On the Syntax of Predication in Child L2 English

Elena Gavruseva and Melissa Meisterheim
University of Iowa

1. Introduction

English-speaking children's acquisition of non-thematic verbs such as copula *be* or auxiliary *be* has always been viewed as evidence of emergent finiteness (Dulay & Burt, 1974, 1980; Gavruseva & Lardiere, 1996; Gavruseva, this volume; Haznedar, 2001; Ionin & Wexler 2002, among many others). There is consensus in the acquisition literature that L2 child learners of English acquire tense/agreement features of the copula and auxiliary early and in general demonstrate higher finiteness rates with non-thematic verbs than with thematic verbs. Interestingly, unlike verbal predicates that are often spelled out in a non-finite form, the non-thematic verb *be* is altogether dropped and so hardly ever appears in an uninflected form (that is, errors like 'Castles be real' are attested very infrequently). Consider Table 1, which shows the average omission rates of copula *be* in child L2 spontaneous data and contrast these with the omission rates for past tense morphology *(-ed*):

Table 1: *Omission rates of copula 'be' and past tense morphology*

	Copula *be*		Past tense *(-ed*)	
	Overt 'be'	Null 'be'	Finite	Non-finite
Haznedar, 2001	96% (2381)	4% (85)	26% (69)	74% (200)
Ionin & Wexler, 2002[1]	84% (?)	16% (69)	42% (?)	58% (101)
Gavruseva, 2002	86% (276)	14% (46)	60% (175)	40% (115)

The significant differences in the omission rates between copula *be* and the *–ed* morpheme shown in Table 1 suggest that L2 children acquire suppletive tns/agr morphology much earlier than inflectional morphology. Ionin & Wexler (2002) attribute the asymmetry in finiteness rates between thematic and non-thematic verbs to their status as raising vs. non-raising verbs in children's early grammars. Ionin & Wexler (2002) argue that overt movement to T in syntax is a more 'basic' rule of UG and therefore children are likely to acquire it earlier than the 'lowering at LF rule' that has been proposed for thematic verbs (Chomsky, 1993). (The latter rule is considered to be a more language-specific syntactic option.) Thus, "until the English-specific rule has been mastered, the child L2 learners may consider the use of *–s* and *–ed* optional" (Ionin & Wexler, 2002:119).

An alternative account of the thematic/non-thematic contrast in finiteness is suggested in Gavruseva (2002). Unlike Ionin & Wexler (2002) who consider finiteness to be the acquisition of V-to-T movement rules, Gavruseva (2002) looks at finiteness as acquisition of temporal chains (T-chains). Gavruseva proposes that T-chains in an early child grammar cannot be licensed unless a predicate checks its semantic/syntactic telicity features (for greater detail, see Gavruseva, this volume). Because non-thematic verbs have no telicity features to check, they consistently appear in an inflected form (and furthermore, their finiteness rates are quite consistent over the developmental period, which suggests no optionality of use of tns/agr with non-thematic verbs). Thematic verbs, on the other hand, must check an appropriate telicity feature in a syntactic aspectual projection. As Gavruseva suggests, the AspP projection is underspecified in early grammar and therefore thematic verbs often surface as 'root infinitives' (hence, the 'optionality effect' is present only with thematic verbs). In addition, Gavruseva's account provides an explanation for the omissions of non-thematic verbs from the relevant structures (as opposed to the latter appearing in an infinitival form). If copula *be*, for example,

[1] No number of tokens is provided in the 'overt *be*' and 'omitted *–ed*' categories in Ionin & Wexler's (2002) study.

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is a spell-out of tns/agr features in English, it is expected to be dropped if the appropriate functional projections (say, AgrSP and TP) are missing from a derivation. (The pattern of omission errors does not follow straightforwardly from the 'raising' analysis of Ionin & Wexler (2002)).

In this article, we are concerned with acquisition patterns of copula *be* in the data from five L2 child learners of English. The specific questions that we address are as follows:

(1) *Research questions:*

(i) Do L2 children's acquisition patterns of copula *be* reveal sensitivity to predicate semantics, namely, the individual/stage-level distinction, as in Carlson (1977), Kratzer (1995)?

