

WHAT A DIFFERENCE A MORPHEME CAN MAKE!!!

WORDS WITH SPELLING CONNECTIONS HAVE MEANING CONNECTIONS

Nancy Cushen White, Ed.D.

What a Difference a Morpheme Can Make!
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HAVE MEANING CONNECTIONS.

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The International Dyslexia Association
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English Orthography—David Crystal—2012
Ultimate Test of the Validity of a Spelling Principle:
“We use it to predict the spelling of words as yet unborn.”

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

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

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Orthography
Etymology + Morphology + Phonology

- ◆ **Etymology** → interrelationships of words with their own origins and with other words that share those origins—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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ROOT—Base Element—Stem

- ❖ Etymological → strictly historical term (diachronic)
- ❖ Etymological source of the base element

Root—**BASE ELEMENT**—Stem

- ❖ Essential kernel of a word's meaning
- ❖ No inherent historical reference—strictly structural
- ❖ Spelling of a word as it is today

Root—Base Element—**STEM**

- ❖ Base element that has already acquired another element [base or affix] AND to which a further affix or base element can be added:
→ reject [-ion] [in-] active [ate] universe+[ity]
- ❖ All stems are complex words, but not all complex words are stems.

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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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ROOTS-Base Elements-Stems

Eponym → a word derived from the name of a person

- ⊙ <cereal> → Ceres, goddess of grain
- ⊙ <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.
- ⊙ <sandwich> → The Earl of Sandwich was a compulsive gambler—who did not want to stop gambling when he was hungry.

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ROOTS-Base Elements-Stems

Toponym → a word derived from the name of a place

- ⊙ <cologne> → perfume originating from Cologne, Germany
- ⊙ <fez> → cylindrical red headgear with a tassel—named after the Moroccan city of Fez
- ⊙ <meander> → bend in a river—named after Meander, a river in Turkey
- ⊙ <Rubicon> → point of no return—named for Rubicon (or Rubico), a small former river in northern Italy
- ⊙ <Siberia> → remote undesirable location—named for Siberia, in eastern Russia

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<-eme>

minimal distinctive unit of a linguistic concept

- **Phoneme** → smallest unit of speech sound contrast that creates words with different meanings
 /mat/—/pat/:/m/—/p/ /chick/—/cheek/:/i/—/ē/
 /tooth—/tune/:/th/—/n/
- **Grapheme** → letter or letters that spell a single phoneme
 <ck> spells /k/ <ai> spells /ā/
 <dge> spells /i/ <igh> spells /ī/
- **Morpheme** → minimal unit of meaning that cannot be further divided → prefixes base elements suffixes
 <de> + <cise> + <ion>
 <in> + <fine> + <ite>
 <ac> + <com> + <mode> + <ate> + <ion>

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Morpheme → smallest meaningful unit of language

Count the morphemes in these words:

- *elephants → elephant + s
- *election → e + lect + ion
- *accommodation → ac + com + mode + ate + ion
- *interrelationship → inter + re + late + ion + ship?
- *indecisive → in + de + cise + ive
- synchronous → syn + chrone + ous
- beneficial → bene + fice + i + al
- conscious → conscience → conscientious → science
- photograph → telegraph → graphic → geography

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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.realspellers.org/gallery

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

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ENGLISH Is a MORPHOPHONEMIC Language

- English is a morphophonemic language → the pronunciation of polysyllabic words is primarily determined by placement of stress.
- Morphophonemics → interaction between morphological and phonological processes (Venezky, 1999).
- As the number of syllables changes, the stress shifts—and the pronunciation of individual morphemes (and syllables) will change—but the spelling does not change.
- The study of spelling—with a focus on the morphophonemic nature of English—connects even unfamiliar words with a common base to their meanings.

finish finite infinite definite infinitesimal final confine infinitive

ALL WORDS WITH SAME BASE <fine>end

- "Never know the pronunciation of a base until it lands in a word."
- "Words with spelling connections have meaning connections."

