



## Bridging an Orthography...




Leila Schroeder


Why am I saying that the linguistic and orthographic distance between English and African languages is so great that it's hard to build an academic bridge between them? Consider the following...

 Throughout Africa, national curricula expect simultaneous mastery of two very different codes.

 <some>/so.me/

 <some> /sʌm/

The context: For most African orthographies, there is a fairly close matching of symbols and sounds. But across Africa, where the colonial languages are highly prized, children are often confronted with English reading **as well**, as early as grade 1. For readers of African languages to bridge to a very deep orthography with completely different sound-mapping associations for its twelve vowel phonemes, necessitates major changes in their decoding and word recognition strategies....even if they *have* heard English spoken before!



## Orthographic differences

Shallow sound-grapheme mapping for nearly all African languages, vs. English's deep representations of sounds/meaning

(Winskel, 2010; Piper, Zuilkowski and Ong'ele, 2016; Schroeder, 2010; Ziegler & Goswami 2005; Rayner, Foorman, Perfetti, Resetsky, Seidenberg, 2001).

One significant barrier to true L2 reading success, aside from vocabulary, is orthographic. Transfer from a shallow, consistent L1 orthography to a deeper orthography with completely different sound-mapping associations for its twelve vowel phonemes, necessitates major changes in learners' decoding and word recognition strategies. What pedagogical strategies can narrow the chasm for learners? I will refer to alphabetic scripts only, though some of these strategies apply to transfer from alpha-syllabic scripts. There is so much evidence to support the notion that engaging the English orthography has negative effects on processing of L1 shallow orthographies for young children—I've only cited a few.



Virtually **none** of English's vowel-sound/graphemes match those of any African language.

English vowel	Maasai vowel
I sound in <i>bike</i>	ai
A sound in <i>cake</i>	ei
O sound in <i>boat</i>	ou
U sound in <i>cute</i>	iu
E sound in <i>see</i>	ii

Maa languages (such as Purko Maasai) have 9 vowel phonemes, so they can auditorily distinguish most of *our* vowel sounds. That's helpful, but this chart shows just a few of the complete mismatches between letters and their sounds for the Maa reader. This time we'll look at our vowel glides/ long vowels.

If they tried to decode these aloud when first confronted with them, they'd say .....

When they heard them, on the other hand, and tried to spell them, they'd write what you see in the right column.

**SIL**

- Different grain sizes for vowel phonemes between African orthographies and English


man	main	mane	champagne
pan	pain	pane	campaign
ran	rain	lane	reign
plan	plain	plane	feign
can	cain	cane	Duquesne
Figure 1.1	Figure 1.2	Figure 1.3	Figure 1.4

I've come across a few consonantal digraphs and trigraphs in Africa (not counting consonant clusters), but for the most part, we can generalize that the grain size of African orthographies, the number of graphemes needed to represent a phoneme, is usually a one-to-one correspondence, unless we are talking about vowel diphthongs for a language like Maasai.)

Since English has 12 vowel phonemes (plus diphthongs), with only 5 vowel symbols, they must be distinguished visually by the reader processing a **series** of letters.

In **Figure 1.1.**, the /æ/ sound cannot be recognized or pronounced without a closed syllable, so the reader must look beyond the letter <A> to the VC **coda!**

In **Figure 1.2**, the reader must distinguish a series of 3 letters to recognize the vowel glide /ɛɪ/ in main, pain, etc. **Figure 1.3:** for the same glide sound in these words, a series of 3 graphemes is also necessary. **African orthographies seldom or never use a silent <e>!** and in column **1.4** the grain size is either 4 or 5!




- More grain size challenges for all of us, with “long” vowels: glides and truly longer Vs...

ea ee ie eCe	igh iCe y uy	oa oCe o ow* oCC	oo ew uCe o*
<b>Figure 1.1</b>	<b>Figure 1.2</b>	<b>Figure 1.3</b>	<b>Figure 1.4</b>

Altogether, there are also 4 ways to spell the “long e” sound; 3 main ways to spell “long l”, 3 main ways to spell long o, and four ways to spell “long u”; two to spell the u glide, plus eleven oddballs which must be memorized.


Let’s now consider what the African young child faces, when confronted with English textbooks. What happens to their fledgling decoding prowess, when confronted with our amazing vowel grain sizes, and their frequently ambiguous representations? No wonder one Ethiopian teacher, demonstrating the English names for parts of the body, said “Everyone point to your feet. Now, point to your twos!” (After all, T O E must rhyme with shoe, he assumed!)



## Phonological Differences

- Vowel (and consonant) inventory
- Syllable structures/complexity
- Number of phonotactically licensed syllables
- Word structures/affixation
- Morphological typology
- Morpheme shapes and their variants
- Length of words
- Homophony

All of these features affect development of an effective transfer curriculum. We'll go into more detail, for the earliest grades with little time for polysyllabic word structures, etc. See Meletis, on the nature of writing, 2020.



African languages often feature syllabic nasals.

In Verbs	
<m-ba>	ride
<m-bilim>	roll
<n-gbam>	crawl
In pronouns	
<N ni tin ya>	I will give you
<M ba wahu>	I rode a horse
<M-bala>	It is I
<N-taani>	It is my nut

English has syllabic consonants too <l, r, n, m>, but we show their syllabicity - usually with a silent letter <e> (but also <u, i, o>)!

little
river
happen
problem

Adam Peter Pazzack, 2013

These examples are taken from a book on Dagbani, by Pazzack, 2013. (For some syllabic nasals, which always mark morphology, hyphens are used to highlight their meaning, and also to break up what looks like a consonant cluster. The Dagbani language allows only “open” syllables, but its frequent syllabic nasals are treated like vowels, since they are continuants, and of course syllable nuclei. To deal with a multiplicity of these grammatical homonyms, they use hyphens for certain classes of words or affixes.)




English has many consonant clusters, word-initially and especially syllable or word-finally.

Syllable onset	Syllable coda
fl, sl, cl, bl, gl,	nd, rk, mp, mb, nk, lk
st, sm, sn, sp, sk	tch, dge,
gr, pr, dr, fr....	rn, rk, rc, rb, rm, rd, rth, rt, rp
scr, str, sch, spl, squ, spr	rst
thr, kn, wr, gn	Cs, CCs

These consonantal syllable onsets and codas, must be recognized for their importance in developing a transitional reading pedagogy which fits the phonotactics of English and its spelling rules – to maximize the “linguistic fit for the writing system, in terms of a pedagogical approach which will help readers (and speakers) of African languages read English most efficiently..

**If you give them practice recognizing consonant cluster patterns, you don’t have to explicitly teach every single one.**



Although no individual study has controlled for all relevant items and subject variables, the body of evidence, collectively, is unanimous in showing that, for the developing reader, English is truly exceptional. By the end of the 1st year of schooling, hyperlexic-style reading is the norm in transparent alphabetic orthographies; most children are capable of tackling almost any printed (monosyllabic) word. In English, though, such proficiency is delayed for several years. Moreover, this ‘great divide’ between early English and non-English reading appears to be more than quantitative and clearly extends to the nature of the reading strategies employed (Share, 2008: 586).
















The chasm between African and Indo-European languages and orthographies is probably widest with English. What can be done? Now we talk about the reading strategies which I think are valuable.

## What pedagogical strategies can narrow an orthographic and linguistic chasm?

1. Provide daily, systematic oral vocabulary/syntax instruction so English texts, for all subjects, will be comprehensible, eventually (i.e., by grade 6-8).

The chasm between African and Indo-European languages and orthographies is probably widest with English. What can be done? Here we go onto reading strategies! #1, oral ESL. **Start this long before they are exposed to English text!**

2. Ensure that learners can auditorily distinguish the 12 vowel phonemes of English, helping immeasurably with their comprehension of texts. Make pedagogy auditory and visual, making the orthography work for them.

e			
e			
e			
i			
i			

Either with ESL instruction for phonemic awareness, or with pre-literacy for L2...

- Phonemic awareness is a significant predictor of reading success in the early grades. But we can't assume that PA will automatically transfer over for young rural L2 learners, unless they've had a *well-designed* ESL curriculum first!

hat	set
hot	sit
hut	

The following phonemic contrasts are often confused by Africans, orally.

**SIL**

- 3. Teach new vowel-grapheme correspondences, starting with the five “short” vowel sounds.

Note all five short vowels here.

So, what can be done to remove ambiguity for readers, hindering their comprehension when they fail to hear an important vowel contrast?— we need to promote comprehension, while encouraging readers that they really can learn to read this language! Pictures scaffold comprehension and strengthen vocabulary development. This review is from two weeks of word-final consonant clusters, but readers must pay attention to the segments preceding them, and recognize the meanings of each word....with all five short vowels

**SIL**

### 4. Use simple monosyllabic CVC words to make the orthography seem shallow/transparent.

Use the L1 consonants and digraphs they've already learned, then slowly add syllable complexity.

