



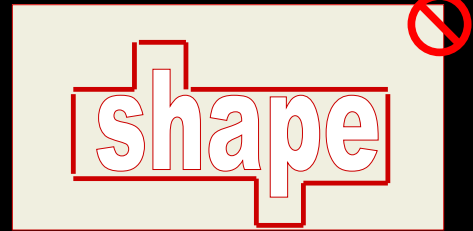
## How We Recognize Words

### Units of Analysis

unreachable	<i>word</i>
un-reach-able	<i>morpheme</i>
un-reach-a-ble	<i>syllable</i>
u-n-r-ea-ch-a-b-le	<i>grapheme</i>
u-n-r-e-a-c-h-a-b-l-e	<i>letter</i>

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Configuration is not helpful in identifying words.



Words are not recognized by shape.

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## Context Does Not Drive Word Recognition

- “....Don't know that word? Well just keep reading and see what might make sense here...”



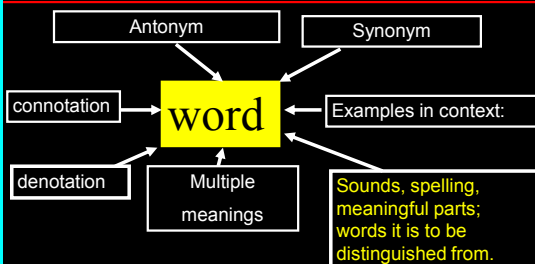
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We read this way:



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Knowledge of word form is related to knowledge of word meaning (Perfetti, 2011)

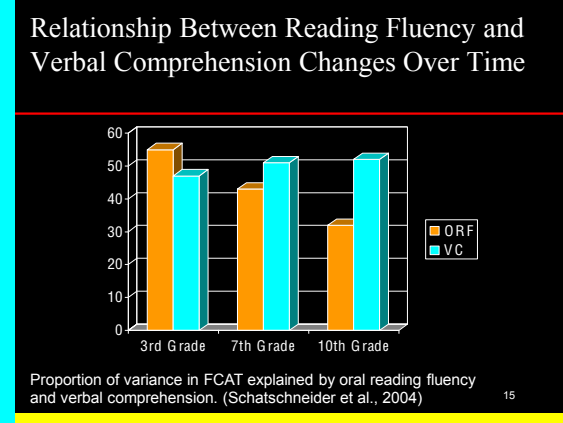
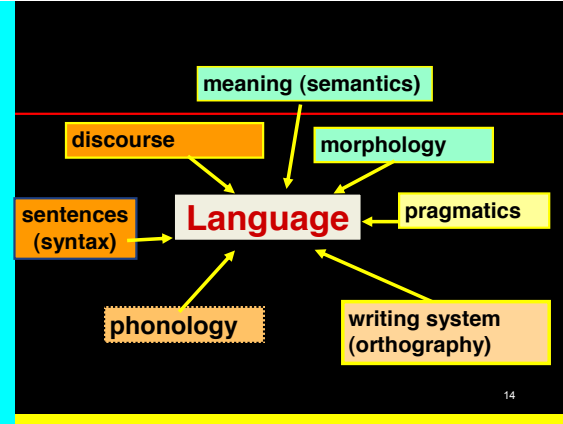
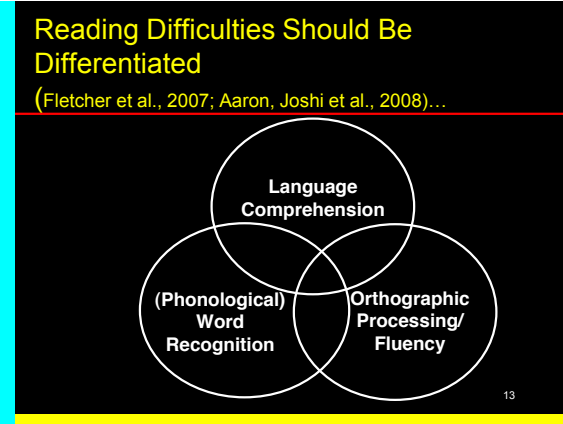


