Syntactic movement in Turkish agrammatic production

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Introduction

Agrammatic aphasic patients have problems with sentence production and verb inflection (Bastiaanse, Hugen, Kos, & Zonneveld, 2002; Friedmann, 2000). As reported by Bastiaanse et al. (2002) agrammatic patients have difficulty with the production of finite verbs in Dutch main clauses. In Dutch, the base position of verbs is argued to be sentence final (Koster, 1975). However, in Dutch main clauses, finite verbs move from their base position to the second position in the sentence (Verb Second). It has been argued that difficulties with the main clauses stem from a problem with derived structure (Derived Order Problem Hypothesis: Bastiaanse & van Zonneveld, 2005).

Others have suggested that production deficits can be predicted on the basis of the position that certain structures take in the syntactic tree (Tree Pruning Hypothesis: Friedmann, 2000). Agrammatism is argued to be a tense representation deficit, where functional projections to tense (TP), and movement of arguments to this (TP) and higher nodes (CP) are deficient. This suggests that difficulties with Verb Second in Dutch might stem from problems with the landing site (V0 to C0) in the syntactic tree, where tense checking (TP) causes problems with verb inflection and subsequently movement to CP causes problems with word order. Thus, the relation between disruptions of syntactic movement related constructions and consequences of a tense representation deficit as such remains controversial. To test these two hypotheses, we focus on Turkish where movement of any constituent in a clause interferes in neither tense inflection (TP) nor high sentential nodes (CP) in the phrase marker.

Basic word order in Turkish is SOV (1). Turkish Relative Clauses (RCs) are participle constructions where the verb of the RC appears in a non-finite form. The predicate is marked either with a specific “subject relativizer,” -yAn (2), or the “object relativizer” — DIK (3). Turkish RCs involve neither complementizer/wh-word (CP) nor tense inflection (TP). Accordingly, Turkish RCs consist of structures smaller than an IP/TP or CP; they consist only of (Aspect) (P)hrases (Aygen 2004). If it is the syntactic movement that hampers sentence production and not a deficit in finiteness as such, then the production of non-finite RCs that are generated below TP and CP will be more difficult than the production of finite clauses in base order. If, however, the problems with sentence production are caused by finiteness as such, then the production of finite regular clauses should be more difficult than non-finite RCs.

(1) adam ekmek-i kes-iyor
man bread-acc cut-progr/3rd prs.sing.
“The man cuts the bread”

(2) [ Ø ı ekmek-i kes- en ] adam ı 
[ RC OV [ S ] ]
“the man who cuts / cut the bread”

(3) [adam-ın Ø ı kes-ti /C20 g - i ] ekmek ı 
[RC SV ] O
“The bread that the man cuts/cut”

Methods

Subjects

Four male Turkish agrammatic patients (mean age: 52.5 years) participated in this experiment. The aphasia type was established with the Gülhane Aphasia Test (Tanrıdağ, 1993). All the patients were right-handed and aphasic due to a single lesion in the left hemisphere.

Materials

A pictured sentence completion test was developed with three conditions:

(a) Regular Clause (– movement ) = subject – object – finite verb (+ tense, – (unmarked) agreement)
(b) Subject Relative (+ movement) = NP [object – non-finite verb (– tense, – agreement)] subject]
(c) Object Relative (+ movement) = NP [subject – non-finite verb (–tense, + agreement)] object]
There were 15 sentences in each condition. An example of Object Relative clause condition follows:

Tester: … Yani, bu adamın kesti domates ve bu … [patient: adamın kesti ekmek]

‘Tester: … So, this man cutting tomato and this … [patient: man cutting bread]’.

Results

Regular SOV sentences, with a finite verb, are easier to complete than RCs with a non-finite verb: there is a significant difference between the production of the regular sentences and the subject/object RCs ($\chi^2 = 19.40$, $df = 2$, $p < .001$). The production of subject RCs ($\chi^2 = 5.2$, $df = 1$, $p < .05$) and object RCs ($\chi^2 = 17.81$, $df = 1$, $p < .05$) are each significantly poorer than the production of regular sentences. A clustered data analysis indicates that more errors were produced to object RCs than subject RCs since the total production of subject RCs/regular clauses is significantly poorer than the production of object RCs/regular clauses was compared to subject RCs ($\chi^2 = 4.5$, $df = 1$, $p > 0.05$) (Table 1).

Table 1

<table>
<thead>
<tr>
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<th>Total numbers (mean proportions) of correctly completed sentences in each condition (60 in each)</th>
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<tbody>
<tr>
<td><strong>Regular sentence</strong></td>
<td></td>
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<tr>
<td><strong>S O V</strong></td>
<td><strong>Subject relative</strong> [ NP O V [ S ] ]</td>
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<td>45 (0.75)</td>
<td>32 (0.53)</td>
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Conclusion

The production of non-finite RCs that do not involve tense inflection but syntactic movements is difficult for Turkish agrammatic aphasics. However, the production of finite regular clauses where each constituent is in its base position is well-preserved and the patients produce finite verbs always with the correct tense inflection (progressive tense). Thus, the production of sentences with syntactic movement (i.e., derived order) is difficult even in the absence of finiteness and functional projections to tense are syntactically active in Turkish agrammatic production.

The patients are able to produce finite verbs (TP) while they are incapable of realizing syntactic movements below tense node (AspP) in non-finite RCs; hence, our results are not compatible with theories which suggest that finiteness as such is difficult and that only movements to high positions in the syntactic tree (TP, CP) are impaired.

References


