research ED

Professor Kathy Rastle
Dr Maria Korochkina

Words in books: a challenge, a blessing, or both?

@kathy_rastle
Kathy.Rastle@rhul.ac.uk
Maria.Korochkina@rhul.ac.uk

Economic
and Social
Research Council

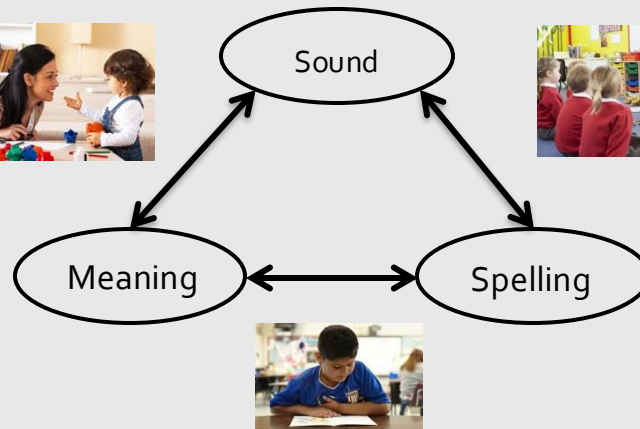"Then a mischievous thought flashed across her eyes, and she pursed her lips together and pushed her tongue forward".
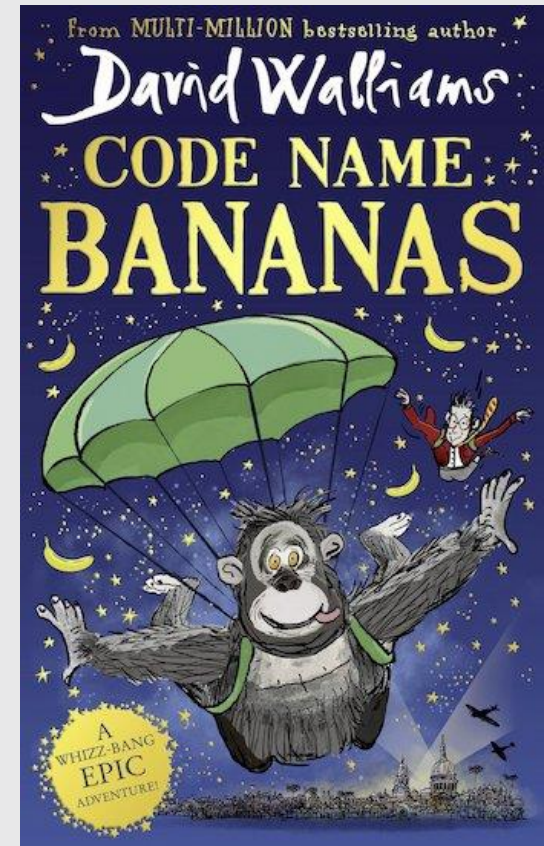
Oral language
foundations

Phonics
instruction

Sound

Meaning

Spelling

Text experience

**What challenges does text experience pose and what
opportunities does it bring?**

Keep an eye out for the lightbulbs!

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National reading surveys, publisher data, book sales statistics from Amazon, BookTrust, Goodreads, LoveReading4Kids, etc.

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1,200 popular books, 400 books per age band
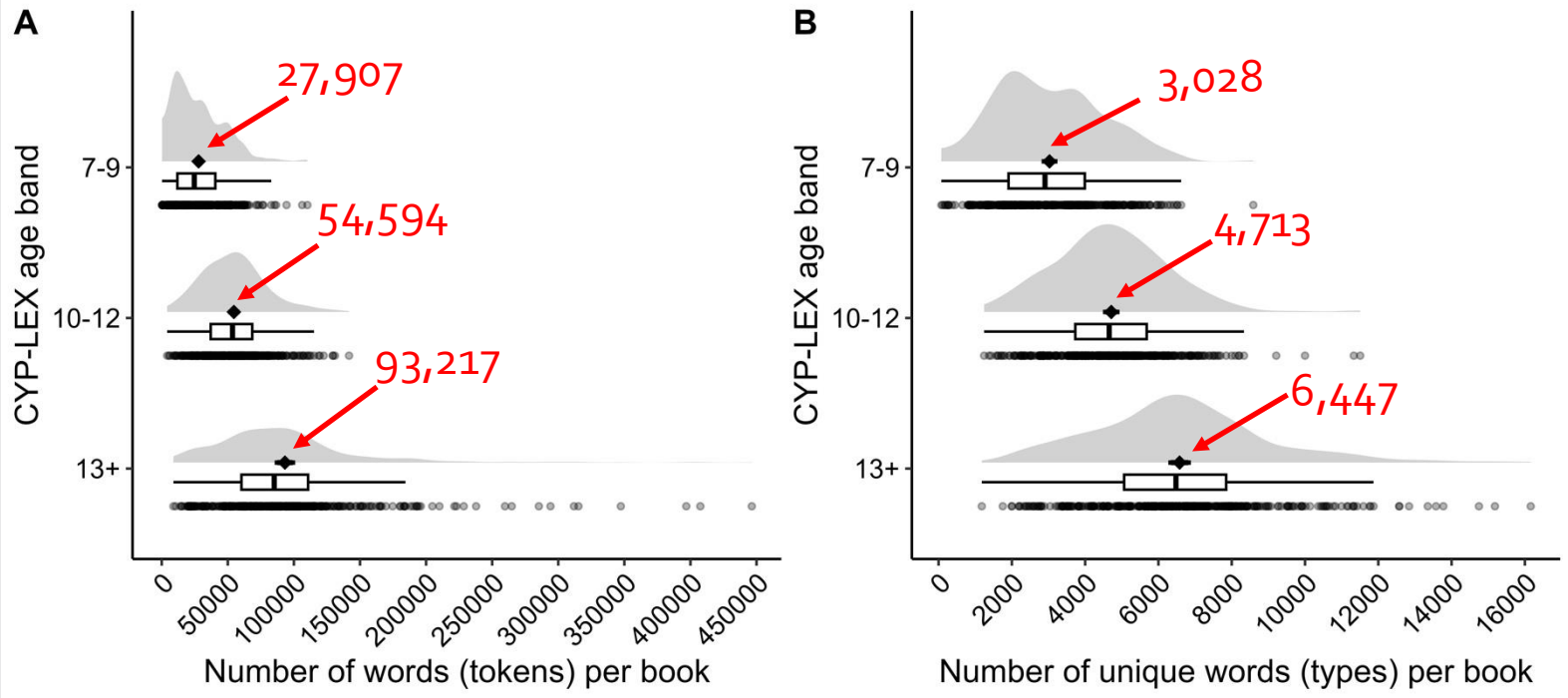
7-9 years

