light of the conclusion in §3.2.1 that the overt copula in child English occurs in structures that *lack* an Event argument. Indeed, how can we reconcile the fact that we get a stage-level reading of the predicate in a *make* complement (as in (19b)) with the fact that in a main clause predicative the same predicate is individual-level? In other words, if *be* introduces an Event argument in (19b) (*Mary made John be polite*), and the presence of the Event argument yields a stage-level reading, then why do we not also get a stage-level reading in the main clause predicative *John is polite*, where there is obviously a copula?

We can answer this question by postulating that the bare uninflected copula (*be*) projects an Event argument while the inflected copula (*is*, etc.) does not. Under this assumption, we can account for the fact that the presence of *be* in a *make* complement appears to induce a stage-level reading (in contrast to the *make* complement without *be*, as in (19a)), while the presence of *is* in a main clause predicative does not induce a stage-level reading. Now the question becomes why the morphological form of the copula should cause, or be otherwise linked to, the projection of an Event argument. I believe the most straightforward answer is that the inflected and uninflected copula head different projections. The uninflected copula heads a VP projection, which projects EvP, while the inflected copula is not a V. Instead, the inflected copula is inserted in Infl when finiteness

in the simplest, least complicated way possible. The gist of her argument is that there must be some reason to insert *be* in the *make* complement, otherwise its insertion would be unjustified. One thing that would justify its insertion is the need to shift the aspectual class of the predicate. Thus, since the predicate *polite* is interpreted as a state without the insertion of *be*, then by inserting *be*, the speaker signals that the aspectual class of the predicate is shifted, in this case to an activity predicate. Please see Rothstein (1999: 406ff) for discussion.

nuisance, fool). The predicates that can occur in the active *be* context can also occur in a *make* complement with *be* (cf. §4.2.1).¹⁵

As in the case of *make* complements with and without *be*, the main differences between predicatives with *being* (e.g. (21b)) vs. those without *being* (e.g. (21a)) are: (i) that the predicate in the active *be* construction has a "temporary" meaning, and (ii) that the subject of the active *be* construction has an agentive meaning. Partee (1977) accounts for these differences by claiming that progressive *be* is a thematic verb which assigns an Agent theta-role to its subject and is synonymous with the verb *act* (cf. *John is acting polite*). Her evidence for this claim is the existence of the following contrast:

- (24) a. John is easy to please.
b. It is easy to please John.

- (25) a. John is being easy to please.
b. *It is being easy to please John.

Without progressive *be*, the predicate *easy to please* can take either a thematic subject or a non-thematic one (pleonastic *it*). The classical transformational analysis of "rough-movement" as in (24a-b) is that the lexical subject in (24a) is raised from a lower position in the structure: the underlying position of the subject of (24a) (*John*) is the position it occupies at the surface in (24b) (the object position of *please*). According to the standard raising analysis, raising an argument to matrix subject position is possible only if no theta-role is already assigned to that position. It follows that the subject position in (24)

¹⁵The reverse is not true: some predicates can occur in a *make* complement with *be* that cannot occur in a main clause with *being*, e.g. *ready*:
(i) We made the children be ready.
(ii) *The children are being ready.
In this particular case, I believe the predicate *ready* cannot occur in (ii) because active *be* contexts exclude stage-level predicates; *make* complements do not seem to have this restriction.

- (21) a. John is a nuisance.
(individual-level; he is generally a nuisance)
b. John is being a nuisance.
(stage-level; he is a nuisance at time of utterance, not necessarily a general property)

- (22) a. John is polite.
(individual-level; he is generally polite)
b. John is being polite.
(stage-level; he is acting in a polite way right now, not necessarily at other times)

The active *be* construction is limited to certain behavior-denoting AP and NP predicates; PP predicates and all stage-level predicates are uniformly excluded (e.g. **John is being in the garden/tired*). The subject always has an agentive or volitional interpretation, i.e. the subject is understood as causing or being somehow in control of the behavior denoted by the predicate. To be felicitous, then, the predicate must denote a property that is controllable by the subject, and the subject must be animate or volitional.

- (23) a. *John is being awake.
b. Rodney is being noisy.
c. #The river is being noisy.

As we saw in §2.2.1, many of the adjectival predicates that can occur with progressive *be* belong to Stowell's (1991) class of Mental Property (MP) adjectives.¹⁴ The nominal predicates that can occur in this context are ones having to do with behavior (*jerk*,

¹⁴It is interesting to note that in Spanish and Portuguese, the adjectives that can occur in the active *be* construction always occur with *ser* (not *estar*), and it is *ser* that occurs in progressive when they are used in the active *be* context: *Maria está sendo cruel* 'Maria is being cruel'. Please see §2.3.1 for discussion.

is not assigned a theta-role in the underlying representation (D-structure), and this is why the expletive subject is permitted (in (24b)).

However, the progressive form of this predicate (*being easy to please*) does not allow an expletive subject (cf. (25a-b)). Partee concludes that the verb *be* (*being*) in (25a) assigns an Agent theta role to the subject position, and this is why (25b) is ungrammatical: the subject of (25a) did not raise from a lower position. The result of her argument is that she must postulate two lexical items *be*, one of which assigns no theta-roles and occurs as *is* in the sentence *John is polite*, the other of which assigns an Agent theta-role to the subject and occurs as *being* in the sentence *John is being polite*.^{16,17}

Rothstein (1999) argues against the view (both Partee's and Dowty's) that "active *be*" is a different lexical item (a theta-assigning verb) from the non-progressive copula. The main problem Rothstein cites with the dual verb approach is the "certain inelegance in solving the problem of progressive *be*—both its 'agentivity' effects and its apparent selectional restrictions on adjectival complements—by positing a second verb *be*. There is little supporting evidence for the existence of the homonym." (Rothstein 1999: 360).

Instead of endowing active *be* with theta-assigning capabilities, Rothstein (1999) offers a semantic analysis for the agentive interpretation of the subject. Rothstein argues that it comes from the fact that the progressive operator (Landman 1992) is compatible only with activity or accomplishment predicates (Vendler 1967). She notes that according to Dowty

¹⁶Dowty (1979) gives an analysis of the "active *be*" construction that is similar to Partee's in that he analyzes "active *be*" as a different lexical item from the non-progressive copula. See Rothstein (1999) for discussion.

¹⁷The claim that *be* assigns a theta role to its "subject" (i.e. the pre-copular DP) and its "object" (i.e. the post-copular DP) is sometimes made with respect to the *be* in "equative" or "identificational" constructions. These are constructions such as *Mr. Smith is Mr. Jones*, where the post-copular DP is referential (non-predicative) (see Rapoport 1987, Williams 1983, 1984). The problem of how the post-copular DP gets Case (and a theta role, if it gets a theta role), and the question of whether *be* might reasonably be responsible for its Case (/theta role) are important problems in syntactic theory. However, I will not deal with these constructions in this thesis. Please see Heggie (1988) and Heycock (1994) for discussion.

(1979), subjects of activity predicates normally have an agentive interpretation, and subjects of accomplishment predicates may also have this reading. Thus, progressives should normally have an agentive subject.¹⁸ The source of the agentive reading of the subject in both *make* complements with *be* and active *be* predicates is similar: in both cases the predicate is an activity or accomplishment, and subjects of these kinds of predicates have an agentive reading.¹⁹

The "temporary" or stage-level reading of the predicate in an active *be* construction follows from the fact that the untensed copula (*be* or *being*) projects an Event argument. As argued in §4.2.1, uninflected *be* (and, I would argue, the progressive form *being*) projects an Event argument, but the inflected copula (*is*, etc.) does not.²⁰ Like the bare copula *be*, the participle *being* is itself an untensed form (it does not bear morphosyntactic tense or agreement features), although it occurs in a finite clause.

