Predication and L1 acquisition

1 Copulas

1.1 The copula vs lexical verbs


In child Standard American English the copula may be omitted in main clauses. This stage is a substage of the "root infinitive" stage: main verbs may lack inflectional morphology in main clauses (e.g. Eve sit floor). The examples below come from the CHILDES database.

(1) a. He's a dog. (Nina 2;0.24)
   b. Patsy's a girl. (Peter 2;3.24)
   c. She's a crocodile. (Naomi 2;3)
   d. it basket. (Nina 2;2.6)
   e. I big boy. (Adam 2;7)

(2) a. this empty. (Peter 2;3.3)
   b. this is orange. (Peter 2;3.3)
   c. I not tired now. (Adam 3;2)
   d. I'm tired. (Adam 3;2)
   e. her thirsty. (Nina 2;2.6)

(3) a. my pen down there. (Peter 2;0.10)
   b. I in the kitchen. (Nina 2;1.15)
   c. Eric at Cathy house. (Naomi 2;4.30)

Root infinitives: alternation between finite, inflected predicates and non-finite, bare predicates. The rate of production (averaged) of finite/inflected main verbs is 42%; thus, 58% of children's main verbs are uninflected (measured over verbs that could bear inflectional morphology, i.e. verbs with 3rd person singular subjects).

Crucially: Children produce an uninflected copula (be) in main clause predicatives less than 1% of the time (averaged across 4 children), that is, is varies with the null copula, not with be.

1.2 The copula and the type of the predicate

Reading:

Becker’s (2004) task: To account for the copula omission.

Hypothesis: Copula omission is a grammatical phenomenon and is not processing-based.

Data: the files of four children (Adam, Nina, Naomi, and Peter) from the CHILDES database.
Results:
1) The copula tends to be overt in utterances with a nominal predicate and tends to be omitted in utterances with a locative predicate.

<table>
<thead>
<tr>
<th>Child</th>
<th>Nominal Predicate M</th>
<th>Nominal Predicate N</th>
<th>Locative Predicate M</th>
<th>Locative Predicate N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nina</td>
<td>74.1</td>
<td>143</td>
<td>13.0</td>
<td>115</td>
</tr>
<tr>
<td>Peter</td>
<td>86.4</td>
<td>398</td>
<td>18.9</td>
<td>90</td>
</tr>
<tr>
<td>Naomi</td>
<td>90.2</td>
<td>122</td>
<td>33.3</td>
<td>30</td>
</tr>
<tr>
<td>Adam</td>
<td>52.0</td>
<td>302</td>
<td>7.7</td>
<td>26</td>
</tr>
<tr>
<td>M</td>
<td>76.3</td>
<td></td>
<td>18.8</td>
<td></td>
</tr>
</tbody>
</table>

2) Omission of the copula does not correlate with the length of utterances.

<table>
<thead>
<tr>
<th>Sentence Length (in Noncopula Words)</th>
<th>Nominal Predicate M</th>
<th>Nominal Predicate N</th>
<th>Locative Predicate M</th>
<th>Locative Predicate N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two words</td>
<td>73.8</td>
<td>206</td>
<td>42.9</td>
<td>28</td>
</tr>
<tr>
<td>Three words</td>
<td>75.3</td>
<td>457</td>
<td>12.3</td>
<td>73</td>
</tr>
<tr>
<td>Four words</td>
<td>73.6</td>
<td>216</td>
<td>15.9</td>
<td>107</td>
</tr>
<tr>
<td>Five words</td>
<td>74.1</td>
<td>54</td>
<td>14.3</td>
<td>35</td>
</tr>
<tr>
<td>M</td>
<td>74.2</td>
<td></td>
<td>21.4</td>
<td></td>
</tr>
</tbody>
</table>

Interpretation:
Nominal predicates typically denote permanent properties (individual level), locative predicates typically denote temporary properties (stage-level). IL predicates are non-aspectual, SL predicates are aspectual. The copula is a grammatical reflex of the temporal anchoring of a clause containing a non-aspectual predicate (i.e., IL predicates). Temporal anchoring is the formal binding relation between a tense operator in the C-domain and a syntactic tense or aspect node in the main clause. In adult English main clauses, the temporal an-choring requirement must be satisfied through tense operator binding T (not Asp). In child English, SL predicates may be temporally anchored by tense operator binding Asp.

