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Why Phonics (in English) is Difficult to Teach, Learn, and Apply: What Caregivers and Teachers Need to Know

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About the Authors

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Literacy Education at the University of Georgia. He is a past president of the Literacy Research Association and is an elected member of the Reading Hall of Fame. In 2013, he was a visiting professor of education at the Università degli Studi della Tuscia, Viterbo, Italy.

Sharon L. Reinking is retired after having served 31 years as a primary-grade teacher. From the beginning of her career in the early



1970s, she has taught phonics within what today would be labeled a balanced approach to reading instruction. The creation of an alphabet was a momentous development in the history of writing and reading. The idea was a simple, yet a profoundly useful and enduring one: Create written symbols that represent the sounds in a spoken language. Before alphabetic writing, written characters represented objects or ideas, an approach that emerged independently in several regions of the ancient world and is still the basis for writing modern Chinese. However, the historical record suggests that alphabetic writing emerged only once, about 3000 years ago. Credit is often given to the Phoenicians, although their role may have been more to spread the idea of alphabetic writing given their extensive trade routes around the Mediterranean Sea (Flanders, 2020).

Many wrongly think that the Phoenicians' legacy is heard in words such as phonetic, phoneme, and phonics — all terms related to spoken language and how it is related to written symbols. However, the root of these words actually comes from the Greek word for sound or voice.

The term phonics is widely known as an approach to beginning reading instruction: Teach beginning readers how written characters represent speech sounds and they will be able to decipher what is essentially a code for spoken language.

Phonics, in its simplest terms, is teaching new readers how to decode letters into speech sounds. However, that conceptual simplicity can be misleading, at least in English. Teachers, parents, and other adults who do not have a full and deep understanding of phonics and an appreciation of its potential difficulties risk being—at best-ineffective and inefficient when teaching phonics to children. At worst, they risk making teaching, learning, and applying phonics a hinderance, transforming learning to read into a confusing and frustrating chore. Those risks are unique to English, which, for various historical reasons, has incredibly complex and irregular connections between speech sounds and the letters that represent them (e.g., Bryson, 1990).



Phonics and Reading 101: Three Foundational **Principles**

Before delving into the particular difficulties of phonics in English, there are a few key principles that are relevant to teaching, learning, and applying phonics in any alphabetic language.

Principle 1. Phonics is an important gateway to reading, but decoding letters-to-sounds, as an isolated skill, is not sufficient to ensure that real reading will occur.

Reading is not pronouncing words. It entails understanding and reflecting on thoughts, ideas, and information communicated through writing. It also includes the unique pleasures of reading, often through genres of creative writing such as poetry and fiction.

An example is adults who are learning to speak and read a new language. One of the first things they are typically taught is the speech sounds of the language and how they are represented alphabetically in written words (i.e., phonics). Then, they can look at written words in the new language and at least approximate their pronunciation. But that does not mean they can now successfully read a language, because there is little or no understanding and there is certainly no utility, enjoyment, or sense of accomplishment in simply pronouncing words that are not understood.

Principle 2. Alphabetic texts are not just speech written down.

We do not talk the way we write, and vice versa. Speakers and listeners often share the same time and space, whereas writers and readers do not. Speakers use inflections and cadences of their voice, and they use gestures to communicate meaning beyond the words they speak. For example, it is easy for listeners to determine who is speaking, what physically present objects are being discussed, and whether a speaker is excited, angry, stern, or confused. Written texts use various linguistic and visual cues to simulate such aspects of speech such as punctuation (e.g., commas and exclamation points), graphic cues like capital letters to indicate shouting, and so forth, but these are only crude imitations of actual speech. These are also conventions that must be decoded. Written texts are also structured differently. In everyday talk, we don't typically speak in complete sentences, nor do we organize our thoughts into paragraphs.

Another, often overlooked, difference between speech and writing is what constitutes a word. For a reader, words in written texts are easy to spot. They are groups of letters separated by a white space, although that system can be arbitrary (e.g., why is postman one word and post office is two). In an interesting twist, the knowledge of written words through reading creates a deception that our speech is composed of similarly separable words divided by pauses when they are spoken. An analysis of recorded speech shows that this is incorrect. Our speech is a steady

stream of sounds, with any brief absence of vocalization occurring as often within as between what we normally think of as words. Further, in everyday speech, we often elide words and sounds in phrases such as "Whatchuhdoointahnight?" instead of "What | are | you | doing | tonight?"