Going back to the structure of active *be* constructions, I propose that progressive *be* is a V head of a VP projection. *Be(ing)* selects a lexical SC complement and projects E/P, which is the Event argument.

(26) [P Rodney]_i [_i is [AspP [EvP [VP being [SC _i noisy]]]]]]

¹⁸I am not sure the agentivity of subjects in the active *be* construction is quite the same as the agentivity of normal progressives. The subject of *John is sleeping* does not seem to have as strong an agentive meaning as the subject of *John is being obnoxious* (cf. ??*John is deliberately sleeping* vs. *John is deliberately being obnoxious*). I suspect that the agentivity of active *be* subjects has more to do with the combination of the progressive operator (Landman 1992) and the behavior-denoting predicate, i.e. the fact that the predicate denotes a property that could potentially be controlled by the subject. Nevertheless, I leave it now as a semantic restriction on the subject.

¹⁹The need for an agentive subject in a *make* complement with *be* is weaker than in an active *be* construction: there are *make* complements with *be* that lack an agentive reading of the subject (e.g. *We made the children be ready/awake*; cf. footnote 15). These cases involve stage-level predicates, which cannot occur in the active *be* construction.

²⁰It is possible to argue that finite *be* raises from a V head that does not project an Event argument, but this sort of distinction seems to me arbitrary.

EvP is selected by the head of AspP, and I will speculate that the head of AspP is the source of the *-ing* morphology on the copula. But I leave the exact mechanics of how the copula surfaces as *being* unspecified here.

As for the restriction of the predicates in this construction to a subset of (behavior-denoting) individual-level predicates, I assume this is a semantic restriction (as in Rothstein 1999). The subject of the progressive construction has an agentive meaning, as discussed above; thus, only predicates that could plausibly occur with an agentive subject are able to occur here.

Support for the account of uninflected *be* as projecting an Event argument comes from Perception Verb Complements (PVCs).²¹ As we saw in §3.2.1.2, PVCs are AspPs that select a lexical SC. Since only stage-level predicates project to AspP (individual-level predicates do not), PVCs are limited to stage-level predicates. As is expected on my analysis, active *be* predicates can occur in PVCs:

- (27) a. We saw/watched John be a nuisance. (Felser 1999: 43)
 b. I saw John be funny/polite.
 c. *I saw John be in the garden.

²¹Schütze (1997) makes the observation (which he attributes to Alec Marantz) that in Mad Magazine sentences (Akmajian 1984), stage-level predicates can occur much more easily with an overt (uninflected) *be* than individual-level predicates can; the latter are natural only without a copula.

(i) What?? Me (?*be) intelligent??

(ii) What?? Me (be) tired??

Although in (ii) the two variants (with and without *be*) do not have an equivalent meaning—with an overt copula the meaning is “necessarily irrealis” (Schütze 1997: 192)—the fact that stage-level predicates *can* occur with a non-finite copula, while individual-level predicates cannot, is consistent with my claim here that uninflected *be* projects an Event argument. It is consistent because stage-level predicates are typically associated with an Event argument, but individual-level predicates typically are not. Please see Schütze (1997: 192, footnote 8).

The ability of *be*+AP/NP complements to occur in PVCs follows from the fact that uninflected *be* projects an EvP and AspP, and as we saw before (cf. §3.2.1.2), there is evidence that PVCs are AspPs. The ability of only a subset of lexical predicates (certain APs and NPs) to occur in this construction should follow from the same restriction that applies to the active *be* construction, since they appear to be the same predicates (all denoting behaviors).

The predicates that can occur in *make* complements with *be* but not in the active *be* construction (e.g. *ready*, cf. footnotes 15 and 19) are not grammatical in PVCs.

- (28) *I saw John be awake/ready.

Sentences such as (28) are ruled out because if an overt non-finite copula were projected, then there would be two Event arguments projected in the structure (one from the adjectival predicate and one from the uninflected copula). I will assume a grammatical constraint against projecting two Event arguments in the same clause. If we remove *be* from (28) so that there is only one Event argument in the structure (that of the stage-level predicate), the structure is grammatical as in (29).

- (29) I saw John awake/ready.

Before proceeding to the next discussion, I will point out that my argument for a categorial distinction between *is* and *be/being* is distinct from the argument for postulating two verbs *be*. That is, I do not take issue with the view that *be* is the same lexical item in its various constructions (e.g. predicatives, existentials, progressives, etc.; cf. Déchaine 1993, 1994, Heggie 1988, Schütze 2000). The difficulty, however, is that these authors must stipulate that the *inflected* copula raises from V to Infl. There seems to me no way to

demonstrate conclusively that the inflected copula indeed raises from V, as opposed to being inserted in Infl. The evidence for its insertion in Infl, on the other hand, is that the inflected copula lacks an important property of the uninflected copula: that of projecting an Event argument.

Thus, in present tense constructions (at least; I am not sure what to say about future and past tenses) the inflected copula is inserted in Infl—as required by temporal anchoring—and does not project an Event argument (uniformly across constructions). The uninflected copula (*be/being*) heads a VP and projects an Event argument (uniformly across constructions).

Potentially problematic for my claim that *be/being* projects an Event argument (yielding a stage-level reading of the predicate) is the construction in (30), in which simple infinitive and participial clauses with *be* do not force a stage-level reading of the predicate.

(30) [PRO to be a man/PRO being a man] is an advantage in this industry.

(30) contains a nominal predicate with uninflected *be*, but the predicate is not construed as a temporary or "controlled" property (cf. active *be* contexts, discussed above). This difference might warrant a weakening of the above claim that uninflected *be* always projects an Event argument, so that instead uninflected *be* can (but need not) project an Event argument. Alternatively, *be* in (30) does not head a VP projection, but rather is in (non-finite) Infl. Thus, the restriction on whether the copula is associated with an Event argument or not would depend purely on whether the copula occupied a V position (in which case it projects EvP) or Infl (in which case it does not project EvP, regardless of whether Infl is finite or non-finite). These issues should be further investigated in the future.²²

²²I thank Hagit Borer for useful discussion on this point.

4.2.3 Free adjuncts

There is another non-main clause context in English in which *be* (*being*) appears to be optional, yet its presence or absence has an effect on the interpretation of the predicate. This is the context of free adjuncts. In (31) I give an example of a free adjunct containing an eventive main verb (the free adjunct itself is marked by boldface characters.)²³

(31) **Walking home**, he found a dollar. (Stump 1985: 1)

As discussed extensively in Stump (1985), free adjuncts display a semantic alternation that is linked in a direct way to the stage-/individual-level contrast. The alternation can be seen in the pair in (32), (32a) containing a stative verb (*having*; individual-level), and (32b) containing an eventive verb (*standing*; stage-level).²⁴

(32) a. **Having unusually long arms**, John can touch the ceiling.
 b. **Standing on a chair**, John can touch the ceiling. (Stump 1985: 53)

(That the verb *stand* is eventive while *have* is stative can be seen by their respective behavior in a progressive main clause: *John is standing on a chair*; **John is having unusually long arms*.)

²³Free adjuncts differ from absolute constructions in that free adjuncts lack an overt subject. Stump identifies two types of absolute construction: the nominative absolute (ia) and the augmented absolute (ib).
 (i) a. **His father being a sailor**, John knows all about boats. (Stump 1985: 1)
 b. **With the children asleep**, Mary watched TV.
 I will be concerned only with the free adjunct construction, although absolutes display a similar semantic distinction to the one I will discuss in free adjuncts. Please see Stump (1985) for discussion.