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Morphophonemics	
* <u>invent</u>	in <u>vent</u> ion
* <u>electric</u>	electr <u>ic</u> ian
* <u>inspiration</u>	ins <u>pire</u>
* <u>definite</u>	de <u>fine</u> <u>fin</u> ite
<u>specific</u>	spe <u>ci</u> es <u>spe</u> cial
<u>grammar</u>	gram <u>mar</u> ian
<u>politics</u>	pol <u>it</u> ical
mathem <u>atic</u> ian	mathem <u>atic</u> s
rh <u>et</u> oric	rh <u>et</u> orical

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Morphology	
Morpheme → smallest unit of meaning	
↳ Linguistic Entity → whole word → part of a word → single phoneme	
* <u>accept</u>	<u>ex</u> cept
<u>elicit</u>	il <u>lic</u> it
<u>affect</u>	<u>eff</u> ect
<u>fiscal</u> <small>-1560s; "pertaining to public revenue," etymological notion: "public purse"—taxes</small>	<u>ph</u> ysical
<u>specific</u>	<u>pac</u> ific
<u>conscious</u>	con <u>sci</u> ence
* <u>dentist</u>	swif <u>te</u> st
<u>hostess</u>	<u>fa</u> mous
<u>spectroheliograph</u> <small>-instrument for taking photographs of the sun in light of one wavelength only</small>	

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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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Another BIG Idea

- ❖ Words with spelling connections also have meaning connections.
- ❖ We don't know the pronunciation of a base until it surfaces in a word.
- ❖ 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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Nagy & Anderson—1984 (p. 125)

- * It is interesting to note that [the] **un**predictability of a derived word's meaning from its structural constituents is much more common among frequent words than among infrequent words."
- * Thus, a reader's structural analysis of a new word he encounters is more likely to be correct if the word is an **infrequent** one.
- * This is fortunate, because it is precisely an infrequent word that a fluent reader is likely not to know.

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Denotation and Connotation NOT THE SAME

- ❖ **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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Free Morphemes-Bases

- Can stand alone as words
- Do not need to be combined with other morphemes
- May have one or more syllables

FUNCTION WORDS

- conjunctions
- prepositions
- pronouns
- auxiliary (helping) verbs
- articles

CONTENT WORDS

- nouns
- verbs
- adjectives
- adverbs

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Function Words

- Difficult to define in isolation—without context
- Provide information about the function of content words
- Main concern of grammar books
- Usually UNstressed (unaccented)
- Few, if any, synonyms

Function Words

- conjunctions
- prepositions
- pronouns
- auxiliary [helping] verbs
- articles

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Connected Text
Unstressed Function Words

- Learning to read and write words is a process of increasing awareness and coordination of three different types of word forms.
- Compounds are characterized more by their stress pattern than by their spellings.
- With one etymological concept—the homophone principle—we can drop the false assumption that homophones are confusing because they are spelled differently.

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Content [Lexical] Words

- ☐ Denotation—specific meanings/definitions—and multiple synonyms
- ☐ Can be defined in isolation
- ☐ Principal concern of dictionaries
- ☐ 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 /i/?
<cry> <dry> <try> <sly> <pry> <shy>

These words can be spelled with a <y> grapheme to represent their /i/ 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 /i/ 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 /i/.

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

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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.
- ◇ Only **one** connecting vowel letter may follow a base element.

- synonym = syn + onym
- ◇ **Latin**—Default connecting vowel letter: <i>**i**</i>
 - proficient = pro + fice + **i** + ent
 - Sometimes <u>:
 - situation = site + **u** + ate + ion
- ◇ **Greek**—Default connecting vowel letter in Greek: <o>**o**</o>
 - thermometer = therm + **o** + meter
 - psychology = psych + **o** + loge + y
- ◇ **Old English**—ONLY occasionally <e>**e**</e>
 - righteous = right + **e** + ous

- 26 -courteous = court + **e** + ous

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Base Elements

Free Bases—Bound Bases Twin (Alternant) Bases

□ **Free Bases** can function as single words independently.

will the text she with run warm

□ **Bound Bases** are only words in combination with at least one other element.

sponse ject rupt chrone phys fer tain sci

□ **Twin Bases** have alternant forms.

vide-vise scribe-script tend-tense duce-duct flex-flect

- Any or all may appear in the same word family:
 - same base—different spellings

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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 etymological family
 ↘ different morphological family

mobility → **emotion** → **moveable**

text^{weave} → **textile** → **context** → **texture** → **textual**

fide^{trust} → **confident** → **diffident** → **fidelity** → **fiduciary**

crede^{believe} → **accredit** → **incredible** → **credential**

fer^{bring-bear} → **reference** → **referral** → **prefer** → **different**

duce-duct^{lead} *twin bases* → **introduce** → **introduction**

sponse-spond^{answer} *twin bases* → **respond** → **responsive**

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ORTHOGRAPHIC CHANGES WHEN ADDING SUFFIXES
SPELLING CONVENTIONS

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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A **Sample for Illustration
 Basic Daily Lesson Plan Format **INTEGRATED** Structured Literacy Lesson
Slingerland® Multisensory Structured Language Approach
 Teacher guides students as they practice, never assuming but constantly moving around the classroom to prevent errors, clarify confusion, and ensure success.

