

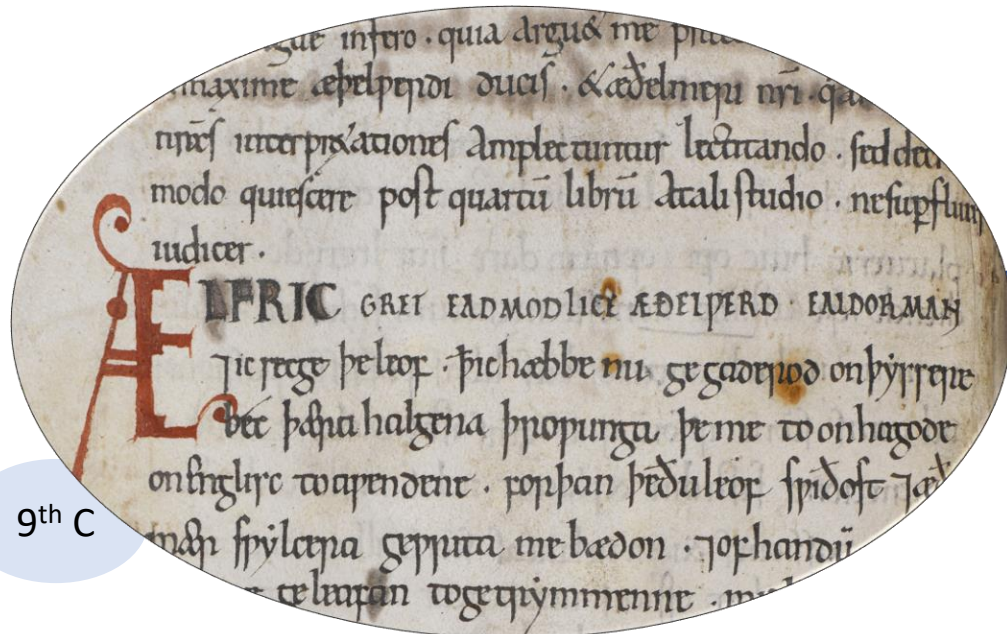
ENGLISH FIRST ADDITIONAL LANGUAGE (and the reading challenges that English poses)

Lilli Pretorius
9 November 2022



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So the giraffe would lift his long neck and wander off. He spent all day with his head in the trees eating the sweetest leaves.

He didn't know that the birds were frightened of his large head suddenly appearing in the treetops. Or that the small animals on the ground ran away because they were scared of being stepped on.

After a while, the lonely giraffe stopped trying to speak to anyone. This went on for the rest of the long dry

21st C

ALPHABETIC WRITING SYSTEMS

Early writing systems tried to represent spoken language with symbols based on pictures, e.g. hieroglyphics  = /n/ word for water began with /n/

- Around 5,000 years ago, spoken language started being represented sublexically in terms of **sound structure** (at the syllabic or phonemic level).
- The alphabetic principle –symbols (graphs) used to represent the different consonants and vowels in a language.
- Early Phoenician (2nd C BCE) represented consonants (a Semitic language). The Greeks adapted this to include consonants and vowels.
- Over the centuries, languages adapted the alphabet to their specific linguistic structures, so there are a range of letters in alphabetic writing systems (around 23 - 37) to represent phonemes.
- Oral language is acquired whether it is taught or not. Literacy (reading and writing) is largely dependent on teaching. Poor quality teaching can seriously jeopardise children's literacy development.

ALPHABETIC WRITING SYSTEMS

they all use (different) symbols to represent speech - at the level of phonemes

- ARABIC:

ذات مرة كان هناك ثلاثة خنازير صغيرة

- HEBREW:

היה היה שלושה חזירים קטנים

- GREEK:

Μια φορά κι έναν καιρό υπήρχαν τρία μικρά γουρούνια.

- ROMAN/LATIN:

Once upon a time there were three little pigs.

- CYRILLIC/RUSSIAN:

Давным-давно было три поросенка.

- HANGUL KOREAN:

옛날 옛적에 세 개의 작은 돼지가 있었다

EFFECT OF ALPHABETIC WRITING SYSTEMS ON EARLY READING DEVELOPMENT

Alphabetic and alphasyllabic writing systems represent spoken language at the **sound** level (phonemic or syllabic)

The **size** of the code set and the **nature of the letter-sound relationships** can influence reading development.