²⁴In order to differentiate strong from weak adjuncts, the main clause must contain a modal. This is because the conditional (iF) reading of the weak adjunct is possible only if there is a modal in the main clause.

There is a clear difference in meaning between the free adjuncts in (32a) and (32b), aside from their difference in lexical meaning. (32a) can be paraphrased as "because/since he has unusually long arms, John can touch the ceiling." (32b) could be paraphrased as "if/when he stands on a chair, John can touch the ceiling." (32a) cannot have the 'if' paraphrase. (It is possible for (32b) to have the 'because' paraphrase, but it is much less natural, at least in these examples.) Stump distinguishes these two readings of the free adjuncts by calling the former case a "strong adjunct" (the 'because' reading), and the latter case a "weak adjunct" (the 'if' reading). In a strong adjunct the truth of the adjunct is entailed. In a weak adjunct the truth of the adjunct is not necessarily entailed.

Thus, as shown in (32) above, the stative verb occurs in a strong adjunct, while the eventive verb occurs in a weak adjunct. Stump notes that the distinction between strong and weak adjuncts with stative vs. eventive verbs, respectively, extends to individual- vs. stage-level non-verbal predicates. Thus, (33a), which contains an individual-level predicate, receives a strong reading; (33b), which contains a stage-level predicate, receives a weak reading.

- (33) a. **Being a master of disguise**, Bill would fool anyone. (Stump 1985: 53)
 = because he is a master of disguise...
 b. **In first gear**, the truck might reach the top of that hill. (ibid, 53)
 = if the truck is in first gear...

Additionally, we find the same distinction among stage- and individual-level adjectival predicates.

- (34) a. **Being clever**, John should pass his test.
 = because he is clever...
 b. **Clean-shaven**, John might impress the dean.
 = if he is clean-shaven...

The reader will have noticed that in (33) and (34) the individual-level predicates (*a master of disguises*, *clever*) occur with an overt copula in progressive form (*being*), while the stage-level predicates (*in first gear*, *clean-shaven*) appear without a copula. Interestingly, stage-level predicates can occur with an overt copula and thereby take on a strong reading. Note the contrast between (34b) and (35).

- (35) **Being clean-shaven**, John might impress the dean.
 = because he is clean-shaven...

Thus, it appears that the presence of *being* in these constructions is linked to the availability of the strong ('because') reading of the adjunct.²⁵ However, *being* does not actually turn a stage-level predicate (e.g. *clean-shaven*) into an individual-level predicate. That is, (35) means that "because he is clean-shaven (perhaps today), John might impress the dean." No implication is made about whether the property of being clean-shaven holds more generally, or whether it holds only at the time of utterance. The difference between (34b) and (35) is that (35) does not have a conditional ('if') meaning.

Locatives behave like stage-level adjectives. *Being* may or may not be overt, but its overtness yields a strong adjunct ('because' reading only).

- (36) a. **Being in the dark woods**, John might get lost.
 = because he's in the dark woods, John might get lost
 b. **In the dark woods**, John might get lost.
 = if/when he's in the dark woods, John might get lost

²⁵The progressive copula *being* must be overt with individual-level adjectives. Ungrammaticality results from its absence:

(i) *(Being) intelligent, Mary should pass her test.
 Curiously, *being* may be omitted with a nominal predicate (recall that nominal predicates are individual-level). However, regardless of the presence of *being* in (ii), the adjunct has a strong ('because') reading.
 (ii) (Being) a reknowned scholar, Bill might not speak for such a low fee.

What is the syntactic role of *being* in free adjuncts? I do not have an answer to this question. The *be* in free adjuncts does not resemble, syntactically or semantically, any of the other occurrences of the copula we have seen so far. Its role seems to be somewhat different from the role of *being* in active *be* constructions, since it can occur with stage-level predicates (as in (35)), and it does not induce a volitional or agentive reading of the (implicit) subject. In fact, if we use a predicate that can occur in the active *be* context, we get ambiguity: *being* can be the active *be* kind of *being*, or the free adjunct kind of *being*. There is a clear semantic difference, accordingly: on the active *be* reading, the adjunct has a weak (if) reading and the implicit subject has a volitional interpretation. On the "free adjunct *being*" reading (i.e. *being* is not interpreted as active *be*), the adjunct is strong ('because' reading), and the subject does not have a volitional interpretation. This contrast is seen in the two interpretations offered for (37).

- (37) **Being polite**, John might impress the dean.
 = because he is polite... (free adjunct *being*)
 = if he acts politely... (active *be being*)²⁶

Thus, the *being* in free adjuncts differs from the *being* in the active *be* construction (and also the *be* in a *make* complement): the presence of *being* in free adjuncts does not induce a "temporary" or stage-level reading of the predicate, but rather a strong ('because') reading. Moreover, the occurrence of *being* in free adjuncts is not limited to those adjuncts containing behavior-denoting predicates. The distribution of *being* in free adjuncts also does not resemble the distribution of the finite copula in child English main clauses, for three reasons. One is that free adjuncts are not main clauses and hence are not subject to the

²⁶This reading is coerced by the addition of *by*: *By being polite*, John might impress the dean (Schütze, p.c.); this can only have the active *be* reading.

temporal anchoring requirement; thus the copula is not overt in free adjuncts to satisfy the temporal anchoring requirement. Secondly, free adjunct *be* need not occur with nominal predicates (see footnote 25), and it can optionally occur with stage-level predicates (yielding a strong reading of the adjunct, which I noted earlier is not equivalent to an individual-level reading). Thirdly, overt *be* in child English main clause predicates does not yield an interpretation like that of the 'because' interpretation of strong adjuncts (though, admittedly, it is not clear what this would mean in a main clause). Thus, there is neither a semantic nor a syntactic connection between the *be* of free adjuncts and the *be* of child English predicates.

The role of the copula in free adjuncts remains an open question. It does not appear to introduce an Event argument (since it does not induce a stage-level interpretation of the predicate, in contrast to the copula in the active *be* and *make* complement constructions), and it is not the pronunciation of Infl bound by T_{OP} (since free adjuncts are not main clauses and therefore not subject to the temporal anchoring requirement). Since the syntax of free adjuncts is not well understood, I will leave the analysis of the overt/null *being* alternation in this construction as an unresolved issue.

4.3 African American English

There are two syntactic differences between African American English (AAE) and Standard American English (SAE) that are relevant to our discussion here. One is that in AAE main clause predicates the (finite) copula may be omitted, as shown below in (38). The other difference has to do with the presence of an invariant (non-inflecting) form of *be* in AAE which indicates a habitual property (e.g. *He be tired* 'He is habitually tired'). We will examine each of these differences in turn, paying particular attention to potential similarities between the copula in AAE and in child SAE. I will argue that there is a limited

amount of evidence for the view that the inflected (finite) copula in AAE patterns like the copula in child SAE, and there is evidence *against* the view that invariant *be* in AAE patterns like the copula in child SAE. Instead, I will show that there is evidence that invariant *be* in AAE behaves like the non-finite copula in the adult SAE active *be* and *make* complement constructions, in that it projects an Event argument.

The finite (inflected) copula in AAE (present tense) main clauses is neither uniformly present (as in SAE) nor uniformly absent (as in Russian, cf. §4.1.3). For example, both sentences in the alternation in (38) are fully grammatical in AAE, while SAE requires an overt copula (only (38b) is grammatical in SAE) (see e.g. Labov 1969; Green 1993; Rickford 1999).²⁷

- (38) a. John tired/in the garden/a teacher.
 b. John is/'s tired/in the garden/a teacher.

