Why understanding morphology is vital for vocabulary building and reading comprehension

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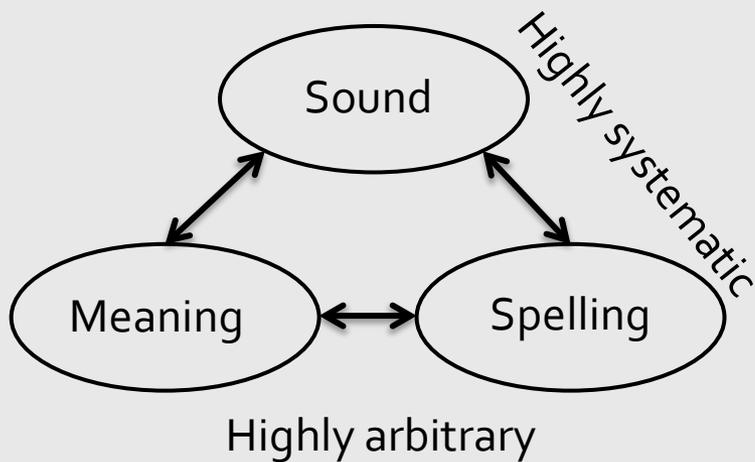
CUT   CAT   CAN

- Arbitrary learning is very hard
- Not possible in languages with very large vocabularies
- Spelling-sound mapping enormously efficient; learned quickly via phonics
- Extensive practice via independent reading builds fluency and vocabulary

This story forgets about morphology!

Morphemes are the meaningful part of words

un + lock

lock + able

un + lock + able

lock + smith

Over 70% of words that adults know are morphologically complex.
But how about children?

Morphology incidence in children's books

The CYP-LEX project *(Korochkina et al., 2024)*

1,200 popular fiction & non-fiction e-books, 400 books per age band
The books British children are reading now

7-9 years

10-12 years

13+ years
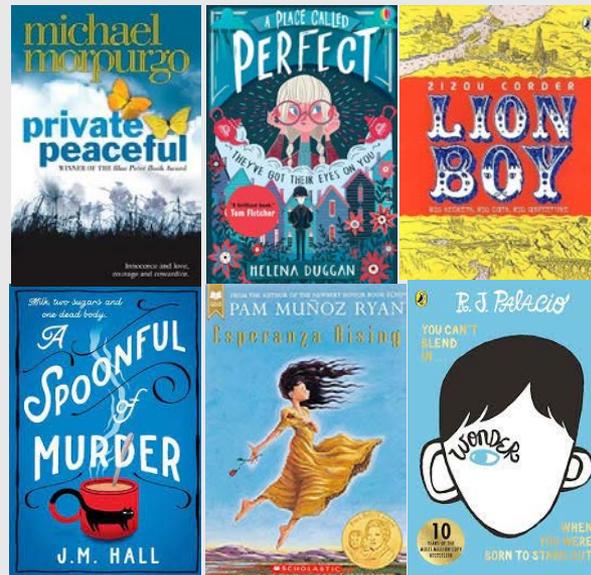
Morphology incidence in children's books

7-9 years

45% morphologically complex
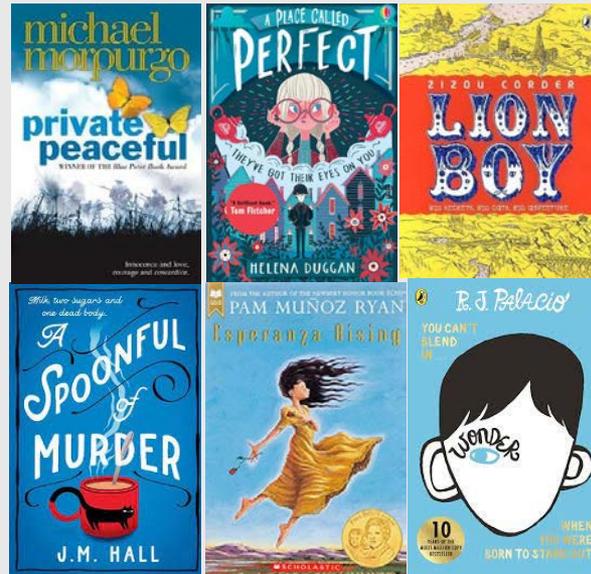
10-12 years

48% morphologically complex

13+ years

51% morphologically complex

These comprise words with one suffix > two roots > one prefix > two suffixes or a prefix and a suffix. Figures do not include inflections.
Incredible richness even in popular children's books!