Prediction: IL/SL distinction for adjectival predicates.

IL: adjectives denoting color, size, aesthetic properties (*pretty, ugly*); physical properties having to do with hardness, softness, or texture; and other inherent properties.

SL: adjectives denoting temperature, physical sensations (*hungry, sick*), emotions, and other accidental or temporary properties.
Becker’s interpretation: The prediction is borne out.

Note, however, that Guo (2009) reports that children tend to produce copula ‘is’ more accurately with low-frequency than with high-frequency predicates.

2 Unaccusative vs Unergative


Children appear to acquire passives with a delay (only around the age of 4).

→ A-chain Maturation Hypothesis (Borer & Wexler 1987).

*An alternative explanation for the difficulty in the comprehension of passives: It is more difficult to assign a thematic role to the by-phrase.

Prediction: Since unaccusatives involve A-movement, children should either produce unaccusatives without movement to external argument position or avoid using them, at least in English.

The prediction does not appear to be borne out: young (English speaking) children successfully produce and comprehend unaccusatives.

Pierce (1989; 1992) analyzed spontaneous speech of children aged 1;6–2;3. 99% of the cases – SV order. 75% of the VS sentences (45 of 60) included unaccusative verbs.

→ Avoidance of raising of the NP from its original position after the verb to a position before the verb.

Grela and Leonard (1997) also found no difference in the rate of subject omission in SV sentences with unaccusatives compared to that of subjects of unergative verbs, in a group of typically developing children aged 2;11 – 3;4.

← Borer & Wexler (1992), Babyonyshev et al. (2001) claim that young children utilize the structure of unergatives to interpret unaccusatives (the Unergative Misanalysis Hypothesis).

Counter-evidence: Friedmann (2007)

In adult Hebrew, unaccusatives (but not unergatives) appear in both SV and VS orders. Unaccusatives (but not unergatives) allow possessive datives.

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### Mean Proportion of Overt Be With IL and SL Adjectival Predicates

<table>
<thead>
<tr>
<th>Child</th>
<th>IL Adjectives</th>
<th>SL Adjectives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>N</td>
</tr>
<tr>
<td>Nina</td>
<td>62.5</td>
<td>24</td>
</tr>
<tr>
<td>Peter</td>
<td>57.1</td>
<td>28</td>
</tr>
<tr>
<td>Naomi</td>
<td>93.5</td>
<td>29</td>
</tr>
<tr>
<td>Adam</td>
<td>37.1</td>
<td>35</td>
</tr>
<tr>
<td>M</td>
<td>62.6</td>
<td></td>
</tr>
</tbody>
</table>

Note. IL = individual level; SL = stage level.
(4)  
\begin{align*}
\text{a.} & \quad \text{nishpax} \quad \text{ha-kafe} \\
& \quad \text{spilled} \quad \text{the-coffee} \\
\text{b.} & \quad \text{ha-kafe} \quad \text{t} \quad \text{ni} \\
& \quad \text{the-coffee} \quad \text{spilled}
\end{align*}

(5)  
Possessive dative  
\begin{align*}
\text{nafal} & \quad \text{1i} \quad \text{ha-kadur} \\
& \quad \text{fell} \quad \text{to-me} \quad \text{the-ball}
\end{align*}

Note: VS order with unaccusative verbs is the basic word order. VS order with unergative and transitive verbs requires movement of the verb to C, and a trigger in spec-CP.

Prediction: If the A-chain maturation hypothesis is correct, children are expected to produce unaccusatives in their base-generated VS order, and refrain from the SV order. If the unergative misanalysis hypothesis is correct, children are expected to produce unaccusatives only in SV order, as they do with unergatives, and without possessive datives.