Principle 3. Certain things must be in place before young children are ready to learn and apply phonics for decoding.

Language ability typically must be developed at least to a point where a child can carry on simple conversations with adults and their peers, that is, beyond one- or two-word responses. In our view, preschool children should also indicate some interest in written language and reading before they are taught to read. At that age, they should not have phonics thrust upon them by overzealous adults.

Teaching the relation between alphabetic symbols and speech sounds logically requires that children be able to distinguish among letters and, at least for instructional purposes, to know letter names. It is much easier, if not essential, to teach children a sound a letter represents, if, when you name a letter, they know which one you are talking about.

Children must know the basic conventions of writing, for example, that English words and texts, unlike in some languages, are written and read left to right and top to bottom. Children must understand where the front of a book is (or, today, where to start reading a web page). They

must know that the marks on a page (or screen) separated by white space represent words (as noted in the second principle). That is why, as grandparents reading to our preschool grandchildren, when they seem ready, we occasionally ask questions, such as: "Where is the first page (or word) where I should start reading?" "Where are the words on the page (or screen)?" Can you count how many words there are on this page (usually only a few in children's books)?"

Children must know and hear that spoken words are made up of separate sounds, which is called phonemic awareness. If a child hears the word cat holistically and is unable to separate it into its three constituent speech sounds /c/a/t/, phonics instruction will be meaningless. Some children acquire that awareness informally and naturally through nursery rhymes and word games. But others need instructional activities to develop phonemic awareness. So, determining if a child has acquired phonemic awareness is a preliminary step in teaching phonics, and helping them acquire that awareness, if necessary, must occur before phonics instruction can make sense.

There are a few simple questions that can reveal whether children have phonemic awareness. For example, using a simple, familiar word with three separate speech sounds (e.g., dog, cat, bake), ask them if they can tell you the first, last or middle (more difficult) sound in that word. Or, ask if a word rhymes with another word (of course, a child must understand what you mean by rhyme). For example, for cat, you could use words like sat, a word that rhymes and one that is similar but doesn't rhyme, like the name Kate. You could also ask,

"Can you tell me what word I'm saying?" Then, pronounce each separate sound in a word slowly exaggerating each separate sound (e.g., for *came* say *k-ay-m*). Such comparisons are also the basis for some instructional activities that can help develop phonemic awareness, if needed.

All Alphabetic Languages Are Not Equal

As an approach to teaching beginning reading, phonics works smoothly, naturally, and is mastered relatively quickly in alphabetic languages where the match between letters and sounds is almost perfectly consistent and predictable. Such languages include Arabic, Finnish, Italian, Spanish, and Turkish, among others. In those languages, almost all children learn to decode fairly quickly and with relatively little difficulty, because there is an almost perfect correspondence between a speech sound and how that sound is represented with a letter or letter combination. That is not the case in English. For example, Seymour et al. (2003) found that young children learning to read English took twice as long to learn basic decoding skills as children learning to read more regularly spelled European languages.

Italian is a good example. The letter "i," without exception, stands for the vowel sound in the English word see (as in si, which, even those who don't speak Italian often know, means yes). So, every time Italian readers encounter an "i" in a word, they know with absolute certainty the sound it represents. Making matters even easier, no other letter or group of letters in Italian represent that vowel sound. Now consider the many ways the same vowel sound (/ee/)

can be represented in English spelling: seen, thief, money, receive, treat. It can even be represented by "i" as it is in Italian: machine, routine, obedient. Adding to the complexity in English, these same spellings for the leel sound also represent other sounds: been, mischief, obey, beige, tread, great, medicine. And, the letter "e" sometimes represents no sound at all as in like, some, foe, beautiful. There are even words in which the same vowel represents different sounds. For some speakers of English each "i" in the word "divisive" represents a different vowel sound.