Morphology incidence in children's books

- Many new morphological forms encountered for first time in reading
- Main device for productive language use
- But tend to be low in frequency and book diversity
- Children need capacity to use analytical skills to 'decompose'

develop		develop	
develops		develop	s
developing		develop	ing
developed		develop	ed
developers		develop	er	s
undeveloped	un	develop	ed
undevelopable	un	develop	able
developable		develop	able
development		develop	ment
developmental		develop	ment	al
developmentally		develop	ment	ally
antidevelopment	anti	develop	ment
redevelop	re	develop	
predevelop	pre	develop	
predevelopment	pre	develop	ment

Increases vocabulary by 7 times!
Enables generalization e.g. underdeveloped, misdevelopment

Morphology trades against phonology

herded, kicked snored
hurdid, kict, snord

blessed, kicked, passed
blest, kict, past

Morphology trades against phonology

/ləs/

/ɪkəl/
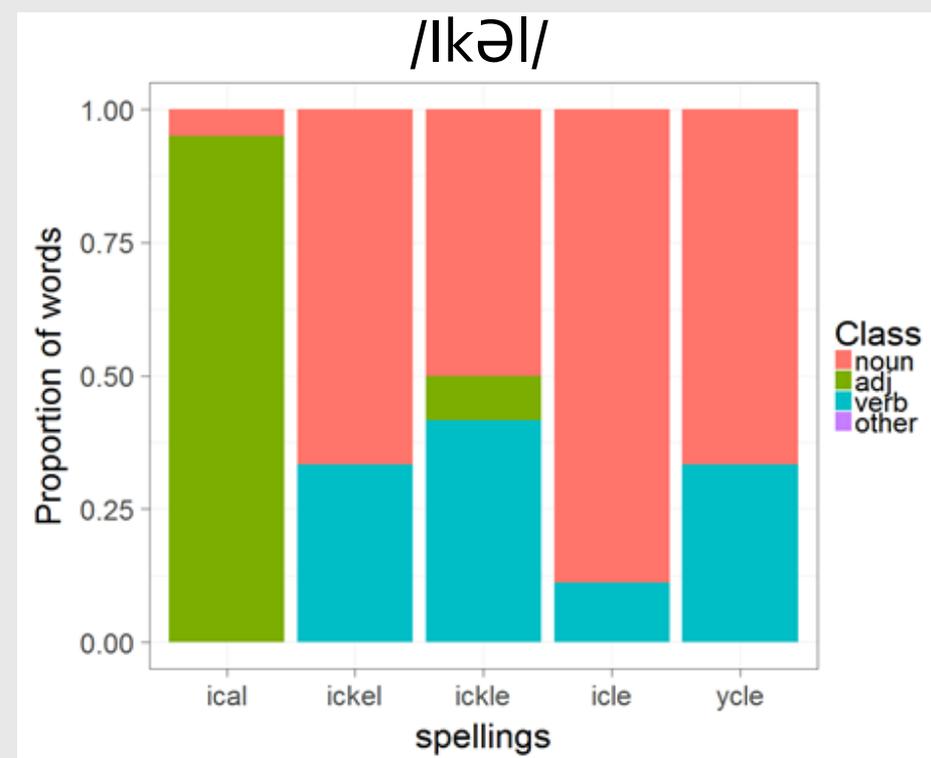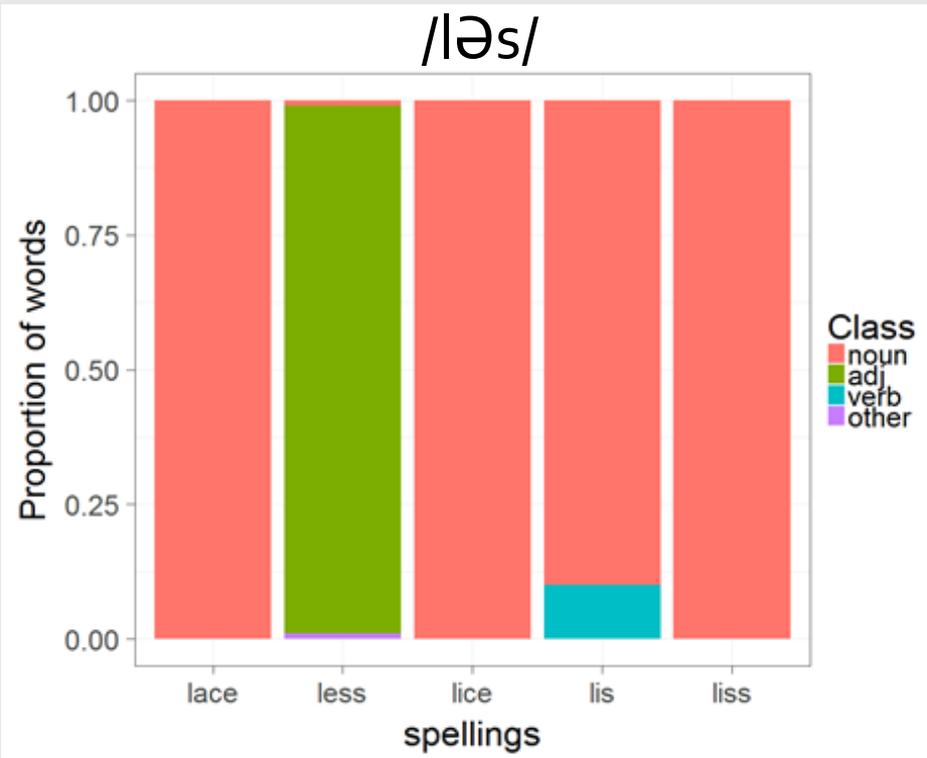
- Letter clusters in English become "reserved" for communicating meaning
- Ubiquitous across English spelling system
- Information not available in spoken language

