THE ACQUISITION OF RECURSIVE POSSESSIVE STRUCTURES IN HUNGARIAN

Ágnes Tóth
EXPERIMENTAL HYPOTHESIS, QUESTIONS TO BE ANSWERED

- Can 8-year-olds understand recursive possessive structures? How does their interpretation differ from the interpretation of adults?
- Do Hungarian children interpret recursive structures as asyndetic coordination (direct recursion) at first?
- Does an overt functional head help Hungarian children interpret recursive possessive structures?
THE ROLE OF THE FUNCTIONAL HEADS

- DiSciullo (2015): There is (covert) semantic connection between constituents that forms the property of a functional element.
- The functional element (head) between constituents indicates indirect recursion
- E.g.:
  - *Punto controllo passaporti* (Italian)
  - *Punto controle pasaporte* (Portuguese)
  "point (of) control (of) passport"
  'The point of the checking of passports'
The role of the functional heads in PP recursion

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Materials:
(a) embedded PP adjectivalized by -i


the crocodile the giraffe before-ADJ lion before stands

’The crocodile stands before the lion before the giraffe.’

(b) embedded PP in a levő participle phrase


the crocodile the giraffe before being lion before stands

’The crocodile stands before the lion (being) before the giraffe.’
Results: PP recursion by lévő is easier than by –i

<table>
<thead>
<tr>
<th></th>
<th>PP-recursion by -i</th>
<th>PP-recursion by lévő</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; graders (6-7 yrs)</td>
<td>69%</td>
<td>76%</td>
<td>$T_{paired} (1,167) = 2.414, p&lt;0.05^*$</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; and 4&lt;sup&gt;th&lt;/sup&gt; graders (9-10 yrs)</td>
<td>85%</td>
<td>84%</td>
<td>n.s.</td>
</tr>
</tbody>
</table>
POSSESSIVE STRUCTURES IN HUNGARIAN

Only the possessum is marked.

a. \[DP [DP János] [NP könyv-e ]] 
   John book-POSS
   ‘John’s book’

The possessor is also marked by dative -nak case.

b. \[DP [KP János-nak] [DP a [NP könyv-e ]]] 
   John-DAT the book-POSS
   ‘John’s book’
Hungarian Recursive Possessive Structures

1. Two unmarked possessors

?A maci doboz-a szalag-ja piros
the teddy bear box-POSS ribbon-POSS red
‘The teddy bear’s box’s ribbon is red.’

2. Mixed case

A maci doboz-á-nak a szalag-ja piros
the teddy bear box-POSS-DAT the ribbon-POSS red
‘The ribbon of the bear’s box is red’

3. Two dative possessors

?A maci-nak a doboz-á-nak a szalag-ja piros
the teddy bear-DAT the box-POSS-DAT the ribbon-POSS red
‘The ribbon of the box of the bear is red.’
EXPERIMENT

Participants
N = 25 children 24 adults
Mean age: 8;3 Mean age: 41 years

Methods
- Colouring pictures with the help of a computer after hearing the test sentences.
- 9 test sentences, 9 fillers (other pictures to colour)
- Pseudo-randomized order (3 versions)
Please colour the teddy bear’s box’s ribbon red.
Hungarian: A maci doboza szalagja piros
English: The teddy bear’s box’s ribbon is red
CONJUNCTIVE 1

Hungarian: [A maci & doboza] szalagja piros
English: [The teddy bear’s & box’s] ribbons are red
Hungarian: A maci [szalagja & doboza] piros
English: The teddy bear’s [ribbon & box] are red
CONJUNCTIVE 3

Hungarian: [A maci doboza] & [(neki a) szalagja] piros
English: [The teddy bear’s box] & [(its) ribbon] are red
Hungarian: [A maci (szalagja)] & [(az ő) doboza] & [(az ő) szalagja] piros
English: [The teddy bear’s (ribbon)] & [his box] & [(its) ribbon] are red
## Results: Children