10-12 years

13+ years

Many distinct words in each age band

- Over **70 million words** and **over 100K** distinct words in 1,200 books
- **50K+** distinct words in the 7-9 age band alone

- Vast numbers of distinct words in books
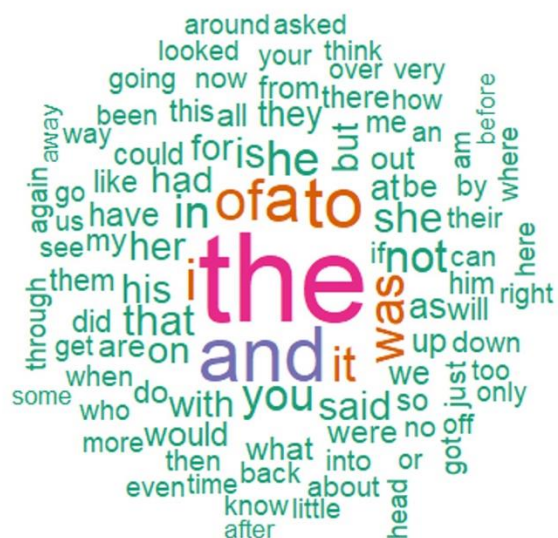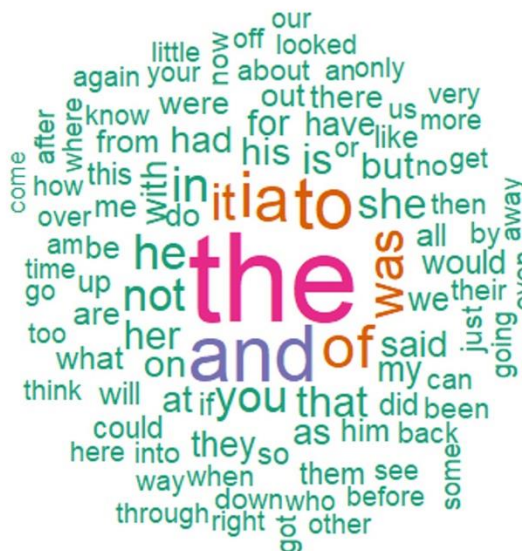- **Memorising words by rote is not an option**

…that's about 37 million words!

A   7-9 age band   **B**   10-12 age band   **C**   13+ age band
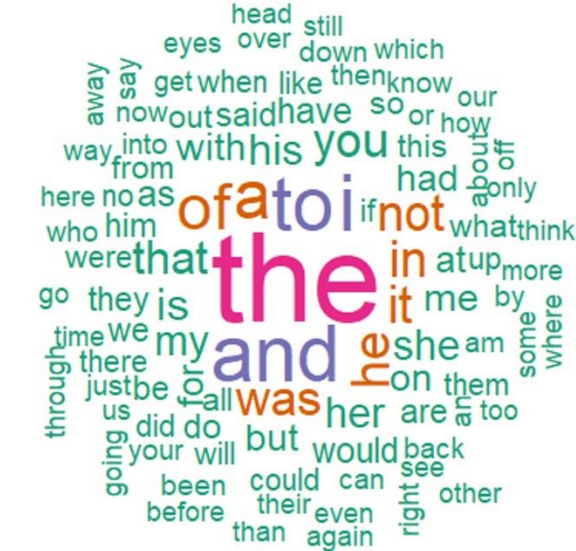
"Then a mischievous thought flashed across her eyes, and she pursed her lips together and pushed her tongue forward".