Ulicheva, Harvey, Aronoff, & Rastle, 2020, Cognition

- Skilled, adult readers break words into morpheme very rapidly; mechanism to isolate content-rich components

Morphemic analysis

Semantic analysis

— Non-morph (e.g. shovel)

— Morph (e.g. teacher)

— Pseudo-morph (e.g. corner)
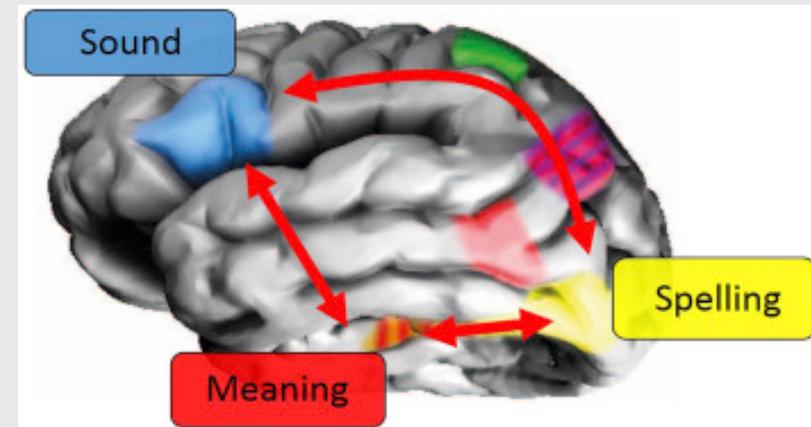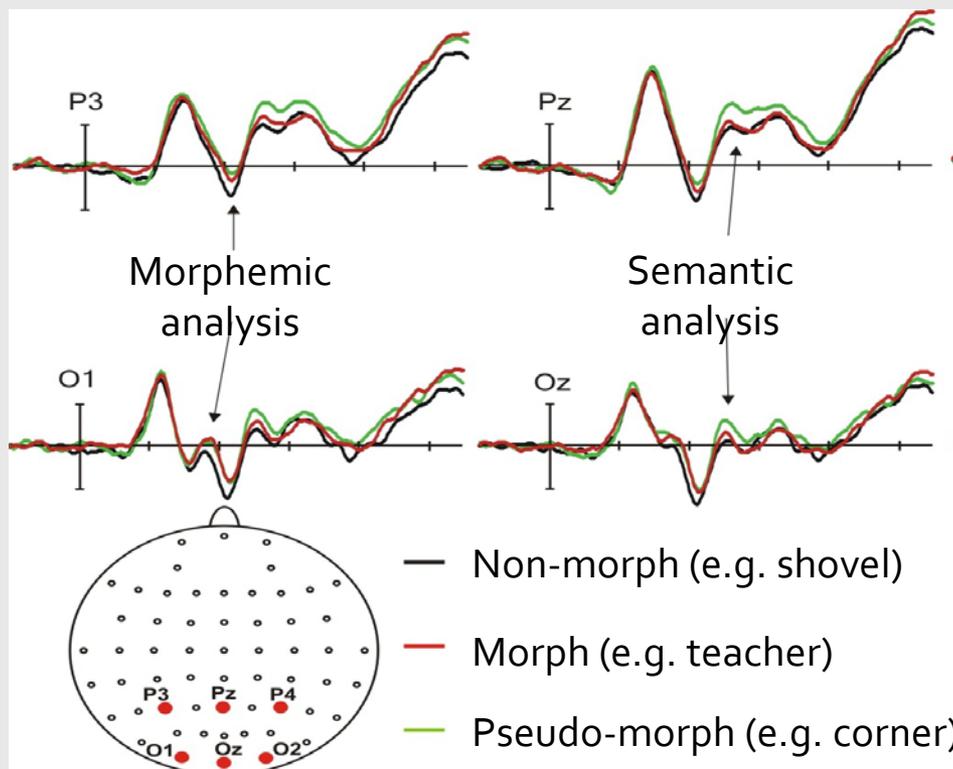
- Depends on 'salience' of morpheme; high-frequency, high-consistency morphemes

