

Supporting vocabulary learning in noise: what do we know and what we can do?

Courtney Hooton

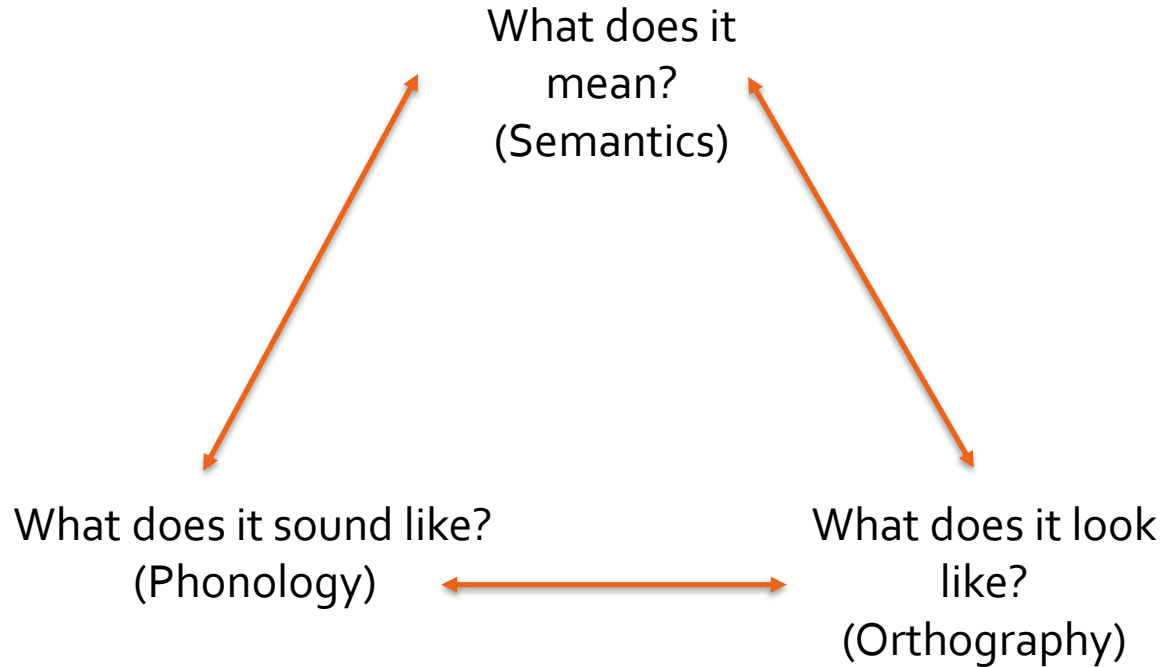


@courtneyhooton_

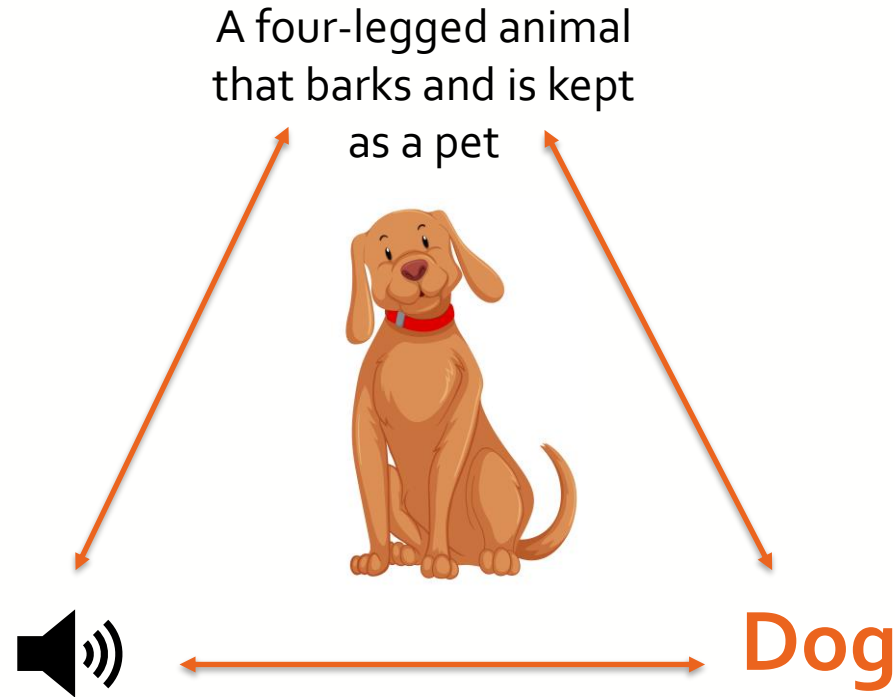


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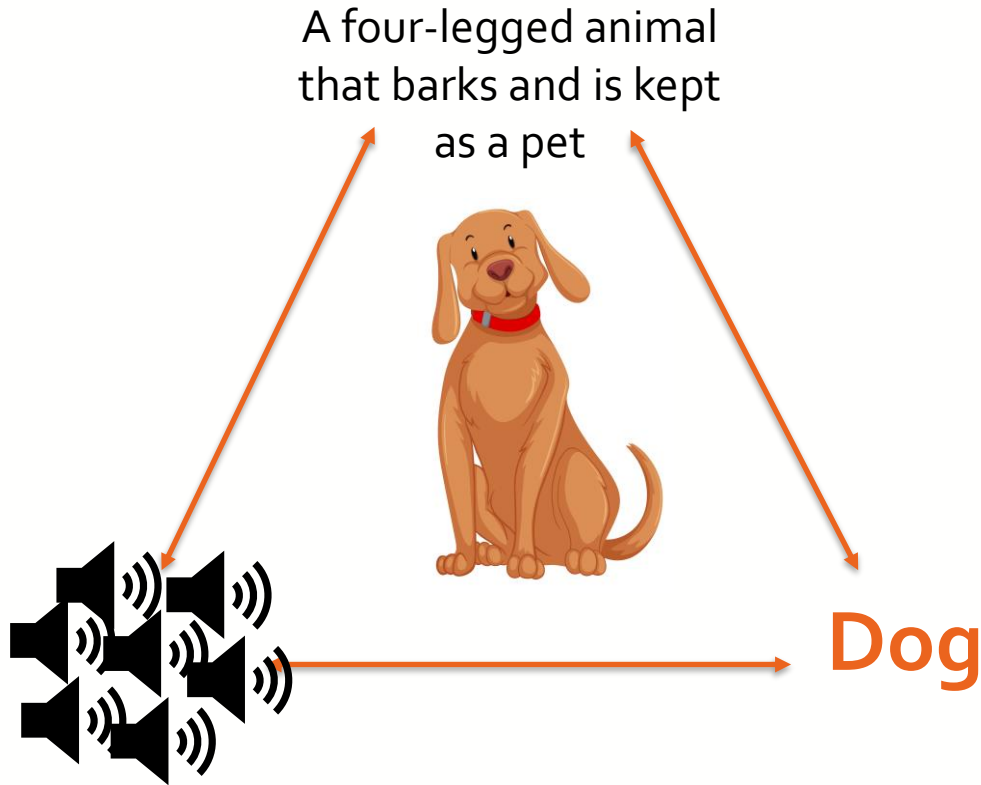
What does it mean to know a word?



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How can noise affect word learning?



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1. Noise can mask phonological information in the auditory stream (Klatte et al., 2013)
2. Noise can act as a distractor that must be suppressed when attending to the auditory signal of interest (i.e., words) (Beaman, 2005; Brungart, 2001; Howard et al., 2010; Kahneman, 1973; Larsby et al., 2005)

Why is this important?



- Classrooms are (unavoidably) noisy places!
- The American Speech Language Hearing Association recommends a SNR of +15dB or greater for adequate speech perception in children
 - Substantial evidence to suggest that classrooms regularly fail to meet these recommended listening conditions (Grempe & Easterbrooks, 2018; Shield, 2015; Wang & Brill, 2021)

What can we do to mitigate the effect of noise?



- Orthographic facilitation (Ricketts et al., 2009; Rosenthal & Ehri., 2008)
 - Presenting and/or emphasising the written word when teaching new words leads to better word learning
- Can help in two ways (Salins et al, 2021):
 - Provide a way of specifying impoverished phonological input
 - Reduce the cognitive load and free up resources