"Then a   her   , and she   her   and   her   ".
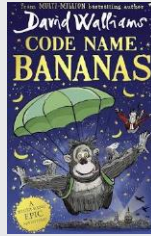
- Children will quickly learn to recognise these words by sight
- Recognising every second word effortlessly **will not be enough to understand** the text

Many words may be unfamiliar

Percentage of CYP-LEX words **not** encountered on TV

	CBeebies (*up to 6 yrs*) + CBBC (*6-12 yrs*) 63,081 words	9 BBC channels 159,235 words
7-9 age band	**28%**	
10-12 age band	**40%**	
13+ age band		**21%**

- Children encounter many words in books that are **not in their spoken vocabulary**
- This occurs from the **earliest** years of independent reading

Children **will be needing support** to understand the words they encounter in books

Most words are not used repeatedly

	% words used **more** than 100 times	% words used **less** than 50 times
7-9 age band	12%	81%
10-12 age band	14%	79%
13+ age band	16%	77%

- Increasing % of frequently used words as books become more advanced
- **Not enough exposure** to learn to recognise most words by sight

It is crucial that children acquire **strong decoding skills** early on

Books vary greatly in the words they use

- In each age band, 30% of distinct words appear in **1 book out of 400**

- Most of these words are used **once** in that book

- **Low similarity** in vocabulary **across the individual books**

- In the 7-9 age band, books are less similar to one another than in the other age bands

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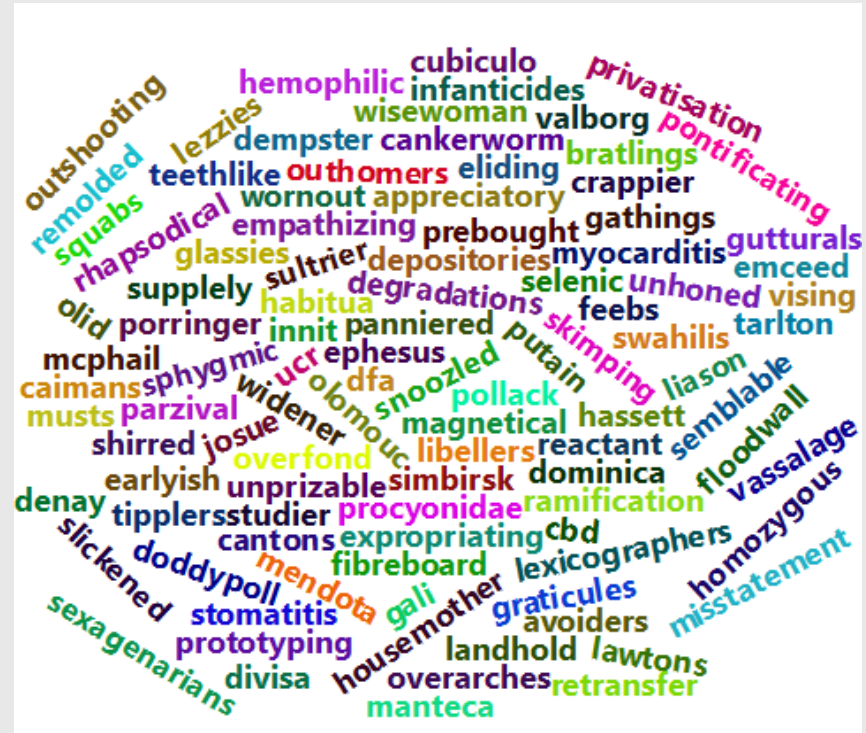Each book contains many words that are not encountered in any other book
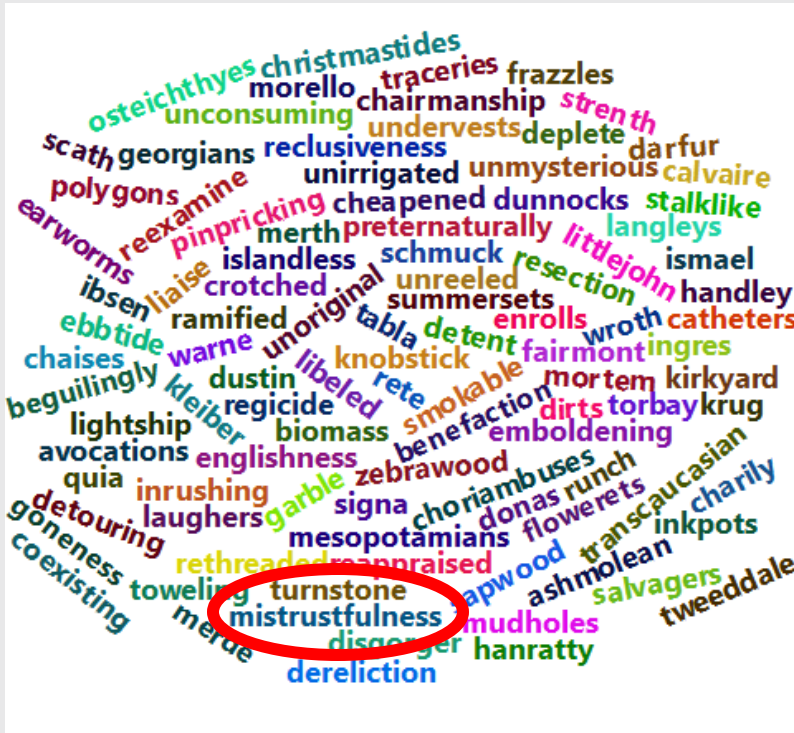
- **Each book is a challenge**
- To encounter as many different words as possible as often as possible, children **must read widely**

Many new words in each age band

- **25,627** new words in the 10-12 age band
- **31,025** new words in the 13+ age band
- Only 1 % are encountered frequently

Many names…   …and, in 13+ books, swear words!

