

The effects of orthographic consistency at different levels of speech processing in Spanish beginning readers

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The orthographic consistency effect (OCE)

Spoken words with **consistent** grapheme-to-phoneme mappings are processed and recognized faster than words with **inconsistent** grapheme-to-phoneme mappings (Ziegler & Ferrand, 1998).

globe vs **name**
/əʊb/ /eɪm/
<obe> <ame> <aim>
flame claim

These effects have been shown across different opaque orthographies, such as French and Portuguese (Ventura et al., 2004). However, consistency effects have almost exclusively been studied at the word level - *lexical decision and word reading tasks* - and in adult participants (Pattamadilok et al., 2007).

Aims of the present study

- Investigate the OCE in a highly **consistent orthography** such as Spanish
- Move from the word to a more fine-grained level – **phonemic level**
- Test the OCE effect in **early readers** – 60 Spanish second-graders (7 years; 5 months)

WORD LEVEL

Word-Pseudoword reading task

CONSISTENT		INCONSISTENT	
W	PW	W	PW
planta	duanta	balcón	calbon
/p/ /l/ /a/ /n/ /t/ /a/	/d/ /w/ /a/ /n/ /t/ /a/	/b/ /a/ /l/ /k/ /o/ /n/	/k/ /a/ /l/ /b/ /o/ /n/

PHONEMIC LEVEL

Phonemic monitoring task (Oddball paradigm)