Focus is -VCC

Focus is -VC

sad	cap
mad	tap
bad	nap
pad	map
bag	am
rag	ram

test	
rest	
nest	

Research substantiates the intuitive use of rhyming, even for pre-literate children, epilinguistically, as well as those who are beginning to read English, using metalinguistic skills. Both groups “hear” the consonant onset, followed by the vowel and consonant: the coda. Elinor Saiegh-Haddad, Bar-Ilan University, Israel 2007. Epilinguistic and metalinguistic phonological awareness may be subject to different constraints: Evidence from Hebrew. Sage Publications.


Arrange them in rimes, making the syllable structures easy to compare, so that our commonest syllable pattern, CVC, is regular and manageable, before moving on to consonant clusters and vowel letter combinations.

Start with simple Cs and the new vowel sounds for several weeks. Then add the consonant clusters, especially helping them with **closed syllables**.


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- Use our huge lexicon of monosyllabic words for decoding, using the consonants learners can already recognize from grade 1/2
- Line up these monosyllabic words in sets, giving practice with the visual patterns.
- Use vowel substitution
- Use consonant substitution

Segmenting without phonics!



lap  
lip



peck
neck
deck

Many of these CVC words contain 5 short vowel sounds, so its 5 short vowel graphemes are a great place to start. Many of them are either verbs or nouns, contentive and picturable. No memorization of phonics rules – recognition of common patterns.



- Add the harder aspects of the orthography/phonology

- Syllable-initial C clusters
- Syllable-final C clusters
- Use “word-building” on the syllable level to help with decoding longer words: -ing, -ed.
  - sing ing
  - singing
- Introduce the plural suffix <-s>, <-es>), as part of word-final consonant clusters
- In the 2<sup>nd</sup> year, introduce the larger grain size of English “long” vowels (glides), vowel diphthongs, etc.

- Leverage Africans' syllable awareness (auditory and visual) to help them recognize English syllables in longer words.

### Helping



dish	es
-----	
dishes	







Dad is bringing bricks to mend the wall. I am getting long sticks so it will be strong. We will get a rest when we stop for lunch. We will drink, and Mom will bring us fish and yams. My sister helps her with the dishes. She washes them.

Before they read a text, break some disyllabic words into parts.

- Give practice recognizing complex syllable structure patterns

Practice with L clusters

fl cl gl pl sl

		
flag	clip	slip
flat	clog	slap
flip	clap	slam
		
glass	clock	plum
glad		plot
glut		plug

Use them strategically in texts, as well.

### Stan can Swim!

Yesterday Stan went fishing. His dog, Spot, went fishing too. Spot and Sam sat in the sand. Then they slept on a big nest of ants! Ants can sting! Stan ran fast, but Spot ran fastest!



Of course, vocabulary development for everything in a decodable text cannot be assumed: it must be planned for.

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5. Promote recognition of the large grain sizes which represent all 12 vowel sounds

1. Now we will listen and look for the different vowel sounds in these words.
2. Look and Listen. Touch the top picture. What is it, c or cape?
3. Find the word which matches the picture. Good this is cape.
4. Touch the word cape.
5. Now, touch the second picture. What is it, cap or cape?
6. Find the word that matches with cap.
7. Vocabulary development

It's all about recognizing complex visual/auditory patterns. For the CVC words, the reader must always look beyond the vowel grapheme to the consonant following it. For the vowel glides here, the reader must recognize **vowel-consonant-silent e**. I think the visual comparisons can build decoding confidence. This type of activity comes much later in the progression of the curriculum.


It comes down to distinguishing **meaning**, again.

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- Systematically introduce (a huge variety of) larger grain sizes for English's 12 vowel sounds, introducing patterns systematically.

Short a(C)	Long <ai>	Long <ee>	Long <oCe>
Short e(C)	Long <ay>	Long <eCe>	Long <oa>
Short i(C)	Long <aCe>	Long <ea>	Long <ow>
Short o(C)	Long <ei>	Long <ie>	
Short u (C)		Long <iCe>	
		Long <igh>	

There are twenty more?  
Some of it depends upon stress at the word level?!



African learners and their teachers seem to love and prefer syllable drills such as these. They are really helped by “blending” of syllables, as part of decoding. I’m only listing the “regular” patterns here, and leaving off vowel diphthongs and R-influenced vowels!