Size of code set

There are always far more syllables than phonemes in a language, so alphasyllabic writing systems have much larger code sets than alphabetic languages (also use lots of diacritics).

Orthographic breadth hypothesis (Nag, Parrilla): Children take longer to read in orthographies with a more extensive code set.

Transparent/opaque continuum:

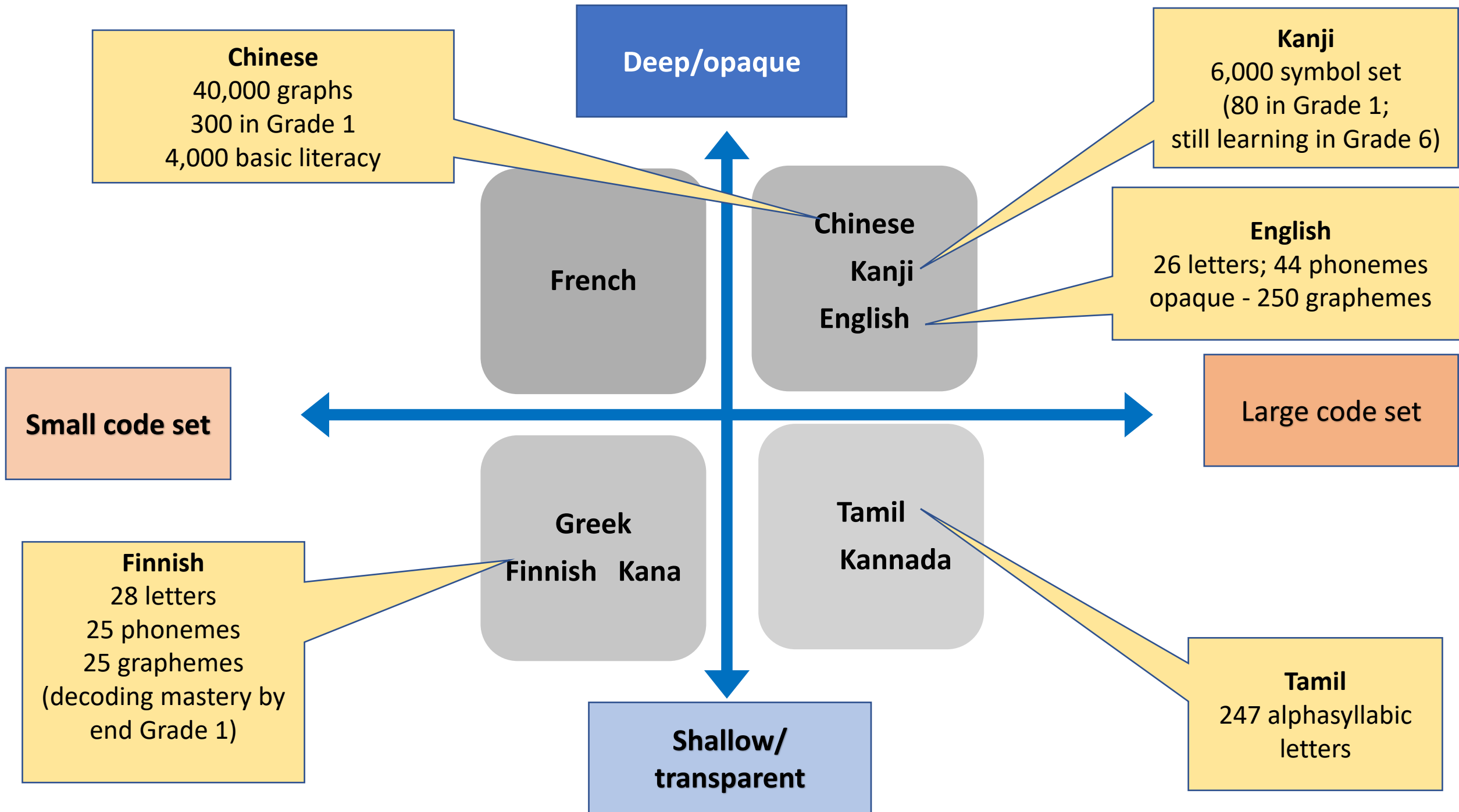
Earlier mastery of reading happens in more transparent orthographies - Finnish, Hungarian, Dutch, Welsh, Kana

Mastery is slower in Portuguese, French, English, Kanji

Orthographic depth hypothesis: size of grapheme = grain size.

