Verbal Morphology in Aphasia: Comparison of Structured vs. Narrative Elicitation Tasks

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Individuals with agrammatic aphasia show difficulty producing verb morphology (Menn & Obler, 1990). Various tasks ranging from spontaneous speech to constrained sentence level tasks have been used to detail these deficits and various subsets of verb inflections have been tested, resulting in mixed findings. In studies comparing finite (walks, walked) vs. nonfinite inflection forms (walking, to walk), agrammatic speakers produced more errors with finite than nonfinite forms (LaPointe, 1985; Lee et al., 2008). Although less is known about production of verb morphology in fluent aphasia, recent research suggests that fluent aphasic speakers may also experience greater difficulty with finite compared to nonfinite verbs in spontaneous speech (Bastiaanse, 2011).

Despite the frequently observed verb morphology deficits in aphasia, no assessment tool is available for clinical or research purposes to quantify these deficits. Additionally, little attention has been paid to the effects of different elicitation tasks on verb inflection deficits in aphasia. We examined production of verb inflection in 10 agrammatic and 10 anomic aphasic speakers using two different elicitation methods: structured sentence completion and narrative production tasks. For the structured task, we used the Northwestern Assessment of Verb Inflection (NAVI; Lee & Thompson, experimental version), which was developed to assess both finite (present singular, present plural, past regular, past irregular) and nonfinite (infinitive, present progressive) forms in English, using a sentence completion task. For the narrative task, we used the Cinderella story.

Results from the NAVI revealed an effect of finiteness ($F(1, 18) = 30.66, p < .001$), indicating that both groups performed worse on finite vs. nonfinite forms (anomic: 81% vs. 99%, $p = .008$; agrammatic: 45% vs. 90%, $p = .001$). Overall anomic participants performed better than agrammatic participants ($F(1, 18) = 13.78, p = .002$). Importantly, there was a significant interaction between finiteness and group ($F(1, 18) = 4.843, p = .041$). Agrammatic participants performed worse than anomic participants on finite forms (45% vs. 81%, $p = .005$) but not on nonfinite forms (90% vs. 99%, $p = .143$). The Cinderella narrative task revealed no main effect of finiteness ($F(1, 18) = 2.33, p = .110$) indicating only numerically lower performance on finite vs. nonfinite forms in both agrammatic (86% vs. 92%) and anomic participants (97% vs. 100%). Additionally, there was no reliable group effect ($F(1, 18) = 3.56, p = .076$) or interaction between finiteness and group ($F(1, 18) = .289, p = .592$).

The same agrammatic and anomic participants showed different performance in the structured and narrative elicitation tasks. On the NAVI, both groups experienced greater difficulty with finite compared to nonfinite verbs; however, agrammatic participants, compared to anomic participants, showed greater deficits producing finite, but not nonfinite verbs. The Cinderella narrative task did not reveal these differences, indicating that structured tasks are more sensitive for detecting verb inflection deficits in individuals with aphasia.
Figure 1. Production accuracy for finite vs. nonfinite verb forms across tasks and aphasic groups