

Verb-Form Regularity and Tense-Aspect Frequency Facilitate Copula Verb Production in Spanish Agrammatism

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Introduction

- Numerous factors have been suggested to explain the disorder of agrammatism across languages, including:
 - Verb-Form Regularity
 - Tense-Aspect Frequency
 - Semantics
- Our previous study, (O'Connor et al., 2007) found verb-form regularity predicted verb production in two Spanish-speakers with agrammatic aphasia, while word frequency did not

Objective

- Compare the effects of verb-form regularity, tense-aspect frequency and semantic obligatoriness on verb production in agrammatism
- Using the Spanish language and its dual-copula system: *ser* and *estar*

Research Question

Which factor best facilitates verb production in agrammatism: verb-form regularity, tense-aspect frequency or semantic obligatoriness?

Participants with Agrammatism (Ag)

- Six Spanish-speakers with agrammatism
- Age range: 51-72 years (mean = 60)
- All suffered single left frontal strokes & at least 4 years post-onset
- Adjudged agrammatic by at least two certified SLDs
- No other history of neurological, hearing and/or visual impairment

Control Participants (C)

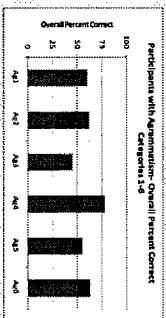
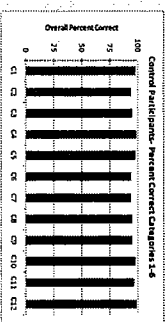
- Twelve normal language and age-range matched controls
- No history of neurological, hearing and/or visual impairment

Methods

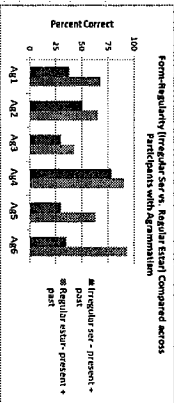
- Six sentence types were created to compare these three factors
- Total of 130 sentences that required the copula were presented
- Sentence completion paradigm

Results

- Overall, neurologically healthy participants performed with high accuracy (mean = 96%) compared to participants with agrammatism (mean = 60%)

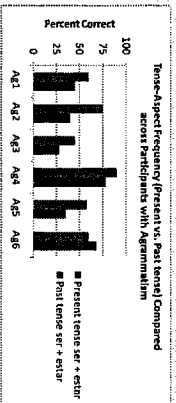


- Among the participants with agrammatism, a mixed-effects logistic regression confirmed that:
 - The regular copula verb *estar* yielded higher accuracy than the irregular *ser*



Irregular ser	Regular estar
Ella es una maestra en nuestra escuela	Los niños están entrando de su casa
She is a teacher in our school	Children is in front of the house
	Past
Durante su niñez, Juan era pobre	Durante su niñez, Amanda siempre estaba contenta
During his childhood, Juan was poor	During her childhood, Amanda was always content/happy

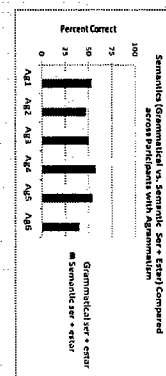
- Sentences that required the present tense yielded significantly higher accuracy than those that required the imperfect past tense



Present Tense	Imperfect Past Tense
La camisa es de seda.	Cambiaba eso de seda.
The shirt is silk.	As a little boy, his hat was blonde
	Past
La niña está en el lavatorio	Antes del cierre, la escuela estaba llena de estudiantes
The girl is at the park	Before closing, the school was filled with students

Results continued

- Semantic obligatoriness did not help performance: grammatical uses of *ser* and *estar* were more accurate than semantic uses



Conclusions

Despite their overall high frequency, *ser* and *estar* are not resistant to agrammatism

Our data show that verb-form regularity (as O'Connor et al., 2007 reported) and tense-aspect frequency (as Centeno et al., 2001 and Baistaanse, 2008 report) facilitate verb production in agrammatism, while semantic obligatoriness does not

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