Poster 1b: Early readers' knowledge of phoneme-to-grapheme correspondences affects speech sound processing

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Abstract

The present study examined whether early readers' speech sound perception and production is modulated by their knowledge of phoneme-to-grapheme correspondences. Sixty Spanish second-graders (Mage= 7;5 years), classified as good or poor decoders, completed tasks measuring speech sound perception and production. These speech sounds were either orthographically consistent or inconsistent: in Spanish, /p/ and /t/ exclusively map onto 'p' and 't' (hereafter, consistent sounds), respectively; while /k/ maps onto 'c', 'qu' and 'k' (hereafter, inconsistent sound). In the perception task, children had to detect both consistent and inconsistent sounds appearing infrequently within a repetitive auditory stream. In the production task, they had to produce these same sounds in meaningless syllables whenever they saw a star appear on the screen. Data were analyzed using linear mixed-effects models for reaction times (perception) and speech onset times (production). In perception, all children were faster to detect the consistent compared to the inconsistent sound (β=7.89, SE=3.52, t=2.24, p=.025). In production however, only good decoders were faster to produce consistent than the inconsistent sound (β=.026, SE=.012, t=2.19, p=.032). These results show that orthographic knowledge affects speech sound perception and production, thus suggesting that literacy acquisition modulates already formed speech sound representations.

Presenter's availability in ***NEW*** online room: **16:00-17:00 CET**

Question (name:)
Good afternoon, I would like if you could elaborate more exhaustively what do you mean by orthographic influence on production and what is its phonetic manifestation (I'm working on this possibility too, in Italian)

Piero Cossu, University of Pisa

Author's response:
Thank you for your message Piero! I sent you an email :)

Question (name:)
HI, Could you maybe explain what the reaction time and accuracy of the speech perception task mean? They had to repeat the deviant sounds and you measured RT and accuracy?
Or if I understand correctly by detecting, they had to press a button?

Author's response:
Hi! Thank you for the question. You understood it perfectly :) In the perception task, children were presented with a repetitive auditory sequence of /f/, /f/, /f/... presented on 80% of the trials and were instructed to press a button every time they here a different sound from the repetitive one (either the consistent sound /t/ or the inconsistent sound /k/ presented on 10% of the trials each). RTs were measured for the button responses (how fast they respond to /k/ and /t/) and errors represented missed trials (so the accuracy are all button responses to /k/ and /t/).
Hope this helps! I am happy to answer any question either here or you can send me an email m.jevtovic@bcbl.eu

Question (name:) Emanuele Casani
Hi!
I entered your Jitsi room but you were not there.
Can I ask you how you have interpreted your results?

Author's response:

Question (name:)
Author’s response: