

The dramatic impact of explicit instruction on learning to read

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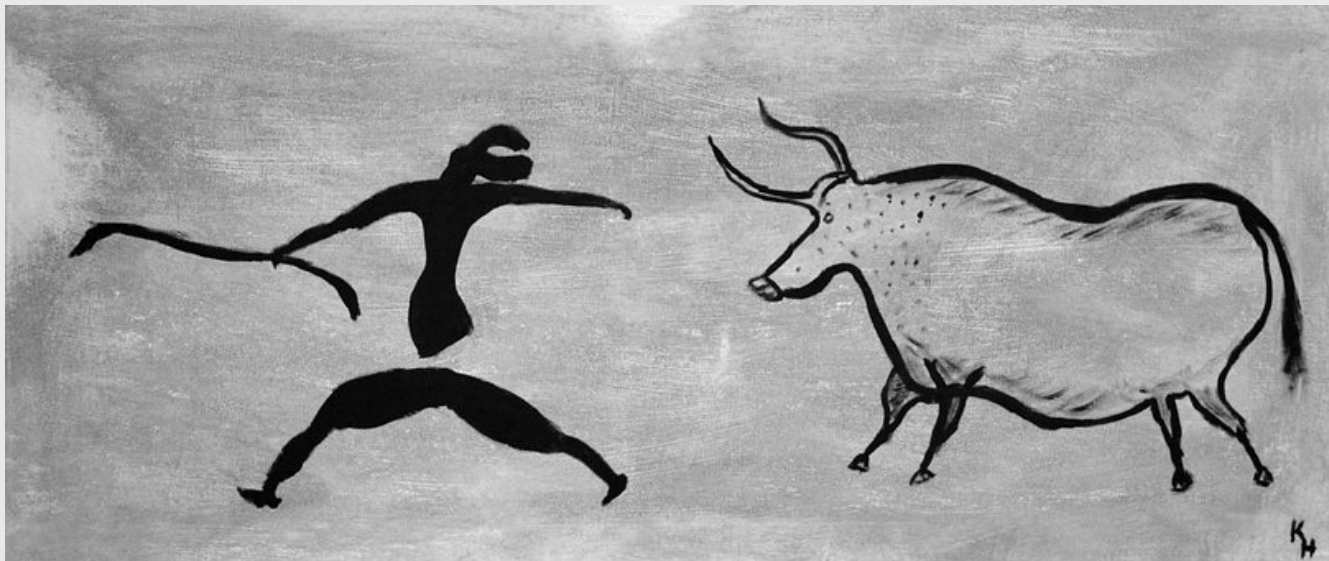


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Writing is a recent cultural invention
Reading is a learned skill



Writing is not intuitive



- Spoken language is continuous (no discrete words, sounds)
- Spoken language includes non-lexical acoustic information
- Spoken language includes gesture, audio-visual information
- Spoken language happens in shared contexts

Writing tries to represent this as discrete visual symbols!

Visual symbols for language



Basic challenge is to link arbitrary visual symbols to language.
Solution will depend on writing system.



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Upper case
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Lower case
a b c d e f g h i j k l m n o p q r s t u v w x y z

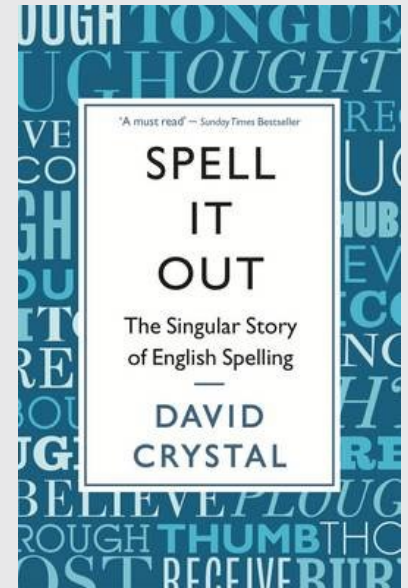
English writing system



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“How are we going to spell forty+ phonemes with twenty-six letters? That, in a nutshell, is the problem of English spelling.” (Crystal, 2012)

