

WORDS WITH SPELLING CONNECTIONS HAVE MEANING CONNECTIONS
PHONOLOGY + PHONICS + MORPHOLOGY + ETYMOLOGY = ORTHOGRAPHY
→ **FOUR CONVERGING PATHS EN ROUTE TO AUTOMATIC WORD RECOGNITION AND SPELLING** ←
Nancy Cushen White, Ed.D.

Everyone Reading Conference
Dyslexia and Related Learning Disabilities

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→ **FOUR CONVERGING PATHS EN ROUTE TO READING AND WRITTEN EXPRESSION** ←

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English Orthography
Preserves Bits of History

Richard Venezky—1999—page 4

★ “English orthography is not a failed phonetic transcription system, invented out of madness or perversity.

★ Instead, it is a more complex system that preserves bits of history (i.e., etymology), facilitates understanding, and also translates into sound.”

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ENGLISH Is a MORPHOPHONEMIC Language

Elaine Silliman, Ph.D.

ASHA Fellow—Board Certified Specialist in Child Language and Language Disorders

◆ Spelling is the engine that interconnects new word formation with vocabulary”—
because English is morphophonemic.

◆ Therefore, the teaching of spelling from a morphophonemic framework should begin in kindergarten.”

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Bruner's Law

“We want kids to experience **success and failure as information**—not success or failure.”

—Jerome Bruner

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English Orthography—David Crystal—2012

Ultimate Test of the Validity of a Spelling Principle:

“The underlying system is robust and regular, but struggles to be visible through the layers of orthographic practice introduced over the centuries by writers with different linguistic, cultural, and political backgrounds.”

“... the best of way of defeating an enemy is to get to understand him.”

★ Spelling is a linguistic problem that must be solved using linguistic tools.

Orthography

Etymology + Morphology + Phonics + Phonology

◆ Etymology → *interrelationships* of words with their own origins and with other words that share that origin—through *history*

◆ Morphology → sequence and structure of meaningful units—in English today

◆ Phonology → units of speech that create meaning only when combined

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<p>English’s “Loose Immigration Regulations” Richard Venezky—1999—page 7</p>
<p>★ “English has always had rather loose immigration regulations for vocabulary.</p>
<p>✦ Words, unlike people, have been forever welcomed, regardless of their origins.</p>
<p>✦ Neither quotas nor IQ tests have ever been required for admission to the lexicon.</p>
<p>✦ And unlike the melting-pot emphasis on assimilation in most of American history, orthography has been unencumbered by pressures to shed its alien appearance.”</p>
<p>✦ “Consequently, <i>bijou</i>, <i>chalet</i>, and <i>chauffeur</i> retain their French garb, <i>trekked</i> smacks of Dutch (via Afrikaans), <i>ohm</i> and <i>Fahrenheit</i> are still German, and <i>vodka</i> remains recognizably Russian.”</p>

<p>Etymology www.etymonline.com</p> <p>“Nuggets often nestle in etymonline.” <i>-a 4th grade student of Old Grouch</i></p>
<p><u>INTERRELATIONSHIPS</u></p>
<p>➤ Words with <u>their origins</u></p>
<p>➤ <u>Other words with the same origin</u></p>
<p>French → coquette, antique, contour</p>
<p>Italian → piano, Monticello</p>
<p>Yiddish → chutzpah, schlock</p>
<p>Spanish → mesa, taco</p>
<p>Greek* → polychrome, philosophy, mythology</p>

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Some BIG Ideas

- ❖ Words with spelling connections also have meaning connections.
- ❖ The meaning of a word is the sum of its parts:
 - ◆ 80% of derived words mean what their parts suggest —IF multiple meanings of the base elements are taken into account (Nagy & Anderson).
 - ◆ Denotation AND Connotation must be considered.
- ❖ Students who understand language structure notice and use these links in meaning.

Denotation and Connotation

- ❖ BOTH Denotation AND Connotation must be considered, but they are NOT THE SAME.
- ❖ denotation → refers to literal, primary meaning
- ❖ connotation → refers to other characteristics suggested or implied
 - ◆ A word like *mother* denotes "a woman who is a parent" but connotes qualities such as protection and affection.

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Morpheme → smallest meaningful unit of language

Count the morphemes in these words:

- *elephants
- election
- *accommodation → ac + com + mode + ate + ion
- *interrelationship → inter + re + late + ion + ship
- photograph → telegraph → graphic
- idiosyncratic → idio + syn + crat + ic
- beneficial → bene + fice + i + al
- conscious → conscience → conscientious → science

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More BIG Ideas

❖ Words with spelling connections also have meaning connections.

❖ We don't know the pronunciation of a base until it surfaces in a word.

