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Verb Production in Stroke Induced Aphasia and Semantic Dementia: Similarities and Dissociations

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Unaccusative verbs are more difficult to produce in both agrammatic (Thompson, 2003) and fluent aphasia (McAllister, Bachrach, Waters, Michaud, & Caplan, 2009) than unergative verbs. Transitivity affects verb retrieval in agrammatic aphasia (Thompson, 2003), whereas it does not seem to affect verb production in semantic dementia (henceforth SD) (Thompson et al., 2012). Koukoulioti, Stavrakaki, Ioannidis, & Tsirka, (2010) report unaccusativity effect for 5 stroke aphasic patients with fluent aphasia and transitivity effect for 1 SD participant. The present study aims at further investigating the performance of stroke aphasic and SD patients in producing unergative, unaccusative and transitive verbs.

A sentence elicitation task was administered, where the participants were presented with videos and had to describe what was happening. Correct responses were those including (i) correct verb and (ii) correct argument structure (henceforth AS) production.

31 native speakers of Greek participated: 10 aphasics due to stroke (6 anomic, 2 Wernicke's and 2 Broca's with agrammatism), 10 healthy controls, 7 participants with SD and 7 controls.

Control groups performed at ceiling. Aphasic patients showed a selective impairment in unaccusative verbs, as they performed at ceiling in unergative verbs and significantly worse in unaccusative (z=2.68, p=0.003) (see figure). Most errors for unaccusatives and transitives involved incorrect AS production (71% and 58%, respectively). SD patients showed the same level of performance across the verb classes ($x^2(2) = 1.391$, p=0.535) (see figure) but they produced predominantly light verb constructions (i.e. constructions with a semantically underspecified verb) for unergatives (50% of the errors), whereas for unaccusatives and transitives most errors involved production of incorrect AS (58% and 57% of the errors, respectively).

SD individuals were significantly worse than stroke patients in unergatives (M-W U = 13, p = 0.021), but there was no difference between the groups for unaccusatives and transitives.

Concluding, the data indicate: 1) selective deficits in stroke induced aphasia and generalized deficits across all verb classes in SD 2) quantitative difference between the groups for unergatives 3) a different error pattern with a high proportion of light verbs produced by SD patients which nevertheless was not attested in the aphasic data.

We discuss the implications of these results for verb production theories and lexicon organization in SD and aphasia.

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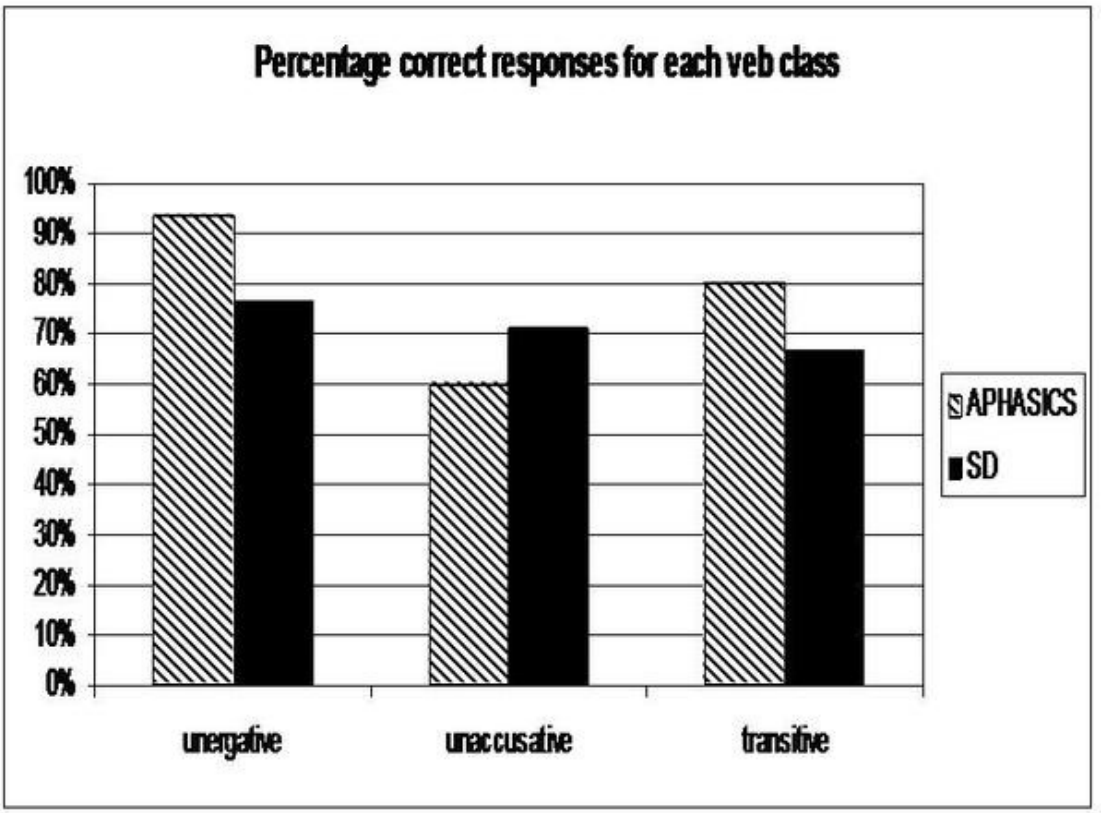

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