Upper case
ABCDEFGHIJKLMNOPQRSTUVWXYZ
Lower case
abcdefghijklmnopqrstuvwxyz

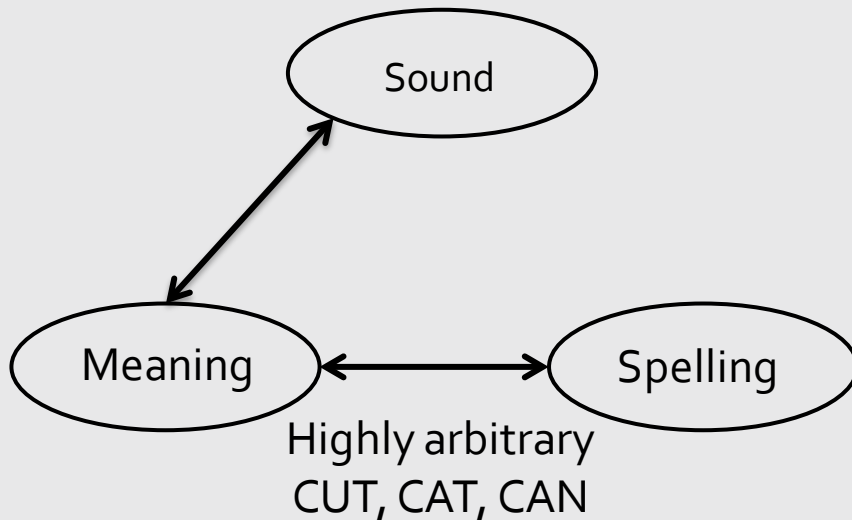




- THIGH
 - Multiple grain sizes; sounds represented by 1-4 symbols.
- EIGHT
 - Highly inconsistent; same symbols represent different sounds and same sounds represented by different symbols
- AGE
 - Symbols sometimes also represent meanings

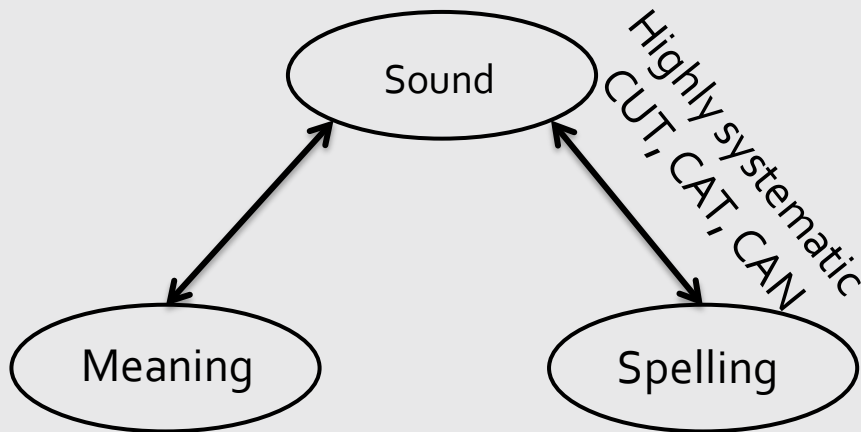
Phonics is systematic instruction on how the writing system works; it's the explanation of how visual symbols map to language.

Why can't children just memorize words?



- Humans are very bad at arbitrary learning
- Degree of rote memorisation required for Chinese but learning challenge far smaller; 8 hrs instruction / day for 6 years to learn 2500 characters
- English readers exposed to ~5,000 words in Reception year alone

Do children need to know the code?



CUT



CAT



CAN



- Learning the code provides hook into spoken language knowledge
- Enormously efficient: understanding the code enables *generalisation*
- Self-teaching through independent reading

Phonics is a fact about the writing system



We sit with our children reading whole books, talking about them, sometimes pointing at whole words, sometimes at letters. We sit with them writing shopping lists, labelling things in their rooms, doing texting on phones, planning holidays looking at pictures and reading out the names of places these are ways in which many people ... have learned in part or whole how to read.” (Rosen, 2013).

Learning through discovery



The image displays a musical score for piano, consisting of two systems of music. The first system is marked *Andantino*, *Piano*, *p dolce*, and *con Pedale*. The second system is marked *mp*, *mp*, *rit. e dim.....*, and *pp*. The score is written in treble and bass clefs with a key signature of two sharps (F# and C#) and a 3/4 time signature. The music features a mix of chords and melodic lines, with dynamic markings and performance instructions.

