

The breakdown of functional categories in Greek aphasia

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Background

Verbal inflectional errors are among the most prominent characteristics of aphasic non-fluent speech. Subject-verb agreement is relatively intact while tense is severely impaired. Some researchers view the deficit as *structural* and attribute errors to a breakdown of functional categories and their projections. Agrammatic individuals produce trees that are intact up to the Tense node and ‘pruned’ from this node up. Other researchers suggest that difficulties are due to processing limitations. Within such accounts, grammatical representations are intact but *access* to them is impaired. The asymmetry in production vs. grammaticality judgement tasks has been taken as further evidence for such approaches.

Method

Participants were 8 individuals (1 woman) aged 42–81, diagnosed with aphasia, who had suffered a left-hemisphere CVA at least 3 months before testing.

Materials were constructed to assess three functional categories: (a) subject-verb agreement (32 items); (b) tense (16 items); and (c) aspect (32 items). Eight verbs were used, balancing estimated frequency of use and regularity of aspectual conjugation.

Testing of each participant targeted comprehension, in a grammaticality judgment task, and production, in a sentence completion task. The same set of sentences was used in the two tasks, in different sessions, to ensure comparability of comprehension and production measurements.

Objectives

The purpose of the present study was to investigate functional categories in Greek aphasia across different tasks. In order to contrast structural and processing theoretical approaches to morphological impairments in aphasia, we investigated (a) the relative sensitivity of functional categories to brain damage and the systematicity thereof; and (b) the relation between production and comprehension performance.

Greek is a null-subject language with relatively free word order. The likely clause structure is: CP > ... > AgrP > TP > VoiceP > AspectP > VP

Results (percent errors)

Patient	Grammaticality judgment			Sentence completion		
	Agreement	Tense	Aspect	Agreement	Tense	Aspect
1	3.1	0.0	17.2	15.6	12.5	43.8
2	43.8	62.5	43.8	40.6	93.8	81.3
3	17.2	56.3	46.9	28.1	81.3	56.3
4	1.6	50.0	48.4	56.3	68.8	68.8
5	0.0	3.1	1.6	0.0	0.0	0.0
6	23.4	56.3	48.4	–	–	–
7	3.1	0.0	10.9	9.4	0.0	12.5
8	0.0	28.1	32.8	15.6	12.5	37.5
All	11.5	32.0	31.3	23.7	38.4	42.9

Discussion

Performance on subject-verb agreement tends to be least impaired. Tense errors make up a small proportion of the total individual errors of the least impaired participants (defined on the basis of total number of errors; pat. 5, 7, 1, & 8) but a large proportion, even more than aspect errors, for the most impaired participants (pat. 4, 3, 6, & 2).

The tree pruning hypothesis would predict that aspect would be least impaired while subject-verb agreement would be more (if not most) impaired, a pattern opposite from the one observed. Therefore, our findings do not support this hypothesis. Taking into account that we found a higher proportion of production than comprehension errors in almost every case, our results are compatible with processing accounts.

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