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Base Element → <sci>
Real Spelling www.realspelling.fr

un sub	con	sci "know"	ence	es
			ent	ist
omn	i		i	fic al ly
				ous ly ness
	pre ne		ous	ly ness
			on	able ably

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Morphology

Morpheme → smallest unit of meaning
 ➤ Linguistic Entity → whole word → part of a word → single phoneme

* <u>a</u> cept	<u>e</u> xcept
<u>e</u> licit	<u>i</u> llicit
<u>a</u> ffect	<u>e</u> ffect
* <u>f</u> iscal	<u>p</u> hysical
<u>s</u> pecific	<u>p</u> acific
con <u>s</u> ci <u>o</u> us	con <u>s</u> ci <u>e</u> nce
* <u>d</u> ent <u>i</u> st	swif <u>t</u> est
* <u>h</u> ost <u>e</u> ss	fam <u>o</u> us
spectroheliograph <small>an instrument for taking photographs of the sun in light of one wavelength only</small>	

Roots—Base Elements—Stems

Roots → Etymological or Morphological?

- ❖ Strictly historical term (diachronic)
- ❖ Currently used as exclusively etymological
- ❖ Etymological source of the base element

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Roots-Base Elements-Stems

EXAMPLES OF ROOTS

- The root of <ugly> is the Old Norse <uggligr> which means “to be feared.”
- The root of <gregarious> is the Latin <gregem> which means “flock.”

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Another BIG Idea

- ❖ Words with spelling connections also have meaning connections.
- ❖ The meanings of specific words need to be taught in ways that support students in understanding how words are connected semantically and morphologically (Graves, Juel, & Graves, 2004).

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Roots-Base Elements-Stems

Eponym → a word derived from the name of a person

- ⊙ <sandwich> → **The Earl of Sandwich** was a compulsive gambler—who did not want to stop gambling when he was hungry.
- ⊙ <atlas> → **Atlas** was a 2nd-generation Titan who personified the quality of endurance. He led the Titans in a rebellion against Zeus and was **condemned to bear the heavens upon his shoulders**. Illustrations on covers of early books of maps showed **Atlas holding up the globe**; today a book of maps is called an **atlas**.

Roots-Base Elements-Stems

Toponyms

Toponym → a word derived from the name of a place

⊙ The root of <fez> is <fez>. This word, meaning cylindrical red headgear with a tassel, is named after the Moroccan city of Fez.

⊙ Examples of Toponyms:

- <hamburger>
- <cologne>
- <fez>

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Roots-Base Elements-Stems

Toponym → a word derived from the name of a place

⊙ <la la land>

1. A place or a state of being out of touch with reality
2. A place known for frivolous activities.

The term <la-la land> is coined from the initials of the city of Los Angeles, home of Hollywood, alluding to the fictitious nature of the movies, sets, etc.

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Roots- <u>Base Elements</u> -Stems	
<u>Base Element</u>	
❖	Essential <u>kernel</u> of a word's meaning
❖	Morphological <u>base</u> of a word
❖	No inherent historical reference
❖	Strictly <u>structural</u> connotation
❖	Spelling of a word as it is today
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Roots-Base Elements	
<u>Base Element</u>	<u>Root</u>
<u>No inherent historical reference</u>	<u>Strictly historical etymological reference</u>
<u>Morphological base of a word in English</u>	<u>Origin and history of a base</u>
Essential <u>kernel</u> of a word's meaning	Meaning and form <u>through time</u> between a word and its origin
Spelling of a word as it is <u>today</u>	<u>Diachronic</u> —development through history
Strictly <u>structural</u> connotation	Strictly <u>historical</u> reference
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Roots-Base Elements-Stems	
Base Elements	
<input type="checkbox"/> Free Bases can function as <u>single words</u> independently.	will the text she with run warm
<input type="checkbox"/> Bound Bases are only words in combination with <u>at least one other element</u> .	ject rupt chrone phys fer tain sci
<input type="checkbox"/> Twin Bases have alternative forms.	scribe-script tend-tense duce-duct flex-flect
<input type="checkbox"/> Any or all <u>may</u> appear in the same word family.	
<input type="checkbox"/> Different Bases derived from the <u>same root</u> : <u>same etymological family</u> — <u>different morphological family</u>	face-fice-fact-fect →to make tain-tent-tine-tene →to hold

Free Morphemes-Bases	
<input type="checkbox"/> Can stand alone as words	
<input type="checkbox"/> Do not have to be combined with other morphemes	
<input type="checkbox"/> May be made up of one or more syllables	
<u>FUNCTION WORDS</u>	<u>CONTENT WORDS</u>
<ul style="list-style-type: none"> ▪ conjunctions ▪ prepositions ▪ pronouns ▪ helping verbs ▪ articles 	<ul style="list-style-type: none"> ▪ nouns ▪ verbs ▪ adjectives ▪ adverbs

Function Words

- Have little meaning of their own
- Give information about the function of lexical [content] words
- Are the main concern of grammar books
- Are usually unstressed (unaccented)