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… and many contain **several morphemes!**

💡 Children will need **strong morphological knowledge** to understand new words in books

The power of morphology

- Most English words are built by **recombining stems and affixes**

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

- Morpheme knowledge is also crucial for computing the meanings of **unfamiliar** words

  bright + -ify → brightify

- Limited time for explicit teaching of morphology, so morpheme knowledge often acquired through **text experience**

Few complex words are used repeatedly

- Roughly **half of all distinct words** in each age band are complex
- But **few complex words are used repeatedly** or in many books

	7-9	10-12	13+
Occur 5 times or less	50%	42%	35%
Occur 100 times or more	8%	11%	15%

- Children are **likely to see** a complex word, but **unlikely to ever see it again**!

- **Difficult** to learn to recognise complex words by sight
- It is critical to be able to **break words apart**

Pre-requisites for affix learning

<u>un</u>known	<u>sub</u>conscious
<u>un</u>fair	<u>sub</u>heading
<u>un</u>afraid	<u>sub</u>optimal
<u>un</u>likely	<u>sub</u>jugate
<u>un</u>convinced	<u>sub</u>mit
<u>un</u>sure	<u>sub</u>ject
<u>un</u>well	<u>sub</u>side (sub + -sidere)

- Must have **consistent** meaning transformation
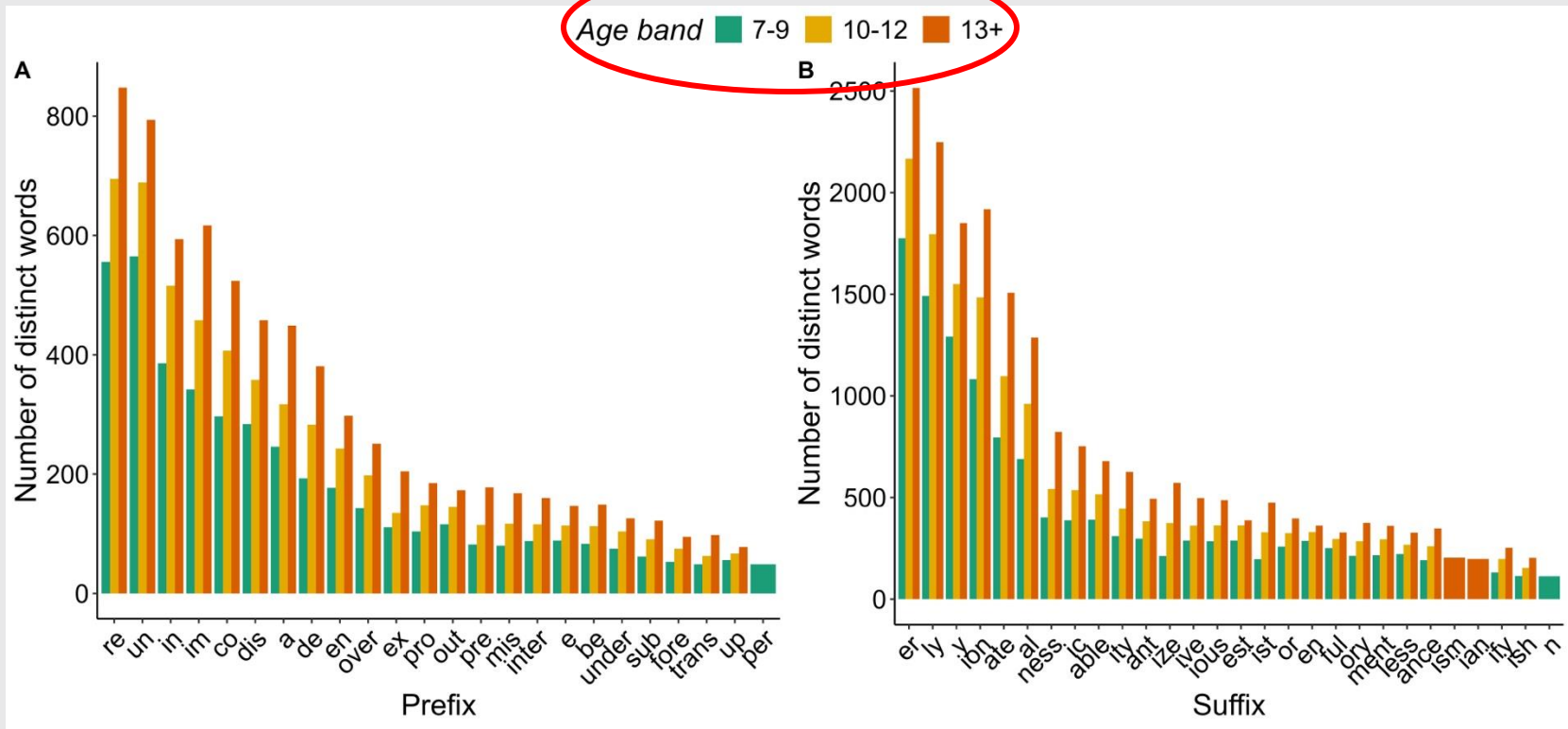- Must occur with a high number of **distinct stems**
- Must be **detectable**
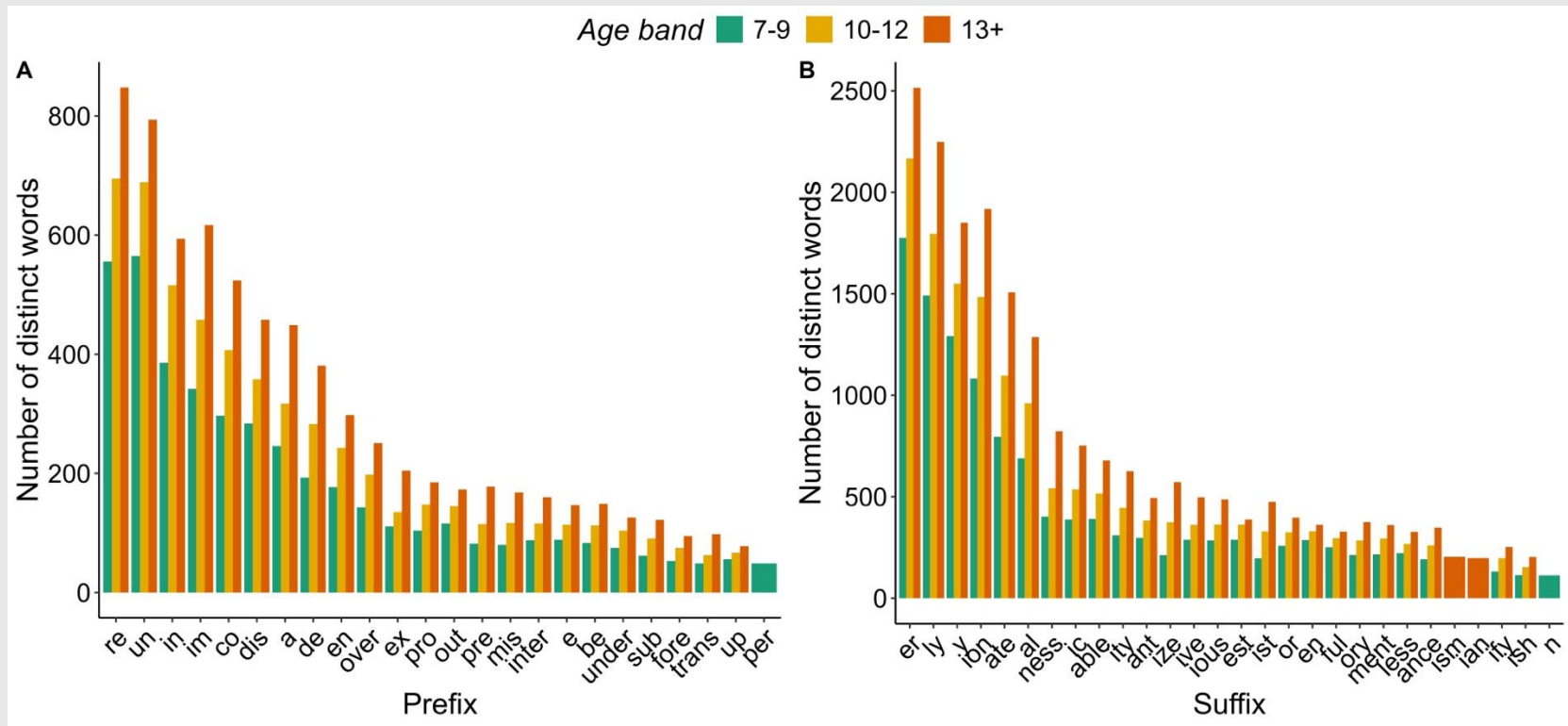
Few affixes are used with many different stems
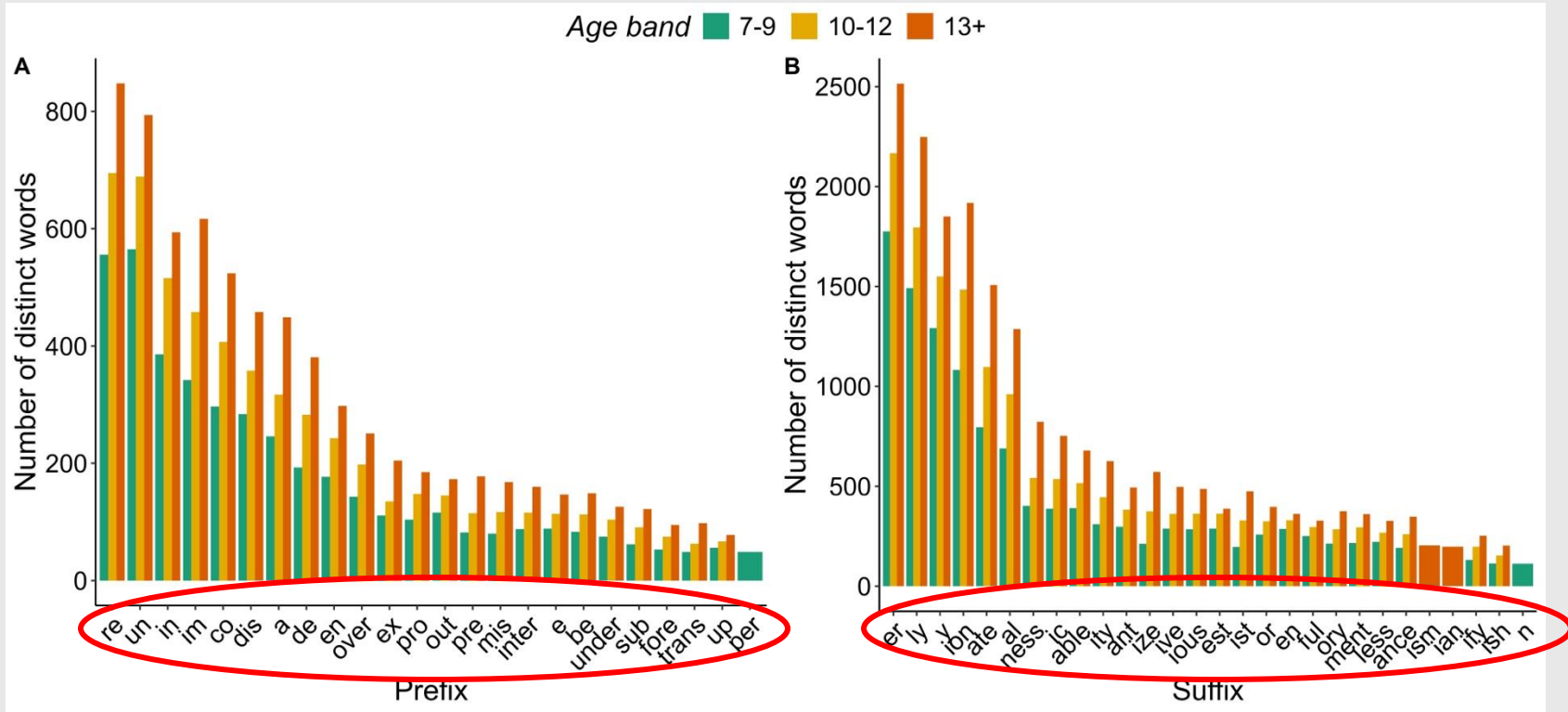
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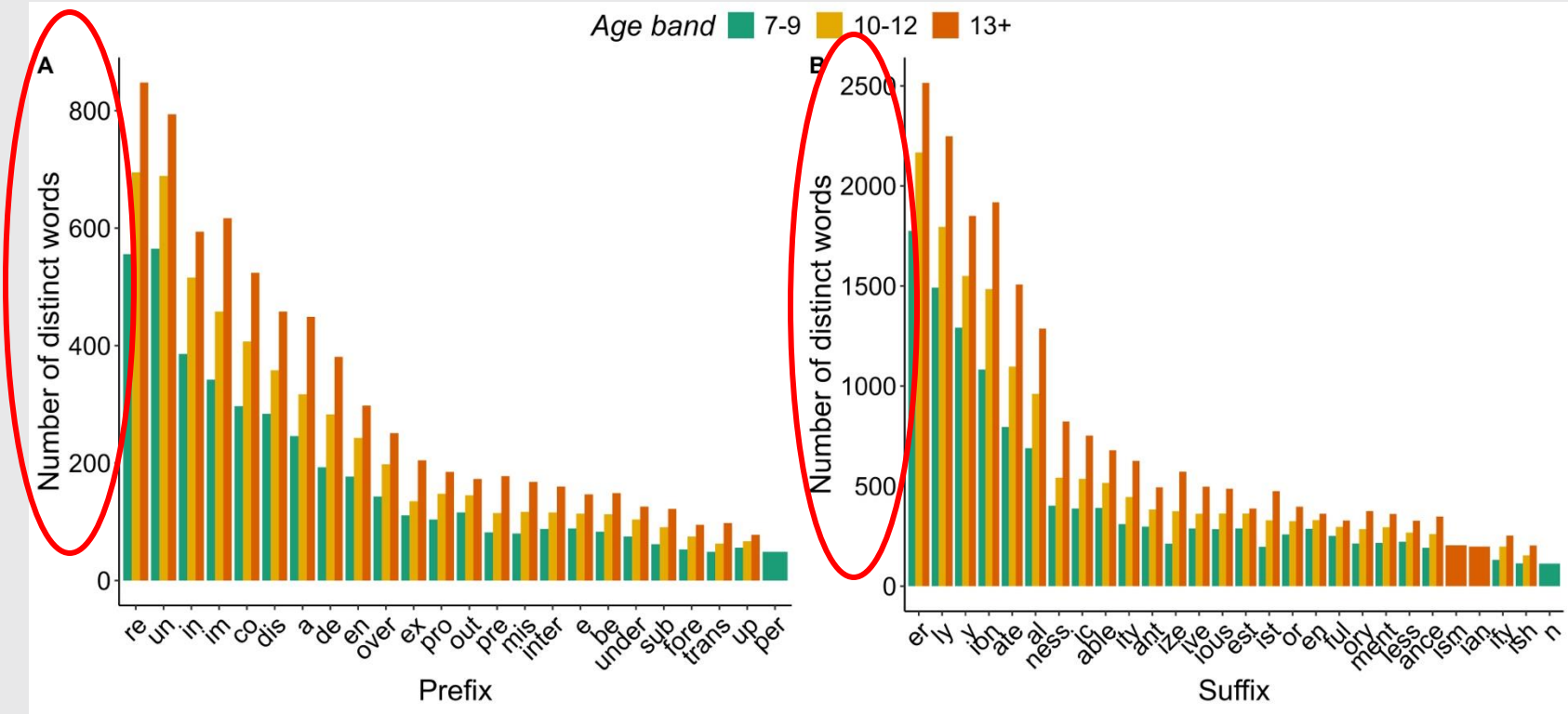
Few affixes are used with many different stems