(ii) What additional insights can we gain into L2 children's acquisition of finiteness if the difference in the omission rates of *be* by predicate type is found?

The article is organized as follows. In section 2, we provide a theoretical background on the individual/stage-level semantic distinction and discuss syntactic representations of the two predicate types. In section 3, we discuss Becker's (2000a, 2000b) work on the acquisition of copula *be* in child L1 English. In section 4, we present the child L2 data and discuss the coding procedures. In section 5, we present the results of our investigation and point out the differences between child L1 and child L2 patterns. Section 6 provides a discussion of the results and concludes the article.

2. Background

The predicates in copular structures can be realized by various syntactic categories (e.g. NP, AP, or PP) and can be semantically divided into individual-level predicates (that is, those expressing permanent properties of the subject) or stage-level predicates (that is, those expressing temporary or transient properties of the subject). Consider some examples from the child L2 data that illustrate this semantic distinction:

(2) *Individual-level predicates:*
   a. Castles are [real$_{AP}$]
   b. She's [from Russia$_{PP}$]
   c. Two cents is [nothing$_{NP}$]

(3) *Stage-level predicates:*
   a. My teacher's [sick$_{AP}$]
   b. She was [sick$_{AP}$]this week
   c. Yesterday I was [this one$_{NP}$] ('this one'='this card')
   d. I'm [a boy$_{NP}$] now
   e. But I wasn't [here$_{AdvP}$]

Kratzer (1995: 125-126) observes that the individual/stage-level semantic contrast "cannot be a distinction that is made in the lexicon of a language once and for all." Kratzer (1995:126) points out that "usually, we think" of a property as permanent or transient or, in other words, the "stage-level/individual-level distinction is context dependent and vague" (p.136). Consider the examples in (4) that illustrate Kratzer's point:

(4) a. The shoes are brown
   b. The shoes are brown in sunlight

If sentence (4a) is uttered as a description of leather that the shoes are made of by a manufacturer we can interpret the adjective 'brown' as an individual-level predicate. However, if a temporal modifier 'in sunlight' is added to the sentence, 'brown' no longer has to express the idea that the shoes are made of brown leather. Rather, the implication is that the leather is of different color but takes on a brown shade if the shoes are seen in sunlight. In (4b), 'brown' is interpreted as a stage-level predicate.

Following Davidson (1967), Kratzer (1995) suggests that stage-level predicates introduce an event variable (or an event argument), unlike individual-level predicates. Consider the logical representations of 4(a&b) in (5):

(5) a. IL: brown (the shoes) ['The shoes are brown']

b. SL: [brown (the shoes, 1) & in sunlight, (1)] ['The shoes are brown in sunlight']

In (5b), according to Kratzer (1995), *an event argument* '1' is "a variable ranging over spatio-temporal locations" and the PP 'in sunlight' is a temporal extension of '1'. To quote Kratzer (1995:136) further, "all stage-level predicates have an external argument for spatio-temporal location. In languages like English or German, this argument seems to be implicit, that is, it has no realization at D- or S-structure. As a consequence, spatial and temporal expressions are adjuncts." Kratzer proposes that event arguments are external arguments of a stage-level predicate (in our case, 'brown' (p. 135)).

Let us now consider some syntactic implementations of Kratzer's (1995) ideas. Heycock (1995) proposes that an event argument of stage-level predicates is located in the AspP projection. Consider the representation in (6):

(6) $[_{TP}\ [_{VP}\ [_{V}$ be$]\ [_{AspP}$ (ev)$\ [_{AP}]]]]$

Individual-level predicates, on the other hand, have no AspP below the VP (a projection where copula *be* is assumed to be base-generated), as shown in (7):[2]

(7) $[_{TP}\ [_{VP}\ [_{V}$ be$]\ [_{AP}]]]$

As we can see from (6) and (7), stage- and individual-level predicates have distinct syntactic representations. Now, the question is, do children acquiring English know this? More precisely, do acquisition patterns of copula *be* provide any evidence that children treat the two semantic predicate types distinctly in their grammar?

