Comprehension of Turkish relative clauses in children and adults with agrammatic aphasia

Duygu Özpe, ozpe@metu.edu.tr
Middle East Technical University, Turkey
University of Reading, UK

Procedure and Stimuli

Participants were tested individually in a sentence-picture matching task and provided with oral instruction and some trials.

10 subject RCs, 10 object RCs, 10 simple SOV sentences were read in a random order and participants were asked to choose the picture correctly depicting each sentence.

Procedure and Stimuli

Participants

• 18 children with normal development
• Left-frontal damage involving Broca's Area
• Diagnosis with effortful, non-fluent, and telegraphic speech
• All left-handed
• All attending kindergarten
• Mean age: 43.66 (41-52 moths)
• 8 Females and 7 Males

Participants

• 11 people with agrammatic Broca's aphasia
• 15 children with normal development
• Left-frontal damage involving Broca's Area
• Diagnosis with effortful, non-fluent, and telegraphic speech
• All left-handed
• All attending kindergarten
• Mean age: 43.66 (41-52 moths)

How might the agrammatic deficit be caused for the children and adults in these populations?

1. Trace Deletion Hypothesis (TDH), Grodzinsky (1986,2000): No access to syntactic chains in agrammatic aphasia.

The default strategy: assign the agent role to the first NP without a theta-role.

In English TDH expects above chance performance in subject RCs and chance performance in object RCs. On the other hand Turkish being a head-final language, should yield the opposite pattern. That is, the first NP in an object RC is already in the agent role, which should produce an above chance performance.

Above chance performance in Object RCs

On the contrary, the first NP in a subject RC has the patient role in Turkish. The default strategy should fail when it assigns the role to the first NP: the chance performance in subject RCs.

Yet, our data do NOT verify the predictions of TDH: Most of the participants in this study consistently behaved like English-speaking people while TDH expected the opposite. That is, they performed at chance level in object RCs while having no problem in subject RCs.

2. Filler-gap Hypothesis, O'Grady (1997): Processing load increases in line with the distance between filler and the gap.

In Turkish, structural difference between the gap and the filler is larger in object RCs than subject RCs, which might be the reason for the particular deficit our participants presented in this study. One node between the gap and the filler in Subject RC: 2 nodes between the gap and the filler in Object RC. E.g. [ kadı, man-GEN kill -Sub.Rel. -poss.3sg] woman

3. Limitations in the realization of Genitive case: No/limited access to AGR associated with a functional category -r or -h which checks Genitive case. In object RCs, the NP in the agent role is marked with genitive case, which might also be hindering correct comprehension of these structures.

4. Deficit in Morphosyntax of Case and Agreement: In object RCs the verb should have possessive marker followed by agreement morphology. The fact that participants are having problems in structures with genitive-agreement possessive might be why they perform at chance level in object RCs.

5. Limited processing capacity: Both children and people with agrammatism might be suffering from limited computational resources or limited short-term memory buffer, which might be preventing them from keeping the complex sentences in memory and leading them to come up with compensating strategies.

What might be the cause of the comprehension deficit?

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