The optionality of the (inflected) copula is limited to certain contexts: it is not possible with 1sg subjects²⁸, as in (39a), and it cannot be omitted under emphasis (it bears focal stress), in tag questions (Jackson, Ramos et al. 1996), or phrase-finally, as illustrated in (39b-d).²⁹

- (39) a. *I tired/in the garden/a teacher/running.
 b. She *(IS) tall.
 (i.e. *She tall* cannot mean *She IS tall*)
 c. She (is) tall, isn't/ain't/*don't she?
 d. John (is) smarter than Bill think he *(is).

²⁷ Auxiliary *be* shares this property in AAE: *John is/'s running* alternates with *John running*.

²⁸ Note that this is different from child SAE, as there were several occurrences in the data of a 1sg subject followed by a predicative with a null copula (e.g. *I in the kitchen* (Nina 10)).

²⁹ The relevance of the ungrammatical **don't* tag question in (37c) will become clear below.

The fact that the finite copula may be omitted from main clause predicatives suggests (according to my account in Chapter 3) that adult AAE has two options available for satisfying the temporal anchoring requirement. That is, since finiteness is not obligatorily specified in AAE, AAE allows Asp to be bound by Top in order to satisfy the requirement, provided there is an Asp in the structure. If this is the case, we would expect to find similarities between adult AAE and child SAE with respect to the environments in which the copula is omitted.³⁰

There is some evidence that the inflected *be*/null *be* alternation is dependent on syntactic properties (e.g. the grammatical category) of the predicate, as we saw was the case in child SAE. Labov's (1969) study of the speech of African American adolescents in NYC showed that the speakers he studied omitted the copula more often before adjectival or locative predicates than before nominal predicates. Additionally, in Wyatt's (1995) study of AAE-speaking children (all of elementary school age, not toddlers), she found that children used an overt copula most often with nominal predicates (82% overt), less often before adjectival predicates (73% overt), and least often before a locative predicate (65% overt). The fact that the rate of overt *be* is higher with nominal predicates than locative predicates is predicted under my account, although my account predicts no omissions of *be* with nominal predicates. As argued in Chapter 3, nominal predicates do not project AspP; therefore, Infl must be bound by Top to satisfy temporal anchoring, and Infl bound by Top is spelled out

³⁰ In §3.1.2 I hypothesized that Adam's overall lower rate of overt *be*, as compared to that of the other children, might be due to the fact that Adam is African American and might have had a certain amount of AAE input (although Brown 1973 claims he had only SAE input). Given that AAE permits omission of the finite copula in main clause predicatives (including in nominal predicatives), it is possible that AAE input might cause a child to produce lower rates of overt *be*. While I suspect this might be a factor in Adam's production data, there is reason to be cautious: Adam produced a fair number of null-*be* predicatives with 1sg subjects. This is an environment in which the finite copula cannot be omitted in adult AAE. Furthermore, without knowing how much of Adam's input was indeed AAE, it is difficult to know conclusively how much it might have been a factor in his production of the copula.

as a finite copula. Locatives do project to AspP, and apparently AAE allows Top to bind Asp in order to satisfy temporal anchoring; thus Infl need not be bound by Top and so the copula does not need to occur overtly in Infl.

However, there are a couple of caveats that should be considered. One problem in interpreting both Labov's and Wyatt's results is that they do not distinguish different types of adjectival predicates. That is, they do not specify the rate of overt *be* with individual-level vs. stage-level adjectives; all adjectival predicates are grouped together. I am not aware at present of any study of AAE that specifically makes this distinction among adjectives.³¹

Additionally, it is important to note that in both Labov's and Wyatt's studies, the asymmetry between nominal predicates on the one hand, and adjectival/locative predicates on the other, is quite small. In Labov's study, there was a difference of as little as 4% for the Jets,³² between the rate of overt *be* before nominal vs. adjectival predicates; the greatest difference was a 25% difference between the rate of overt *be* before nominal vs. adjectival predicates for the Thunderbirds (for comparison, the SAE-speaking children whose transcripts I analyzed in Chapter 3 showed about a 50% difference between the overtness of the copula in nominal vs. locative predicates).

It is also interesting to note that the difference between the rate of overt *be* before adjectival and locative predicates varied among groups of speakers, so that the Jets, for example, used an overt copula more often before adjectival predicates than locative predicates, but the Thunderbirds used an overt copula more often before locative predicates than adjectival predicates. Variation of this sort is also found in comparisons of different dialects of AAE, many stemming from English Based Creoles. For example, in Jamaican

³¹It is noteworthy, however, that Wyatt's finding (that the rate of overt *be* with adjectives is intermediate between the rates with nominal and locative predicates) is consistent with my analysis.

³²Labov studied the speech of members of several adolescent gangs in the New York City area; among these gangs were the Jets and the Thunderbirds.

and Gullah a *zero* copula is much more common before an adjectival predicate (66%, 62%) than before a locative predicate (17%, 22%), but in Samaná English and Liberian Settler English, a zero copula is favored before a locative predicate, as compared to an adjectival predicate (Walker 2000). In still other dialects, e.g. Trinidad Creole, the finite copula appears only with nominal predicates; the copula is always null with *both* adjectival and locative predicates (Youssef 1994).

Thus, there is suggestive evidence that omission of the finite copula in AAE is similar in its nature and distribution to omission of the finite copula in child SAE (i.e. overall, more cases of an overt copula with nominal predicates, fewer cases of an overt copula with adjectival and/or locative predicates). However, the distinction among predicates in terms of the overtness of the copula is variable (across groups of speakers of a dialect and across dialects), and overall, it is a much weaker effect than what I found in the speech of SAE-acquiring children. Therefore, I leave the distribution of the inflected (finite) copula in AAE as an open question and turn instead to the issue of the uninflected, or invariant form of the copula.

Recall that the second relevant difference between the copula in AAE and in SAE is that AAE has an invariant form of *be*. By invariant, I mean that it does not inflect for person, number or tense agreement. An example is given in (40).

(40) *I/you/she/we/they be tired.*

Invariant *be* is compatible with all subject types (all personal pronouns, proper nouns and Det+N subjects) and all predicate types (NP, AP, PP and VP (progressive) predicates). It occupies a different position in the structure than inflected *be*, as shown in (41) (Green 1993; Jackson, Ramos et al. 1996). Green (1993) argues that invariant *be* occupies the same position as main verbs in the structure, while inflected *be* occurs higher in

the structure. This can be seen in the relative positions of invariant and inflected *be* with respect to negation and tag question formation. The position of the main verb *like* in these constructions is given for comparison.

- (41) a. John be tired, don't/*isn't/*ain't he?
 b. She (is) tall, isn't/ain't/*don't she? [repeated from (38c)]
 c. John like cake, don't/*isn't/*ain't he?
- (42) a. John don't be/*isn't/*ain't tired. (with the invariant *be* meaning)
 b. John isn't/ain't/*don't be tired. (with normal predicative meaning)
 c. John don't like cake.

The fact that invariant *be* occurs with *don't* negation and with *don't* in tag questions (like main verbs, but unlike inflected *be*) supports Green's claim that invariant *be* occupies a lower position than inflected *be*.

