The development of the copula in Child English

The lightness of be

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The dissertation summarized here provides an account of the fact that young children acquiring English (around age 2) often produce utterances like (1), in which they omit a form of the copula, be.

(1) I 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 conforms to a systematic pattern (it is neither across the board, nor haphazard). In particular, children omit the copula far less frequently in utterances like (2).

(2) He's a dog.

The difference between the constructions in (1) and (2) can be characterized in terms of the well-known semantic stage-level/individual-level contrast. That is, a location such as 'in the kitchen' denotes a stage-level property of the subject; a predicate such as 'a dog' denotes an individual-level property of the subject. I argue for a syntactic difference between stage- and individual-level predicates: stage-level predicates contain additional functional structure (AspP) that individual-level predicates lack. Cross-linguistic support for this proposal is provided.

As for why children acquiring English omit the copula in main clauses, 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 Tense Operator (T_{OP}) located in CP and Infl. In certain grammars (among them child English) T_{OP} may bind Asp instead of Infl, 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 those with individual-level predicates, it follows that stage-

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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 (in the sample studied here it is inflected over 99% of the time) and an omitted copula indicates non-finiteness, the pattern of copula omission and production in child English is accounted for.

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 English-speaking 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.

This work 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)).

The second question posed above, that of why children should distinguish (1)-type sentences from (2)-type sentences in their omission of the copula, is approached from a syntactic standpoint: it is argued that sentences like (1) differ in their syntax from sentences like (2). This syntactic difference is rooted in the well-known semantic contrast between stage- and individual-level predicates (Carlson 1977, among others). Section 2 explores this semantic contrast and some traditional formal accounts of it. Ultimately, it will be argued that the semantic stage/individual contrast corresponds to an aspectual contrast that is expressed in the syntax. More specifically, there is evidence that stage-

level predicates are "aspectual" (they contain an Aspect Phrase, or AspP), while individual-level predicates are not aspectual (they lack AspP). Evidence for this view is provided from a variety of adult languages (English, Russian, Spanish and Portuguese).

The first question above, that of why children should ever omit the copula in main clauses, will be shown to relate to the Temporal Anchoring of main clauses, a notion that I define in Section 4 below. I will also discuss the ways in which child and adult English differ from each other in this respect, i.e. why the copula can be omitted in child English main clauses but not in adult English. Importantly, the formal mechanism of temporal anchoring relates to the functional projections of IP and AspP. Thus, the analysis of the syntax of stage- and individual-level predicates given in Section 2 is crucial for the analysis of copula omission as resulting from temporal anchoring, as argued in Section 4.

Prior to the work presented here, a systematic study of the omission of the copula in child English, and its relevance for understanding the syntax of child grammar, had not been undertaken. It is hoped that this work contributes to our understanding of the syntax of predicative (copular) constructions, the syntactic correlate of the semantic stage/individual contrast, as well as the possible source of inflectional underspecification in child grammar.

First, let me lay out some assumptions I will make about the structure of predicative constructions and the omission of function elements in children's speech.

1.1 The structure of predicatives

Following Stowell (1981), I assume that the copula, be, is a raising verb that takes a Small Clause (SC) complement. That is, in a sentence such as (3a), the subject, John, raises to its surface position from a lower position in the structure; the derivation is shown in (3b).

(3) a. John is a man.
    b. \[ \begin{array}{c}
    \text{spec} \\
    \text{IP} \\
    \text{I} \\
    \text{SC} \\
    \text{t, a man} \\
    \end{array} \]
The question of whether the copula is a verb (heading a VP) or is inserted in Infl is a separate question which I will not deal with here. For consistency’s sake I will assume throughout that the inflected copula is inserted in Infl and is not raised from a lower V position (for discussion and arguments for this view, please see Lasnik (1999) and Becker (2002)). The notion that the subject of a predicative expression raises from a lower SC is relatively uncontroversial within the GB tradition.

1.2 Function morpheme omission in child language

During an early stage of development, children acquiring certain languages sometimes omit functional elements from their speech. This stage is often referred to as the Root or Optional Infinitive stage (Weverink 1989, Rizzi 1994, Wexler 1992). Children in this phase of development may omit determiners and verbal inflectional morphology while producing, alongside these non-adult utterances, well-formed adult-like utterances containing these functional items. Following a considerable body of work on this phenomenon (Brown 1973, Weverink 1994, Hoekstra & Hyams 1996, among others), I take child English to be a grammar in which function morphemes are sometimes omitted (e.g. Cowboy stand up instead of The cowboy stands/is standing up).

