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Verbal Inflection Processing in Spanish Speakers with Aphasia: Time and Agreement

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Introduction

There is substantial cross-linguistic evidence that morphosyntax of verbs is impaired in agrammatic aphasia and that not all verb inflections are affected equally, with tense morphology being especially vulnerable (Benedet et al., 1998; Caramazza & Hillis, 1991, Friedmann & Grodzinsky, 1997). Two explanations for this deficit focus on the processing costs that the grammatical operations impose on People with Aphasia (PWA). The PAsT DIscourse LIinking Hypothesis (PADILIH. Bastiaanse et al, 2011) posits that reference to the past is particularly harder to produce because it requires discourse linking, which is affected in aphasia. Faroqi-Shah & Thompson (2007), on the other hand, suggest that there is a special difficulty in the retrieval of the accurate verb forms which affects temporal reference in general, in both regularly and irregularly tensed verbs, while sparing non-finite forms.

Our work aims to study these difficulties in agrammatic aphasia to obtain evidence on its processing in Spanish, which uses two different morphemes to express time and agreement in verbal inflection. We want to see specifically the performance pattern in Argentinian Spanish, in which inflected, simple tenses are preferred over their complex counterparts, in opposition to peninsular Spanish. We intend to compare if it coincides with what has been accounted for other languages in the literature and discuss and review if the current hypotheses can account for it adequately.

Methods

Participants

Two PWA with agrammatism and two groups of healthy people (HPG) matched in age and education level participated in the study. All native Argentinian Spanish speakers.

Procedure and materials

We developed a brand-new assessment battery designed to tap the production and comprehension of verbal inflection of tense and agreement on isolated verbs and sentences. It's composed of five tasks:

- (1) Sentence completion task.
- (2) Sentence elicitation task (SC).
- (3) Picture-guided elicitation task.
- (4) Grammaticality judgment task (GJ).
- (5) Sentence-picture matching task.

For the stimuli we manipulated both time reference (past, present and future simple tenses and adverbs) and the person and number of the subject (first person singular and third person singular and plural). We used only transitive verbs with a maximum length of 3 syllables. All sentences had an Adverb-Subject-Verb-Object structure (e.g., “Ayer María pesó las naranjas” / “Yesterday María weighted the oranges”).

Results

The preliminary results show that HPG performed at ceiling level in these first two tasks, while PWA encountered great difficulties (Table 1). Both had greater problems with stimuli that evaluated Tense, accounting for 29/38 and 9/10 wrong answers respectively in the SC task.

Conclusions

The results show a clear deficit in the processing of verbal inflection in the PWA compared to the HP. While evidence is still scarce to arrive to conclusions on the explanatory adequacy of the presented hypotheses, it doesn't appear to be a specific problem with reference to the past in these subjects. Nevertheless, these data need to be completed and compared with the results for the remaining three tasks, to conduct a thorough analysis and understand the specific pattern for Argentinian Spanish in greater detail.

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Table 1. Accuracy on Grammaticality Judgement and Sentence Completion tasks.

Participants	GJ Mean	SD	SC Mean	SD
PWA 1	63.2	-	24	-
HP Group 1 45-65 y.o. High education level	98.25	2.15	99.67	0.82
PWA 2	73.68	-	80	-
HP Group 2 20-40 y.o. Low education level	100	0	100	0