Transparent – small grain size phonemes

Opaque – smaller and larger grain sizes, phonemes and sight words (Ziegler & Goswami 2005; Ziegler et al. 2010).



ENGLISH ORTHOGRAPHY

- English has one of the **most opaque** orthographies among alphabetic languages
- It is regarded as an **outlier** orthography (Share 2008).
- English uses 26 letters of the alphabet to map onto 44 English phonemes, of which 24 are consonants and 20 are vowels (Dewey 1971; Galletly & Knight 2013).
- Modern English developed from Old English and Middle English, with lots of grammatical and sound changes over the centuries (the Great Vowel shift). The orthography was only properly standardised in the 19th C but still reflects traces of the historical changes (e.g. *blood*).
- Unlike transparent orthographies which have mostly one-to-one letter-sound or grapheme-phoneme mappings (GPMs) or correspondences, **English has several many-to-one and one-to-many GPMs.**

VARIOUS SOUND/PHONEME & LETTER/GRAPHEME MAPPINGS/RELATIONSHIPS

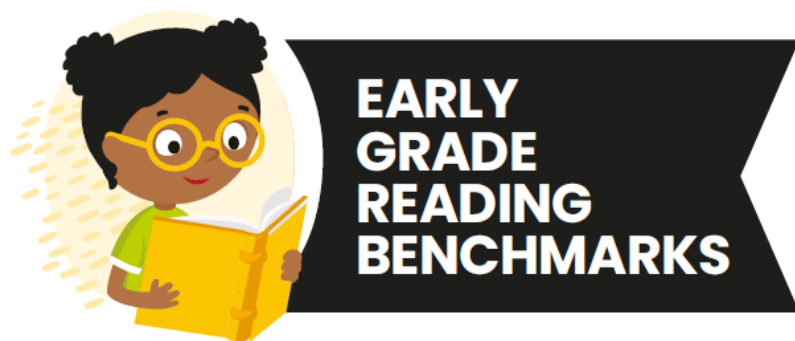
Some of the one-to-many PGMs include:

- The consonant phoneme /f/ can be written as *f* (*f*rog), *-ff* (*cuff*), *ph* (*ph*one) or *-gh* (*cough*)
- The consonant phoneme /ʃ/ can be written as *sh*, *station*, *mission*, *sure*, *chef*, *social*
- The vowel phoneme /ai/ can be written as *made*, *eight*, *they*, *way*, *train*
- The schwa vowel phoneme /ə/ has about 15 graphemes: *the*, *virus*, *gracious*, *begun*, *nation*, *mountain*, *aside...*

Some of the many GPMs include:

- The grapheme *g* represents the phonemes /g/ (as in *go*) and /dʒ/ (as in *giraffe*)
- The grapheme *c* represents the phonemes /k/ (as in *cat*) and /s/ (as in *ace*)
- The grapheme *o* represents 8 different vowel phonemes as reflected in: *or*, *box*, *boy*, *come*, *go*, *now*, *one*, *word*
- The grapheme *-ough* represents 8 different vowel phonemes as reflected in: *bough*, *bought*, *cough*, *dough*, *hiccough*, *rough*, *through*, *thorough*
- Some letters are silent: *gh*ost, *kn*ee, *ps*yche, *comb*, *pane*, *gn*ome, *calm*, *cupboard*, *wh*o

FREQUENCY OF CONSONANT AND VOWEL *LETTERS* IN ENGLISH



Consonants 24		Xhosa C frequency	Vowels 20	
Frequency of letters	r - 39% t - 35 n - 34 s - 29 l - 28 c - 23 d - 17 p - 16 m - 15+ h - 15 g - 13 b - 11 ≤9-5 % f y w k v ≤1 % x z j	l k m b z s y w n kh ph	Frequency of V letters	e - 57% a - 43 i - 38 o - 37 u - 19 y - ?

LEARNING TO READ IN ENGLISH (HL) DEVELOPS MORE SLOWLY THAN IN TRANSPARENT LANGUAGES

Large body of research that shows rapid mastery of fluent reading accuracy by the vast majority of children learning to read in a transparent orthography (e.g Aro, 2004; Cossu, 1999; Goswami, 2002; Holopainen, Ahonen, & Lyytinen, 2001; de Jong & van der Leij, 1999; Landerl, 2000; Lyytinen et al., 2004; Schneider, Ennemoser, Roth, & Kuspert, 1999; Share, 2008; Spencer & Hanley, 2003; 2004; Wimmer & Mayringer, 2002; Ziegler & Goswami, 2005).