Italian and English both have double letter combinations that represent one sound (called digraphs) and that must be taught as part of phonics instruction. In English the most common are ch, th, sh, ck, gh, ph, wh, kn, ng, qu, wr. However, in Italian, there are fewer such combinations, and each combination represents a unique sound requiring children to learn only a few rules that have no exceptions. For example, Italian, like English, has a "ch" combination. However, in Italian, that combination invariably represents the /k/ sound heard at the beginning of the English word kid. In English, "ch" also represents that sound as in the word character, but it can represent the sounds heard in *chart* and *march*, and, occasionally words such as chute and moustache. Further, in English, the many speech sounds represented by "ch" can be represented by other combinations such as "c" in cute, "k" or "ck" in kick, "tu" in fortune and furniture, or "xi" as in anxious, or "sh" as in shoot (vs. chute), with "sh" also represented other spellings such as "ti" (on), as in motion, "ci" (an) as in musician or only with an "s" or "ss" as in sure, sugar, and issue.



"Gh" is another example. In Italian it always represents the same sound as in the English word ghost, with no other spelling of that sound. But, in English "gh" also appears in the words ending in "ough" sometimes taking the final sound in words such as enough and cough, or having no sound by itself as in through, ought, and though, with each of the previous "ough" spellings, by the way, representing a different vowel sound.

Adding to the potential confusion and difficulty is that, when compared to Italian, English has many words that have more than one correct spelling (e.g., grey and gray), including everyday words pronounced the same but with different meanings, such as blue/blew, see/sea, here/ hear, by/buy, to/too, and there/their/ they're. However, as explained in a subsequent section, although these alternative spellings make phonics (and spelling) more difficult, they create an advantage when reading for meaning once such words can be recognized automatically.

All these differences suggest the relative simplicity of the correspondence between letters and sounds in a language like Italian and the much greater complexity of English. Depending on what you count, and considering variations in dialect, English has 40-46 unique speech sounds. Italian has 30-36. But the real difference is in the number of ways those unique sounds can be spelled. In English, there are hundreds of spellings across all its speech sounds, and these spellings have hundreds of different pronunciations. Italian has about 24 spellings for all its speech sounds. So, teaching, learning, and applying phonics in Italian is much easier than in English.

The Challenges of Teaching Phonics in English

Before reading on, especially if you remain unconvinced that English spelling provides a major challenge to teaching phonics, you might read the entertaining poems downloadable at this link: www.spellingsociety. org/uploaded_misc/poems-onlinemisc-1419940069.pdf. They illustrate well the idiosyncrasies of English spelling and set the stage for considering the challenges highlighted in this section. Knowing those specific challenges can go a long way toward addressing them and can guide decisions about helping beginning readers decode.

The paradox of expertise

You have probably heard that it is important to know what you don't know. But, sometimes knowing what you do know is even harder. That's the paradox of expertise. It is knowing something so well that it puts you on automatic pilot with no conscious awareness of what you know or what exactly you are doing. That condition makes it difficult to teach novices what to do and what they need to know, and it can make it difficult to appreciate the complexity and challenge they face in learning to do what is so natural and easy for you.

We have all experienced both sides of this paradox, sometime being the expert and sometime the novice. Think about a parent teaching a teenager how to drive a car, a basketball coach teaching a grade-school student how to shoot a free throw, or a grandparent trying to teach a preschool child how to tie a shoe, not to mention a world-class mathematician trying to teach something as

'simple' as beginning calculus. Or, consider times when you've been the novice learning a new skill such as fly fishing, sewing, speaking a new language, driving on the other side of the road in another country, or playing a video game a child is trying to teach you. It is frustrating if your 'teacher' fails to understand, or even to acknowledge, the difficulty of the task for you, and it can be equally frustrating for your teacher that you don't see how easy it really is.

In one sense, the paradox of expertise is the central challenge of all teaching. Teachers qualify to teach because they are experts, and the whole point of teaching is that they might pass some degree of that expertise on to their students. There is no better, or more challenging, example than reading. To teachers, and most adults, reading has become incredibly easy in most situations, almost as natural as breathing, maybe even more so. You can hold your breath, but try not reading some words placed in front of your eyes (the rationale for outdoor advertising while driving, another fortunately automatic activity that allows you to safely read road signs). Reading is so automatic and natural that you can't turn it off.