Furthermore, I take the omission of functional elements, including both D and Infl items, to be primarily a syntactic phenomenon. That is, while recognizing that other factors may play a role in determining the form of children’s utterances (e.g. metrical constraints; see Gerken 1991, 1994, 1996, Becker 1998), children’s patterns of producing uninflected forms can be accounted for in terms of syntactic constraints on their grammar. Building on this approach to child language, I will attempt to account for children’s omission of the copula in terms of the syntax of predicative expressions and syntactic properties of child English.

2. Stage- and individual-level predicates

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

(4) 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. Since objects may change their location but not their identity (under normal circumstances), nominal predications normally denote permanent or inherent properties of things, while locations typically denote temporary or accidental properties.

2.1 A semantic contrast

Carlson (1977) formalized the distinction between “permanent” and “temporary” sorts of properties in terms of a distinction between “individuals” and “stages”. An individual may be an animate or inanimate object and an individual-level predicate is one that applies directly to an individual. Thus, in a sentence like (5),

(5) Rodney is a cat

the predicate [a cat] is predicated directly of the subject, Rodney. In contrast, a stage is a “spatio-temporal slice” of an individual. A stage-level predicate applies not directly to an individual, but rather to a stage of the individual. In an expression such as (6),

(6) Rodney is in the kitchen

the predicate [in the kitchen] is predicated of a “slice” of Rodney’s life. Carlson notes further that “most 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” (Carlson 1977: 130).

A number of phenomena fall out from the stage/individual distinction. For example, stage-level predicates can be modified by a spatial or temporal modifier, but individual-level predicates cannot, as shown in (7).

(7) a. Rodney is in the kitchen in the morning.
    b. ??Rodney is a cat in the morning.

Another difference between stage- and individual-level predicates is their ability to occur in a when-clause, as in (8) (note: the relevant interpretation of when is ‘whenever’).

(8) a. When Rodney is in the kitchen, he eats my parsley.
    b. ??When Rodney is a cat, he eats my parsley.
Kratzer (1995) accounts for both of these asymmetries by arguing that stage-level predicates, but not individual-level predicates, contain an Event variable (Davidson 1967), which denotes a “spatio-temporal location”. This Event variable is what allows the predicate in (7a) to be modified by the temporal adjunct in the morning (the Event itself gets modified). Moreover, it can be unselectively bound by an implicit always operator in when-clauses, yielding the asymmetry in (8). The sentences in (8a-b) have the semantic structures in (9a) and (9b), respectively.

\[ (9) \]
\[ \text{a. always, [in-the-kitchen (Rodney, x)] [eats (Rodney, my-parsley, x)]} \]
\[ \text{b. *always [cat (Rodney)] [eats (Rodney, my-parsley, x)]]} \]

Given the constraint against vacuous quantification (i.e. a quantifier needs to bind a variable in its restrictor clause), the semantic structure in (9a) is well-formed (there is a location variable in the restrictor clause), but (9b) is ill-formed (there is no variable in the restrictor).

The bulk of this paper will focus on the contrast between nominal and locative predicates, but it is worth noting that adjectival predicates may be divided into stage- and individual-level predicates. That is, adjectives that typically denote temporary properties (e.g. hungry, tired) are stage-level, while adjectives that typically denote permanent properties (e.g. intelligent, tall) are individual-level (cf. John is hungry/tall in the mornings; When John is hungry/tall, he eats a ham sandwich).

### 2.2 A syntactic contrast

In addition to the semantic contrast we have seen between stage- and individual-level predicates, there is evidence that this contrast plays out in the syntax as well. More specifically, I will argue for an analysis according to which stage-level predicates contain a syntactic projection (AspP) that individual-level predicates lack. In this subsection we will discuss data from various adult languages. This discussion will set the stage for interpreting the patterns we find in child English, to be discussed in Section 3.

#### 2.2.1 Adult English perception verb constructions

One environment in which one finds evidence for a syntactic difference between stage- and individual-level predicates is in the complement of perception verbs (see, hear, feel). Perception verbs may take a verbal or non-verbal reduced clausal complement, as in (10).

(10) a. I saw John draw a circle. (verbal)
    b. I saw John in the garden. (non-verbal)

Felser (1999) argues that the reduced clausal constituent under a perception verb involves more structure than a VP (it can host expletive subjects, as in (11a)) but less than a TP (it cannot be tensed, as in (11b)).