A Grade 1 study of reading accuracy achievement in 14 European countries (Seymour et al. 2003) found that:

- In highly transparent orthographies, most Grade 1s achieved 100% accuracy (Norwegian, Dutch, Icelandic, Swedish, Spanish, Italian, Finnish, Turkish, German and Greek).
- In contrast, in English, Grade 1 English readers were reading with only 34% accuracy and even at the end of Grade 2 most English readers still only achieved 76% accuracy.
- Learning to read in English takes even longer if the quality of teaching is poor and if no explicit phonics is provided.

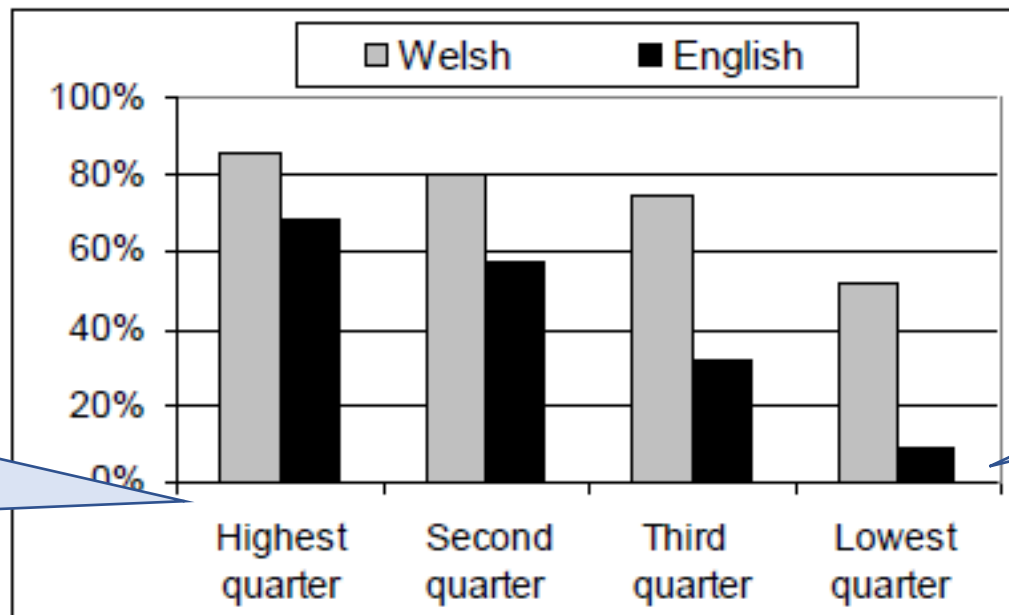
LONGER DEVELOPMENTAL TRAJECTORY FOR LEARNING THE CODE IN ENGLISH

Grade 2 Reading-accuracy achievement

Research by Spencer & Hanley (2003) comparing Grade 2 Welsh (transparent) and English (opaque) readers

The study showed that English readers were delayed in Grades 1 and 2 compared to Welsh.

Some English readers were still delayed in Grade 6 (2004)