3. Becker (2000a, 2000b)

Becker (2000a, 2000b) investigated the acquisition patterns of copula *be* in the data from three child L1 English learners (the Brown corpus, CHILDES). The biographical information on the children is given in Table 2:

Table 2: *Ages of the children in Becker's studies*

child	age (file)						
Nina	2;0.24 (7)	2;1.15 (10)	2;2.6 (13)	2;3.5 (16)			
Peter	1;0.10 (6)	2;2.13 (9)	2;3.3 (10)				
Naomi	2;0.28 (42)	2;1.17 (47)	2;2.0 (50)	2;2.25 (51)	2;3.29 (56)	2;4.30 (60)	2;5.8 (62)

Becker found that these three children frequently omitted copula *be*. Interestingly, the omission rates were higher with stage-level predicates than with individual-level predicates. Consider Table 3, which illustrates this finding (observe the discrepancy in *be* rates between nominal predicatives and locative predicatives, in particular):

[2] The representations in (6) and (7) are taken from Becker (2000b).

Table 3: *Average rates of overt 'be', by construction type*

	pred-nom (n) + individual	pred-adj (n) + individual	pred-adj (n) + level	pred-loc (n) +level
Nina	79.2 (106)	75 (16)	41.9 (31)	21.3 (80)
Peter	83 (182)	81.3 (16)	55.6 (54)	25.5 (47)
Naomi	84.8 (33)	87.5 (8)	34.5 (29)	20 (10)
avg. % overt *be*	**82.3%**	**81.3%**	**44%**	**22.3%**

Some examples of child utterances with the overt *be* and null *be* are given in (8):

(8) a. this empty (Peter 10)
b. this is orange (Peter 10)
c. her thirsty (Nina 13)
d. you warm enough (Naomi 62)
e. that's green (Naomi 47)

Becker's account of the L1 child data is as follows. She suggests that the asymmetry in the omission rates of *be* indicates children's sensitivity to the individual/stage-level contrast. Becker proposes that early child grammars encode this semantic contrast in two distinct syntactic structures. Children's individual-level predicatives are completely adult-like and so consistently show an overt copula. The stage-level predicatives, however, differ from adult representations in that they are missing T. Becker suggests that stage-level predicates receive a temporal interpretation via an aspectual node (see structure (6)). The absence of T from the latter and a different anchoring mechanism manifest themselves in the omission of *be*.

In the sections to follow, we investigate whether children acquiring English as L2 also omit *be* more frequently in stage-level predicatives.

4. The L2 study

The data come from a longitudinal study of five child learners of English as L2. The data collection schedule is given in Table 4:

Table 4. *Data collection schedule*s

File	Toshiko (6.4) L1: Japanese	Dasha (8.1) L1: Russian	Alla (6.9) L1: Russian	Tamara (7.10) & Sultana (9.2) L1: Azerbaijani
File 1	Oct. 4, '00	Nov. 14, '94	July 13, '00	Oct. 5, '00
File 2	Oct. 25, '00	Nov. 30, '94	Aug. 30, '00	Nov. 27, '00
File 3	Nov. 29, '00	Dec. 7, '94	Sept. 14, '00	Jan. 14, '01
File 4	Dec. 15, '00	Dec. 18, '94	Sept. 28, '00	Mar. 31, '01
File 5	Jan. 24, '01	Jan. 13, '95	Nov. 5, '00	Apr. 21, '01
File 6	Feb. 21, '01	Jan. 20, '95	Dec. 3, '00	June 10, '01
File 7	Mar. 21, '01	Jan. 27, '95	Jan. 14, '01	
File 8	Apr. 11, '01	Feb. 10, '95	Mar. 4, '01	
File 9	May 2, '01	Feb. 17, '95	Mar. 24, '01	
File 10	May 23, '01	Mar. 3, '95	Apr. 4, '01	

The children (all female) were tape-recorded approximately every three to four weeks in spontaneous play at their homes. The audio-recordings were transcribed and checked for accuracy by a research assistant. All children were at a similar developmental stage at the beginning of the study. They all came to the US with their parents who enrolled them in American elementary schools within the first two to three months of arrival. Thus, the earliest stages of children's linguistic development have been documented when they were able to say only nouns in isolation. In later files, all children progressed to two-word and multi-word utterances.