(11) a. I wouldn’t like to see there be so many mistakes.
    b. *I saw John draws to draw a circle.

Rather, she argues that the relevant level of projection is the functional projection between VP and TP, namely AspP (Travis 1992).

If Perception Verb Complements (PVCs) contain the projection AspP, we expect them to show some indication of being aspsectual. The function of grammatical Aspect, according to Comrie (1976) is to encode information about the imperfectivity or perfectivity of an event or eventuality. In fact, verbal PVCs can be either perfective, as in (12a) or imperfective, as in (12b).

(12) a. I saw Bill drown (#but I rescued him).
    b. I saw Bill drowning (but I rescued him).

That the PVC in (12a) is perfective is shown by the fact that it cannot be continued with the phrase but I rescued him, which implies that the drowning event was not completed (see note 2). The predicate in (12b), however, can have such a continuation, showing that it is imperfective; it denotes a non-closed eventuality.

In addition to verbal complements, perception verbs can also take certain non-verbal complements (cf. (10) above). However, there is a restriction on the type of non-verbal predicate that can occur here: only stage-level predicates are grammatical in this environment; individual-level predicates are not.

(13) a. I saw John in the garden.
    b. *I saw John a teacher.

The contrast between (13a) and (13b) is not semantic. Even if it is possible to observe John in a teacher’s capacity, a sentence like (13b) is not grammatical. The question then becomes: What is the syntactic difference between the predicate in (13a) and the predicate in (13b) such that only the one in (13a) can occur in a PVC?

Given the argument above that PVCs contain AspP, the ungrammaticality of (13b) is expected if the predicate of the embedded clause in (13b) does not
project AspP. That is, the contrast in (13) reduces to a matter of selection: the stage-level predicate in (13a) is aspectual (it contains AspP) and so can occur under a perception verb, but the individual-level predicate in (13b) is non-aspectual (it does not project AspP). Being non-aspectual, it cannot occur in this environment. Thus, the structure for a sentence like (13a) is that in (14).

\[
\text{(14) }\quad \begin{array}{c}
\text{Spec} \\
\text{I} \\
[+\text{past}] \\
\text{VP} \\
\text{V} \\
\text{saw} \\
\text{AspP} \\
\text{Spec} \\
\text{Asp} \\
\text{SC} \\
\text{PP} \\
\text{in the garden} \\
\end{array}
\]

Looking beyond adult English, we find evidence in main clause predicatives for an association between stage-level predicates and AspP. Let us now turn to this evidence.

2.2.2 Russian
In past tense predicatives in Russian, 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. Predicates marked with Nominative case have a permanent or inherent meaning, while predicates with Instrumental case have a more temporary or accidental meaning, as shown in (15)–(16) (from Pereltsvaig (1999); see also Ballyn and Rubin (1991), Dechaine (1993)).

(15) a. Oleg byl durakom
   Oleg was fool-\text{instr}
   ‘Oleg was a fool’ (sometimes he'd behave like a fool)

b. Oleg byl durak
   Oleg was fool-\text{nom}
   ‘Oleg was a fool’ (by nature, he was a foolish person)

(16) a. Piatno bylo krasnym
    spot was red-\text{instr}
    ‘The spot was red’ (and then it changed color)

b. Piatno bylo krasnoe
    spot was red-\text{nom}
    ‘The spot was red’ (as long as there was a spot, it was red)

Matushansky (2000) argues that unlike Nominative predicates, predications marked with Instrumental case project AspP. Her evidence for claiming that Instrumental predicates involve an extra functional projection comes from extraction asymmetries between Nominative and Instrumental predicatives: in cases of Wh-extraction, scrambling and extraction from embedded clauses, the extraction is possible only when the predicate bears Instrumental case. An example of this asymmetry in scrambling is given in (17).

(17) a. Velikim poetom byl Pushkin
    great poet-\text{instr} was Pushkin
    ‘Pushkin was a great poet.’

b. *Velikij poet byl Pushkin
    great poet-\text{nom} was Pushkin
    The contrast in (17a–b) shows that scrambling of the predicate is not grammatical when the predicate bears Nominative case. Since extraction is possible only when the predicate is marked with Instrumental case, Matushansky argues that Instrumental predicates must have a position in the structure through which the predicate can move. This position must be absent in Nominative predicates, since these predicates may not raise. Thus, Instrumental predicates involve an extra projection in the structure that Nominative predicates lack.

