

Learning multiple pronunciation variants of French novel words with orthographic forms

DAAD

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Introduction

In conversational speech, the vowel schwa is often omitted. For example, the French word *chemin* (road) is oftend produced as ch'min. It has argued that orthographic information plays an important role in how listeners learn and store such phonological variants.

Previous research has shown that orthographic information can induce the of schwa variants of generation in schwaless novel words production^[1]. In the present study, we investigate whether orthographic information can also generate schwa variants of schwaless words in word recognition.

Design

investigated this question using an artificial lexicon paradigm in which we taught participants novel words that either did or did not contain a schwa.

In an orthographic exposure phase, the words without schwa were § presented with a printed form that either did or did not contain the letter <e>.

Schwa presence

	With schwa	No schwa
with <e></e>	/pəlim/ <pelime></pelime>	/plim/ <pelime></pelime>
no <e></e>	×	/plim/ <plime></plime>

Participants & Materials

36 native French speakers from the University of Geneva.

40 novel French words consisting of 20 minimal pairs (e.g. feluge - felube).

40 black-and-white drawings of non-existing objects.

Procedure

Day 1

2 AFC with objects 4 AFC with objects

4 AFC with printed words

4 AFC with objects 4 AFC with printed

words

2 AFC with objects 4 AFC with objects 4 AFC with printed words

Day 2

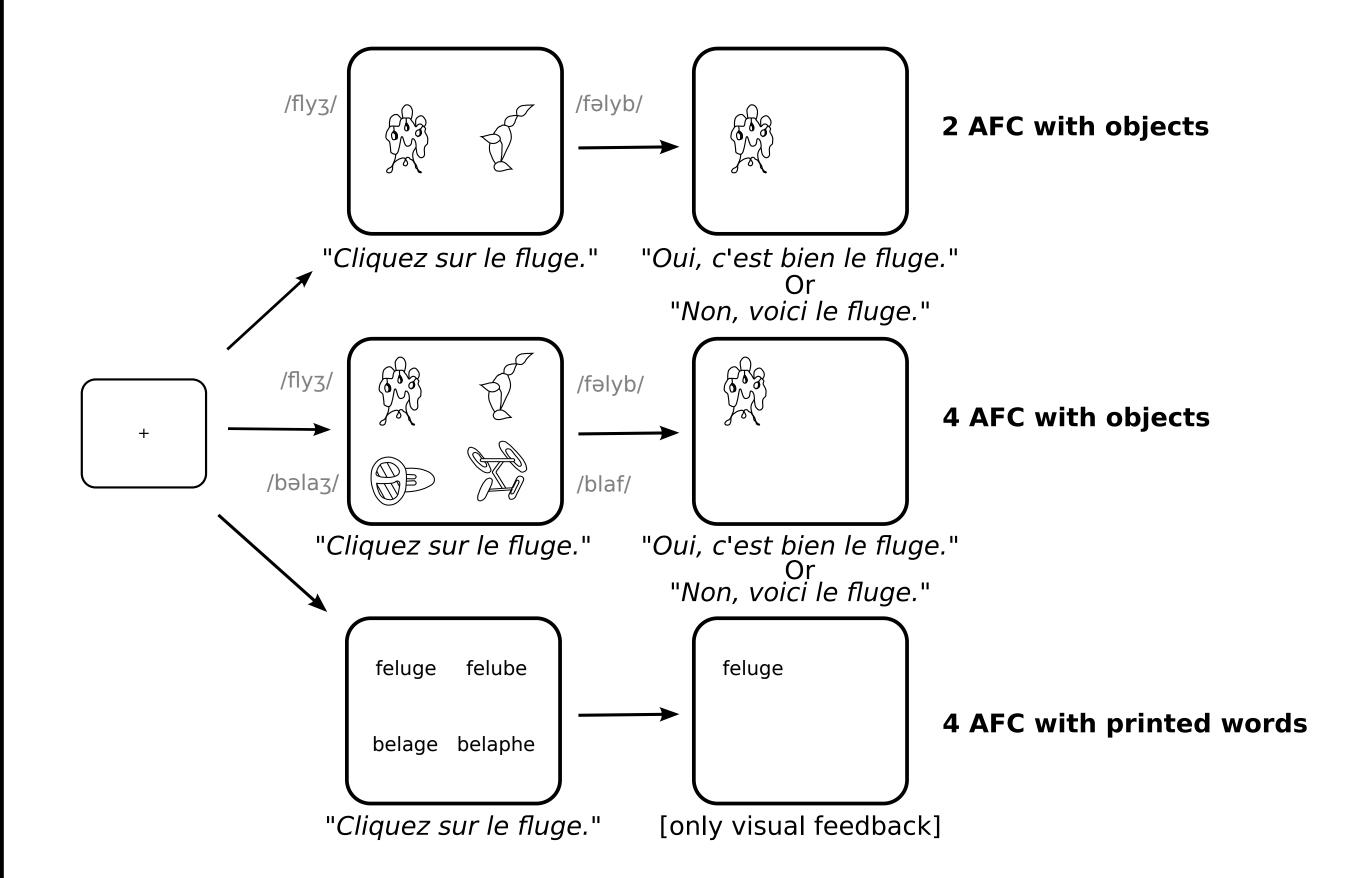
Day 3

2 AFC with objects 4 AFC with objects 4 AFC with printed

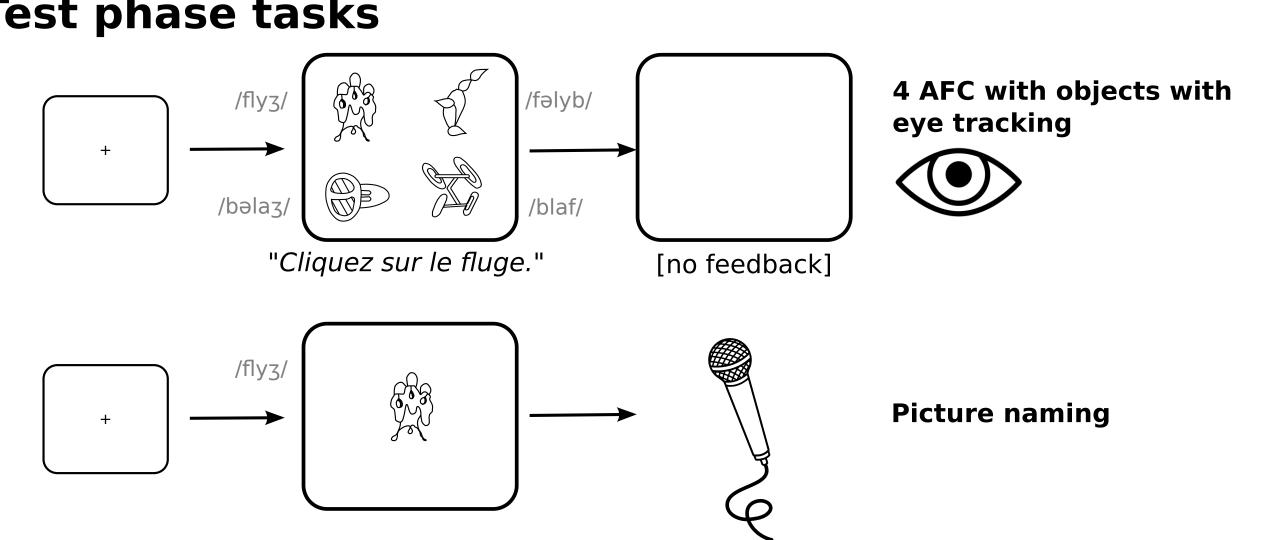
words TEST: 4 AFC with

objects + eye tracking **TEST: Picture naming**

Learning phase tasks

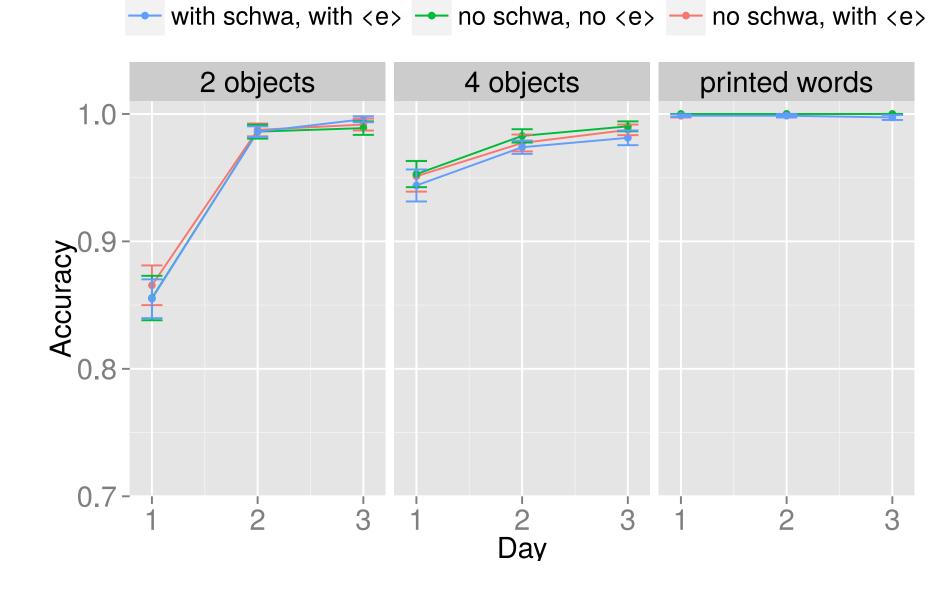


Test phase tasks



Learning phase results

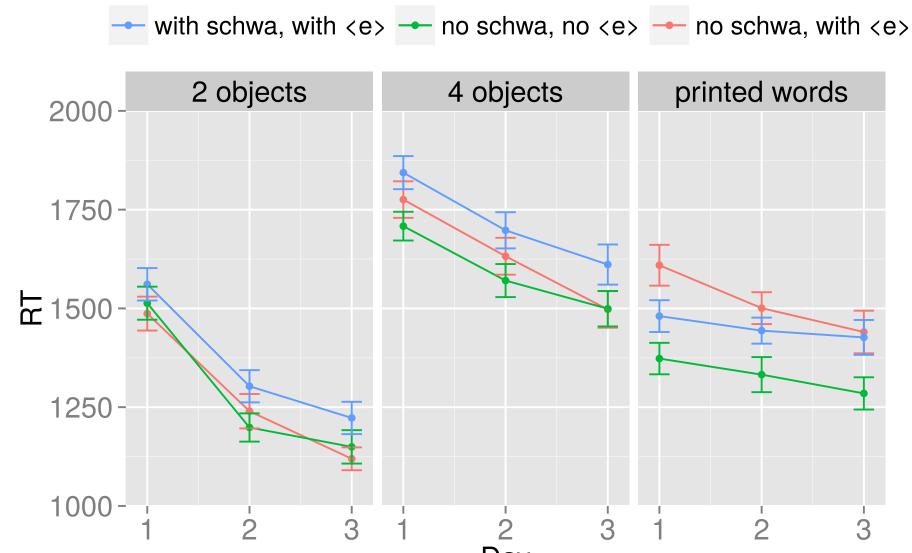
Learning phase accuracy



Participants learned to identify the novel words quite fast.

No differences in learning performance across conditions.

Learning phase RT



Learning of the novel words is also reflected in a decrease in identification responses across the three days.

For printed words, RT were slower if the orthography and the phonology did not match.

Test phase results

Eye movements

Fixation probabilities were modeled using Growth Curve Analysis [2].

No-schwa competitors: Competitor-distractors difference Spelling - with <e> - without <e> 0.2 difference 0.1 Comp Comp 2000 500 Time (50 ms bins)

No-schwa competitors: Target vs. competitor → with <e> → without <e> 0.75 erence 0.25 -0.25 2000

More fixations to the competitors relative to the distractors if the schwaless competitor was spelled with <e> than if it was spelled without <e>.

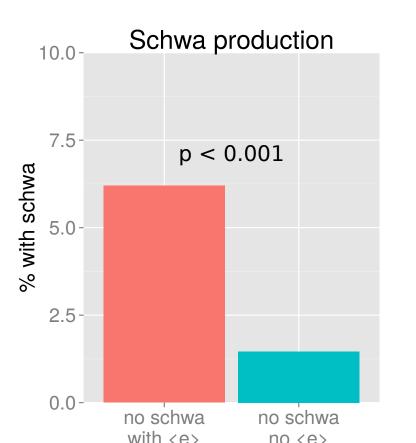