Two other differences between invariant and inflected *be* are (i) that invariant *be* yields a particular aspectual meaning (as alluded to above, cf. (43a-b)), and (ii) that it does not have a null variant (*John *(be) tired*; cf. *John (is) tired*). The meaning that invariant *be* yields is that the state or event denoted by the predicate holds habitually of the subject (Fasold 1969, Green 1993, 2000). It cannot be used to describe a punctual event or momentary state if the event or state is not also iterated.³³

- (43) a. John be tired.
 = John is habitually tired, is tired all the time
 ≠ John is tired right now (and not necessarily at other times)

³³ It is worth noting that Adam (Brown 1973) produced a slightly higher rate of uninflected *be* than the other children examined in Chapter 3 (see Table 3.5), and some of his uses of uninflected *be* appeared to have a 'habitual' meaning, as in (i) and (ii).
 (i) *ADA: Robin always be naughty # when he break pens. (Adam 28)
 (ii) *ADA: because Indians always be bad. (Adam 28)
 However, there were too few of these sorts of utterances to know whether Adam was truly producing the invariant *be* of AAE.

- b. John (is/s/0) tired.
 = John is tired right now.
 ≠ John is habitually tired, is tired all the time

This meaning of invariant *be* might be interpreted to be that of individual-levelhood of the predicate, if the habitual meaning of the predicate with invariant *be* is seen as denoting a "more permanent" property than in the non-habitual case. However, Green (2000) argues that the opposite is true: she argues that predicates with invariant *be* are stage-level. The Event variable of the (stage-level) predicate is bound by a Habitual operator (HAB), yielding the "habitual" meaning. Thus, in (43a) the stage-level predicate *tired* introduces a Davidsonian event variable, which is bound by the HAB operator. The sentence thus means that John is tired on many occasions, not that he is an inherently tired person.

Invariant *be* occurs not only with stage-level predicates, but also with individual-level predicates. In this case, Green argues, it coerces the predicate into a stage-level reading; in other words, it introduces an Event argument. Coercion of a normally individual-level predicate into a stage-level interpretation is found also in SAE main clauses (this was discussed briefly in §2.1.2). That individual-level predicates in SAE can be coerced to have stage-level readings is shown in (44).

- (44) John was brilliant in the morning, but an idiot by the afternoon.

The sentence in (44) must mean either that John was 'acting in a brilliant way' in the morning, and not in the afternoon, or that John's brilliance is something that can come and go (e.g. if he took intelligence-boosting drugs that then wore off). In either case, the normally individual-level property *brilliant* is forced to take a stage-level reading.³⁴

³⁴The fact that it is possible to coerce an individual-level predicate to have a stage-level reading is evidence that the stage- vs. individual-level meaning arises through the projection of the Event argument. Thus, if a

Coercion by invariant *be* works in the same way as coercion in SAE. In (44), the individual-level predicate *know* occurs in a context that involves the projection of EvP/AspP (and presumably the HAB operator, thus differing slightly from SAE). Given the syntactic context, *know* is forced to mean 'demonstrate knowledge,' rather than the more canonical 'have knowledge.'

- (45) Sue *be* knowing that song.
(Green's (29a))

According to Green, (45) means that on various occasions (some arbitrary number of occasions greater than 1), Sue demonstrates in some capacity that she knows the particular song. The sentence cannot mean that Sue permanently knows the song, even though we assume that Sue's knowledge of the song is present even on occasions when she is not demonstrating the knowledge (i.e. her "permanent" knowledge of the song is implied, but not asserted, by (45)). That (45) is not simply a main clause with progressive aspect is shown by the fact that the inflected *be*, or its null variant, cannot occur in this context.

- (46) *Sue (is/Ø) knowing that song.

The fact that invariant *be* in AAE introduces an Event argument in the structure supports the argument made in §4.2 that non-finite *be* can project an Event argument, while finite *be* does not.

predicate such as *brilliant* occurs in a syntactic context that involves the projection of EvP/AspP, then *brilliant* is understood to refer to brilliant behavior, or a demonstration of brilliance. See Chapter 5 (Conclusions) for more discussion.

In this chapter, we examined the consequences of the analysis given in Chapter 3 for various adult languages and dialects. We looked again at some of the languages discussed in Chapter 2 (§2.3) (Spanish, Portuguese and Hebrew), which were seen to mark a distinction in the form of the copula depending on the type of property denoted by the predicate. We showed here that the analysis given in Chapter 3 of the overt/null copula distinction in child (standard) English can account for the alternations in the form of the copula in adult Spanish, Portuguese and Hebrew in a straightforward way. In the case of Spanish and Portuguese, predicates that occur with *estar* (stage-level predicates) project an Event argument and are associated with an AspP, while predicates with *ser* are purely lexical (no EvP/AspP is projected). *Ser* and *estar* differ from one another in terms of selectional properties. In the case of Hebrew, predicates that occur with a null copula were argued to project an Event argument (these were predicates that denoted non-inherent or non-definitional properties, hence properties that did not necessarily hold). I argued, further, that these predicates are associated with the projection of AspP and that Asp is available for binding by *Top* to satisfy the temporal anchoring requirement, as in child English.

Furthermore, Russian past tense predicates were discussed. It was shown that the Russian alternation between Nominative and Instrumental case marking on the predicate could be accounted for in terms of the structural alternation (between "temporary" and "permanent" properties) argued for in English, Hebrew, and the other languages seen so far: Instrumental case is associated with the projection of AspP (and corresponds to a "temporary" or non-inherent meaning), while Nominative case is associated with a purely lexical predicate (and corresponds to a "permanent" or inherent meaning).

In addition to reexamining non-English adult languages, we also looked at syntactic environments in adult standard English which allow omission of the copula (in particular,

the active *be* construction and *make* complements with *be*). Unlike the environments in which the copula is omitted in child English (and Hebrew), the relevant adult standard English constructions are non-finite embedded clauses. Thus, when the copula is overt in these constructions, it is always in its uninflected form (*be*, *being*), not its inflected form (*is*, etc.). There is a semantic difference between overt-*be* and null-*be* cases in these constructions: overt *be* yields a stage-level reading, null *be* yields an individual-level reading. I argued that this semantic difference could be accounted for by analyzing the uninflected and inflected forms of the copula as different syntactic heads. The uninflected copula is a V that projects an Event argument, while the inflected copula is inserted in Infl (when Infl is bound by Top). Thus, the inflected copula is not a V head at all.

In addition to the active *be* and *make* complement constructions, a third type of non-finite clause was discussed in which the copula appears to be optional. Free adjuncts were shown to present a potential counterexample to my claim that uninflected *be* projects an Event argument. In other words, the presence of *be* in a free adjunct does not induce a stage-level meaning of the predicate. However, it was also shown that the presence/absence of *be* in free adjuncts does not correlate well with the stage-/individual-level alternation. Thus, although an account of *be* in free adjuncts was not provided, it was suggested that it does not truly present a problem for my analysis.

Finally, we examined the pattern of copula omission in African American English (AAE), a dialect which allows omission of the copula in main clause contexts, as in Hebrew. The omission pattern of the inflected copula in AAE was not clear enough to tell conclusively whether it conforms to the same pattern we saw in child standard American English (SAE). That is, although speakers of AAE are reported to use an overt copula somewhat more often with nominal predicates than locative predicates, the difference in overt rate of the copula was fairly small and variable across groups of speakers.

Furthermore, it is not indicated in the literature whether there is a difference among stage- and individual-level adjectives in the overtness of the copula.

While the distribution of the inflected copula in AAE is inconclusive, we saw that there is an uninflected, or invariant copula (*be*) that occurs in main clauses and yields a habitual meaning of the predicate.³⁵ Here I followed Green (2000) who associates invariant *be* with the projection of an Event argument (i.e. it forces the predicate to be stage-level). The Event argument itself is bound by the Habitual operator (HAB), deriving the habitual meaning. The invariant *be* of AAE and the uninflected *be* in SAE active *be* and *make* complement contexts are similar in that they both project an Event argument; the inflected copula of both AAE and SAE does not project such an argument. Rather, in both dialects it is inserted in Infl when Infl is bound by Top.