Furthermore, Matushansky argues that this extra projection is AspP. Her reason for invoking AspP in particular has to do with a more general association between Instrumental case and aspect (in particular, with (im)perfectivity).

To see the connection between Instrumental case and aspect, let us look at copular constructions in which the copula is marked for (im)perfectivity. While in the examples above the copula byl is not marked for aspect, it can bear either a perfective or an imperfective affix, as shown in (18). When the copula bears this aspectual affix, the predicate must bear Instrumental case. If the predicate bears Nominative case, the sentence is ungrammatical.

(18) Ja pobyla byvala zavedujushe/*zavedujushaja
    I was-perf/impf manager-\text{instr}/*\text{nom}
    ‘I was/have been a manager.’
The datum in (18) clearly illustrates the connection between instrumental case and aspect. Following Matushansky, I suggest that this association between instrumental case and aspect should extend to those clauses in which the copula does not bear any explicit morphology marking aspect (i.e. cases such as (15a), (16a) and (17a)).

It is worth noting that the semantic distinction between Nominative and Instrumental predicates in Russian, for example the predicates in (15a) and (15b), is not strictly identical to the stage/individual contrast in English. Recall that Carlson has claimed that all nominal predicates in English are individual-level. By this count, the predicate in (15a), *durakom* ‘fool-Instr.’ does not “become” stage-level (see also Filip & Kennedy (to appear) for arguments to this effect), even though it has a more temporary meaning than *durak* ‘fool-Nom’. But even under this view, the difference in meaning between the predicates in (15a) and (15b) is largely in the same spirit as the difference between stage and individual-level predicates in English. My point is that the semantic contrasts in the two languages parallel each other closely enough that both contrasts should be accounted for in terms of the presence vs. absence of AspP in the syntax.

2.2.3 Spanish and Portuguese

In addition to Russian, Spanish and Portuguese provide evidence for a syntactic distinction between stage- and individual-level predicates. In both Spanish and Portuguese, there are two different copulas that appear in main clause predicatives in present tense. One copula, *ser* is used with nominal and permanent-property adjectival predicates; the other copula, *estar* is used with locative and temporary-property adjectival predicates. An example from Spanish is given in (19) below.

(19) a. Juan es/`está` un hombre/grande
   John is-ser/estar a man/big
   ‘John is a man/big’

b. Juan está/`es` en la casa/cansado
   John is-estar/ser in the house/tired
   ‘John is in the house/tired’

Like English, Spanish stage-level predicates can occur in perception verb constructions, but individual-level predicates cannot:

(20) Vi a Juan en la casa/cansado/`profesor`
    I-saw A John in the house/tired/‘teacher’
    ‘I saw John at home/tired/‘a teacher’

Moreover, Schmitt (1992) has argued independently that *estar* is an aspecual copula, in the sense that its predicate carries temporal meaning, but *ser* is not. In support of this view is the following piece of data from Portuguese.

(21) a. Maria é quase bonita.
   Maria is-ser almost pretty
   ‘Maria is sort of pretty’

b. Maria está quase bonita.
   Maria is-estar almost pretty
   ‘Maria is not pretty yet’

As we can see in the different meanings in (21a-b), the adverb *quase* in (21a) modifies the adjective itself, while in (21b) it modifies an event of becoming pretty. Schmitt takes this interpretive difference as evidence that predicates with *estar* are aspecual (they carry temporal meaning and imply an eventuality), while predicates with *ser* are not.

3. Child English

In the preceding section, we examined evidence from a number of adult languages that there is a syntactic difference between stage- and individual-level predicates. This difference involves the projection of AspP in the structure: stage-level predicates are aspecual and therefore project AspP, while individual-level predicates are non-aspecual and therefore lack this projection. Instead, they involve a purely lexical SC predicate.

In this section, I introduce new data regarding English-speaking children’s production and omission of the copula in predicative expressions. The data show that children, like adult speakers of Spanish, Portuguese and Russian, mark a distinction between stage- and individual-level predicates in main clause contexts. Like Spanish and Portuguese-speakers, English-speaking children mark this distinction in the form of the copula: individual-level predicates tend to occur with an overt, inflected copula, while stage-level predicates tend to occur with a null copula.