Learning morphology

- Learning seems to be based on reading experience; statistical learning mechanism (takes a long time!)

- Repeated exposure to morphemes in consistent contexts

  <u>clean</u>er, <u>clean</u>ly, un<u>clean</u>, <u>clean</u>liness
  teach<u>er</u>, build<u>er</u>, clean<u>er</u>, bank<u>er</u>

- But morphologically-complex words in children's books are low in frequency & book diversity (hard to build experience), and much less consistent than might be apparent.

- Begin to see rapid morphemic segmentation only in late adolescence (15-16 yo); circa 10 years of reading experience

- Morpheme consistency weaker than one might expect

  - Pseudoaffixed words (e.g. corn<u>er</u>, fort<u>y</u>)
  - Obscuring of morpheme boundary (e.g. <u>sub</u>sistence, <u>inter</u>cept; both Latin roots)

- Even relatively high consistency morphemes have more subtle nuances than will weaken learning (e.g. snow<u>man</u>, fire<u>man</u>, milk<u>man</u>)

- Possible role for morphology instruction, but there is no clear evidence about what should be taught or when. There are also major questions around feasibility *(Colenbrander et al., 2021)*.

Oral language
foundations
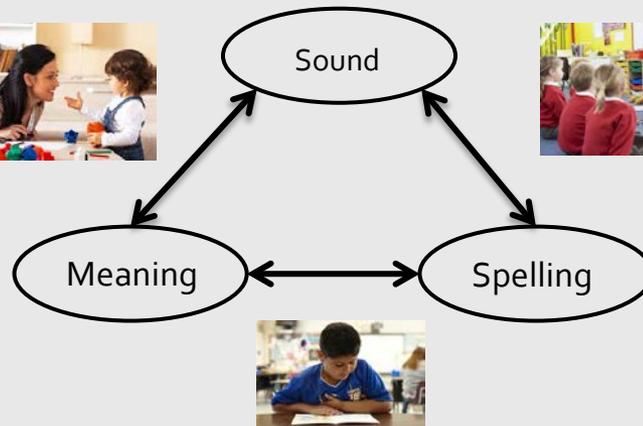
Instruction
(get children
out of the
gate quickly!)

Sound

Meaning ↔ Spelling

Text experience

(learning about morphology, learning
and understanding new words, using
morphology to break words down
quickly!)

Some further reading

Cortex
Volume 116, July 2019, Pages 45-54

Special issue: Review

The place of morphology in learning to read in English

Kathleen Rastle

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The Children and Young People's Books Lexicon (CYP-LEX): A large-scale lexical database of books read by children and young people in the United Kingdom

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