Data & Results: Collected during seven experiments conducted with 136 1;9-4;0-year-old Hebrew speakers.

1) SV and VS sentences with unaccusative verbs vs. unergatives and reflexives in spontaneous speech (21 children 1;6-2).

<table>
<thead>
<tr>
<th>Unaccusatives</th>
<th>Unergatives</th>
<th>Reflexives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full NP</td>
<td>Pronoun/ Proper Name</td>
<td>Full NP</td>
</tr>
<tr>
<td>VS</td>
<td>9 (50%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>SV</td>
<td>9 (50%)</td>
<td>57 (98%)</td>
</tr>
<tr>
<td>Total</td>
<td>76</td>
<td>98</td>
</tr>
</tbody>
</table>

2) Repetition of sentences with unaccusatives in SV and VS order vs. SV and VS orders with transitive verbs (6 children aged 2;3-2;8, 6 children aged 2;11-3;4, and 6 children aged 3;6-3;10).

Repetition Performance in the Various Sentence Types: % Correct (Correct/Total)

<table>
<thead>
<tr>
<th>Age</th>
<th>Unaccusative VS</th>
<th>Unaccusative SV</th>
<th>Transitive VSO</th>
<th>Transitive SVO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:3-2:8</td>
<td>82% (49/60)</td>
<td>92% (55/60)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:11-3:4</td>
<td>100% (60/60)</td>
<td>97% (58/60)</td>
<td>30% (18/60)</td>
<td>93% (56/60)</td>
</tr>
<tr>
<td>3:6-3:10</td>
<td>100% (60/60)</td>
<td>100% (60/60)</td>
<td>43% (26/60)</td>
<td>98% (59/60)</td>
</tr>
</tbody>
</table>
3) Repetition of SV sentences with unaccusatives and unergatives (60 children aged 2;2-3;10).

4) Retelling of a story that included SV and VS sentences with unaccusatives and SV sentences with unergatives and reflexives (30 children aged 1;6-2;0, but only 17 children aged 1;9-2;0 were included in the analysis).

5) Retelling of a story that included SV sentences with unaccusatives, with pronoun and proper name subjects, which in Hebrew must appear preverbally (17 children aged 1;9-2;0).

Out of 119 sentences, the children produced a full sentence in 32 (27%) of the cases, and there was only a single instance in which they changed the SV order to VS order.
6) Production of unaccusatives with possessive datives: a repetition task of SV sentences (7 children aged 2;0-3;0 (mean 2;7) and 13 children aged 3;4-4;0 (mean 3;7)).

<table>
<thead>
<tr>
<th>Age</th>
<th>Unaccusative SVPosDative</th>
<th>Unaccusative AVSP</th>
<th>Unaccusative ASVP</th>
<th>Transitive AVSO</th>
<th>Transitive ASVO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2;0–3;0</td>
<td>82%</td>
<td>46%</td>
<td>65%</td>
<td>18%</td>
<td>77%</td>
</tr>
<tr>
<td>3;4–4;0</td>
<td>88%</td>
<td>71%</td>
<td>77%</td>
<td>39%</td>
<td>88%</td>
</tr>
</tbody>
</table>

7) Production of unaccusatives with possessive datives: story retelling with SV and VS orders (17 children aged 1;9-2;0).

**Summary of the results:** Children younger than 2 years already produce SV sentences with unaccusatives. They distinguish between unaccusatives and unergatives, as they use both VS and SV orders for unaccusatives, but only SV for unergatives. They use possessive datives with unaccusatives, indicating that they analyze the argument of the unaccusative as an internal argument.

**Interpretation:** children younger than 2 years can already move the argument of unaccusatives from object to subject position, i.e. they can construct A-chains.
3 Expletives


Task: To compare deictic pronoun it, anaphoric pronoun it, and expletive it.