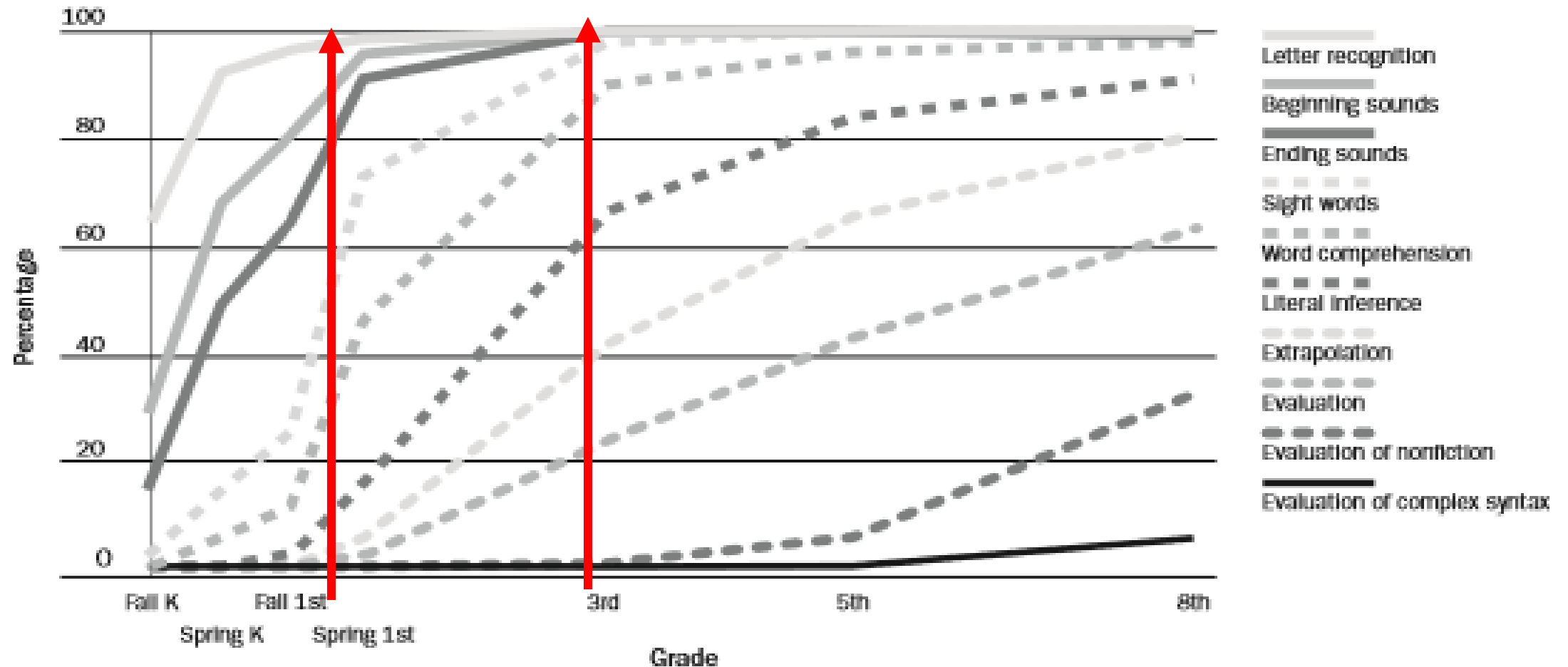
Strongest readers

Weakest readers

PATTERNS OF ENGLISH LITERACY AMONG US LEARNERS

(very large database)
(Reardon, Valentino & Shores 2012)

Figure 1. Percentage of Proficient Students, by Literary Skill, Grades K-8



SOME OF THE MAIN DIFFERENCES BETWEEN ENGLISH AND AFRICAN LANGUAGE ORTHOGRAPHIES

English

- A stress-timed language
- A fairly simple consonant system, but a complex vowel system
- Frequency of letters different from African languages – this affects order in which they are taught)
- Complex syllable structures (CVC, CCVC,
- Many short single syllable words - 2, 3 and 4 letter words (17% and 201%)
- Many high frequency sight words (*once, have, was, their, there, through, laugh*)
- Accuracy develops through small and larger grain size.
- Because of opaque orthography, vocabulary may play a stronger role in decoding proficiency - dual processing may occur at phonemic and lexical level.