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## The Challenges of Syntax

- The white van was hit head-on by the motorcycle
- We had no reason to think that she was unstable
- He put the paper aside to read the book  
He put the paper beside the book  
He put the paper inside the book
- This is a major problem; this is the major problem

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- ### Do Teachers Learn These Things? NCTQ Report (2006)
- Much of current reading instruction remains mired in a view of reading instruction that is incompatible with the science of reading.
  - The process of becoming a reader is described as a natural, organic process, despite the fact there is no evidence to support such a view.
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### Nat'l Council on Teacher Quality 2013

The cover of the report 'Teacher Prep Review: A Review of the Nation's Teacher Preparation Programs' is shown. The title is in large, colorful letters. Below the title, it says 'TEACHER PREPARATION PROGRAMS' and '2013'.

- Overall ratings on 608 institutions
- Additional data on another 522 institutions
- Altogether, data on where 99% of new teachers are trained

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Fig. 14. Distribution of scores on Standard 4: Struggling Readers (N=550 elementary programs)



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## Teachers' Disciplinary Knowledge: A Topic of Discussion for Years...

- *The Missing Foundation in Teacher Education* - Moats, 1994, 1995
- *Wanted: Teachers with Knowledge of Language* - Lyon & Moats, 1996
- *Informed Instruction for Reading Success* - Brady & Moats, 1997
- *Teaching Reading is Rocket Science* - AFT (Moats), 1999
- *Knowledge to Support the Teaching of Reading* - Snow, Griffin, & Burns, 2005

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## Some Studies of Teachers

- Moats & Foorman, 2003; Moats, 2009
- Spear-Swerling, 2004, 2005, 2009
- Bos et al., 2001
- McCutchen et al., 1999, 2001, 2002, 2009
- A. Cunningham, 2004, 2009
- J. Cornier, 2004
- Piasta, Connor, Fishman, & Morrison, 2009
- Brady et al., 2009
- Joshi et al...

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## "Basic" Concepts are Elusive! (900 Teachers in One State...)

How is the word "gl-ue" divided?

- a. syllable
- **b. onset-rime**
- c. phoneme
- d. none of the above

37% correct

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## English is Complex!

Which of the following groups of words is an example of the spelling principle, "we spell by the position of a sound in a word?"

- a. gymnasium, photograph, cello
- **b. fun, puff, rough**
- c. spectator, respect, inspection
- d. medicine, medicinal, medical

(900 Teachers - 24% Correct)

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## Phoneme Segmentation of "Hard Words"

LANGUAGE, SPEECH, AND HEARING SERVICES IN SCHOOLS, October 2008, 39, 512-520

% correct

	SLPs	Teachers
knuckle	90	73
sing	71	45
think	75	41
poison	60	34
squirrel	51	18
quick	70	11
box	61	10
start	31	6
fuse	21	3
use	17	3

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## “Philosophy” Does Matter

- “[1<sup>st</sup> grade teachers] philosophical framework about reading instruction was germane to the extent teachers learned the content of direct methods of reading instruction.
- Those with a “whole language” orientation were less responsive to PD in phonology, phonics, and spelling.

(Brady et al., 2009)

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## Disciplinary Content Knowledge is Not Obvious, Natural, or Intuitive

- Cunningham et al., (2009) asked teachers how they would *prefer* to teach reading.
- “...it appears that a philosophical orientation towards literature-based instruction tends to be more exclusive of other instructional approaches.”
- Teachers’ preferred practices do not conform to current research and policy recommendations for teaching 1<sup>st</sup> graders.

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## What Teachers Know, Affects What They Do (Brady et al., 2009)

- “...Teachers who performed well on phonics tasks [on the knowledge survey] prefer spending more time on explicit and systematic instructional practices and less time on unstructured literature activities.”
- Prior knowledge [of language] plays a role in teachers’ choice of instructional activities.