FUNCTION WORDS

- conjunctions
- prepositions
- pronouns
- helping verbs
- articles

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Content [Lexical] Words

- Have denotation, or specific meanings
- Can be defined in isolation
- Are the principal concern of dictionaries
- Are usually stressed [accented]

CONTENT-LEXICAL WORDS

- nouns
- verbs
- adjectives
- adverbs

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**Lexical [Content] Words
Must Have At Least Three Letters**

odd egg err ebb

When a lexical [content] word and a function word are homophones, one more letter is used to spell the lexical word.

in	for	by	to	or	but	be	we
inn	fore	bye	too	ore	butt	bee	wee
		buy		oar			

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**Lexical [Content] Words
Must Have At Least Three Letters**

✧ What about one-syllable words ending in the phoneme /ɪ/?
 <cry> <dry> <try> <sly> <pry> <shy>

These words can be spelled with a <y> grapheme to represent their /ɪ/ phoneme because their spelling includes a consonant blend or consonant digraph thus providing the 3 letters required for a lexical word.

<lie> <die> <vie> <tie>

These words cannot be spelled with the single letter <y> grapheme to represent their /ɪ/ phoneme because they begin with a single consonant grapheme and therefore need an additional letter to meet the minimum of three letters required for a lexical word—so <ie> must spell /ɪ/.

28 Thanks to Gina Cooke for her insights on use of graphemes <y> and <ie> to spell /ɪ/.

Bound Morphemes

- ◆ Work as meaningful units ONLY in combination with other morphemes
- ◆ NEVER stand alone

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Affixes → Prefixes and Suffixes

- Affixes → bound morphemes that generate derivations and inflections of a base element
- Prefixes
 - Prefixes precede base elements within words.
 - A single base element may have multiple prefixes.
- Suffixes
 - Suffixes follow base elements within words.
 - A single base element may have multiple suffixes.
 - Although there are only about 50 suffixes used in everyday English, suffixes appear in 50% of English words (David Crystal, 2012).

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Connecting Vowel Letter

□ **It connects; it's a vowel; it's ONE vowel letter.**

- ✧ A connecting vowel letter follows a base element within a word.
- ✧ Only one connecting vowel letter may follow a base element.
- ✧ Default connecting vowel letter in Latin: <i>
 ▪ Sometimes <u>; occasionally <e>
- ✧ Default connecting vowel letter in Greek: <o>

synonym	=	syn + onym
thermometer	=	therm + <u>o</u> + meter
proficient	=	pro + fice + <u>i</u> + ent
situation	=	site + <u>u</u> + ate + ion
psychology	=	psych + <u>o</u> + loge + y

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Some Little-Known Orthographic Rules

[Examples Below Shared and/or Inspired by Gina Cooke]

A grapheme cannot straddle a morpheme boundary:

- ★ There is a consonant digraph <ph> grapheme in <prophet>.
- ★ There is NO <ph> grapheme in <uphill> or <haphazard>:
 <up> + <hill> <hap> + <hazard>
- ★ There is a double vowel <ea> grapheme in <heal>.
- ★ There is NO <ea> grapheme in <create>:
 <cre> + <ate> <pro> + <cre> + <ate>

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Some Little-Known Orthographic Rules

[Examples Below Shared and/or Inspired by Gina Cooke]

A grapheme **cannot** straddle a morpheme boundary:

There are **constraints** as to which (and how many) consecutive letters English **will allow**.

- ◇ <agree> + <ed> → <agreed> [NOT agreed]
- ◇ <agree> + <ing> → <agreeing>
- ◇ <knee> + <ed> → <kneed> [NOT kneeed]
The fighter kneed his opponent.
- ◇ <eight + th → <eighth> [NOT eightth]
- ◇ <full + ly → <fully> [NOT fullly]

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ORTHOGRAPHIC CHANGES WHEN ADDING SUFFIXES SPELLING RULES

1-1-1 OR DOUBLING RULE

win → winning refer → referral grab → grabbing

SILENT e OR DROP RULE

give → giving escape → escapee response → responsive
confide → confident promote → promotion gene → genius

BOUND BASES: stere → sterile fine → finite pune → punish

Y OR CHANGE RULE

penny → pennies fury → furious stingy → stingiest

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ORTHOGRAPHIC CHANGES WHEN ADDING SUFFIXES

[Examples Below Shared and/or Inspired by Gina Cooke]

1. A grapheme cannot straddle a morpheme boundary.
2. There are constraints on which (and how many) consecutive letters English will allow.

- <y> and <i> do the same job.
- The <e> in the grapheme <ie> at the end of free base elements (e.g., *tie*, *die*) is needed to provide the required three letters to “lexicalize” these words.
- The grapheme <ie> is unnecessary when building something other than a free base element: <tie>
 - <tie> → <ty> + <ing> → <tying>
 - <tie> + <ed> → <tied>

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The meaning of the word is the sum of its parts.