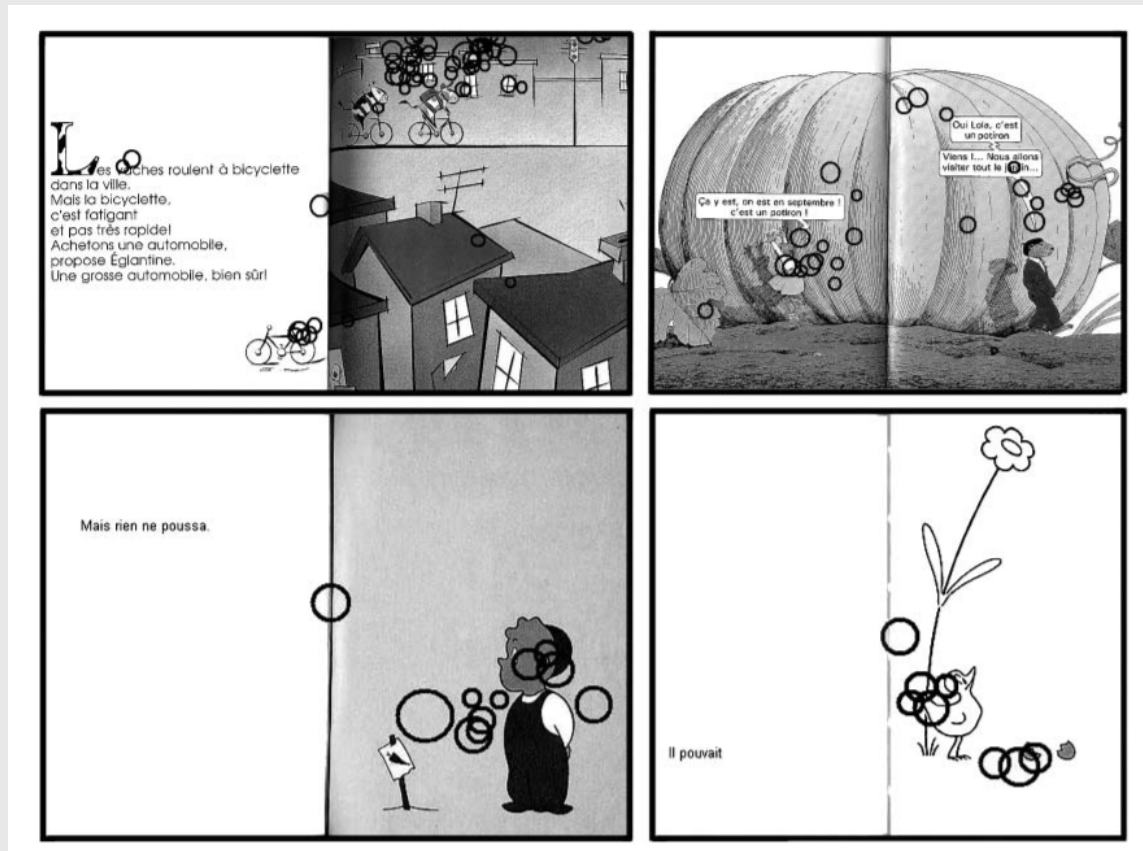
Learn to play by following along as someone plays for you.

Music is a far easier code: no ambiguity about grain size or function; and no inconsistency. If discovery is a viable learning strategy, this should be straightforward.

Learning through discovery

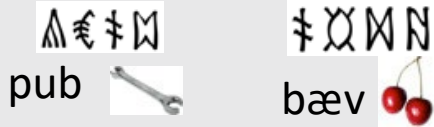


What are 4-5 year old children looking at during shared reading?

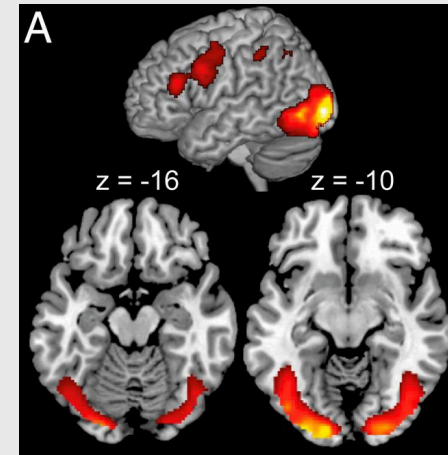
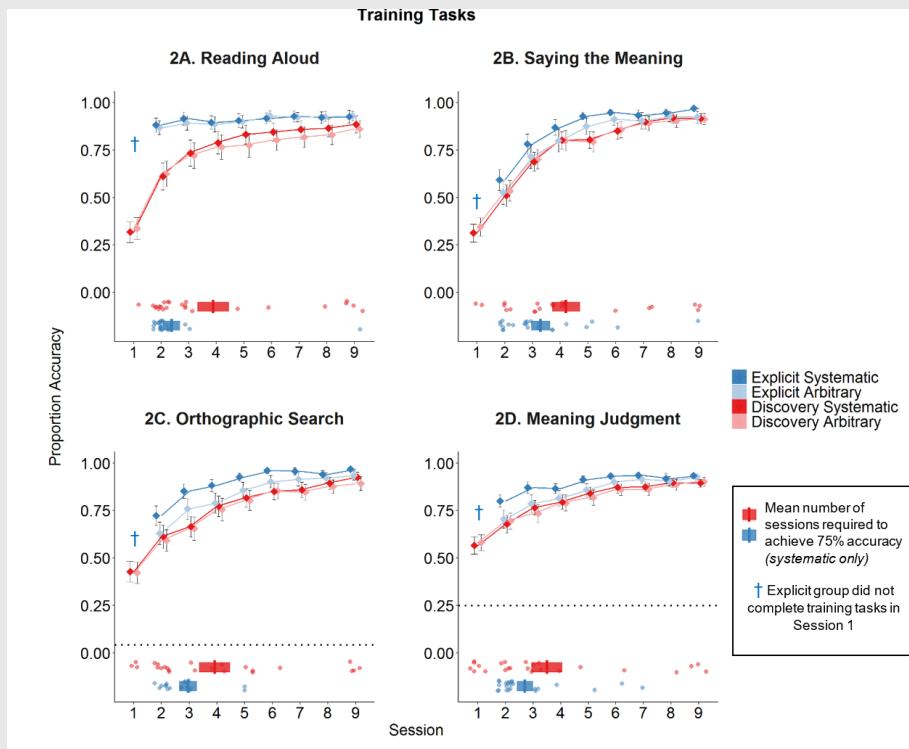