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Cunningham et al.

## What Teachers Know, Affects What Students Learn

- Students enrolled in classrooms (K-3) where the teachers had the lowest knowledge of phoneme-grapheme relationships made the least growth in spelling development.

Kroese, Mather, & Sammons, (2006) *LD: A Multidisciplinary Journal*, 14, 85-89.

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## Teacher Learning Takes Time (McCutchen, Abbott et al., 2002)

- ...with K-1<sup>st</sup> Grade teachers, gave a 10-day summer course focused on increasing teachers’ own linguistic knowledge; observed frequently during the year; 3 more days of inservice focused on students’ progress and instructional needs
- Taught phonology and phonological development; structure of orthography; importance of code learning within a comprehensive lesson framework. Spelling samples used diagnostically.

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## Knowledge and Mentoring Matter (McCutchen et al. (2009)

- 10 days of summer institute with 30 teachers of Grades 3-5
- “...teachers’ linguistic knowledge uniquely predicted lower-performing students’ end-of-year scores on Gates-MacGinitie Vocabulary, narrative composition, WIAT Spelling, and WRMT-R Word Attack ( $ps < .05$ )

Louisa Moats, 2009

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## Good Instructional Programs Do Not Supplant Teacher Training

Piasta et al. (SSR, 2009)

- Students' gains were predicted by the interaction between teacher knowledge and amount of explicit decoding instruction students received
- Highly scripted core curricula "cannot replace the expert teaching of highly knowledgeable teachers"
- More code instruction by teachers with low levels of knowledge did not produce student gains

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## Teacher Educators Need Better Preparation in the Content

Binks-Cantrell, Joshi, & Washburn, "Peter effect in the preparation of reading teachers" (2012), *Scientific Studies of Reading*

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	University faculty	First Year Teachers
define and count the number of syllables correctly	≈ 92%	≈ 92%
Identifying the definition of a phoneme	98%	89%
correctly recognize that "chef" and "shoe" begin with the same sound.	92%	88%
correctly recognize a word with two closed syllables (napkin)	65%	53%
correctly recognize the definition of phonological awareness	58%	47%
No. of morphemes:		
heaven	40%	21%
Observer	26%	18%
Frogs	29%	24%
Name all the 5 components of NRP	15%	0%

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## Summary: Why We Need Stronger Preparation Programs

- Low standards for entry and licensing
- Inappropriate/absent course content
- No requirements for language study
- Concepts themselves are difficult, complex, and elusive; they take time (and practice) to learn
- Application requires mentoring, coaching, appropriate tools for teaching

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## IDA's Knowledge and Practice Standards for Teachers of Reading

Adopted by the  
International Dyslexia Association  
and the Alliance for the Accreditation and  
Certification of Structured Language  
Education (ALTA and IMSLEC)

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## Purpose of Standards

- ...to guide the preparation, certification, and professional development of those who teach reading and related literacy skills in classroom, remedial, and clinical settings;
- ...to specify what **any individual responsible for teaching reading** should know and be able to do, so that reading difficulties, including dyslexia, may be prevented, alleviated, or remediated.

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## Purpose of Standards

- ...individuals who teach in public and private schools, as well as those who teach in clinics, are prepared to implement **scientifically based** and **clinically proven** practices.
- To **protect the interests of the consuming public** by establishing the content knowledge and practices unique to the profession.

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## Accomplished to Date...

- Standards-aligned process of higher education program review
- Second round of reviews getting underway
- Progress toward adoption of a licensing exam aligned with the KP Standards



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- Univ. Colorado, CS
- Southern Methodist U.
- Simmons (Boston)
- St. Joseph's, Phila.
- MGH Institute
- Fairleigh Dickinson
- Colorado College
- College of Mt. St. Joseph's (Ohio)



Accrediting Organizations:  
IMSLEC  
NILD

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Thank you so much!

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