How many words can you think of that share these Latin base elements?

mobe-mote-move ↗ *same morphological family*
 ↘ *different etymological family*

text

fide

***crede**

***duce-duct** *twin bases*

fer

sponse-spond *twin bases*

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Slingerland Multisensory Structured Language Instruction Basic Lesson Plan Format	
<u>LEARNING TO WRITE</u> 1. Learning new letters 2. Practicing letters newly learned 3. Review of letters previously learned 4. Teaching and Practicing letter connections (Cursive)	
<p style="text-align: center;"><u>AUDITORY</u></p> <p>A. Phoneme-Grapheme Practice Auditory ↔ Visual = Phoneme ↔ Grapheme</p> <p>B. Encoding (segmentation)</p> <p>C. Spelling</p> <ol style="list-style-type: none"> 1. Base Elements + Affixes 2. Unpredictable Words 3. Phrases—Sentences—Paragraphs <p>D. Dictation</p> <p>E. GOAL: Independent Writing</p>	<p style="text-align: center;"><u>VISUAL</u></p> <p>A. Grapheme-Phoneme Practice Visual ↔ Auditory = Grapheme ↔ Phoneme</p> <p>B. Decoding (blending)</p> <p>C. Preparation for Reading</p> <p>D. Structured Reading (Studying)</p> <p>E. GOAL: Independent Reading</p>

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Two Types of Suffixes: Inflectional and Derivational

Inflections and derivational morphemes are two kinds of morpheme units that operate differently in word formation.

- **INFLECTIONAL SUFFIXES** do not change the part of speech of the word to which they are added. The word continues to be a noun, verb, or adjective even with the inflection.
- **DERIVATIONAL SUFFIXES** usually, but not always, change the part of speech of the word to which they are added.

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Inflections

NOUNS:

- Possession hers
- Gender alumna
- Number toys, wishes, crises

VERBS:

- Tense talked
- Voice He was driven.
- Mood She could have been driving.

ADJECTIVES:

- Comparison wilder, wildest

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Derivational Complexity

Several types of phonological changes can occur between a base or stem and a derivational suffix:

- syllable regrouping differ ➔ different
- vowel sound change sane ➔ sanity
- consonant sound change electric ➔ electricity
- stress alternation philosophy ➔ philosophical

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How We Remember Words

- ◆ Related words are activated in memory when they have meaningful connections and share structural elements at the morpheme level, especially when spelling reveals those connections (Nagy et al, 1989)—even when pronunciation does not:

<late> = to carry; to bear

relate ➔ relative ➔ relation ➔ relationship ➔ interrelate

- ◆ Awareness of morphemes aids understanding and recall of and recall of differences among homophones:

site ➔ situation cite ➔ citation
 accept ➔ except

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Vowel Sound // Changes

- ❑ Long vowel // reduced to schwa (or schwi) //:
 *define ➔ definition compete ➔ competition
- ❑ Long vowel // becomes stressed short vowel //:
 exteme ➔ extemity *precise ➔ precision
 profane ➔ profanity
- ❑ Schwa (or schwi) // becomes stressed short vowel //:
 industry ➔ industrious solid ➔ solidify
 *credence ➔ credential electric ➔ electrician
- ❑ Schwa (or schwi) // becomes stressed long vowel //:
 injure ➔ injurious* labor ➔ laborious
 specific ➔ species* separate ➔ separation

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Consonant Phoneme // Changes

Consonant phonemes change in pronunciation from one form of a word to another:

- bomb ➔ bombard ➔ bombardier
- *crumb ➔ crumble** ➔ <crumb> + <_le>
- malign ➔ malignant*
- *sign ➔ signature ➔ signify ➔ signal
- anxious ➔ anxiety
- medic ➔ medicine
- *definite ➔ definition
- repress ➔ repression

**<-le> is sometimes a suffix

sparkle—twinkle—suckle—speckle—crackle—circle—nestle

Revisiting Those **BIG** Ideas

- ❖ Words with spelling connections also have meaning connections.
- ❖ We don't know the pronunciation of a base until it surfaces in a word.
- ❖ "... denotation of a root will have echoes, however faint, in the meanings of words descended from it.
- ❖ Furthermore, appreciating a word's etymology and the orthographic denotation of its root leads to understanding of fine nuances of meaning that can often help in distinguishing it from its synonyms."