(6) Non-expletive
a. Here it is. – subject
b. Find it. – object

(7) Expletive
a. It’s raining./It’s five o’clock. – subject
b. It’s obvious that the boys are friends. – subject
c. That make it dark outside. – object

Note: It was considered to be anaphoric only if it occurred as the immediate replacement for a full NP in the discourse.

Prediction: Following Gentner’s Natural Partitions Hypothesis the authors assume that tangible objects will be easier to conceptualize, and therefore that their labels (viz. nouns) will be acquired earlier, as compared to non-referential words. → All types of referential pronoun it, including the anaphor, should be acquired before expletive it.

Data: the files of four children (Adam, Eve, Nina and Peter) aged 1;6–3;0 in the CHILDES database. The files were coded for occurrences of it. The omitted uses of expletive subject it were also marked (i.e. with a weather or time predicate).

Results:

1) All children examined produce deictic and anaphoric pronoun it from the very first files, but do not produce expletive it until 2–7 months later. In other words, referential pronoun it was used by all children beginning in the earliest files examined, while expletive it was not used until the fourth or fifth file examined for each child, three to nine months later.

2) The children used expletive it primarily for weather/atmosphere (it’s cold/dark/noisy) and time predicates (it’s X o’clock, it’s time for/to _), i.e. in its quasi-argument form. They do not use it in extraposition, cleft or raising structures in the files examined (with the exception of it’s more fun to not be sad (nina33)). Note that in adult language too extraposition, clefting and raising structures are more marked than weather and time predicates. Plus they are more difficult to form as a result of MLU limitations.
3) Expletive *it* is used by children productively: (1) it is used in questions, and not only declaratives, (2) the ‘atmospheric’ use of the expletive is extended to include feelings (*now it happiness now* (eve14)), (3) there are non-adult-like utterances (*it’s fourteen o’clock* (adam20)).

**Interpretation:**

„The emergence of expletive *it* is a result of lexical–semantic reanalysis dependent upon the child’s understanding of it as a pronoun that is used with variable reference, both as a deictic term whose referent is retrievable from context and as an anaphoric pronoun whose referent is retrievable from the conversation, be that from the child’s own speech or from that of the child’s interlocutor. However, in the case of the expletive, no referent can be found, since the expletive is nonreferential. Because no referent ever appears in conjunction with the expletive in phrases like *it’s cold* or *it’s five o’clock*, the child is forced to reanalyze the lexeme it to include a subtype EXPLETIVE which is completely bleached of any referential meaning. This, in turn, will allow the child to entertain the option that a predicate may not project a theta-role into its subject position, widening the child’s grammatical options. We can further speculate that once children have assimilated quasiargument it into their lexicon, the next easy move is to take the expletive status of this element one step further, by removing the theta-role assigned to this element and thereby allowing for acquisition of the true expletive (as used in extraposition, clefting and raising structures).”

**Comparison to previous studies:**

Shafer & Roeper (2000) – a study on the acquisition of locative (deictic) vs. expletive *there*.

(3) a. that Mom nose right there (Eve 1;9) – *deictic-locative*
   b. I sticked it on these wood. Stays on there (Naomi 2;11) – *anaphoric*
   c. there no squirrels (Eve 1;11) – *expletive*

Data: the files of nine children in the CHILDES database.

Results: deictic–locative pronoun *there* is acquired first, followed by expletive *there*, followed then by anaphoric pronoun *there*.

S&R’s interpretation: Expletive *there* acts as a logical trigger for anaphoric *there*; the anaphor cannot be acquired until the expletive has been acquired.

- A grammatical element with variable reference (i.e. anaphoric *there*) should be a subcase of a grammatical element with no reference (i.e. expletive *there*).
- The local syntactic chain between an expletive and its associate is syntactically simpler than the nonlocal (i.e. extra-clausal) relation between an anaphor and its discourse referent.

Inoue (1991): The acquisition of expletive *there* after locative *there* is a result of weakening the locative meaning of *there* in sentences like *There is a polar bear in the kitchen* and reanalyzing it as an expletive subject.