**SIL**

## 6. Help learners deal with a deeper orthography.

This includes homophones, irregular spellings and frequent grammatical words


Teach them as sight words, using read-alouds with the teacher and games


### I See You



my	self
myself	

you
your

I see you in the glass. You are getting big. You are brushing your  .

I see you washing your hands. Now you are dressing. You are putting on your socks and  .

Now you can go to class.







Dolch wordlist contains 220 of our most frequently used words, and many are not contentives but functors. They're not very isolatable or picturable. Teach them in a context, always. The frequent, non-decodable grammatical words here: **are, you, your, our** and **my**. They are already part of the readers' syntax and vocabulary, but they are visually unfamiliar.

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- Promote use of the lexical route to reading for essential non-decodable sight words or functors

Use read-along activities scaffolded significantly by the teacher.

No! my his

1. No! That is **my**  .
2. No! That is **my**  .
3. No! That is **my** dish. 
4. This is **his** dish  .
5. This is **his**  .
6. This is **my**  .

Context gives meaning and predictability to functors.

- Enable learners to leverage the predictability of English's syntax and grammar to make educated guesses about words they can't yet decode.

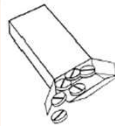


On this bike are nine \_\_\_\_\_.

lime limes

On this bike are five \_\_\_\_\_.

mick mice



In this box are ten \_\_\_\_\_.

pill pills

They CAN decode all of these, but we're building their confidence with the predictability of certain plurals, here.



- Promote context use so they can self-assess their comprehension. This facilitates use of a less decodable orthography.


sis ter	broth er	moth er	fath er
sister	brother	mother	father

A Family of Workers

My big brother drives a truck, carrying milk to town. He is a \_\_\_\_\_.  
 My sister likes to write stories. Father says she will be a \_\_\_\_\_ one  
 day. I help father plant beans, and some day I will be a farmer. My moth-  
 er teaches at the school. She is a \_\_\_\_\_. My little brother just  
 eats! I call him Bean \_\_\_\_\_.




Eater, teacher, truck driver, farmer, writer,

Examine the words along the bottom of the slide. Readers must choose which word makes sense in each blank.




- Provide morpheme recognition activities which leverage English's deeper orthography (plural nouns and pronouns, <-ed> suffixes, -er suffixes, <-ing>, etc.)

Match the pictures

baker		driver
rocking chair		digger
someone behind steering wheel		baker
someone reading		teacher
singer		writer
		singer
	reader	
teacher	rocker	

For polysyllabic polymorphemic (PSPM) words, the morphophonemic nature of English means elementary-age children may focus on roots and affixes. Does developing readers' PSPM word reading accuracy relate to the morphological units, the nonmorphological, or both? In this study, 3rd and 4th graders (N = 202) read PSPM words (N = 45), and models were constructed to answer this question. A nonmorphological polysyllabic model showed a main effect of phonological awareness; a Vocabulary Size × Word Frequency interaction, with larger vocabularies improving accuracy for low-frequency words; and a GPC Knowledge × Word Frequency interaction, with a slight negative GPC knowledge effect for all but low-frequency words. A polymorphemic model showed main effects of word-specific root word knowledge, general root word reading, vocabulary, and word frequency. A Morphological Awareness × Morphological Transparency interaction showed morphological awareness affected accuracy for shift words more than transparent ones.



- **AVOID** Introducing two divergent orthographies simultaneously! (Pretorius & Mampuru 2007; Lekgoko & Winskel 2008; Winskel 2010; Schroeder 2020; Probert and de Vos, 2016).
- **Do**
  - Provide as much oral L2 instruction as possible (30-45 minutes daily every year thru grade 8)
  - Promote strong mastery of L1 reading, 45-60 minutes daily at least from grade1-5.
  - All content areas taught via L1, with L1 textbooks, for those 5 years.
  - Teach transitional reading for 4 weeks or so, around grade 8. Treat the L2 orthography as though it were shallow and consistent when first introducing it, to build decoding confidence in learners who already can read their L1.
  - All L2 content instruction after that should leverage trans-languageing activities.

Research (“reading” tests) repeatedly indicates the current situation is disastrous. 1) 30-45 minutes of ESL per day, starting with oral only (but textbooks); 2) 45-60 minutes per day of L1 reading in the early grades, at least grades 1-4. 3) All content areas taught in L1 for those years; 4) Transitional reading in grade 5 (though grade 8 has been proven to be much stronger. 4) Content area instruction in L2 (with trans-languageing activities used for vocabulary development thereafter). 5) Local level mandated exams in the L1 from grades 1-4 or 5.