³⁵It is true that just because invariant *be* is invariant (i.e. does not inflect for person/number in the subject), it does not necessarily follow that it is non-finite. However, given its behavior with respect to negation and tag questions, I take it to clearly head a VP, unlike the finite (inflected) copula. In this sense, it is similar to the (clearly non-finite) *be* in adult SAE non-main clause contexts (discussed in §4.2).

Chapter 5

Conclusions

was argued to be the presence vs. absence of AspP and EvP in the structure, and support for this syntactic difference was provided from adult English, Spanish, Portuguese and Russian.

The two components to my account are rooted in two important domains of research in linguistic theory: the syntax and semantics of the stage-/individual-level distinction, and the syntax and semantics of Tense and Aspect. Given the large amount of research these issues have generated and the number of unanswered questions that arise from them, the present work naturally leaves many problems unsolved. Here I will outline some of the theoretical and empirical questions that remain to be answered.

5.1 Remaining Theoretical Questions

One issue that has been discussed only indirectly is the problem of determining what role our world knowledge plays in giving rise to, and in our understanding of, the "permanent" vs. "temporary" meanings of individual- and stage-level predicates, respectively. As noted in Chapter 1, permanence and temporariness are properties of objects, states or events in the world, not of linguistic objects (predicates). Jäger (1999) argues, in fact, that the "permanent" vs. "temporary" meanings of individual- and stage-level predicates come only from our world knowledge and do not derive from the structures of the respective predicates. While there is surely an important connection between our semantic knowledge of the meanings of predicates and knowledge about the properties in the world they denote, I do not subscribe to Jäger's view.

Relying on world knowledge alone will not give us a complete and unambiguous division between "permanent" and "temporary" properties, neither a linguistic division nor a non-linguistic (real-world) division. There is no absolute length of time that serves as a cutoff point, on one side of which are grouped stage-level predicates, and on the other side individual-level predicates. Stump (1985) notes that "[u]ltimately, the question of when a

As set out in the first chapter, the main purpose of this dissertation was to account for the pattern of production and omission of the copula by young children acquiring English. Toward this end, I posed two main questions, summarized here:

1. Why do children's main clauses sometimes contain a null copula, as in *I in the kitchen*?
2. Why do children produce an overt copula with individual-level predicates (e.g. *He's a dog*), and why do children omit the copula with stage-level predicates?

I have offered an answer to the first question in terms of the formal requirement of temporal anchoring, i.e. the anchoring of the temporal reference of a main clause to the discourse. When the Temporal Operator (T_{OP}) binds the head Infl, the clause is finite (in main clause predicative constructions, finite Infl spells out as an inflected copula); when T_{OP} binds Asp, the clause is not finite (hence there is no copula: non-finite Infl has no phonetic content in main clauses). I have hypothesized that this second option for temporal anchoring (T_{OP} binding Asp) is grammatical in child English but not in adult English. Support for the existence of this second option was provided from adult Hebrew.

The answer offered here to the second question turns on the argument for a syntactic difference between stage- and individual-level predicates. This syntactic difference

property ceases to be an accidental property of certain objects and becomes an essential property of the kind they realize is epistemological in nature, and thus one which the grammar of English should not be expected to answer," (Stump 1985: 194).

A similar problem arises in the nominal domain with respect to mass and count nouns. Mass nouns denote things that allow a certain amount of "stuff" to be subtracted, while preserving the identity of the object in question. For example, a sufficient number of grains of sand will give you "sand." But there is no specific number of grains required to yield the mass, "sand," and likewise no specific number that must be taken away before you are left not with "sand," but with countable "grains of sand." Another linguistic distinction whose criterion is tied to world knowledge is the distinction between unaccusative and unergative verbs. This distinction is most visible in languages that distinguish the two sets in terms of auxiliary selection. The broad semantic property of unaccusative verbs is that they tend to be those verbs whose meanings involve directional motion. But as noted in §2.3, languages vary in the particular set of verbs that count as unaccusative (e.g. the verb meaning 'to grow' is unergative in French—it takes the auxiliary 'have'—but unaccusative in Italian—it takes the auxiliary 'be').

In each of these domains, certain real-world oppositions are mapped onto linguistic oppositions in grammar. This mapping is language-specific and does not arise from any logical necessity. The language-specific nature of the mapping suggests an interesting problem for learnability: how does a language learner know, without having heard all of the possible stage-level or individual-level predicates (or all of the mass and count nouns, or all of the unergative and unaccusative verbs) how the ambient language draws its linguistic distinction between "permanent" and "temporary" properties? In some cases, the distinction can be made on the basis of lexical category (e.g. in English, predicate NPs are uniformly banned from certain environments, e.g. perception verb complements, while locative PPs are uniformly grammatical there), but in other cases lexical category is insufficient (recall the

variation among adjectives). This is an interesting problem which should be investigated in the future.

I have not answered the question of exactly how our world knowledge plays into the grammatical distinction among "permanent" and "temporary" properties, but I have argued that the "permanent" and "temporary" meanings of *predicates* arise through the absence vs. presence (respectively) of the Event argument. Support for the view that the permanent/temporary meaning of predicates is (at least in part) linked to structural differences among predicates is that individual-level predicates can often be "coerced" into having a stage-level reading, as discussed in Chapter 4 (I am not sure whether this works in both directions in English or not—at the very least, it seems much easier to coerce a predicate from individual- to stage-level). Thus (1a) is individual-level, but the same lexical predicate occurring in (1b) takes on a stage-level meaning.

- (1) a. John is tall.
b. John is tall wearing those boots.

The fact that predicates can be coerced (at least in the direction of individual → stage) suggests either that there are multiple lexical items for each predicate (e.g. *tall*) that have different (temporary vs. permanent) meanings, or that something happens to the structure of (1b) (and, as argued in Chapter 4, in the case of active *be* contexts and complements of *make*) to cause the meaning of the predicate to be altered. Although I have not provided any evidence against the former solution (multiple lexical items), the latter seems conceptually more appealing, in particular since all other aspects of the predicate's meaning remain the same.

The issue of coercion of predicates to take on stage- or individual-level meanings (contrary to the predicate's natural tendency) raises a further problem that has not been

solved here. In particular, individual-level predicates can occur in certain grammatical contexts and thereby be forced to have a stage-level meaning. Such is the case in (1b) above, as well as in (2).

- (2) a. Zoe is particularly cute this morning.
(cf. Zoe is cute)
b. This suitcase is heavy, but once we unpack it it will weigh almost nothing.
(cf. This rock is heavy)
c. When the Wonder Twins are human, they lack their special super-powers.
(cf. John is human)

But none of these individual-level predicates, shown to be "coercible" to have temporary meanings in (2), can occur in the complement of a perception verb.

- (3) a. *I saw John tall, wearing those boots.
b. *I saw Zoe particularly cute this morning.
c. *I felt this suitcase heavy when it was full.
d. *I saw the Wonder Twins human.

If perception verb complements take stage-level predicates, and if the predicates in (1-3) can be forced to occur in the stage-level contexts (with corresponding "temporary" meaning) in (1b) and (2a-c), why can't they occur in the context in (3)? Part of the answer may be linked to peculiar restrictions on perception verb complements. As mentioned in §3.2.3.1, there are certain adjectives that seem stage-level (i.e. they pass various other tests for stage-levelhood; see Chapter 2), yet they cannot occur in this context, e.g. *available*. This discrepancy between the different tests for stage-levelhood might indicate that some of these tests (e.g. the perception verb complement test) are actually testing for something else that happens to resemble closely the stage-/individual-level distinction. Or, stage-levelhood might be a

necessary but not sufficient condition for occurring in a perception verb complement. This matter is left open here.