3.1 Method

The data reported here come from the CHILDES database (MacWhinney & Snow 1985). The data include spontaneous speech utterances from four children at
the Root Infinitive stage. In Table 1, I show the ages and average MLU (Mean Length of Utterance) of the children whose data I will discuss here. The final column in the table (Be Contexts) gives the number of predicative utterances in the relevant files that either contained an overt copula or lacked a copula (but would require an overt copula in adult English).

<table>
<thead>
<tr>
<th>Child (source)</th>
<th>Age Range</th>
<th>Avg. MLU</th>
<th>Be Contexts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nina (Suppes 1973)</td>
<td>2;0–2;2</td>
<td>2.98</td>
<td>320</td>
</tr>
<tr>
<td>Peter (Bloom 1970)</td>
<td>2;0–2;3</td>
<td>2.84</td>
<td>607</td>
</tr>
<tr>
<td>Naomi (Sachs 1983)</td>
<td>2;0–2;7</td>
<td>3.09</td>
<td>226</td>
</tr>
<tr>
<td>Adam (Brown 1973)</td>
<td>2;7–3;4</td>
<td>3.38</td>
<td>444</td>
</tr>
</tbody>
</table>

For each relevant file for each child, all predicative utterances were coded as containing an overt or a null copula, and the category of the predicate was likewise coded (NP, PP, stage-level AP, individual-level AP). Utterances that contained only a bare predicate (e.g. on the table) were not counted, as they might have been elliptical. Direct repetitions were not counted, either if the child was repeating an adult, or him- or herself. Interrogatives and imperatives were not counted, only indicative declarative main clauses. An overt copula was counted as overt whether it was inflected (e.g. is) or uninflected (e.g. be); however, over 99% of children's overt copulas were correctly inflected (99.25%, averaged over the four children). The significance of the fact that children's copulas are almost exclusively inflected will become clear in Section 4.

The range of the files to be examined was determined as follows: the first file counted was the first in which children used all relevant types of predicative expressions (nominal, locative, adjectival); the last file counted was the last in which there was a significant difference in the overtness rate of the copula between nominal and locative predicatives. The reason for using this criterion to select the upper bound will become clear below when we examine children's rates of omitting the copula.

3.2 Results

First let us look at children's omission rates of the copula in nominal vs. locative predicatives. We will return to adjectival predicatives below.

As we can see in Table 2, children show a strong tendency to use an overt copula with nominal predicates; they tend to omit the copula with locative predicates.

<table>
<thead>
<tr>
<th>Child</th>
<th>Nominal Pred.</th>
<th>Locative Pred.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nina</td>
<td>74.1% (143)</td>
<td>14% (115)</td>
</tr>
<tr>
<td>Peter</td>
<td>81.2% (401)</td>
<td>26.7% (90)</td>
</tr>
<tr>
<td>Naomi</td>
<td>89.7% (102)</td>
<td>38.1% (31)</td>
</tr>
<tr>
<td>Adam</td>
<td>44.6% (305)</td>
<td>4.9% (26)</td>
</tr>
<tr>
<td>average</td>
<td>72.4%</td>
<td>20.9%</td>
</tr>
</tbody>
</table>

Some examples of children's nominal and locative predicative utterances are given in (22)–(23).

(22) a. he's a dog. (Nina 2;0.24)
     b. Patsy's a girl. (Peter 2;1.22)
     c. she's a crocodile. (Naomi 2;3)
     d. I'm big boy. (Adam 2;7)

(23) a. I in the kitchen. (Nina 2;1.15)
     b. Eric at Cathy house. (Naomi 2;4.30)
     c. my pen down there. (Peter 2;0.10)
     d. he way up dere [there]. (Adam 3;0.10)

It is worth noting that while Adam's rates of overt be are far lower with each type of predicate than those of the other children, he shows the same asymmetry as the others. That is, Adam's rate of overt be in nominal predicatives is far higher than that in locatives; his rates of overt be are simply depressed (as compared to the other children) in both categories.

In addition to nominal and locative predicatives, children's adjectival predicatives were examined. As was mentioned briefly above, adjectival predicates may be classified as either stage- or individual-level. Typically, their classification depends on whether the property denotes a more permanent/inherent sort of property or a more temporary or accidental one (e.g. tall and intelligent are individual-level, tired and sick are stage-level). Three of the children examined here showed an asymmetry in their omission of the copula in adjectival predicatives along the lines predicted by their pattern with nominal and locative predicates. Specifically, Nina, Peter and Naomi produced an overt copula more often with individual-level adjectival predicates than...
with stage-level adjectives. One child, Adam, failed to show an asymmetry among adjectives.