Few affixes are used with many different stems

- **Limited exposure** before 13+ texts
- Only a few affixes are frequent: *un-*, *re-*, *in-*, *-er*, *-ly*, *-y*, *-ate*

Few affixes are easy to detect

Easy to detect
un- (unknown, unwise, undo)
-ly (warmly, openly, friendly)

Mostly undetectable
in- (inject, include, involve)
-ate (facilitate, allocate, irrigate)

Often undetectable or difficult to parse
-y (gravity, trinity, comply, rely, subsidy)

Pseudo-affixation
-er (corner, brother, number)

- Many complex words **will not add to a reader's experience** of the affixes
- The **opportunity** for affix learning via text is **limited**

- Complex words comprise a large proportion of words in children's books

- Beyond a handful of affixes, morpheme knowledge will be **difficult to acquire** from text

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- Is there value in **more systematic** morphology instruction?

- There is **potential for substantial impact** on vocabulary acquisition and reading comprehension

- Yet, there may be significant **challenges in implementation**

- We'd love to hear **your thoughts** on this!

A closer look at the 13+ books…

32 prose books from the AQA and EdExcel specifications for English Literature GCSE
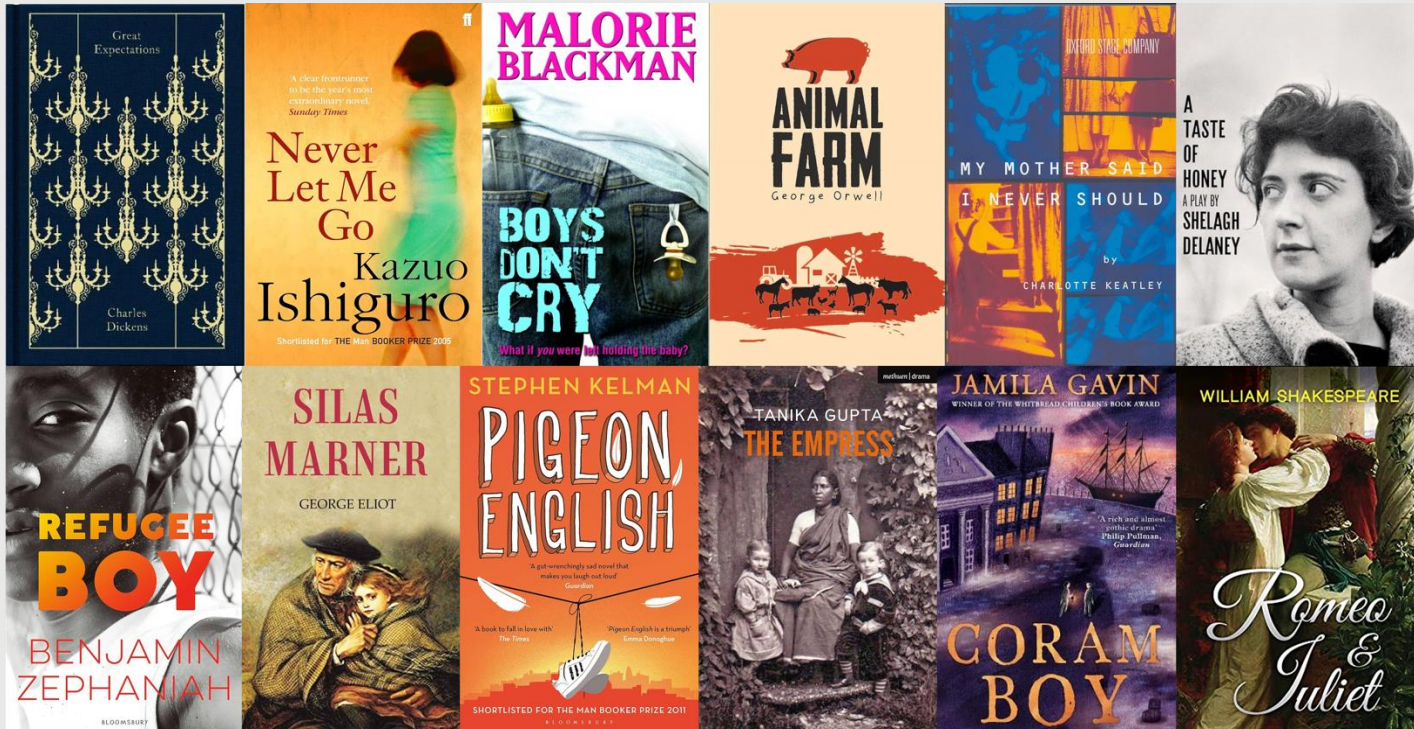
How do these books compare to the popular books?

