Are orthographic skeletons formed with or without semantics?

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How does vocabulary help child learn to read?

Wegener et al. (2018) proposed that children combine their knowledge of spoken words with what they know about how spoken sounds relate to written letters to form an expectation about the likely spelling of a word they have not yet seen written down. We call these spelling expectations "orthographic skeletons."

"finch"

Vocabulary knowledge

+

/f/=F
/I/=I
/n/=N
/tʃ/=CH

Sound-letter knowledge

=

FINCH

Orthographic skeleton

An initial test of this mechanism

Wegener et al. (2018) provided initial evidence for this mechanism in the following way: Children were told the pronunciations and meanings of some novel words.

"nesh"

"coib"

Later, children saw the novel words in written sentences for the first time. Novel words either had a spelling that children likely expected (predictable spelling) or a spelling that they likely did not expect (unpredictable spelling).

NESH

KOYB

Monitoring children's eye movements as they read sentences containing these words for the first time showed that looking times for predictable (NESH) and unpredictable (KOYB) spellings varied according to whether or not the word had been learned orally. Across all looking time measures, if a word had been learned orally, there was a larger difference in looking times between predictable and unpredictable spellings than the corresponding difference when words had not been heard before. This initial finding suggests that children do form "orthographic skeletons" of orally known words.

Testing the role of semantics in the formation of the orthographic skeleton

In the current study, we wanted to refine our understanding of this new cognitive mechanism, by evaluating the role of semantics within it. We asked two questions: Does semantic support result in the formation of stronger orthographic skeletons? And, is meaning necessary? We predicted that we would observe orthographic skeletons when children learned novel words with and without meaning, but that they would be stronger when meaning was present.

Phonology and semantics

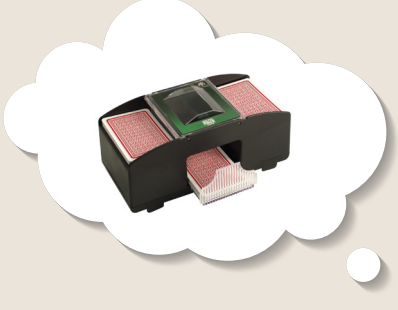
"This is a nesh. It is used for shuffling cards."

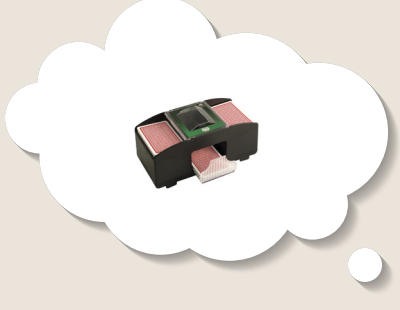
Phonology only

"nesh"

What was found?

When meaning is present, children form orthographic expectations that are consistently apparent from early to late looking time measures. When meaning is absent, children form orthographic expectations that are apparent only in the late looking time measure.





Implications

There is a suggestion that semantics contributes to the creation of stronger orthographic skeletons, which implies that both should be taught to maximally leverage this mechanism. Future work might investigate the role of contextual support at the point of reading, and the form of the orthographic skeleton.

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