The data and some examples are given below.

Table 3. Average rate of overt copula in children’s adjectival predicatives

<table>
<thead>
<tr>
<th>Child</th>
<th>Individual-level AP</th>
<th>Stage-level AP</th>
</tr>
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<tbody>
<tr>
<td>Nina</td>
<td>75.3% (24)</td>
<td>49.5% (38)</td>
</tr>
<tr>
<td>Peter</td>
<td>60% (29)</td>
<td>39.8% (87)</td>
</tr>
<tr>
<td>Naomi</td>
<td>93.5% (29)</td>
<td>52% (64)</td>
</tr>
<tr>
<td>Adam</td>
<td>44.4% (35)</td>
<td>43.3% (80)</td>
</tr>
<tr>
<td>average</td>
<td>68.3%</td>
<td>46.2%</td>
</tr>
</tbody>
</table>

(24) a. this empty. (Peter 2;3,3)
b. this is orange. (Peter 2;3,3)

(25) a. her thirsty. (Nina 2;2,6)
b. Mommy’s little. (Nina 2;1,22)

(26) a. you warm enough. (Naomi 2;5)
b. and this is yellow. (Naomi 2;5)

As we can see, except in the case of Adam, children’s tendency to produce an overt (and inflected) copula with individual-level predicates, but a null copula with stage-level predicates, extends from the nominal/locative domain to the adjectival domain. Their asymmetry pattern with adjectives, however, is much less robust. It is unclear why this should be so, and perhaps the reasons for it can be teased apart with experimental work. I leave this issue for a future resolution.

4. Analysis: Temporal anchoring

So far we have established that the semantic stage/individual distinction is represented syntactically, via a distinction in the projection of AspP: stage-level predicates are aspectual and therefore project AspP, while individual-level predicates are non-aspectual and therefore do not project AspP. They involve, instead, a purely lexical SC predicate.

(27) a. [IP [SC individual-level predicate]]
b. [IP [AspP [SC stage-level predicate]]]

We have also established that the stage/individual distinction gives rise to a variety of phenomena across languages, including adult English (cf. asymmetries in perception verb complements), Russian (the distinction between Nominative and Instrumental case on predicates), and Spanish and Portuguese (the ser/estar alternation). In the previous section, we saw that the stage/individual distinction also appears to play out in main clause predicatives in child English. It surfaces as an asymmetry in the overtness of the copula: children produce an overt copula with individual-level predicates but a null copula with stage-level predicates.

Given the syntactic analysis of the stage/individual distinction, the question for child English is why the presence of AspP in the structure should give rise to a null copula, and why the absence of AspP should give rise to an overt (and inflected) copula. I propose that this question can be answered in terms of the Temporal Anchoring of main clauses.

Let us assume that all (indicative) main clauses must be anchored to the discourse in order to receive a temporal interpretation. This anchoring is done by an abstract Tense Operator \((T_{OP})\), located in the C-domain. A clause is temporally anchored if \(T_{OP}\) binds a functional head that is associated with the temporal structure of the clause. The functional heads that are associated with temporal structure are Infl/Tns and Asp, since both Tense and Aspect have to do with the expression or representation of temporal information. The particular head (Infl or Asp) that must be bound by \(T_{OP}\) may vary across languages, so that in some languages Infl must be bound by \(T_{OP}\), but in other languages, Asp. To make this more concrete, let us define Temporal Anchoring as follows.

(28) Temporal anchoring:
   i. A main clause is temporally anchored if the Tense Operator binds an appropriate functional head in the structure, where an appropriate head is either Infl or Asp.
   ii. (a) In some languages \(T_{OP}\) necessarily binds Infl, whether or not Asp is projected;
       (b) In other languages \(T_{OP}\) necessarily binds Asp when Asp is projected.

Let us further define finiteness in terms of a binding relation between \(T_{OP}\) and Infl/Tns. Thus, a clause is said to be finite if Infl is bound by \(T_{OP}\) in that clause; it is nonfinite otherwise (i.e. if Asp is bound). Finiteness is spelled out by morphological marking on the verb or by the presence of a tensed Infl element, if there is such morphology in a given language. In predicative expressions,
finiteness is indicated by an inflected copula; non-finiteness is indicated by the lack of a copula (i.e. an empty Infl node).

Given these definitions, adult English satisfies the temporal anchoring requirement by $T_{OP}$ binding Infl. That is, English main clauses are always finite, whether the clause contains AspP or not. Thus, adult English requires an overt and inflected copula both with stage- and individual-level predicates.