The paradox of expertise manifests itself in several ways that increase the challenge of teaching phonics in English. Most fundamentally, expert readers typically recognize words automatically without any conscious awareness of phonics. In fact, in one sense, the ultimate goal of phonics is to help novice readers get to a point where they don't need it (Maclean, 1988). Similarly, the paradox of expertise creates what might be called phonics word blindness. Expert readers tend not to notice the many irregularities in decoding English spelling, although they are occasionally reminded of it when trying to spell certain words (though not so often today with spell checkers). Once a reader of English texts becomes proficient at recognizing words automatically, an awareness of the complex letter-sound relationships in English fades away and must be reactivated when helping novice readers decode.

So, one of the challenges for teachers and other adult readers who want to help children learn phonics is to overcome their own expertise and the illusion that decoding in English is relatively easy. That includes the illusion that phonics can be boiled down to a few rules, which is the next challenge.

The first rule of phonics (in English): There are no rules.

Italian and other regularly spelled alphabetic languages have phonics rules. For example, as noted, in Italian "i" is always /ee/ and vice versa. But there are no such invariable rules for individual letters or letter combinations in English. There are some regular patterns, but these are more aptly, and more often, called phonics generalizations or principles, not rules. Any attempt to establish a phonics rule in English can lead to a labyrinth of exceptions or new rules. For example, in spelling (phonics in reverse) you may have been taught a 'rule' that also specifies an exception: Use "i" before "e" except after "c" (e.g., relieve/receive). But even that exception isn't enough. You may have also been taught the exceptions to the exception in the form of this nonsensical sentence: "He seized neither weird leisure." But wait, there's also weight, eight, freight, and foreign.

Or, try to develop a rule that helps a new reader reliably decode the many common words with "oo" such as blood and flood vs. boom and food vs. book and foot vs. door and floor, not to mention cooperate and coordinate. Or, consider a rule that enables reliable decoding of words that end in "-ove": love/glove/above/shove/dove (the bird) vs. move/prove vs. stove/drove/wove. Note, too, that words like love and glove are among many exceptions to a common generalization taught to children: vowel/consonant/silent "e" ending that often indicates that the vowel is long, or says its name (e.g., take, make, like, but also not the case in some, come, done, and give). Or, consider all the pronunciations of "ie": /ee/ as in yield and belief; /eye/ as in pie and die; /ee-eh/ as in alien and fluffiest, /eye-eh/ as in quiet and science; and even /eh/ as in friend and patient, /ih/ as in sieve, and /yoo/ as in view.

The generally rule-less landscape of English also suggests careful consideration of which phonics generalizations have the most utility as well as having a sense of when it is time to stop teaching generalizations all together. For example, Figure 1 is a generalization with exceptions that we created, but that, for good reason, is unlikely to be adopted in even the

most extensive and aggressive phonics curriculum. In English, creating phonics generalizations can quickly become complicated. Some prioritizing and discretion are called for.

Or try this phonics equivalent of a tongue twister. Read the following words "ow" quickly, without thinking. Then, try to write a generalization that would help a beginning reader to decide between the two pronunciations of their vowels sounds when encountering any word with "ow": cow, coworker, tow, now, nowhere, mow, vow, flower, flow, brow, row, sow, snow, how, bow, crow, town, own, drown, grower, glower, glowed.

Common doesn't mean simple and easy.

You may be thinking, "But, aren't most of the short, common words that young readers first encounter in the simple stories they read pretty regular and easy?" The answer is a resounding "no," on at least two counts. The first was revealed in a classic analysis by Theodore Clymer (1963). He identified 45 phonics rules/generalizations taught in four widely used commercial reading programs for teaching beginning reading to primary-grade children. Then, he compared those generalizations

Figure 1. The /yoot-oot/ Generalization

When -ute is at the end of the word and immediately preceded by c, m, p, or b, it is pronounced /yoot/. Examples: cute, mute, compute, tribute

When -ute is at the end of a word and is immediately preceded by any other consonant, it is pronounded /oot/. Examples: salute, institute

Exception 1: When a consonant diagraph or blend immediately procedes -ute, it is pronounced /oot/. Examples: chute, flute

Exception 2: The word *minute* may be pronounced /min-ut/ or mi-noot/.

Exception 3: The word debuted is pronounced /day-byood/.

with the words he found in the texts children were asked to read in those same programs — 2,600 different words in all. He applied the phonics generalizations taught in the reading programs to each word to determine the percentage of time the generalization did or did not apply.