- Wanted to assess whether orthographic facilitation was still effective in supporting word learning in noisy environments
- Methods:
 - Adults (children later)
 - 16 “inventions”
 - Spelling presence manipulated between participants
 - Noise manipulated within participants



Valtem

“Diana put the best orange on the valtem to juice it”

Our study



Background measures

Background
measures

TOWRE-2

BPVS-3

Sentence
verification
task

Training block 1

Repetition

See image
and given
sentence

Repeat
word

"Diana put the
best orange on
the valtem to
juice it"

"Say valtem"

Production

See image
and asked
what it is

Repeat
for
blocks 2
and 3

Picture
naming

See picture
and asked
to recall
name

Post-tests

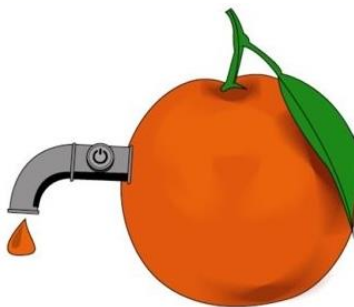
Meaning
recall

Hear word
and recall
what they
remember
about
invention

"Tell me all
you can
remember
about
valtem"

Spelling

Asked to
spell word



Our findings



- Effect of orthography: picture naming, spelling (not meaning recall)
- Effect of noise: meaning recall (not picture naming or spelling)
- Interaction between orthography and noise: picture naming (not meaning recall or spelling)
- Suggests that noise doesn't matter when orthography is present

What can we do?



- Show written forms whilst teaching new vocabulary in the classroom!
- Further research needed but evidence definitely doesn't suggest there is any harm in doing so

Acknowledgements



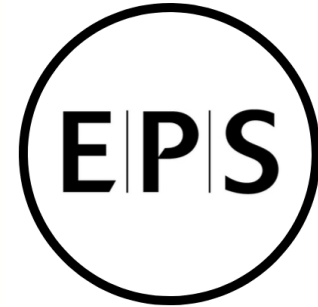
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