(29) a. John is/*0 a man.
    b. John is/*0 in the garden.

The structures for these sentences are those in (30a-b).

(30) a. \[
\begin{array}{c}
\text{CP} \\
\text{Spec} \text{John,} \\text{t} \\
\text{I, is} \\
\text{SC} \\
\text{a man}
\end{array}
\]

b. \[
\begin{array}{c}
\text{CP} \\
\text{Spec} \text{John,} \\text{t} \\
\text{I, is} \\
\text{AspP} \\
\text{SC} \\
\text{t, garden}
\end{array}
\]

In other languages, however, the temporal anchoring requirement may be satisfied by $T_{OP}$ binding Asp. Since finiteness is defined in terms of $T_{OP}$ binding Infl, main clauses with AspP in such languages will not be finite. Such appears to be the case in child English. In other words, child English fulfills the temporal anchoring requirement by $T_{OP}$ binding Asp. But this can happen only when Asp is actually projected in a clause, and in the case of predicatives, this happens only with stage-level predicates.

Thus we derive the result that in child English stage-level predicatives (those that contain Asp) are more often nonfinite (they lack a copula), while individual-level predicatives (those without Asp) are more often finite (they contain an inflected copula). Since individual-level predicatives do not contain Asp, the temporal anchoring requirement in these clauses must be satisfied as in adult English, namely by $T_{OP}$ binding Infl. The structures of individual- and stage-level predicatives in child English are shown in (31a-b).

(31) a. \[
\begin{array}{c}
\text{CP} \\
T_{CH} \\
\text{Spec} \text{John,} \\text{t} \\
\text{I, is} \\
\text{SC} \\
\text{a man}
\end{array}
\]

b. \[
\begin{array}{c}
\text{CP} \\
T_{CH} \\
\text{Spec} \text{John,} \\text{t} \\
\text{I, AspP} \\
\text{SC} \\
\text{t, in the garden}
\end{array}
\]

An alternative to the account given here of children's copula omission is suggested by Diesing's (1988, 1992) syntactic account of the stage/individual distinction. Diesing's analysis of this distinction involves the claim that subjects of stage-level predicates originate low in the structure (in VP), while subjects of individual-level predicates originate high, in SpecIP. One could argue that in child English, subjects of stage-level predicates remain in VP even at surface structure, and that no IP is projected, and hence no copula is generated. One problem with this approach is that there is reason to think that children always project as high as IP, even in non-finite utterances. One reason is that they sometimes produce Nominative subjects with a null copula (e.g. I in the kitchen). See also arguments in Schutze (1997) for children's projection of IP.
An alternative to the idea that child English differs from adult English in terms of the setting of a parameter in the Temporal Anchoring mechanism would be to say that allowing $T_{op}$ to bind Asp is an option made available only by immature grammars. That is, the copula becomes obligatorily overt as a result of maturation, rather than parameter setting. While this approach offers an interesting perspective on the data at hand, one difficulty with it is that there are adult grammars that appear to pattern with child English in allowing a null copula with stage-level predicates but requiring an overt copula with individual-level predicates. Two languages that appear to have this property are Hebrew and African-American English. Because of space limitations, I cannot present the relevant data here, but please see Becker (2000, submitted) for discussion.

4.1 Problems and implications

Although the asymmetry between copula omission with individual-level vs. stage-level predicates is robust, it is not perfect. Even looking only at NP and PP predicates, children sometimes produce an overt copula with stage-level predicates, and they sometimes omit the copula with individual-level predicates. In light of the analysis offered above, we might wonder whether children interpret certain NP predicates as being stage-level, and certain PP predicates as individual-level. However, as much as children's interpretations can be determined from spontaneous speech, there does not appear to be a connection in this respect. Some examples of children's "counterexample" utterances are given in (32).

(32) a. that the doctor. (Nina 2;0.24)
    b. it's in the closet. (Peter 2;2.13)

Children's production of the copula with PP predicates could be partly accounted for by the fact that children are becoming more adult-like in their speech, and so part of the time we would expect children to produce adult-like utterances (such as (32b)). Children's omission of the copula with NP predicates is much more difficult to account for under my analysis, and I must leave an account of these utterances to be worked out in the future.

Before concluding, let me mention one consequence of the analysis offered here. I have proposed that a null copula is indicative of a non-finite main clause, while an overt copula is indicative of a finite one. We would then expect the stage/individual asymmetry in finiteness to extend to children's utterances containing main verbs.