African languages

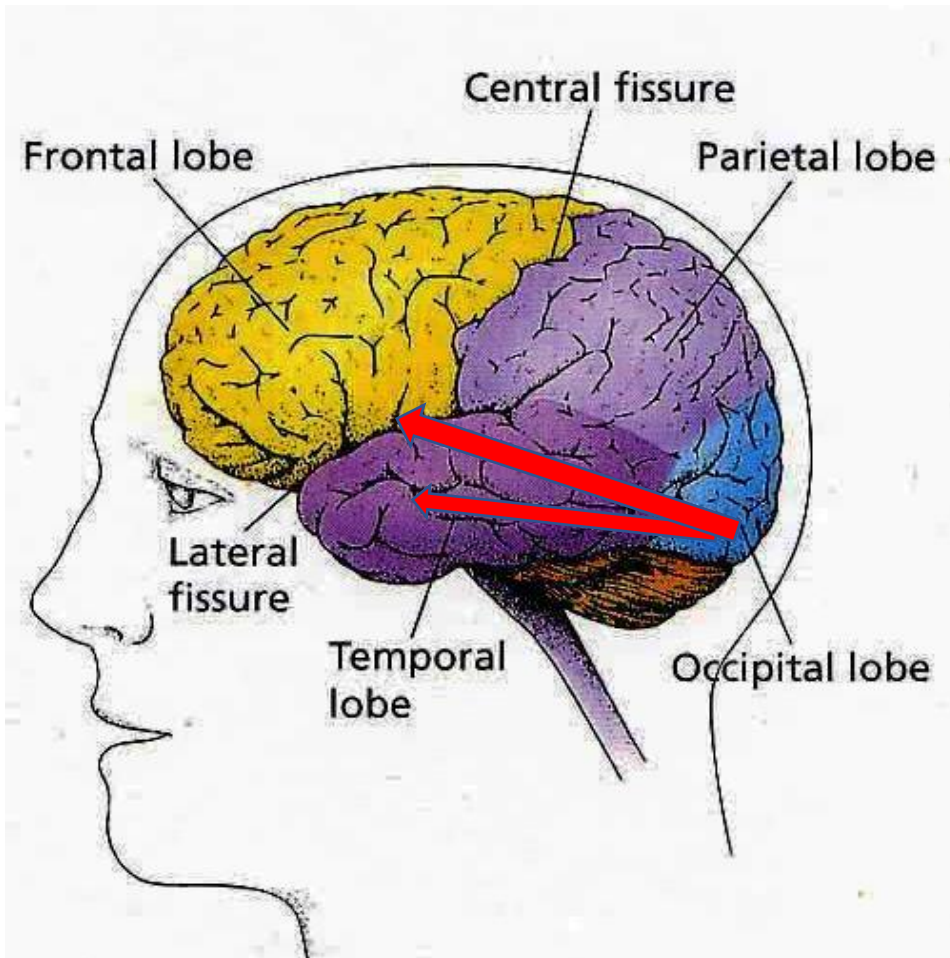
- A syllabic language with some tone
- A complex consonant system but a simple vowel system
- Frequency of letters differs slightly across languages, different from English
- Simple syllable structures (V, CV)
- Many long words, especially in the conjunctive orthography of the Nguni languages
- Very few single syllable words in the Nguni languages
- Accuracy develops mainly through small grain size – phonemic decoding
- Because of transparency, decoding proficiency is not reliant on vocabulary knowledge

PEDAGOGIC IMPLICATIONS

Despite having an opaque orthography, **English is sufficiently regular for beginner readers to benefit enormously from explicit phonics instruction**, whether HL or EFAL.

- The Whole Language approach to teaching reading arose within the English speaking world (Goodman 1970; Smith 1980). It was, in part, an attempt to bypass the complexities of English orthography (it's too difficult so don't bother with it...), downplaying decoding skills. Education systems with transparent languages have a long tradition of explicitly teaching children how the code works, early and quickly. WL is highly inappropriate for teaching reading in transparent agglutinating languages.
- Foundation Phase EFAL programmes should not re-invent the wheel - there are many good phonics programmes available (Jolly Phonics, Letter Land, RAVE-O, THRASS). Teacher trainees need to be familiarised with these in BEd programmes already and be shown how to adapt them for EFAL readers.
- Schools should be guided in their use of effective phonics programmes that align with the science of reading. There are many English reading programmes that claim to offer phonics but which aren't aligned with research evidence (<https://achievethecore.org/page/3240/comparing-reading-research-to-program-design-an-examination-of-teachers-college-units-of-study>)
- Decoding skills in languages that share the same alphabetic writing system are eminently transferable. International and local research show that strong foundational reading skills in HL support learning to read in EFAL (e.g. EGRS II).

HOW THE BRAIN READS WRITTEN LANGUAGE



Because written language is a recent invention in human history, unlike oral language, we are not genetically predisposed to learn to read – we need to be taught to read.

Reading has co-opted the visual cortex and connected it to the language brain areas, to become a reading brain, with new neural pathways.

- After about 250ms of seeing written words, the visual cortex links with language networks via neural pathways
- Reading is an **invisible proficiency** that operates beyond our conscious awareness – and it happens fast (measured in milliseconds)
- Basic neural pathways linking the occipital lobe to language domains in the temporal lobe can be established over a period of 2-3 years – **but many more years needed to develop fast, efficient processing.**