- GCSE books are **half as long as** popular books, but contain a **similar number of distinct words**

- GCSE books are much **less homogenous** in the words they use

- **More** vocabulary through **less** text in the GCSE books

- May be **harder to understand the text as a whole**

Many unfamiliar words in the GCSE books

- Only **33%** of the distinct words **occur regularly** in popular books

- The remaining **67% are used sparsely**

- **3,000** distinct words **never used on 9 BBC TV channels over 3 years**

  - *poulterer, bonneted, dowerless, bedight, sepulchre, catechize*

  - *brusquely, docilely, imploringly, beatifically, superciliously*

- GCSE texts **will stretch** even those who read widely

- Weaker readers **may not be able to engage** with the GCSE texts at all
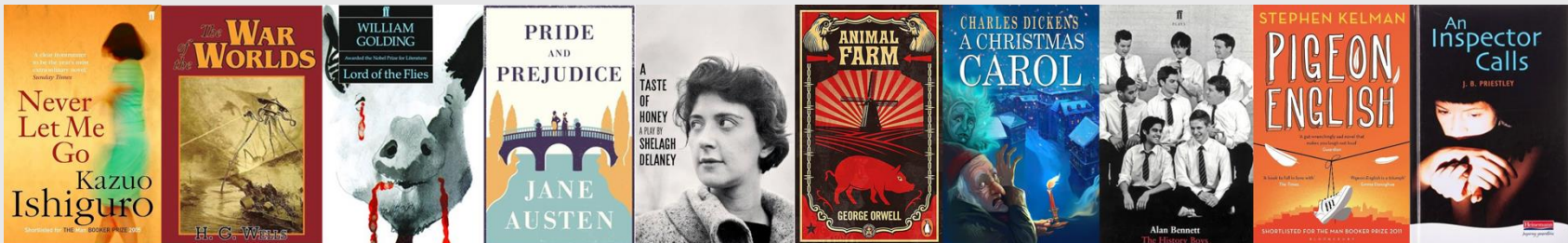
- Children **often** encounter unfamiliar words in books
- In popular books, many of these "new" words are **morphologically complex**

→ Meanings **can be derived** from the words' constituents: [mourn] + [-ful] + [-ly]

- In GCSE books, most "new" words are **new roots**

→ Meanings **cannot be derived** from smaller units

  - *aspidistra, crimplene, beseech, coccidia, gambol*

- Pupils **must rely on context or instruction** to understand these words

- Deriving meaning from context requires **advanced language and reading skills**

Conclusions

💡 Books offer a wonderful **opportunity** to build vocabulary

💡 Yet, book vocabulary is **challenging** from the get-go

💡 Children need **strong foundational reading skills** to access popular books

💡 Children need to **read widely** to build reading proficiency

💡 There is a **partnership** between reading skills and reading motivation

💡 Children with good foundational reading skills will be able to read, understand what they are reading, and derive pleasure from books, **leading to a virtuous cycle**

Further reading

https://doi.org/10.31219/osf.io/vg8c3

The vocabulary barrier in the General Certificate of Secondary Education (GCSE) in English Literature

Maria Korochkina and Kathleen Rastle
Department of Psychology, Royal Holloway, University of London, United Kingdom

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Original Article

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

Maria Korochkina [1], Marco Marelli[2], Marc Brysbaert [3], and Kathleen Rastle [1]

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What makes GCSE English lit so hard for students?

New research has analysed GCSE literature texts against popular fiction – and found three key reasons why so many young people struggle with the qualification

4th August 2024, 8:00am

Maria Korochkina and Kathleen Rastle

Maria Korochkina & Kathy Rastle · Mar 12 · 5 min read

rastlelab.com/blog

What Words do Children Encounter When They Read for Pleasure?

Please help with our research!

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How does text experience shape children's linguistic knowledge?

Year 3 through to Year 11

Do television subtitles improve children's reading fluency?

Years 2 and 3

@kathy_rastle
kathy.rastle@rhul.ac.uk

Thank you!