

# Reading, writing & spelling

# Early experiences

- Conventions of print
- Purpose/function of print
- Phonological awareness & grapheme-phoneme associations

# How printed words map onto speech

- Major types of writing systems
  - Alphabetic
  - Modified Alphabetic
  - Syllabic
  - Logographic
- Sources of difficulty in alphabetic systems
  - Abstract nature of phonemes
  - Lack of 1-1 mapping

# Lack of 1-1 mapping

- Shallow orthography
  - Italian, Finnish, Spanish, Serbo-Croatian
- Deep orthography
  - English
- Economy at expense of complexity

# “Exception” words

- |         |          |          |             |
|---------|----------|----------|-------------|
| • the   | • your   | • come   | • Mrs.      |
| • said  | • into   | • oh     | • great     |
| • you   | • mother | • some   | • door      |
| • was   | • very   | • their  | • thought   |
| • they  | • could  | • where  | • something |
| • one   | • know   | • two    | • only      |
| • are   | • bear   | • again  | • water     |
| • what  | • Mr.    | • want   | • through   |
| • have  | • would  | • other  | • once      |
| • there | • who    | • find   | • another   |
| • were  | • put    | • father | • give      |

# “Exception” words

- |             |            |            |            |
|-------------|------------|------------|------------|
| • heard     | • woman    | • does     | • many     |
| • nothing   | • young    | • poor     | • friends  |
| • been      | • together | • soup     | • tired    |
| • walked    | • front    | • four     | • anything |
| • always    | • people   | • work     | • course   |
| • eyes      | • sure     | • dinosaur | • most     |
| • dinosaurs | • wanted   | • should   | • pretty   |
| • everyone  | • gone     | • enough   | • bought   |
| • any       | • coming   | • laughed  | • doing    |
| • behind    | • walk     | • clothes  | • almost   |
|             |            | • someone  | • giant    |

## “Exception” words

- watched • walrus • live • worm
- today • friend • shoes • piece
- pulled • caught • sometimes • others
- whole • climbed • floor • answer
- straigh • honey • talk • anyone
- beautiful • mind • brother • loved
- kind • sorry • idea • mama
- police • watch • carry • done
- world • says • picture • comes
- love • word • guess • also
- sign • toward

## Access routes in visual word recognition



Image from Tim Curran

## Bottom-up & top-down processes

- Bottom-up processing
  - Stimuli are dealt with; little influence of higher-level knowledge
- Top-down processing
  - Uptake of information is guided by prior expectations/knowledge.
- Eye tracking studies/eye fixations & saccades

## Reading approaches

- Whole language approach
- Phonics
- Whole word (look-say)

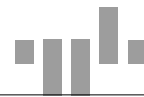


Image from Tim Curran

## Ehri & Wilce, 1985

- Taught children to read either PHONETIC vs. VISUALLY distinctive spellings
  - JRF = GIRAFFE
  - x<sub>E</sub><sup>S</sup><sub>T</sub> = DIAPER
- Prereaders:
  - **VISUAL > PHONETIC**
- Novice readers:
  - **PHONETIC > VISUAL**

## An alternative view...

- Different types of relationships between spellings and spoken forms of words exist in English.
  - Letter sounds: b - a - t = “bat”
  - Letter names: OK = “okay”
  - Arbitrary pairs: “lb” = “pound”

## Letter names

- Children do better at learning letter-sound correspondences with letters that contain the relevant sound in their name.
  - “Y” /wai/ - doesn’t contain sound
  - “B” /bi/ - does contain sound
- Treiman, Weatherston & Berch (1994)

## Letter names

- Initial sound in name
  - b, c, d, g, j, k, p, t, y, z
- Final sound in name
  - f, l, m, n, r, s, x
- Sound not in name
  - h, w, q, y
- Children are equivalent at naming these letters, but not at coming up with or learning the sounds
  - Treiman et al 1998

## Alphabetic vs. logographic

- Children do better at spelling words like “beet” than “bait”
- Reading task:
  - Name: BT = beet
  - Sound: BT = bait
  - Visual:  $\text{B}_\text{T}$  = ham

## Alphabetic vs. logographic

**BN = BEAN    BN = BONE     $\text{B}_\text{N}$  = LOAF**

Prereaders: **NAME > SOUND** and **VISUAL**

Novice readers: **NAME > SOUND**, and **SOUND > VISUAL**

**TL = TELL    TL = TALL     $\text{T}_\text{L}$  = SIZE**

Prereaders: **NAME = SOUND = VISUAL**

Novice readers: **NAME = SOUND**,  
both **NAME** and **SOUND > VISUAL**

From Bowman & Treiman

## Phonemic awareness

- Children’s knowledge of the internal sound structure of spoken words
  - The idea that words are composed of sounds

## Phonological awareness tasks

- Phoneme Deletion
- Word to Word Matching
- Blending
- Phoneme Segmentation
- Phoneme Counting
- Rhyming

## Stages of phonological awareness

- Sentences are made up of words
- Words can rhyme (cat - mat)
- Words can begin with the same sound (cat-car)
- Words can end with the same sound (cat - mitt)
- Words can have the same medial sound(s) (can - bat)
- Words can be broken down into syllables
- Words can be broken down into onsets and rimes
  - For “stripe”, onset = /str/; rime = /ip/
- Words can be broken down into individual phonemes
- Sounds can be deleted from words to make new word
- Ability to blend sounds to make words
- Ability to segment words into constituent sounds

## Parallel vs. Serial

<i>Fixation point</i>	+	+	+
<i>Stimulus display</i>	word	d	orwd
<i>Response choices</i>	d	d	d
	k	k	k

- Word superiority effect

## Early “writing”

- Writing is different from drawing, even before children know letters
- But writing is initially viewed as a semantic representation.

## One’s own name and spelling

- Children learn the letters in their own name first
- These letters tend to intrude into spellings of other words


## Dyslexia

- Acquired vs. Developmental
- Causes of dyslexia
- Types of dyslexia

## Letter recognition

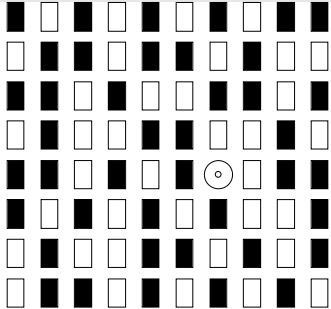
- Template view
- Analysis by features

### Evidence for features



- It is harder to find a particular letter if its embedded among other letters with similar features

### Feature change vs. object change



### Feature change vs. object change