<table>
<thead>
<tr>
<th>Structure</th>
<th>Recursive (The teddy bear’s box’s <strong>ribbon</strong> is red)</th>
<th>Conjunctive 1 ([The teddy bear’s &amp; box’s] <strong>ribbons</strong> are red)</th>
<th>Conjunctive 2 (The teddy bear’s <strong>[ribbon &amp; box]</strong> are red)</th>
<th>Conjunctive 3 ([The teddy bear’s box] &amp; [(its) <strong>ribbon</strong>] are red)</th>
<th>Conjunctive 4 ( [The teddy bear’s (ribbon)] &amp; [his box] &amp; [(its) <strong>ribbon</strong>] are red)</th>
<th>In sum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structure 1 (covert heads)</strong></td>
<td>78%<strong>/</strong></td>
<td>8%</td>
<td>3%</td>
<td>10%</td>
<td>1%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Structure 2 (1 overt head)</strong></td>
<td>89***</td>
<td>11%</td>
<td>1%</td>
<td>3%</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td><strong>Structure 3 (2 overt heads)</strong></td>
<td>81***</td>
<td>15%</td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>
**RESULTS: ADULTS**

<table>
<thead>
<tr>
<th>Adults</th>
<th>Structure 1 (covert heads)</th>
<th>Structure 2 (1 overt head)</th>
<th>Structure 3 (2 overt heads)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recursive (The teddy bear’s box’s <em>ribbon</em> is red)</td>
<td><strong>55%</strong><em>/</em></td>
<td>100%*</td>
<td>100%*</td>
</tr>
<tr>
<td>Conjunctive 1 ([The teddy bear’s &amp; box’s] <em>ribbons</em> are red)</td>
<td>1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conjunctive 2 (The teddy bear’s [ribbon &amp; box] are red)</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conjunctive 3 ([The teddy bear’s box] &amp; [(its) ribbon] are red)</td>
<td><strong>33%</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conjunctive 4 ( [The teddy bear’s (ribbon)] &amp; [his box] &amp; [(its) ribbon] are red)</td>
<td>1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In sum</td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
**RESULTS: RECURSIVE VS. CONJUNCTIVE**

Structure 2 and 3:
Adults: Recursive vs. Conjunctive (p < 0.001***)
Children more conjunctive answers than adults.
8-year-olds gave more recursive answers than adults (Structure 1)

The overt heads have important role in the adult’s interpretation of recursive structures.

The mixed Structure was interpreted by children only two ways (vs. Structure 1 and 3)

8-year-olds: conjunctive answers Structure 2,3 (overt heads) too, unlike adults.

Difference between the interpretation of Structure 1 and 3 (→ the role of the overt functional heads in the interpretation of adults)
DISCUSSION

- Further question: *Why is unmarked possessor recursion interpreted conjunctively by more adults than children?*

- Asyndetic coordination is very rare and marked in Hungarian, it might not be part of their grammar.
PREFERRED INTERPRETATIONS OF ADULTS

The interpretation of adults is based on the overt dative head:

A maci 0 dobozá-nak a szalagja

= A maci-nak a dobozá-nak a szalagja vs.
A maci 0 doboza 0 szalagja
For Children: The Minimize Symmetrical Relations Principle has important role.

A maci 0 dobozá-nak a szalagja

Vs.

A maci 0 doboza 0 szalagja = A maci -nak a dobozá-nak a szalagja
Why is Structure 2 the preferred one?
Answer: Minimize Symmetrical Relations Principle

2. A maci doboz-á-nak a szalag-ja piros
   the teddy bear box-POSS-DAT the ribbon-POSS red
   ‘The ribbon of the teddy bear’s box is red’
The teddy bear’s box’s ribbon is red.
3. *A maci-nak a doboz-á-nak a szalag-ja piros*

the teddy bear-DAT the box-POSS-DAT the ribbon-POSS red

‘The ribbon of the box of the teddy bear is red.’
GENERAL DISCUSSION

1. The great majority of 8-year-old children can interpret recursive possessive structures.
   Structure 1: Children - recursive, 
   Adults – recursive or conjunctive

2. 20% of 8-year-old children still interpret all three recursive possessive constructions conjunctively.

3. The overt –nAk head helped adults interpret multiple possessive structures recursively (not children)
REFERENCES


- Pinto M.– Zuckerman S. Ecological Validity in testing language comprehension - a new Coloring Task (in progress)


THANK YOU FOR YOUR ATTENTION!