Although there is good evidence that something very much like this split is found in child Dutch (Wijnen 1997, Hoekstra & Hyams 1998) and Russian (Avrutin 1997), it is not clear that it shows up in child English. Comparing stative with eventive main verbs, there is no difference in the overall proportion of finiteness (see Becker (2000:143)). One potentially supportive fact, however, is that the proportion of overt auxiliary be with progressives is low, on average 36.2% for the four children discussed here. Thus it is only slightly higher than the proportion of overt copula be with locative predicates. The reason this fact may be supportive is that progressive is a kind of aspect; thus, if progressive VPs project Asp just like stage-level (non-verbal) predicates, we would expect progressive utterances to be non-finite, and it appears that they often are.

5. Summary & conclusions

In this paper, I have argued for a syntactic correlate of the semantic stage/individual distinction, where the syntactic distinction is represented as the presence vs. absence of AspP in the structure: stage-level predicates project AspP, individual-level predicates do not. Evidence for this view was provided from adult English perception verb complements (they are argued to be aspectual, and they admit stage- but not individual-level predicates), and from cross-linguistic phenomena. In Russian past tense predicativeS, predicates bearing Instrumental case have a "temporary" (roughly stage-level) meaning, and Instrumental case is associated with Aspect; predicates bearing Nominative case have a "permanent" (roughly individual-level) meaning, and Nominative is not associated with Aspect, but rather with a bare SC. Furthermore, Spanish and Portuguese mark a distinction between stage- and individual-level predicates in the form of the copula: stage-level predicates occur with the copula estar, while individual-level predicates occur with the copula ser. Predicates occurring with estar are argued to be aspectual.

This syntactic analysis of the stage/individual distinction provides a basis for understanding the asymmetry in copula omission observed in main clause predicatives in child English. The data presented in Section 3 show that children tend to use an overt and inflected copula with individual-level predicates (seen most clearly in the case of nominal predicates), but they tend to omit the copula with stage-level predicates (seen most clearly with locative predicates). Three of the children examined showed the same trend with (individual vs. stage-level) adjectival predicates, though the asymmetry in this case was less robust.
The analysis of the stage/individual distinction as one involving Aspect, coupled with the definition of Temporal Anchoring in main clauses allows us to account for English-speaking children's omission of the copula in stage- but not individual-level predicatives. Specifically, children omit the copula with stage-level predicates because in those constructions AspP is projected; Asp is bound by T_{OP} to satisfy the temporal anchoring requirement. Since Infl is not bound by T_{OP} the clause is nonfinite, and nonfiniteness in a predicative (copular) expression is realized via a null copula. With individual-level predicates, however, AspP is not projected; Infl must then be bound by T_{OP} to satisfy temporal anchoring, thus the clause is finite, and finiteness is spelled out as an inflected copula.

Notes

* I would like to thank Nina Hyams and two anonymous reviewers for helpful comments and suggestions. Different papers based on the same child language data are under review for Natural Language and Linguistic Theory and a proceedings volume of the Workshop on Predicative Constructions held at ZAS, Berlin, in October 2000.

1. It is easy to see that there are some nominal and locative predicates that fall outside of the canonical pattern: some nominal predicates (e.g. a contestant, a fugitive) hold only for a limited period of time, while some locations are permanent (e.g. Paris is in France). However, I will abstract away from these "outliers" throughout this paper.

2. I understand a 'perfective' predicate to be one whose eventuality is closed or complete (it is viewed from the "outside", in its entirety), while a 'imperfective' predicate is one whose eventuality is not closed or complete (it is viewed from the "inside" of the event, e.g. in terms of substages of the event). Please see Comrie (1976) for discussion.

3. MLU was calculated in morphemes, not words.

4. In my dissertation, other constructions containing be were counted and analyzed, e.g. existential and deictic constructions, and constructions containing auxiliary be (progressive); thus, the numbers in the table above do not match the corresponding counts found in my dissertation.

5. The number in parentheses in each cell indicates the total number of utterances of that type. For example, Nina produced 143 nominal predicatives, and 74.1% of them contained an overt copula.

6. Counterexamples will be discussed in Section 4.1.

7. I do not distinguish between Infl and Tns.

8. I thank an anonymous reviewer for emphasizing the importance of this alternative.

9. I thank an anonymous reviewer for this suggestion.

References


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