Consistent vs **Inconsistent** phonemes as deviants

Version 1: G -> P inconsistency

/k/ /k/ /f/ /k/ /k/ /k/ /θ/

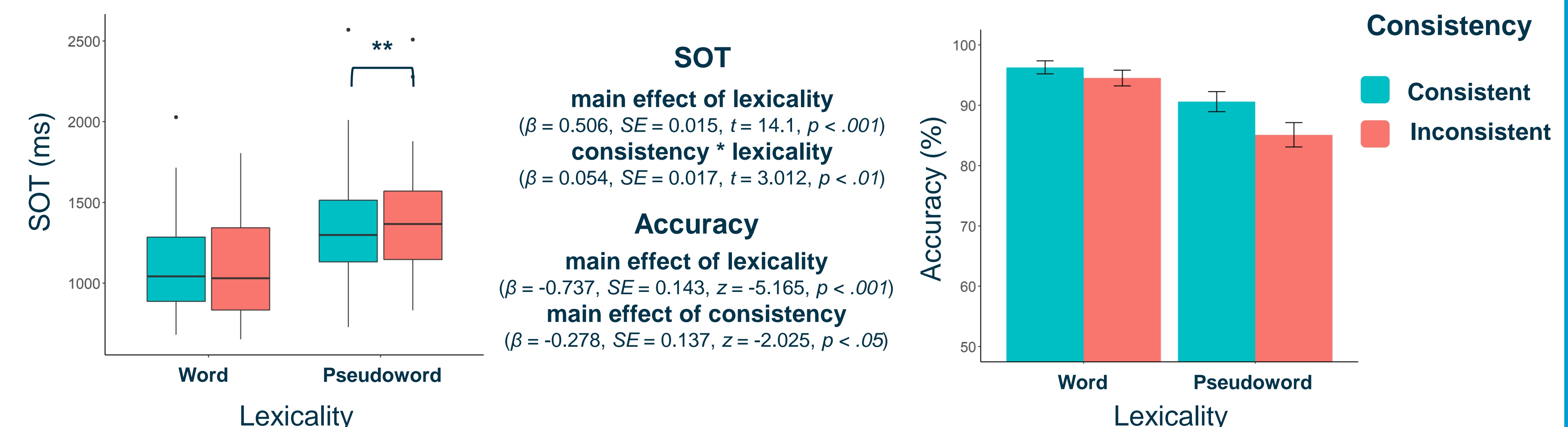
Version 2: P -> G inconsistency

/f/ /f/ /t/ /f/ /f/ /f/ /f/ /k/

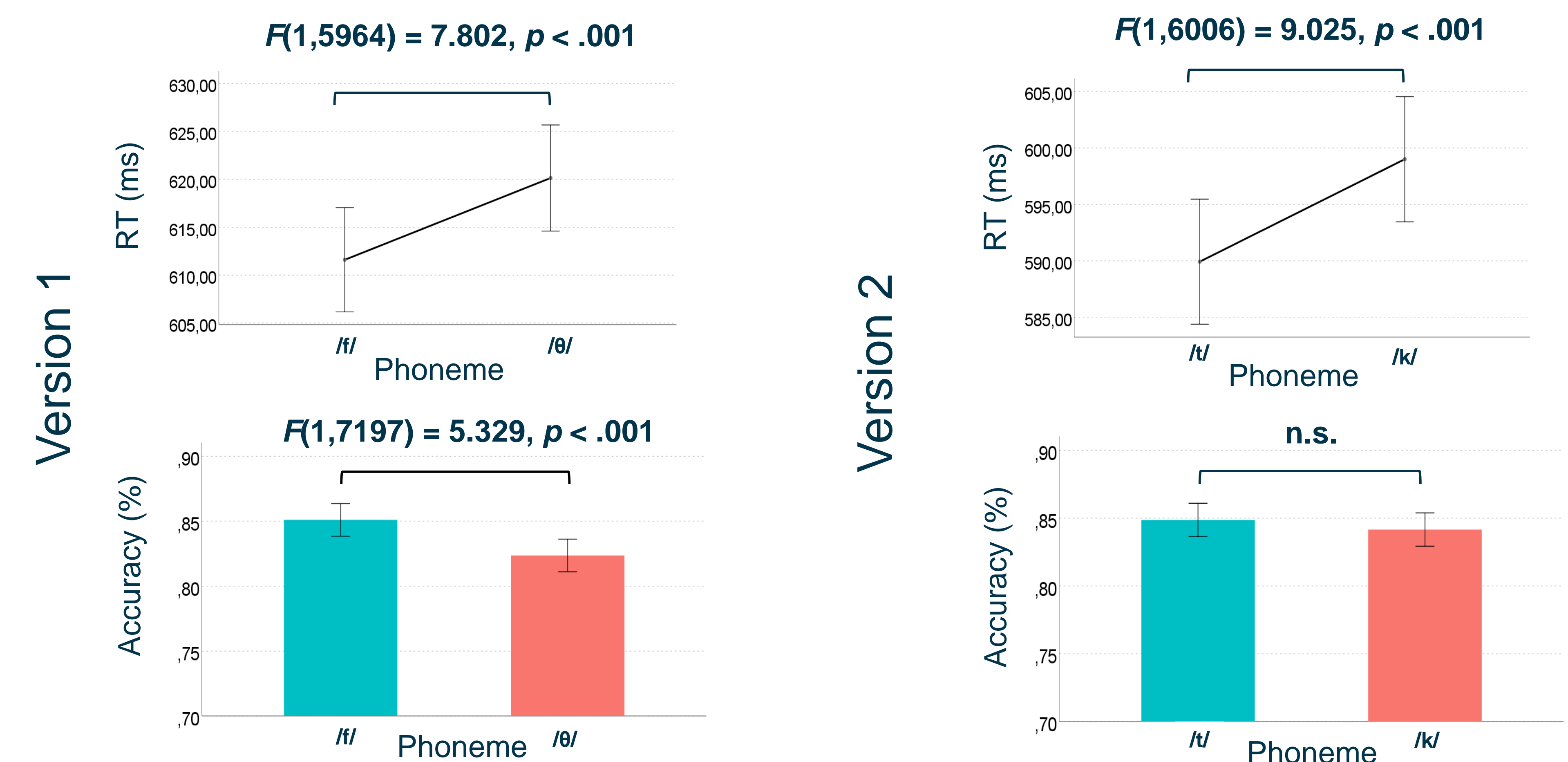


Results

Word-Pseudoword reading task



Phonemic monitoring task



Discussion

- The **OCE** is present even in a language with few grapheme-to-phoneme inconsistencies such as Spanish
- Reading task – consistency influences reading performance both in lexical reading and decoding
- Phonemic monitoring task – consistency effects arise even when no orthographic information is presented
- **Overall these findings prove that orthography affects language beyond reading**
- Future research will focus on the developmental trajectory of this effect through a longitudinal study starting from kindergarten – **prereaders** - and going up to fourth grade - **advanced readers**