Another theoretical issue that deserves some consideration is why the child English grammar starts out allowing T_{OP} to bind Asp, rather than starting with the adult English requirement that it always bind Infl. Since my account is not based on the idea that the child's grammar develops by going from a (structurally) more impoverished state to a richer state (i.e. I argue that the child's grammar contains all the functional projections of the adult grammar), it is not clear why the child's initial setting is different from the adult setting in the first place. This question is quite puzzling, in particular because the binding relation between T_{OP} and Asp is more distant than the relation between T_{OP} and Infl (Infl is higher in the structure). Thus, one might expect the default setting, or null hypothesis, to involve a more local binding relation (T_{OP} binding Infl).¹

Although I do not have a solution to this problem at present, the fact that children's grammar employs the option of anchoring Asp rather than Infl might be related to the view that children develop Aspect in their grammars before Tense. This view is known as the "Aspect First" hypothesis (see Wagner 1998 for a thorough summary of relevant work). The main idea is that knowledge of Aspect develops prior to knowledge of Tense, so that before children develop knowledge of Tense, they use Tense morphology to encode aspectual distinctions (e.g. completed vs. not completed, telic vs. atelic; see Shirai & Anderson 1995, Antinucci & Miller 1976, Bickerton 1981, Bloom 1980 and references cited in Wagner (1998)).

There may be only a loose connection between my account and the Aspect First hypothesis, and I hesitate to make the claim that my analysis supports this hypothesis. For example, Wagner defines this hypothesis as stating that children use tense and/or

¹ I am grateful to Ed Stabler for valuable discussion on this point.

grammatical aspect morphology to mark lexical aspect distinctions (in particular, telic vs. atelic predicates). But since predicative expressions do not carry lexical aspect, this particular conception of the hypothesis is not relevant to the present study. Moreover, my account explicitly claims that children project TP (/IP) during the stage at which they omit the copula. Thus, my account does not suggest that children do not "know" grammatical tense at this stage. Nevertheless, my account shares with the Aspect First hypothesis the notion that there is a certain primacy of Aspect with respect to Tense. It is certainly worth exploring in more detail whether this sort of approach might explain why child English permits T_{OP} to bind Asp as the initial setting.

5.2 Remaining Empirical Questions

One of the first orders of business in the empirical domain is to establish whether the pattern of copula omission found in the data of four of the children examined here is a more widespread phenomenon. Spontaneous speech from several other children could be analyzed to see if the same patterns show up in their speech as well. Examination of further spontaneous speech would tell us how widespread is the pattern of finding an overt copula with individual-level predicates and a null copula with stage-level predicates, but there are certain questions pertaining to the basic result that can only be answered through experimentation.

One of the questions that requires an experimental probe concerns the precise way in which the grammar of child English draws the grammatical line between stage- and individual-level predicates. The children whose speech was examined here produced only "permanent" NP predicates (typically labels for objects) and "temporary" locative PP predicates (typically the locations of toys, people, and other movable or mobile objects). Although NP predicates tend to denote relatively stable or long-term properties, there are

some NP predicates that denote temporary or short-term properties (e.g. *fugitive*, *contestant*, *nuisance*, *neighbor*). Likewise, some locations may be long-term or permanent (as in the case of geographical locations); Spanish treats the locations of events as individual-level predicates. It is not known on the basis of the spontaneous speech data discussed here whether children would tend to use an overt or a null copula with "temporary" NP predicates or "permanent" PP predicates or the locations of events. Controlled contexts in which children were led to produce predicates containing "temporary" NP and "permanent" PP predicates would shed light on this question.

Another aspect of the spontaneous speech data that warrants some experimental examination is children's production of the copula with AP predicates. Unlike their robust distinction between NP and PP predicates in the overtness of the copula, children showed greater variability (one child, Adam, showed no distinction among AP predicates) and overall a weaker distinction among adjectives. Using controlled prompts that target particular sorts of adjectives (size, color, shape, temperatures, emotions, etc.) used in connection with different sorts of objects (e.g. things that change size or color vs. things that don't change size or color) might elucidate the criteria by which children discriminate stage-level from individual-level adjectives.

Given the results on child English discussed here (modulo the caveats outlined above), it would be informative to explore production and omission of the copula in other child languages. For example, my findings for English would seem to predict that Spanish-speaking children should omit *estar* but not *ser*, since *estar* occurs with stage-level predicates and this is the environment in which English-speaking children omit the copula. A brief search of children's predicative utterances in the Spanish files on the CHILDES database (Linaza corpus) suggests that this prediction is not borne out.² Spanish-speaking

²I thank John Grimstead for assistance with checking the child Spanish data.

children produce very few predicates in the files examined, but when they do produce them, they almost never omit either *ser* or *estar*. Instead they produce both, correctly inflected, in main clause predicates.

However, the Spanish child data do not present an immediate problem. The omission of *be* in child English is linked to the fact that English-speaking children allow non-finite main clauses (because child English allows temporal anchoring to be satisfied in a manner other than the binding of Infl, hence a main clause can be temporally anchored without being finite), and Spanish-speaking children virtually never produce non-finite main verbs (Grinstead 1994). Thus, I do not consider Spanish-speaking children's lack of omitted copulas to present counterevidence to my analysis.

Like children acquiring Spanish, Italian-speaking children produce almost no non-finite main verbs [they do so less than 10% of the time; \Guasti, 1994 #62; Schaeffer, 1990 #61] and only rarely omit the copula in predicates (Caponigro, to appear). As discussed by Caponigro, only two out of the four children examined omit *essere* 'be' in nominal and adjectival predicates, and those two children omitted it rarely.³ Italian-speaking children also almost never omit *essere* with locatives. Only one child (Rafaello) omitted *essere* in locatives, and he did so only 22% of the time (hence: locative *essere* is overt 78% of the time; recall that for English-speaking children *be* is overt in locatives only about 21% of the time). In contrast to copular *essere* in predicative constructions, Italian-speaking children do sometimes omit *essere* as an auxiliary verb occurring with a participle (e.g. *(é) andato* '(is gone)'). Omission of auxiliary *essere* in child Italian is also reported in Lyon (1997). The omission of *essere* in participial constructions in child Italian is suggestive of a connection between omitted *essere* and the presence of Aspect in the structure, since past participles

have perfective Aspect. However, the depth of this connection should be investigated more thoroughly.

One final empirical issue I will mention is the contraction of the copula in the input, and the potential connection between contraction in the input (adult language) and omission of the copula in child language. The account offered here does not predict any connection between the two, but this must be checked. It is hoped that the particular pattern of copula omission in child English discussed in Chapter 3 provides convincing evidence that omission of the copula is due to syntactic properties of the predicate.

Undoubtedly, there are many other problems and questions that arise from the topics discussed in this dissertation. I hope that the account provided here of the development of the copula in child language can serve as a starting point for future work in this domain. I also hope that the work discussed here can contribute in some way to our understanding of the development of functional heads in child grammar, and the syntax and semantics of copular constructions in both child and adult grammar.

³Caponigro did not separate nominal from adjectival predicates in the Italian data.