for the target-competitor Cross-over differences: more fixations to schwaless competitors with <e> in the beginning, but fewer later on.

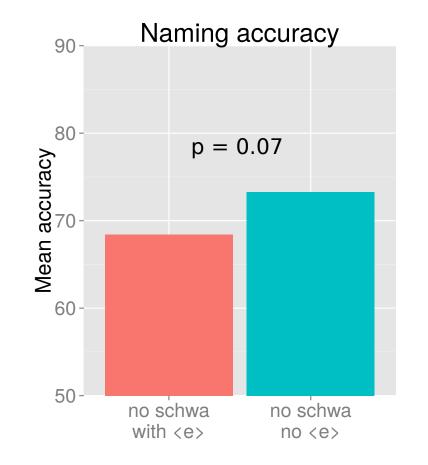
Time (50 ms bins)

Picture naming

Schwaless words spelled with <e> were more likely to be produced with schwa than schwaless words spelled without <e>.

Trend suggesting higher accuracy for schwaless words spelled without <e> than with <e>.





Discussion & conclusions

French words quite quickly. Inconsistent can generate phonological variants orthographic information slowed down based on orthographic information. processing during learning but did not These representations engage in decrease accuracy.

More importantly, we found evidence for lexical competition if schwaless words were spelled with <e> than without <e> during production and recognition.

Listeners were able to learn 40 novel. These results suggest that learners lexical competition during speaking and listening.

References

[1] Buerki, A., Spinelli, E., & Gaskell, M. G. (2012). A written word is worth a thousand spoken words: The influence of spelling on spoken-word production. Journal of Memory and Language, 67(4), 449-467.

[2] Mirman, D., Dixon, J. A., & Magnuson, J. S. (2008). Statistical and computational models of the visual world paradigm: Growth curves and individual differences. Journal of Memory and Language, 59(4), 475-494.