Real Spelling

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Morphophonemics	
Vowel Phoneme Shifts	
Long Vowel Sound	Short Vowel Sound
*sāne	sănity
vīce	vĭcious
nāture	nătural
telescōpe	telescōpic
*stūdius	stŭdy
analyīze	analyĭsis
*abbrēviate	brĕvity
decīive	decĭsion
fīnite	fĭnish

Morphophonemics	
Vowel Phoneme Shifts	
Long Vowel Sound	Short Vowel Sound
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Long Vowel Sound	Short Vowel Sound
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nāture	nătural
telescōpe	telescōpic
*stūdious	stŭdy
analyīze	analyĭsis
*abbrēviate	brĕvity
decīive	decĭsion
fīnite	fĭnish
cyīclist	bicyĭcle

Accent—Stress Hints	
1. ___ ' ___	4. ___ ' /sh/ ___
2. ___ base element' ___	5. ___ ' ity
3. ___ ' ___	___ ' ic
___ ' ___	___ ' ial
	___ ' ian
	___ ' ion
	___ ' ious
*British English pronunciation variations (e.g., conTROVersy, CONtribute)	

Accent—Stress Hints with examples

1. ___ ' ___	spider, scramble, olive, crisis
2. ___ base element'	provide, invert
___ base element' ___	repellent, committee, referral
3. ___ ' ___	cucumber, government, reference
___ ' ___	ridiculous, provisional, reciprocal
4. ___ ' /sh/ ___	education, delicious, proficient
5. ___ ' ity	responsibility, tenacity, personality
___ ' ic	electric, cosmic, authentic, algebraic
___ ' ial	familial, radial,
___ ' ian	Italian, crocodilian, physician,
___ ' ion	champion, religion, onion
___ ' ious	scrumptious, curious, delicious

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Morphophonemics

invent <u>u</u>	invention <u>u</u>
*electric <u>i</u>	electrician <u>i</u>
mathematic <u>a</u> n	mathematics <u>a</u>
rhetor <u>i</u> c	rhetorical <u>i</u>
*defin <u>i</u> te	defin <u>e</u> fin <u>i</u> te
spec <u>i</u> fic	spec <u>i</u> es spec <u>i</u> al
solid <u>i</u> fy	solid <u>i</u>
gram <u>a</u> mmar	gram <u>a</u> mmarian
pol <u>i</u> tics	pol <u>i</u> tical
*inspir <u>i</u> ation	inspir <u>i</u> e

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How We Remember Words

◎ We know from cognitive experimental research that people with morphological awareness **organize their mental dictionaries so that related words are associated and more readily retrieved** (Schreuder & Baayen, 1995).

◎ ... the mind is **always seeking pattern recognition** to reduce the load on memory and facilitate retrieval of linguistic information:

auditory → auditorium → audit → audition → audience

inscribe → subscription → scribe → describe → script → ascribable

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Triple Word Form Theory Phonology—Orthography-Morphology (Berninger et al., 2003)

◆ Learning to read and write words is a process of increasing awareness and coordination (integration) of three different types of word forms and their parts:

- Phonological Awareness
- Orthographic Awareness
- Morpheme Awareness.

◆ Multidisciplinary evidence for triple word form theory continues to accumulate.

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Triple Word Form Theory Phonology—Orthography-Morphology (Berninger et al., 2003)

- ◆ For typically developing third graders, all three word forms were correlated with performance in the following reading and writing skill areas:
 - Real word single word reading—accuracy and rate
 - Pseudo-word reading—accuracy and rate
 - Oral reading of passages—accuracy and rate
 - Reading comprehension
 - Spelling
 - Written Expression
- ◆ Subsequent study evaluated which paths predicted unique variance over and beyond the shared covariance among the predictor factors.

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Triple Word Form Theory Phonology—Orthography-Morphology (Berninger et al., 2003)

- ◆ 3rd Grade—Unique Variance
 - Phonological factor predicted unique variance only to pseudo-word reading.
 - Orthographic factor predicted unique variance only to written expression.
 - Morphological factor predicted unique variance only to reading comprehension.
- ◆ 5th Grade—Unique Variance
 - Only the orthographic factor predicted unique variance—in real word reading—accuracy and rate, pseudo-word reading—accuracy and rate, and spelling
- ◆ **Hypothesis:**
Beyond 3rd grade, awareness and integration of all three word forms—phonological, orthographic and morphological are necessary for literacy acquisition.
 - Begin MUCH sooner!!!!!!!!!!!!

