

## Production of the Copula Verbs Ser and Estar by Spanish-Speakers with Agrammatic Aphasia

Barbara O'Connor, MPhil, MA CCC-SLP  
Dr. Loraine K. Obler  
Dr. Mira Goral  
Dr. Ricardo Otheguy  
CUNY Graduate Center, NY

## Introduction- Agrammatism in Spanish

- Spanish is an example of a highly inflected Indo-European language
- Agrammatism in highly inflected languages has been of particular interest to researchers and clinicians:
  - Typical agrammatic symptom of functor omission is rarely observable
  - Functors are relatively spared

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## Spanish-Speaking Countries

- Spanish is the primary language of more than 20 countries:



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## Features of Agrammatism in Spanish Ardila, 2001

- Restricted word order
  - Limited to canonical form
  - Altered word order (e.g., “**encontré no a una hermana mí**” for “**no encontré a mi hermana**”)
- Clitic pronoun omission (e.g., “**ella dice**” for “**ella me dice**”)
- Overuse of strong pronouns in the subject position (e.g., “**Yo soy tu hermana**”)

(Reznik, Dubrovsky, & Maldonado, 1995) 4

## Features of Agrammatism in Spanish Continued

- Overreliance on simpler, earlier-acquired and more frequently used verb forms- infinitive, present and preterite (Centeno, 1996; Centeno & Obler, 2001)
- Complex verb forms (e.g., conditional) appearing rarely during spontaneous or elicited speech (Centeno, 1996; Centeno & Obler, 2001)

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## Features Resistant to Agrammatism in Spanish

- Subject-verb agreement (Benedet, Christiansen, & Goodglass, 1998)
  - High cue validity in Spanish
- Use of the preposition “a” to distinguish object from subject (Ostrosky-Solis, Marcos-Ortega, Ardila, Rosselli & Palacios, 1999)
  - “Golpeó un tigre **a** un león”
- Definite/indefinite articles (Ostrosky-Solis et al., 1999)
  - “**La** mujer;” “**Una** mujer”

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## Purpose of this Study

- To examine the ability of Spanish speakers with agrammatic aphasia to produce the highly frequent copula verbs *ser* and *estar* in Spanish

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## Common Conjugations of Estar

- **Infinitive:** *estar*

- **Present indicative:** yo *estoy*, tú *estás*, usted/él/ella *está*, nosotros/as *estamos*, vosotros/as *estáis*, ustedes/ellos/ellas *están*
- **Preterite:** yo *estuve*, tu *estuviste*, usted/él/ella *estuvo*, nosotros/as *estuvimos*, vosotros/as *estuvisteis*, ustedes/ellos/ellas *estuvieron*
- **Imperfect:** yo *estaba*, tú *estabas*, usted/él/ella *estaba*, nosotros/as *estábamos*, vosotros/as *estabais*, ustedes/ellos/ellas *estaban*
- **Future:** yo *estaré*, tú *estarás*, usted/él/ella *estará*, nosotros/as *estaremos*, vosotros/as *estaréis*, ustedes/ellos/ellas *estarán*

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## Common Conjugations of Ser

- **Infinitive:** *ser*

- **Present indicative:** yo *soy*, tú *eres*, usted/él/ella *es*, nosotros/as *somos*, vosotros/as *sois*, ustedes/ellos/ellas *son*
- **Preterite:** yo *fui*, tu *fuiste*, usted/él/ella *fue*, nosotros/as *fuimos*, vosotros/as *fuisteis*, ustedes/ellos/ellas *fueron*
- **Imperfect:** yo *era*, tú *eras*, usted/él/ella *era*, nosotros/as *éramos*, vosotros/as *erais*, ustedes/ellos/ellas *eran*
- **Future:** yo *seré*, tú *serás*, usted/él/ella *será*, nosotros/as *seremos*, vosotros/as *seréis*, ustedes/ellos/ellas *serán*

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## Participants

- 2 male participants with agrammatism & expressive aphasia:
  - Puerto Rican Spanish speakers
  - Single left frontal stroke
- 5 normal control participants:
  - 2 female Puerto Rican Spanish Speakers
  - 1 female Colombian Spanish Speaker
  - 1 male Peruvian Spanish Speaker
  - 1 male Catalan Spanish Speaker
- Aged 40-70

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## Methodology

- Sentence-completion task- (270 total)
- “The girls are playing in the park.”
- “Las niñas \_\_\_\_\_ jugando en el parque.”
  - *Target = están*

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## Results

- Few overall errors by control participants
- Markedly more errors by agrammatic participants:
  - No omission errors
  - + substitution errors
  - Overuse of *estar* for *ser* verb forms
  - Fewer *ser* for *estar* errors
  - Person/Number Errors
  - Tense Errors
    - Overreliance on present tense (*está/es*)
    - Minimal ability to produce past and future tenses

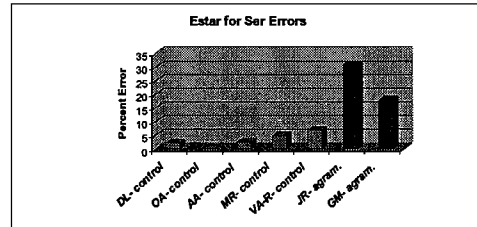
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### Estar for Ser Errors- Example

- “These lamps are made of crystal”
- Target: “Estas lamparas son de cristal.”
- Response: “Estas lamparas están de cristal.”

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### Estar for Ser Errors Continued



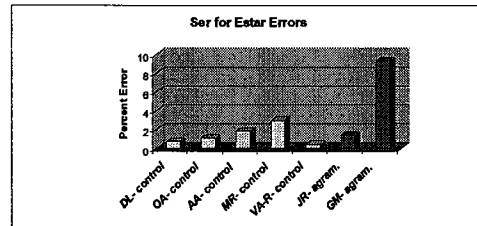
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### Ser for Estar Errors- Example

- “My soup will be cold in a few minutes.”
- Target: “Mi sopa estará fría en pocos minutos.”
- Response: “Mi sopa es fría en pocos minutos.”

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### Ser for Estar Errors Continued



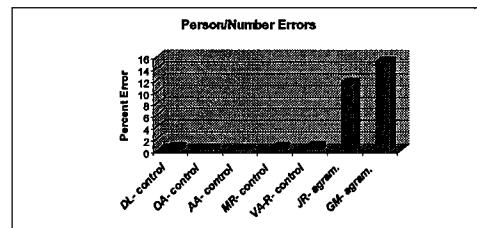
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### Person/Number Errors- Example

- “The earrings are made of silver.”
- Target: “Los aretes son de plata.”
- Response: “Los aretes es de plata.”

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### Person/Number Errors Continued



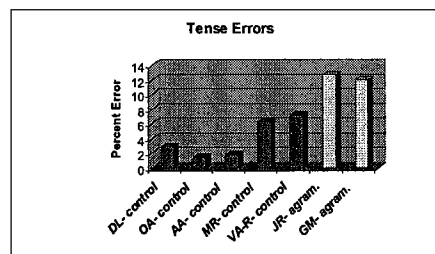
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## Tense Error Example - Present for Preterite

- “Last week, Miguel was sick.”
- Target: “La semana pasada, Miguel estuvo enfermo.”
- Response: “La semana pasada, Miguel está enfermo.”

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## Tense Errors Continued



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## Conclusions

- Despite high frequency, *ser* and *estar* are **not** entirely resistant to agrammatism
- No omission errors noted on this task
- More *estar* for *ser* errors suggests regularity trumps frequency
- Person/Number errors in direction of singular for plural forms
- Tense errors & overuse of present tense supports findings of Centeno, 1996

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