

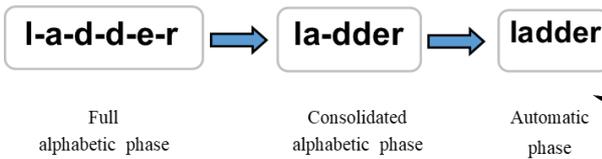
Syllable processing during reading development

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BACKGROUND

Ehri's developmental model of word reading [1]



The use of offline experimental designs have shown a lack of consensus in how the use of syllable information changes across languages during primary school years [2,3,4].

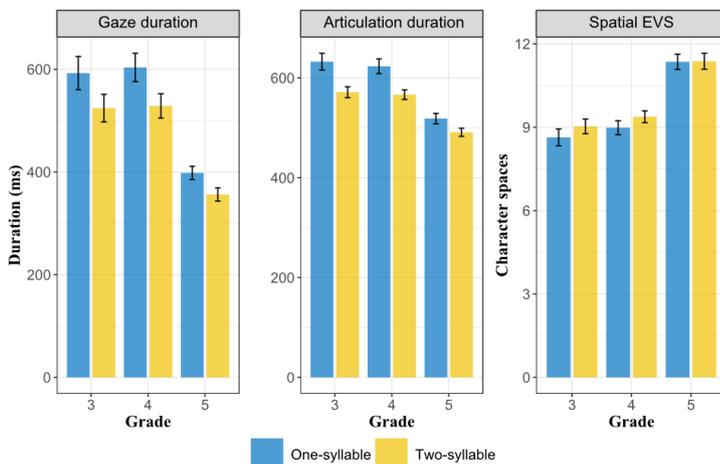
Does the use of syllable information in English as indexed by syllable number change during reading development?

METHODS

- ⇒ 51 participants (7-10 year olds)
- ⇒ Each participant read 42 one and two syllable words embedded in two-sentence passages.
- ⇒ Words were controlled for Frequency and AoA across conditions and could fit either of two passages
- ⇒ Eye movements and voice were recorded while participants read aloud.

Condition	Passage with target words
One syllable	I saw my friend waiting at the gate of the park. He was waving so I could spot him easily.
	Today is a special day for my friend since it is his birthday. We will have some chocolate cake.
Two syllables	I saw my father waiting at the gate of the park. He was waving so I could spot him easily.
	Today is a special day for my father since it is his birthday. We will have some chocolate cake.

RESULTS



LMM analysis with cross random effects of items and participants. Variables such as word frequency and AoA were included into the models as covariates.

Significant difference between grades four and five for gaze duration ($b = -0.15$, $SE = 0.04$, $t = -4.19$, $p < 0.01$), articulation duration $b = -0.08$, $SE = 0.02$, $t = -3.67$, $p < 0.01$), and spatial EVS ($b = 2.33$, $SE = 0.55$, $t = 4.27$, $p < 0.01$).

Significant effect of syllable number for gaze duration in the opposite direction to our prediction ($b = 0.02$, $SE = 0.01$, $t = 2.41$, $p = 0.018$).

No interaction between grade and syllable number for all measures.

None of the offline ability measures of spelling, reading, vocabulary interacted with syllable number.

CONCLUSION

- 🎯 The development of eye movement and voice measures namely gaze duration, articulation duration and eye-voice span are reflective of an overall increase in reading proficiency.
- 🎯 The direction of the syllable number effect may be dependent on other lexical factors such as presence of consonant clusters and word length.
- 🎯 Children may be able to chunk two syllable words for faster processing compared to one syllable words of the same length and this pattern is relatively stable between grades three and five.

[1] Ehri, L. C., & McCormick, S. (1998). Phases of word learning: Implications for instruction with delayed and disabled readers. *Reading & Writing Quarterly: Overcoming Learning Difficulties*, 14(2), 135-163. <https://doi.org/10.1080/1057356980140202>

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