LEARNING TO WRITE

- Learning new letters
- Practicing letters newly learned
- Review of letters previously learned
- Teaching and Practicing letter connections (Cursive)

AUDITORY	VISUAL
A. Phoneme-Grapheme Practice Auditory → Visual = Phoneme → Grapheme	A. Grapheme-Phoneme Practice Visual → Auditory = Grapheme → Phoneme
B. Encoding (segmentation) SKILLS	B. Decoding (blending) SKILLS
C. Spelling FUNCTIONAL USE 1. Base Elements + Affixes 2. Unpredictable Words 3. Phrases—Sentences—Paragraphs	C. Preparation for Reading FUNCTIONAL USE (Pre-Teaching Vocabulary and Syntax—words, phrases, grammar, punctuation, etc.)
D. Dictation	D. Reading Connected Text (Structured Reading & Studying)
E. GOAL: Independent Writing	E. GOAL: Independent Reading

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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 phoneme change sane → sanity
- consonant phoneme change electric → electricity
- stress alternation philosophy → philosophical

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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 → diminutive
sparkle crackle twinkle

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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:

<fine> = to end; limit; set a boundary

define → finish → finite → infinite → definite → infinity →
final → finalize → finality → indefinable → infinitesimal →
confine → confinement → infinitive

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

sci → conscious cise → decision
sponse → response panse → expansion

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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
<aud>
inscribe → subscription → scribe → describe → script → ascribable
<scribe> <script>

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More Morphophonemics Pronunciation Changes

- ◇ English is a morphophonemic language.
- ◇ Morphophonemics → interaction between morphological and phonological processes (Venezky, 1999).
 - * Pronunciation of polysyllabic words → determined by placement of stress.
 - * Pronunciation (phonological) changes in morphemes occur when morphemes combine to form different words
 - † As # of syllables changes, stress shifts—and pronunciation of individual morphemes will change.
 - † Words with spelling connections have meaning connections.
 - † The study of spelling—with a focus on the morphophonemic nature of English—connects even unfamiliar words with a common base to their meanings.

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Romance (Latin) Layer

- Words of Romance origin frequently become affixed (i.e., have prefixes and suffixes).
- Bound Base Elements work as meaningful units ONLY in combination with other morphemes.
- Free Base Elements 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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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:
 - **Phonology** → speech sounds-phonemes
 - **Orthography** → graphemes that spell phonemes
 - **Morphology** → morphemes—meaningful units
[spelled with the same 250+/- graphemes representing 44+/- phonemes-speech sounds]
- ◆ Multidisciplinary evidence for triple word form theory continues to accumulate.

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Layers of the English Language borrowed from Marcia K. Henry

GREEK

specialized words
mostly scientific
dependable
some common unpredictable

phone + o + graph ← combined base elements → neur + o + psych + o + loge + y

LATIN

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

une + i + verse ← combined base elements → omni + sci + ent

OLD ENGLISH—ANGLO-SAXON

compound words
common, everyday
down-to-earth
ordinary situation
many unpredictable

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Old English Layer			
<ul style="list-style-type: none"> 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. The compound has a meaning that <u>isn't *coextensive</u> [does not correspond exactly] with the sum of the meanings of its components: <greenhouse> Spelling may include a hyphen or a space. 			
earthquake	cupcake	two-way	credit card
Classes of Compound Words:			
➢ Closed		→ shakedown baseball bookkeeper	
➢ Hyphenated		→ open-ended	
➢ Open		→ nervous breakdown	
*coextensive: extending over the same space or time; corresponds exactly			

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Old English Layer COMPOUNDS		
CLOSED	HYPHENATED	OPEN
oatmeal	open-ended	apple pie
applesauce	day-to-day	green beans
brainwash	two-way	under water
bookkeeper	under-the-table	honor roll
cornbread	twentieth-century	business suit
42 earthquake	old-fashioned	credit card

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Homophone Principle Venezky (1999)			
<ul style="list-style-type: none"> 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 differently...” 			
heal/ ^{ē/}	health/ ^{ē/}	please/ ^{ē/}	pleasant/ ^{ē/}
steal/ ^{ē/}	stealth/ ^{ē/}		
loan lone	grew-grown groan	beet beat	
scene seen	sight site cite	knead need	43

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Saga of the <u>Scribal-o</u>	
<ul style="list-style-type: none"> 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 <i>similar, beginning, up-and-down strokes</i>: 	
u	m n w 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 /ū/.
- What about *month* and *Monday*?

Adapted from Carol Murray

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Think of a word that ends in v...

