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The role of stress perception in the assignment of written accent in Spanish

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Introduction

Spanish lexical stress and written accent:

Lexical stress position	Written accent	Examples		
Proparoxytone words (PP)	Always required	/ˈnumero/	sp. número	engl. number
		/ˈtransito/	sp. tránsito	engl. transit
Paroxytone words (P)	Not required if ending with a vowel, -n or -s	/nuˈmero/	sp. número	engl. I number
	Required if ending with a consonant other than -n or -s	/ˈkarsel/	sp. cárcel	engl. jail
		/kaˈrakter/	sp. carácter	engl. character
Oxytone words (O)	Not required if ending with a consonant other than -n or -s	/pone/	sp. poner	engl. put
	Required if ending with a vowel, -n or -s	/moral/	sp. moral	engl. moral
		/numeˈro/	sp. número	engl. he numbered
		/paˈis/	sp. país	engl. country

- Difficulty for native speakers of Spanish in placing the written accent
→ Relation with the difficulty in perceiving stress?

Objective

- Examine whether the adults' difficulty in placing the written accent is related to their ability in perceiving stress

Method

- Participants:** 32 native speakers of Spanish from Costa Rica:
 - 16 Academics (University students and academic staff)
 - 16 Non-academics
- Material:** 48 Spanish words and 48 Spanish non-words:
 - Two-, three- and four-syllable stimuli (e.g. *mesa, caseta, camarero; *auca, *mapovo, *oreproca*)
 - PP, P and O pattern (e.g. *únicos, rosas, moral; *cártina, *tébar, *meper*)
 - With and without written accent (e.g. *líder, rosas; *tébar, *meper*)
- Procedure:** Online testing with *Labguistic* platform (www.labguistic.com)
 - Perception* part: Stress identification task
 - Spelling* part: Spelling task
- Data analysis**
 - Spelling* part: Correct/incorrect responses as for the presence/absence of the written accent
 - Perception* part: Correct/incorrect responses
 - Mixed-effects regression models:
 - Random terms: participants and stimuli
 - Dependent variable: spelling correct/incorrect response
 - Predictors: participant's education level (Academics/Non-academics), stimulus lexical status (Words/Non-words), stimulus accentual pattern (PP, P, O), stimulus length, participant's perception response (Correct/Incorrect)

Results

- No effect of Stimulus length ⇒ New regression model without it
- Good global performance: **89%** ⇒ Relatively easy task

Role of Lexical status

- More correct responses for Words (95%) than for Non-words (83%)
- No interaction Lexical status x Education level

Role of Education level and Accentual pattern

- More correct responses for Academics (95%) than for Non-academics (83%)
- More correct responses for PP (91%) and O (92%) than for P (85%)
- Interaction Education level x Accentual pattern:
 - Academics have more difficulties with P stimuli.
 - Non-academics have more difficulties with P and PP stimuli.

Role of Stress perception

- More correct responses for stimuli with correctly identified stress than for stimuli with incorrectly identified stress

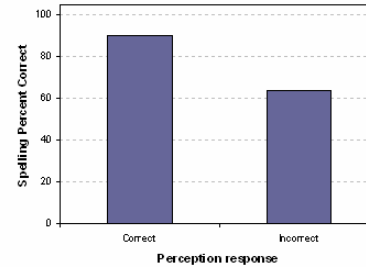


Figure 1. Spelling Percent Correct as a function of the Perception response.

- Interaction Stress perception x Accentual pattern: smaller effect of stress perception in P than in PP or O
- Interaction Stress perception x Education level: larger effect of stress perception in Academics than in Non-academics

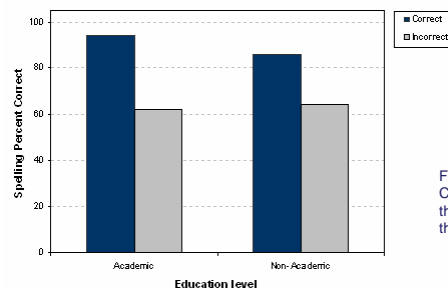


Figure 2. Spelling Percent Correct as a function of the Education level and the Perception response.

→ How can these differences be explained?

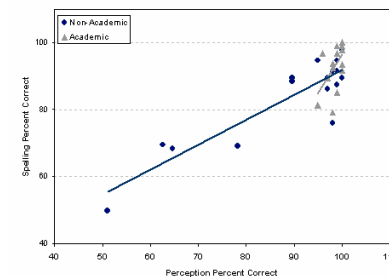


Figure 3. Spelling percent correct as a function of Perception Percent Correct and Education level.

- In comparison with Non-academics:
 - Academics are better in perceiving stress.
 - Academics present less variability in their perception of stress.

Conclusion

- No effect of Stimulus length**
- Effect of Lexical status** (i.e. more correct spellings for Words than for Non-words) → Written accent (i.e. stored in the mental representation of the words?)
- Effect of Education level** → Better mastering of the written accentuation rules in Academics
- Effect of Accentual pattern** (i.e. less correct spellings for paroxytone stimuli than for proparoxytone and oxytone stimuli)
 - Analysis of the *Corpus Digital de Mensajes Presidenciales de Costa Rica* (11'370 types):
 - Few paroxytone words with a written accent: from the 16% of the words with a written accent, only 16% are paroxytone.
 - Paroxytone words ending in -n or -s: infrequent spelling
- Effect of Stress perception** (i.e. more correct spellings for stimuli with correctly identified stress than for stimuli with incorrectly identified stress)

→ The difficulty in placing the written accent in Spanish is related to the ability in perceiving stress.

→ There is a relationship between prosodic and written skills.