For the analysis, we coded only declarative and negative copular structures with overt NP subjects or pronominal referential subjects (*he, she, it, they*, etc.). All utterances with demonstrative subjects *this is, that's, here is* and expletives *it* (mostly *it's*) and *there* (*there is* or *there's*) were excluded because these might have remained as unanalyzed chunks in the children's productions. The main test that we used to categorize the children's predicatives into stage-level and individual-level categories was compatibility with spatial or temporal modifiers in the context of a particular utterance. For example, if a child said 'She's from Russia', we tried to combine this utterance with modifiers such as 'today' or 'now' to see if the predicate might be intended as stage-level by the child. In the case of 'She's from Russia', such a combination would yield a semantically anomalous utterance and so the PP predicate was counted as individual-level. However, if the child said 'I'm pink' while distributing cards in a game, the compatibility with some temporal/spatial modifiers is possible (e.g. 'I'm pink today/in this game'). In this case, the predicate was coded as stage-level.

5. Results

A question of interest to us in this section is whether the predicates with null *be* are more likely to be characterized as stage-level than individual level.

Let us first examine the omission rates of *be* with NP predicates. These are shown in Table 5:

Table 5: *Overall rates of null 'be' with NP predicates*

	IL NP predicates		SL NP predicates	
	Null 'be'	Overt 'be'	Null 'be'	Overt 'be'
Toshiko	2% (1)	98% (44)	6% (1)	94% (17)
Dasha	19% (7)	81% (29)	18% (2)	82% (9)
Alla	0	100% (1)	11% (1)	89% (8)
Tamara	0	100% (5)	0	100% (3)
Sultana	8% (1)	92% (11)	0	100% (2)
overall	**9%** (9)	**91%** (90)	**9%** (4)	**91%** (39)

Table 5 shows that the omission rates of *be* are very low (in fact, identical) with both individual-level NP predicates and stage-level NP predicates, similar to Becker's (2000a, 2000b) results. In fact, the rate of overt *be* could be considered to be higher in the L2 data than in Becker's data (91% vs. 82%).

Next, we look at the omission rates with AP predicates. Consider Table 6:

Table 6: *Overall rates of null 'be' with AP predicates*

	IL AP predicates		SL AP predicates	
	Null 'be'	Overt 'be'	Null 'be'	Overt 'be'
Toshiko	3% (1)	97% (34)	12% (3)	88% (22)
Dasha	11% (2)	89% (16)	26% (12)	74% (25)
Alla	0	100% (6)	0	100% (14)
Tamara	12% (2)	88% (15)	0	100% (7)
Sultana	21% (6)	79% (23)	50% (2)	50% (2)
overall	**10%** (11)	**90%** (94)	**20%** (17)	**80%** (70)

In Table 6, we observe that the omission rates of *be* are a bit higher with stage-level predicates. However, the difference in the number of tokens in the 'null be' category is small (11 utterances in the case of IL predicates and 17 utterances in the case of SL predicates) and therefore the difference might not be significant. Importantly, the omission rate with stage-level predicates in child L2 data is lower than in the L1 data (20% vs. 56%), a difference that needs to be explained.

Finally, we turn to the omission rates with PP/AdvP predicates (mostly with locative semantics):

Table 7: *Overall rates of null 'be' with PP/AdvP predicates*

	IL PP predicates		SL PP predicates	
	Null 'be'	Overt 'be'	Null 'be'	Overt 'be'
Toshiko	0	100% (2)	21% (5)	79% (19)
Dasha	0	0	38% (8)	62% (13)
Alla	0	0	12.5% (1)	87.5% (7)
Tamara	25% (1)	75% (3)	0	100% (3)
Sultana	4% (1)	96% (22)	0	100% (2)
overall	**7%** (2)	**93%** (27)	**24%** (14)	**76%** (44)

The difference with the L1 data is once again apparent: the rate of *be* omission with stage-level predicates in the child L2 data is much lower (78% vs. 24%).