<ul style="list-style-type: none"> ▪ have ▪ starve ▪ love ▪ strive ▪ nerve ▪ give ▪ twelve ▪ grieve ▪ live 	<ul style="list-style-type: none"> ▪ believe ▪ move ▪ arrive ▪ heave ▪ relative ▪ motive ▪ beehive ▪ authoritative ▪ attractive
---	--

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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>:

have love every upon

over live use

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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

- What about <wren>?

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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.

© ... and what about the <l> in <yolk>? Could it be from the same etymological family as <yellow>? 50

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Why does <ey> spell /ā/ in <they>?

they
them
their [ɹ changed to i_ inside a word]

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

will → would
shall → should

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...so what about the <l> in <could>?

ANALOGY

- Words that **sound similar** tend to be spelled the same. This process of **analogy** affected many new words as they arrived in English—and some older spellings were changed to conform. (p. 121, Crystal, 2012).
- Throughout the history of English spelling, even in tiny groups of words (e.g., **auxiliary verbs would-should-could**), analogy has had influence.
 - Though they all look the same now, there was no <l> in <could> originally.
 - The other two verbs both had an <l>: **wolde-sholde**.
 - When <wolde> and <sholde> became <would> and <should> in late Middle English, scribes decided there should also be an <l> in <could>.

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Is the spelling of <does> unpredictable?

*do	does	doing	done
*go	goes	going	gone

The spelling of <does> is predictable, but the pronunciation is not.

*lexical words with only two letters

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Vocabulary Growth from 3rd Grade Onward

- Vocabulary knowledge grows rapidly after 3rd grade, but only if the student understands derivational suffixes (Anglin, 1993; Berninger, Abbott, Nagy & Carlisle, 2010). For the average 5th grader, derivations account for the lion's share of known words.
- Adolescents who do not understand how derivations are structured are likely to struggle with reading, vocabulary and comprehension (Berninger et al., 2010; Nagy, 2007; Nagy, Berninger, & Abbott, 2006). These students need explicit morphology instruction.
- Generating morphological families is a lot like solving a puzzle.
 - Deductive thinking allows students to play detective—sleuthing out unforeseen relationships between words.
 - Relationships between phonology, morphology, orthography, syntax, and semantics can become more transparent within a morphological family.
 - The teacher's task is to help students see how sounds, spellings, morphemes, meanings, and syntax are coordinated in a word.

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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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WHAT A DIFFERENCE A MORPHEME CAN MAKE!!!

WORDS WITH SPELLING CONNECTIONS HAVE MEANING CONNECTIONS

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Latin Layer Morphological Awareness	
<ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> Apparent: red → redness Less Apparent: apply → appliance Least Apparent: science → conscientious 	
<p>The less morphological awareness a student has, the more distinct words need to be learned.</p>	
<ul style="list-style-type: none"> 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 these Latin base elements: <secute-seque> [to follow] ?	
<secute>	<seque>
prosecutor	sequence
consecutively	consequential
persecute	sequential
prosecution	sequester
persecution	subsequent

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Romance Layer	
How many words can you think of that share these Latin base elements: <grade-gress> [to step] ?	
<grade>	<gress>
gradient	progress
graduate	digress
degrade	aggressive
gradual	regress
biodegradable	congressional

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Romance Layer	
How many words can you think of that share these Latin base elements: <pel-pulse> [to push] ?	
<pel>	<pulse>
compel	repulsion
repellent	compulsive
propeller	pulsate
expelled	impulse
dispel	compulsory

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Romance Layer	
How many words can you think of that share these Latin base elements: <pense-pend> [to hang] ?	
<pense> <(s)pense>	<(s)pend> <pend>
pensive	pendant
suspense	appendage
propensity	suspenders
pension	dependent
61 dispense	pendulum

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Romance Layer	
How many words can you think of that share these Latin base elements: mit-miss [to send] ?	
mit	miss
commit	mission
committee	emissary
transmitted	remission
permit	permissive
62 emit	emission

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BASE ELEMENTS	
act	breve cept
cise	clude cluse crede
cuss	duce duct fide fine fuge
grade	grave grate grege gress ign
ject lect	miss mit pel pulse
pendpense	pone pose port
rect	rode rose rupt scribe script seque
tend tense text tort tract	
63 verse vert	vide vise vent vene

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Where Do You <u>Stand</u> on These Questions?
1. What is the <u>base element</u> in <instant>?
2. Is <stand> a <u>free base</u> ?
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 A DIFFERENCE A MORPHEME CAN MAKE!!!
WORDS WITH SPELLING CONNECTIONS HAVE MEANING CONNECTIONS
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What are the elements of the word
 <antidisestablishmentarianism>?

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What are the elements of the word
 <antidisestablishmentarianism>?