Appendix A
Ages and MLUs of Children Studied

Table A4. Adam (Brown 1973)

file	10	15	18	20	25	27	28	30
age	2;7	2;10	2;11	3;0.10	3;2	3;3	3;4	3;5
MLU	2.23	2.73	3.12	3.53	3.87	4.05	4.12	4.20

Table A1. Nina (Suppes 1973)¹

file	7	9	10	11	12	13	14	15	16	20
age	2;0.24	2;1.6	2;1.15	2;1.22	2;1.29	2;2.6	2;2.12	2;2.28	2;3.5	2;4.6
MLU	2.79	2.41	2.83	3.29	3.13	3.43	3.39	3.37	4.27	3.35

Table A2. Peter (Bloom 1970)

file	06	07	08	09	10	11
age	2;0.10	2;1.0	2;1.18	2;2.13	2;3.3	2;3.24
MLU	2.26	2.83	2.78	3.33	3.19	2.65

Table A3. Naomi (Sachs 1983)

file	35-42	43-49	50-51	52-56	57-60	61-68
age	2;0.2-	2;1.0-	2;2.0-	2;3.0-	2;4.4-	2;5.3-
MLU	2;0.28	2;1.25	2;2.25	2;3.29	2;4.30	2;7.16
	2.61	2.33	3.10	3.22	3.62	3.66

Table A5. Eve (Brown 1973)

file	01	05	08	09	10	13	15	16	17	18	19	20
age	1;6	1;8	1;9	1;10	1;10	2;0	2;1	2;1	2;2	2;2	2;3	2;3
MLU	1.43	2.42	2.70	3.05	3.24	3.54	4.16	3.83	4.0	3.94	4.57	3.7

Table A6. Total Number of Utterances, Coded Utterances and *be* Utterances, Per Child²

child	Number of utterances (total)	Number of utterances (coded)	Number of <i>be</i> utterances	% <i>be</i> utterances out of total	% <i>be</i> utterances out of coded utterances
Nina	6700	1658	882	135	52.45
Peter	8028	1804	785	9.8%	43.5%
Naomi	5392	984	555	10.3%	56.4%
Eve	7989	2147	996	12.5%	46.4%
Adam	7570	1705	924	12.2%	54.2%
total n/avg. %	35679	8298	4142	11.56% ³	50.58% ⁴

² For Nina, Eve and Adam, the figures in Table A6 include those files that were coded but later excluded from the analysis. (See grayed boxes in Tables A1, A4 and A5.)

³Standard deviation = 1.305

⁴Standard deviation = 5.429

¹ Shaded squares were coded but were not included in the analysis in Chapter 3. See §3.1.1.

Appendix B
Rates of Overt *be*

The second column in Table A6 gives the total number of utterances produced by each child in all of the coded files. The number was reached by using the grep command to retrieve all occurrences of the child's 3-letter code for his or her speaker tier (e.g. *NIN, *ADA, etc.). This count excludes utterances consisting only of the string 'xxx', which in CHAT format indicates unintelligibility, and utterances consisting of '0', indicating a speech act or gesture, which is described on a dependent tier.

The third column (number of coded utterances) includes all copular constructions, as well as all utterances that contained a (overt or implicit) third person singular subject and an inflected or uninflected main verb. These utterances were coded so that a comparison could be made between children's rate of overtiness in the copula (argued to indicate a finite clause), and children's finiteness in main verbs. This comparison is given in Table 3.9 in Chapter 3.

The fourth column, in which the number of *be* utterances is given, includes all of the following: existentials, deictic expressions, nominal, adjectival and locative predicatives, and progressives. These are all declarative constructions in which the verb *be* should occur in adult English. The number in this column represents the number of these utterances that either contained an overt copula or lacked an overt copula.

The fifth and sixth columns provide the percentage out of the coded and total utterances (respectively) that were copular constructions. That is, about 12% of all utterances (declaratives, interrogatives, imperatives, non-3sg subject expressions, etc.) were copular constructions, and about 50% of all coded utterances (copular constructions plus 3sg-subject declaratives with a main verb) were copular expressions.

Table B1. Nina

Nina: file	nominal	locative	IL adjective	SL adjective
7	76.7% (30)	13% (16)	42.9% (7)	(0)
9	74.3% (35)	4.5% (22)	66.7% (3)	100% (3)
10	82.2% (12)	11.8% (34)	66.7% (9)	20% (5)
11	66.7% (15)	7.1% (14)	100% (3)	20% (5)
12	75% (24)	25% (16)	(0)	66.7% (3)
13	73.5% (34)	23.1% (13)	100% (2)	40.9% (22)
average	80.7%	23.8%	75.2%	49.5%

Table B2. Peter

Peter: file	nominal	locative	IL adjective	SL adjective
6	81.8% (22)	13.8% (29)	100% (1)	22% (18)
7	63.3% (30)	4.5% (22)	25% (4)	22% (9)
8	75% (12)	18.2% (11)	0% (4)	0% (5)
9	85.7% (98)	30.8% (13)	100% (3)	53.8% (13)
10	90.2% (122)	50% (8)	75% (12)	82.6% (23)
11	91.5% (117)	42.9% (7)	60% (5)	57.9% (19)
average	81.2%	26.7%	60%	39.8%

Table B3. Naomi

Naomi: age	nominal	locative	IL adjective	SL adjective
2:0	71.4% (14)	40% (5)	100% (3)	63.6% (11)
2:1	71.4% (7)	28.6% (7)	85.7% (7)	12.5% (16)
2:2	100% (2)	50% (2)	(0)	25% (4)
2:3	100% (4)	60% (5)	(0)	75% (8)
2:4	100% (7)	16.7% (6)	100% (2)	69.2% (13)
2:5	95.6% (68)	33.3% (6)	88.2% (17)	66.7% (12)
average	89.7%	38.1%	93.5%	52%

Table B4. Adam

Adam: file	nominal	locative	IL adjective	SL adjective
10	30.4% (23)	0% (1)	50% (2)	45.5% (11)
15	28.6% (14)	0% (2)	33.3% (6)	45.5% (11)
18	32.4% (37)	0% (2)	11% (9)	25% (8)
20	32.7% (55)	14.3% (7)	16.7% (6)	16.7% (12)
25	41% (39)	20% (5)	50% (4)	37.5% (16)
27	67.4% (46)	0% (4)	50% (2)	50% (10)
28	78.7% (89)	0% (5)	100% (6)	83.3% (12)
average	44.4%	4.9%	44.4%	43.3%

Table B5. Eve

Eve: file	nominal	locative
15	34.8% (23)	83.3% (6)
16	26.1% (23)	66.7% (3)
17	29.7% (37)	33.3% (12)
18	29.7% (37)	50% (2)
19	42.6% (61)	28.6% (7)
20	76% (25)	66.7% (3)
average	39.8%	54.8%

Appendix C

Finiteness on Main Verbs

Table C1. Nina

file	07	09	10	11	12	13	total/avg
finite	13	0	4	3	2	3	56
RI	29	8	27	34	34	54	282
%finite	31%	0%	13%	8%	6%	5%	14.81%

Table C2. Peter

file	6	7	8	9	10	11	total/avg
finite	12	19	26	51	55	15	178
RI	27	27	11	24	21	7	117
%finite	30.77%	41.3%	70.3%	66.7%	72.4%	66.7%	58.48%

Table C3. Naomi

age	2:0	2:1	2:2	2:3	2:4	2:5	total/avg
finite	4	10	5	3	12	27	61
RI	11	24	3	3	1	7	49
%finite	26.67%	29.41%	62.50%	50.00%	92.31%	79.41%	56.72%

Table C4. Adam

file	10	15	18	20	25	27	28	total/avg
finite	18	6	6	7	5	12	9	63
RI	48	8	16	4	11	7	12	106
%finite	27.27%	42.86%	27.27%	63.64%	31.25%	63.16%	42.86%	42.61%

Table C5. Eve

file	15	16	17	18	19	20	total/avg
finites	8	7	12	11	9	1	48
RI	7	6	14	4	2	1	34
%finites	53.33%	53.85%	46.15%	73.33%	81.82%	50.00%	59.75%

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