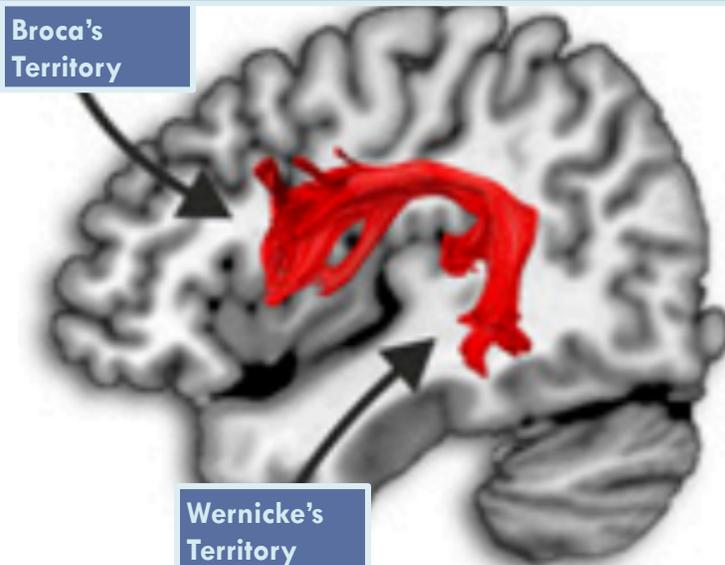
54

Arcuate Fasciculus

- The **arcuate fasciculus** (Latin, *curved bundle*), a collection of **nerve fibers that connects auditory regions at the temporal lobe with the motor (speech) areas at the frontal lobe, allows the “sound” of a word to be connected to the regions responsible for its articulation.**
- Differences in the development of these **auditory-motor connections** may explain differences in people’s **vocabulary—ability to learn words** (Lopez-Barroso et al./ PNAS—2013).

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Arcuate Fasciculus



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Arcuate Fasciculus

- ❑ **Diffusion** tensor imaging of the brain to see the **structure** of the brain **BEFORE** a word learning task.
- ❑ **Functional** MRI to detect the regions that were most active **DURING** the word learning task.
- ❑ Strong relationship between the ability to remember words and the structure of the arcuate fasciculus—which **connects Wernicke's Area** (related to **language comprehension**) and **Broca's Area** (coordinates movements associated with speech).
- ❑ More successful at learning words → more myelinated arcuate fasciculus → more coordinated activity between **Wernicke's and Broca's** → allowing for **faster conduction of electrical signals**.

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Implications of These Findings?

- If this interaction is the way we learn new words—by talking—what effect will the preponderance of interaction via screen, text, and email have on development of vocabulary?

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WORDS WITH SPELLING CONNECTIONS HAVE MEANING CONNECTIONS
PHONOLOGY + PHONICS + MORPHOLOGY + ETYMOLOGY = ORTHOGRAPHY
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Layers of the English Language

borrowed from Marcia K. Henry

GREEK
specialized words
mostly scientific
dependable
some common non-phonetic
phone+o+graph ←combined base elements→ neur+o+psych+o+loge+y

LATIN
academic language
content area text
"high class" words
formal settings
mostly phonetic

ANGLO-SAXON
compound words
common, everyday
down-to-earth
ordinary situation
many non-phonetic

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Old English Layer

▪ **Compounds** are characterized more by their stress pattern than by their spellings. Stress, or accent, almost always occurs on the first word of the compound. Spelling may include a hyphen or a space.

earthquake oatmeal baseball snowman

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Old English Layer		
<u>COMPOUNDS</u>		
oatmeal	honky-tonk	apple pie
applesauce	day-to-day	green beans
brainwash	two-way	under water
baseball	under-the-table	honor roll
cornbread	twentieth-century	business suit
earthquake	old-fashioned	credit card

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Homophone Principle

Venezky (1999)

- * When two words are pronounced the same, if possible, they will be spelled differently *to mark that difference in meaning.*
- * "... with one etymological concept—the *homophone principle*—we can drop the false assumption that homophones are confusing because they are spelled the same ..."

heal health	please pleasant	steal stealth
loan lone	grown groan	beet beat
scene seen	sight site cite	knead need

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Old English Layer

Words of Old English origin are characterized as the common, everyday, down-to-earth words used frequently in ordinary situations.

What is the base element in <happiness>?

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Saga of the Scribal-o

Before the printing press, monks who were scribes noticed that many of their quill-penned letters were difficult to read. Most troublesome were the letters formed with *similar, beginning, up-and-down strokes*:

m n w u r v

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Saga of the Scribal-o

- Therefore, the wise scribes changed the vowel grapheme u to o when **u** appeared adjacent to one of the letters listed.
- The scribes could not, however, alter the pronunciation of the words that were affected by the spelling change they made.
- Therefore, the grapheme **o** in words like, *brother, love, some, and wonder*, is pronounced /u/.
 - What about *month* and *Monday*?

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Adapted from Carol Murray

Think of a word that ends in v...

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Why don't English words end in <v>?

The letter <u> shares history and behavior with <v> and has a spelling partnership with <o>. The letters <u> and <v> used to be written—and printed—identically—something like <v>. The early printers did develop two versions of the letter—<v> and <u>—but choice between them was determined ONLY by their position in the word, not whether they were functioning as the vowel or the consonant letter.

When vowel <u> or consonant <v> appeared at the beginning of a word, it was written <v> but when either occurred inside a word it was written <u>:

vnder have loue
vpon every ouer vse

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Spelling /r/ with wr...