Table 8 contrasts the overall rates of null and overt *be* with stage- and individual-level predicates across all construction types:

Table 8: *Overall rates of null and overt 'be' with SL/IL predicates*

IL predicates		SL predicates	
Null 'be'	Overt 'be'	Null 'be'	Overt 'be'
9% (22)	91% (211)	20% (38)	80% (153)

If we consider the proportions of 'null be' structures within each category (IL vs. SL predicates), we observe that the omission rate is higher in the stage-level category. However, it is not nearly as high as in Becker's (2000a, 2000b) data. Now consider Table 9, which presents the proportions of 'null be' and 'overt be' structures in relation to the total number of predicatives in the child L2 data:

Table 9: *Rates of null and overt 'be' per total number of contexts*

IL predicates		SL predicates	
Null 'be'	Overt 'be'	Null 'be'	Overt 'be'
5% (22)	50% (211)	9% (38)	36% (153)

When the rates of 'null be' structures are viewed as per the total number of contexts (=422), we can see that the proportions of 'null be' in the SL and IL categories are quite similar. In both cases, the rates of null *be* are below 10%. We conclude, therefore, that there is no contrast in the *be* omission rate by the semantic predicate type in the child L2.

6. Discussion/conclusions

We argued in the preceding section that the omission rates of *be* do not suggest that the stage/individual-level distinction is reflected in child syntax through the presence of a non-adult like structure. How do we account for this result, which necessarily must be viewed from the perspective of the child L1-L2 differences in the acquisition of the copula? The most plausible explanation for the L1-L2 difference seems to be of methodological nature. Joseph, Serratrice & Conti-Ramsden (2002) raise this possibility in the discussion of Becker's (2000b) results, observing that many of the locative structures that Becker counted as *be* omissions might in fact be analyzed as elliptical utterances with no clear underlying structure. Consider an example that Joseph et al. (2002:141) give in their article:

(9) CHI: that on roof (Harry, 3:10.6)
(Child is putting a piece on the toy house)
MOT: put it on the roof you mean?

Joseph et al. (2002) argue that the mother's recast of the child's utterance suggests no clear analysis of 'that on roof' as a locative predicative structure. If this is indeed the case, the omission rates with locative constructions in Becker's (2000a, 2000b) data could be severely inflated. Let us adopt this methodological explanation of the contrast that Becker found in her data.

The question, then, is: how do we account for the few 'null be' structures that we found in the L2 data? First, we point out that most of these structures are produced by the children in the earliest files and so may simply reflect a stage in the development when children are learning what specific morphological variants of *be* are mapped onto the formal syntactic features (agr/tns). Once children learn the appropriate morphemes they begin to use copula *be* rather consistently in their productions, that is, the rate of *be* omissions rarely falls below 77% (a similar trend is observed by Haznedar, 2001). The consistency of copula *be* use across the L2 children in our study contrasts sharply with the gradually increasing rate of inflection use. The very few fluctuations in the use of *be* and the clustering of *be* omissions in the earlier files are best accounted for under Gavruseva's (2002) proposal (see this volume), which treats copula *be* as a spell-out of tns/agr features. On this analysis, there is no need to assume that children do not project TP only with stage-level predicates and use Asp to provide them with temporal reference. We suggest that *be* omission may imply either a missing T (both in stage- and individual-level predicatives), or it may imply an early lexical deficiency in the morphological component. An implication of the latter explanation is that tns/agr features are present in a syntactic derivation and are mapped onto a null morpheme. Note that this possibility reflects a UG option, as suggested by the existence of languages that do not require an overt copula in all structures (e.g. Arabic or Russian, among many others).

Finally, we propose that the child L2 developmental data could be taken to support the analyses of *be* as being base-generated in a functional projection and not in a lexical projection. As was emphasized earlier, an analysis of copula as a pure spell out of syntactic features nicely explains why this lexical item is omitted from predicative structures instead of being used in an infinitival form.

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