Any suffixes?

ism
 an
 aryⁱ
 ment
 ish
 able^e

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What are the elements of the word
 <antidisestablishmentarianism>?

Any prefixes?

anti
 dis
 e^{ex}

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What are the elements of the word
 <antidisestablishmentarianism>?

anti + dis + e +
 <st>
 + able^e + ish + ment + aryⁱ + an + ism

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WHAT A DIFFERENCE A MORPHEME CAN MAKE!!!

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Greek Layer	
<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>	
ge <u>o</u> graphy	photo <u>s</u> ynthesis
psych <u>o</u> logy	phil <u>o</u> anthropic
chro <u>n</u> ic	syno <u>n</u> ym
<p>*Prefixes (including assimilated prefixes) *Base Elements *Suffixes</p>	

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Effects of Morphological Awareness
<p>▪ Phonological awareness facilitates morphological awareness in younger children (Carlisle & Nomanbhoy, 1993), and both are associated with stronger reading skills.</p>
<p>▪ 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).</p>
<p>▪ *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.</p>

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Effects of Morphological Awareness
<p>➤ 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).</p>
<p>➤ 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).</p>
<p>➤ 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).</p>

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Effects of Morphological Awareness
<p>-Differences between good and poor spellers are associated with significant differences in sensitivity to word structure at the morphological level.</p>
<p>-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).</p>
<p>-Insensitivity to morphological aspects of word structure also characterizes adults who spell poorly.</p>
<p><i>(Fischer, Shankweiler, & Liberman, 1985; Liberman, Rubin, Duques, & Carlisle, 1985; Shankweiler et al., 1996; Berninger, Abbott, Nagy, & Carlisle, 2010; Kirby et al., 2012; Goodwin & Ahn, 2013)</i></p>

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WHAT A DIFFERENCE A MORPHEME CAN MAKE!!!

WORDS WITH SPELLING CONNECTIONS HAVE MEANING CONNECTIONS

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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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English Orthography—Joanne Carlisle—2003

- * “As the reader proceeds through the grades, the reading material becomes less contrived and words become increasingly morphologically complex.
- * Hence, the ability to recognize morphemes and derive meaning from polysyllabic words will become increasingly invaluable as readers progress through the grades.

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A Thought to Ponder...

- * Reading and spelling are different sides of the same coin.
- * The reading network includes connections between functional areas specific to phonological, orthographic, and morphological information.
- ◆ ... so instruction that INTEGRATES the teaching of reading, spelling, handwriting, and written expression—through one comprehensive approach—is likely to be more effective than teaching each of these aspects of written language separately (Wolf, Abbott, & Berninger, 2017).

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Words of Wisdom

Both Slingerland

We can never teach them
all they need to know, but
we can teach them to THINK.

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WHAT A DIFFERENCE A MORPHEME CAN MAKE!!!

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Entomology or Etymology???

**People who confuse
entomology and
etymology bug me in
ways I have no words for.**

What a Difference a Morpheme Can Make!

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- <http://linguisteducatorexchange.com/>

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Why are these words spelled this way?

commitment

committee

referral

reference

illegal

accommodate

efficacious

effective

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WHAT A DIFFERENCE A MORPHEME CAN MAKE!!!

WORDS WITH SPELLING CONNECTIONS HAVE MEANING CONNECTIONS

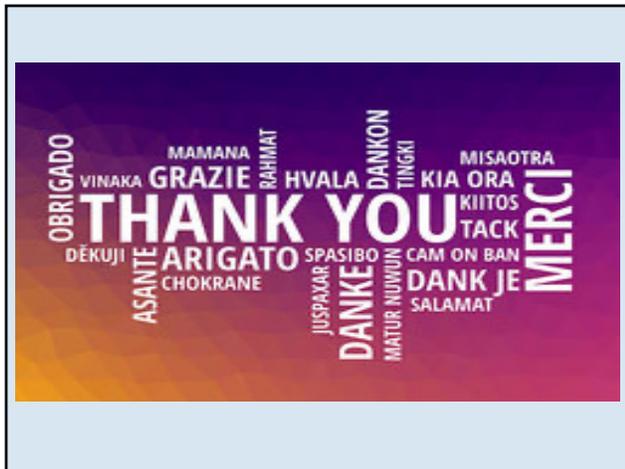
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Layers of English Language <i>Categorize these words.</i>		
table	syllable	anthropology
extract	constellation	character
symmetry	healthy	perspiration
brown	pterodactyl	mystery
insect	utility	brother
interrupt	house	illicit
chaos	complement	phantom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

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Layers of English <i>Categorize these words.</i>		
Old English	Latin	Greek

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