- Usually one syllable
- Meaning associated with “twisting”

wring	wreath	wrestle	wrangle	write
wrath	wrinkle	wrong	wrench	wrist

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Words that begin with *tw...*

- Meaning associated with “two”

twins	twine	twinkle
tweezers	twelve	twenty
betwixt		between

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Etymological Marker?

Venezky 1999

- ◎The <w> in <two> is not there as a grapheme representing a phoneme.
- ◎It is there to inform readers that <two> is the *spelling for the number*.
- ◎... so there is sense to the <o> in <people> when we consider words like <popular> and <population>—from the same etymological family.

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Why does <ey> spell /ā/ in <they>?

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Why is there an <l> in <would>?

Why is there an <l> in <should>?

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Is the spelling of <does> unpredictable?

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Romance (Latin) Layer

Words of Romance origin frequently become affixed (i.e., have prefixes and suffixes). There are bound base elements that work as meaningful units ONLY in combination with other morphemes, and there are free base elements that can stand alone as meaningful units.

press	pressed	pressure	impression
reject	interrupted	concise	decision
transmitting	prevention	sequence	propeller
pulse	repulse	propulsion	science

[Nist, J. (1966). *A Structural History of English*. NY: St. Martins Press]

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Latin Layer

Derivational → Word-Building

- ❑ ****Words derived from Latin roots/base elements are most common in content area textbooks.**
- ❑ **Analysis of the number of distinct words in printed school English showed that students encountered over 88,000 “distinct” words in texts through ninth grade (Nagy and Anderson, 1984).**
- ❑ **About half the words in printed texts through ninth grade occur once in a billion words of text or less (e.g., *inflate, extinguish, nettle*).**

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Latin Layer

Morphological Awareness → Semantic

- ****For every word a student learns, there are usually between one and three related words that should be understandable.**
- ****There are degrees of semantic transparency in words**
 - **Apparent:** *red* → *redness*
 - **Less Apparent:** *apply* → *appliance*
- ****The less morphological awareness a student has, the more distinct words need to be learned.**
- **Semantically transparent words are skewed toward the low end of the frequency distribution to a greater degree than morphologically basic words or semantically opaque words (Nagy and Anderson 1984).**
- **About 60% of the unfamiliar words encountered in the middle school years and beyond are sufficiently transparent—even though they are morphologically complex in structure and meaning—that a reader might be able to infer the meaning of the word (Nagy et al., 1989).**

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Romance Layer

How many words can you think of that share the Latin base element *<nate>*?

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Romance Layer

How many words can you think of that share these Latin base elements:

<secute-seque> [to follow] ?

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Romance Layer

How many words can you think of that share these Latin base elements:

<grade-gress> [to step] ?

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Romance Layer

How many words can you think of that share these Latin base elements:

<pel-pulse> [to push] ?

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Romance Layer

How many words can you think of that share these Latin base elements: *<pense-pend>* [to hang] ?

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Romance Layer

How many words can you think of that share these Latin base elements: *<mit-miss>* [to send] ?

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Where Do You Stand on These Questions?

1. What is the base element in <instant>?
2. Is <stand> a free base?
3. Do <circumstances> and <stationary> have the same base element?
4. Do <establish> and <statistical> have the same base element?

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What are the elements of the word <antidisestablishmentarianism>?

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<h2 style="margin: 0;">Greek Layer</h2>	
<p>✧ Scientific and mathematical terms incorporated into English in the past 500 years have most often been constructed from Greek morphemes.</p> <p>✧ Many Greek-derived morphemes combine with other bound morphemes of equal importance in flexible order:</p>	
geography	photosynthesis
psychology	philanthropic
chronic	synonym

<h3 style="margin: 0;">Growth in Phonological, Orthographic and Morphological Awareness in Grades 1 to 6 -Berninger, Abbott, Nagy & Carlisle, 2010-</h3>	
<ul style="list-style-type: none"> <input type="checkbox"/> Three kinds of morphological awareness show greatest growth in the first three or four grades. <input type="checkbox"/> One kind of morphological awareness—derivation—<u>continues to show substantial growth after fourth grade.</u> <input type="checkbox"/> Studies have shown that morphological awareness makes contributions to academic achievement in several areas: <ul style="list-style-type: none"> <input type="checkbox"/> Word Identification—Decoding <input type="checkbox"/> Reading Comprehension <input type="checkbox"/> <u>BOTH</u> Word Identification—Decoding and Comprehension 	
86	<ul style="list-style-type: none"> <input type="checkbox"/> Written Expression, especially Spelling (Berninger et al. 2008)

Effects of Morphological Awareness

- Better readers with excellent language abilities in fourth through eighth grade are able to talk about word structure and word meaning in a precise, decontextualized manner that reveals conscious knowledge of phonology and morphology (Snow, 1990).
- Adults who read poorly have less information in their mental dictionaries as well as less ability to organize and gain access to words using morphological relationships (Cunningham & Stanovich, 1997; Leong, 1989; Shankweiler et al., 1996).
- Adults who read accurately and fluently have accumulated wide networks of word families for ready access and cross-referencing in the lexicon (Nagy et al., 1989).