Unlikely this could be a major vehicle for development of print skills without other forms of systematic instruction.

Laboratory research

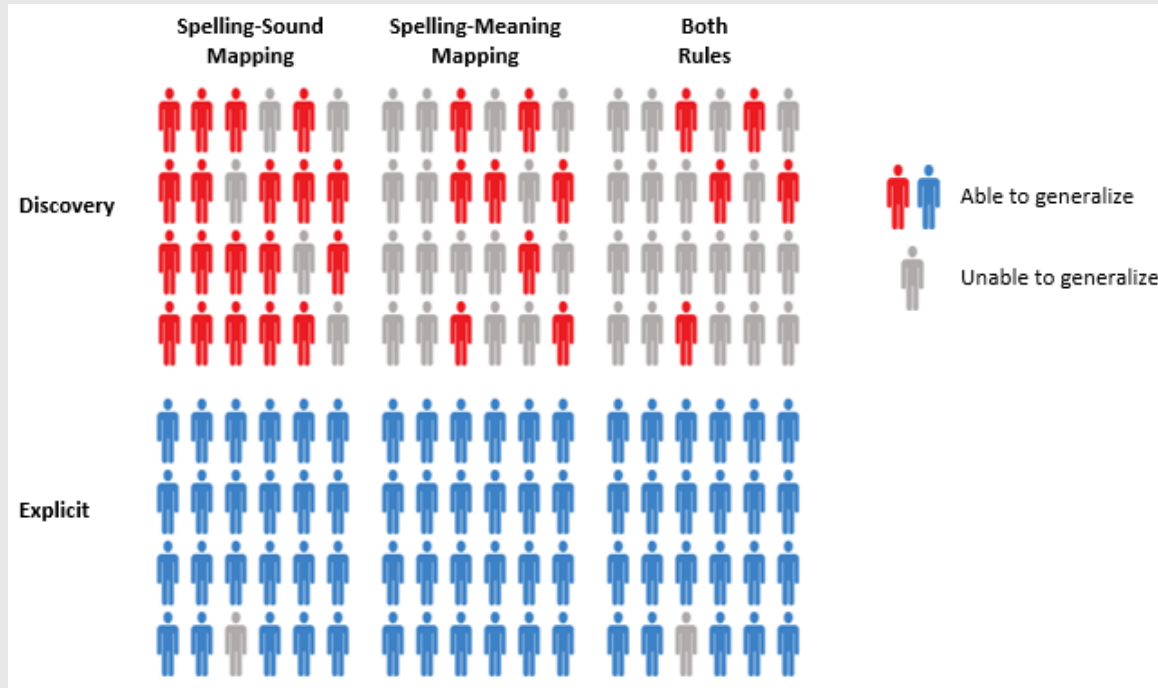


- 48 novel words, adult learners
- Discovery versus explicit instruction
- 18 hours of experience with the novel words over 10 days
- Tested knowledge of code via generalisation