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Effects of Morphological Awareness

- Phonological awareness facilitates morphological awareness in younger children (Carlisle & Nomanbhoy, 1993), and both are associated with stronger reading skills.
- Problems that poor readers have with applying morphological rules to unfamiliar base words are attributable in large part to more basic weaknesses in phonological processing (Carlisle, 1987, 1988; Fowler & Liberman, 1995).
- *Because morphemes are units of both sound and meaning, deficits in phonological processing contribute to confusion of similar-sounding words and word parts, failure to recognize similarities of structure, and failure to either store or retrieve word form with precision.

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Effects of Morphological Awareness

Differences between good and poor spellers are associated with significant differences in sensitivity to word structure at the morphological level. Children with specific written language and spelling disorders have been shown to misuse, substitute, or omit inflected endings more than typical children (Bailet, 1990; Moats, 1996). Insensitivity to morphological aspects of word structure also characterizes adults who spell poorly.

(Fischer, Shankweiler, & Liberman, 1985; Liberman, Rubin, Duques, & Carlisle, 1985; Shankweiler et al., 1996)

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Effects of Morphological Awareness

Well-designed spelling and vocabulary programs make use of morphological structures in word study, making explicit the kind of understanding that good spellers tend to get on their own from seeing words in print. Good spellers and people with larger vocabularies search for and notice in new words letter sequences that can give them clues to meaning (Moats).

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Slingerland Multisensory Structured Language Instruction Basic Lesson Plan Format	
<u>LEARNING TO WRITE</u> 1. Learning new letters 2. Practicing letters newly learned 3. Review of letters previously learned 4. Teaching and Practicing letter connections (Cursive)	
<p style="text-align: center;"><u>AUDITORY</u></p> <p>A. Phoneme-Grapheme Practice Auditory ↔ Visual = Phoneme ↔ Grapheme</p> <p>B. Encoding (segmentation)</p> <p>C. Spelling</p> <ol style="list-style-type: none"> 1. Base Elements + Affixes 2. Unpredictable Words 3. Phrases—Sentences—Paragraphs <p>D. Dictation</p> <p>E. GOAL: Independent Writing</p>	<p style="text-align: center;"><u>VISUAL</u></p> <p>A. Grapheme-Phoneme Practice Visual ↔ Auditory = Grapheme ↔ Phoneme</p> <p>B. Decoding (blending)</p> <p>C. Preparation for Reading</p> <p>D. Structured Reading (Studying)</p> <p>E. GOAL: Independent Reading</p>

Why are these words spelled this way?
<p>commitment</p> <p>committee</p> <p>referral</p> <p>reference</p> <p>illegal</p> <p>accommodate</p> <p>efficacious</p> <p>effective</p>

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Layers of English Language		
<i>Categorize these words.</i>		
Old English	Latin	Greek
table	syllable	anthropology
extract	constellation	character
symmetry	healthy	perspiration
brown	pterodactyl	mystery
insect	utility	brother
interrupt	house	illicit
chaos	complement	phantom
survival	eloquent	been

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References	
<ul style="list-style-type: none"> ▪ Berninger, V.W., Abbott, R.D., Nagy, W., & Carlisle, J. (2010). Growth in phonological, orthographic, and morphological awareness in grades 1 to 6. <i>Journal of Psycholinguistic Research</i>, 39: 141–163. ▪ Birsh, J.R. (Ed.). (2011). <i>Multisensory Teaching of Basic Language Skills-3rd Edition</i>. Baltimore, MD: Paul H. Brookes Publishing Co. ▪ Henry, M. (2010). <i>Unlocking literacy: Effective decoding & spelling instruction—2nd Edition</i>. Baltimore, MD: Paul Brookes Publishing Co. ▪ King, D.H. (2000). <i>English Isn't Crazy!</i> Baltimore, MD: York Press. ▪ Moats, L.C. (2009) <i>Speech to Print: Language Essentials for Teachers-2nd Edition</i>. Baltimore, MD: Paul H. Brookes Publishing Co. ▪ Venezky, R.L. (1999) <i>The American Way of Spelling</i>. New York, NY: The Guilford Press. ▪ www.realspelling.fr www.wordworkskingston.com ▪ www.etymonline.com www.realspellers.org ▪ http://linguisteducatorexchange.com/ ▪ http://www.neilramsdn.co.uk/spelling/matrix/index.html ▪ http://www.neilramsdn.co.uk/spelling/searcher/index.html 	

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<fide> → “to trust”

Fidelity

+

Intensity

+

Duration

=

Efficacy

A thought to ponder...

“Until you are willing to be confused about what you already know, what you know will never become wider, bigger or deeper.”

-Milton Erikson

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