Brain response to trained novel words learned through discovery

Laboratory research



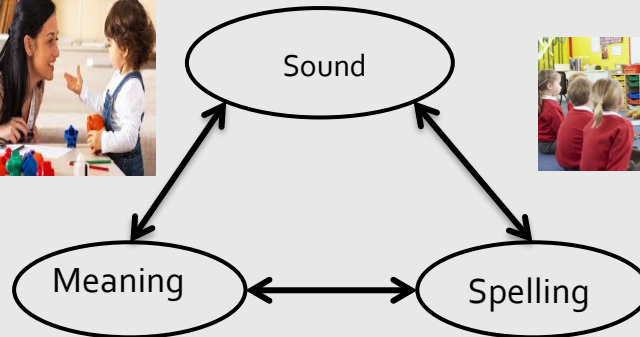
- Discovery exceptionally difficult (less than 25% succeeded)
- No way to predict who will be successful
- Simple writing system, skilled readers, 18 hours experience
- Explicit instruction brings everyone up to the same high level
- **Instruction comprised 3% of training time; transformed outcomes**

Is phonics all there is to reading?



No, and no reading scientist would ever say so!

Oral language



Phonics
instruction



Text experience

Some further reading



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Ending the Reading Wars: Reading Acquisition From Novice to Expert

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The Dramatic Impact of Explicit Instruction on Learning to Read in a New Writing System



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and J. S. H. Taylor³

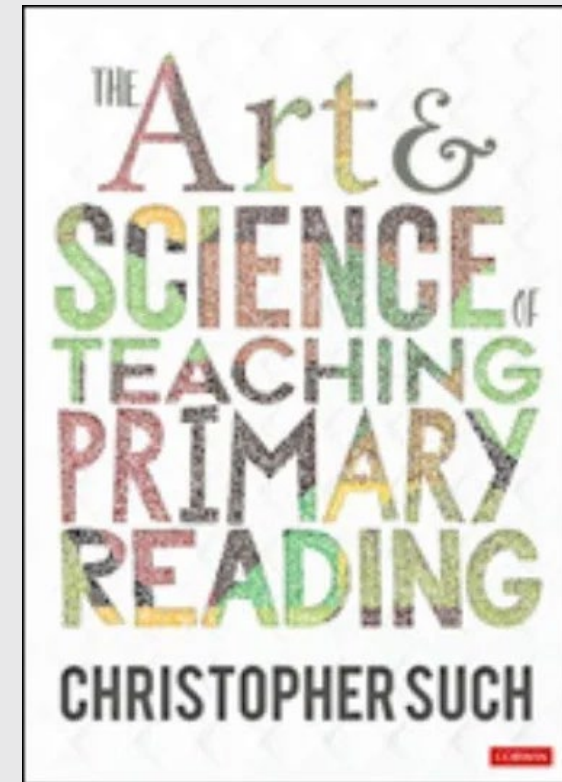
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Do Subtitles help Children Learn to Read?



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turnonthesubtitles.org

Use eye-tracking to measure how children engage with subtitled television

Experiment 1: how do these measures change with age / reading ability?

Experiment 2: does 6 weeks of experience with subtitles (min 30 hours) influence these measures or standard tests of reading ability?

We need your help!



Conclusions



- Writing systems are way too complicated to learn through discovery.
- Discovery learning is ineffective and inefficient, but a small amount of explicit instruction can transform outcomes.
- Research needed to understand how / why instruction works, and how it combines with experience to drive learning.

Thank you!

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How about “other approaches”?



“...there is no ‘one size fits all’ approach ... they need individualised tuition based on their own strengths and weaknesses ... there has to come a point where you should try other approaches as well or instead.” (Carroll, 2022).

How about "other approaches"?



What are these "other approaches"?

EAGLE EYE
Look at the pictures for clues to help figure out the word.

Reading Strategies 8 Posters
+ Bookmark and popsicle stick correlation pics

POINTY PUPPY
Point to each word in the sentence.
I like to eat bones.

LIPS THE FISH
Get your mouth ready to say the first sound.
fish

STRETCHY SNAKE
S-i-t-t-e-t-o-h the word out slowly.
Long = i-e-o-h

CHUNKY MONKEY
Look for chunks in the word you know.
stand = strand

FLIPPY DOLPHIN
Try the short and long vowel sound.
A E I O U

SKIPPY FROG
Skip the tricky word and read to the end of the sentence.

TRYIN' LION
Reread the sentence. Try a word that makes sense.

| | |
|-------------|--|
| independent | |
| definitely | |
| necessary | |
| separate | |

1 Look at the picture.

2 Go back and reread.

3 Get your mouth ready to say the sound.

4 Look at the chunks.

5 Skip the word and read on.

Does it make sense?

There is no other path, no "other approaches" to becoming a skilled reader, than through fluent decoding. Children must know what letters are and what they represent to progress in reading.