The results were eye opening. Of the 45 generalizations taught (already many more than needed to decode Italian), only 24 worked more than 75% of the time. Ten of the remaining 21 generalizations actually worked less than 50% of the time. That included a common one often summarized by this catchy phrase that you may have heard or been taught: "When two vowels go walking [i.e., a pair of vowels side by side] the first one does the talking [i.e., says its name]" as in the words road/toad, treat/seat, and maid/laid. In fact, that generalization worked for only 46% of words in the beginning reading texts in Clymer's study. That is, there were more common words that didn't follow the generalization than those that did (e.g., great, head, and said).

Other evidence that common words aren't all easy comes from lists of English words ranked by frequency. There are several such lists generated from analyzing thousands of diverse texts and millions of words. While there is some variation across the lists, there is much inconsistency among the top 50 or so most common words, which reveals a challenging irony for phonics. As Table 1 shows, half of the most common words in English on one international list have irregular, atypical, or ambivalent letter-to-sound correspondences. This is no small matter given that these words are mostly function words

that glue our language together and are consequently used often. Some estimates suggest that 25 most-used words in English texts account for one-third of all written texts in English — the top 100 words, half (Fry, 1980).

One way to sidestep this problem is to write texts for beginning readers that minimize irregularly spelled words—often called decodable texts/ books. In Italy there is no such category because all texts are equally decodable. But decodable texts in English are, of necessity, often stilted and uninteresting (e.g., "Dan ran with the fan."). In fact, Dr. Seuss wrote his classic children's book The Cat in the Hat to take up the challenge of writing an appealing story with words that have regular spellings and predictable pronunciations. But, despite the engaging cleverness of his story, even he could not entirely avoid all irregularly spelled words (e.g., bed and head in the same sentence). Despite the intuitive appeal of decodable texts for helping children learn to read, research findings provide no clear support for using them (e.g., see Mesmer, 2009). For example, one recent study found that young children better comprehend more natural, less decodable texts (Price-Mohr & Price, 2020).

The good news is that once these frequent words are learned, children can read a high percentage of the words in the text they will encounter. The bad news is that because these common but phonetically irregular words appear so often, they can become models for decoding new words spelled similarly with different pronunciations. For example, as noted in Table 1, the spellings of high-frequency words like of, to, some, your, word, etc. can be misleading examples when used as models to decode other words like often, so, home, our, and cord. Consequently, many teachers help children recognize a small set of common, irregularly spelled words by sight, instead of by decoding letters to sounds.

The longer the word, the more complicated the phonics.

As beginning readers encounter longer words, there are added challenges and new aspects of phonics to teach, learn, and apply. Longer words can be defined as having more than one syllable. A syllable, simply defined, is a word part that has a vowel sound and thus can be readily pronounced as a separate unit of speech (e.g., the word syllable as three syllables: syl-la-ble). As a general principle, the more syllables, the more cumbersome, misleading, and confusing it is to decode one letter or letter combination at a time.

The many irregularities of onesyllable words remain (e.g., is "ea" pronounced /ee/ as in beak, or /eh/ as in bread, or /ay/ as in break?), but in multisyllabic words the vowels can represent two sounds forming two syllables, as in create and react. Again, this is not an issue in other alphabetic languages such as Italian because syllables don't affect letters and their sounds.

There are several approaches to address this challenge. But some are more useful, less confusing, or just make more sense. One approach is to tell children to look for the little word in a big word. That can work, especially when there is a root or base word to which some word parts have been added such as sadness, undo, helpful, preview or in compound

Word	Freq. Rank	Irregularity, Inconsistency, or Ambiguity (Freq. Rank in parentheses, if < 500)	A More Predictable Spelling
the	1	Here the e represents the short sound of u /uh/, not the short sound of e , as in them (61), but also occasionally the long e sound for emphasis (THE best!)	thuh
of	2	The o is pronounced like u /uh/. The f like v . Rhymes with another non-standard spelling: <i>love</i> . No other English word uses the spelling o - f for this pronunciation.	uv
to	3	The single o is pronounced like the <i>oo</i> in <i>moon</i> or in <i>too</i> and like the <i>u</i> in <i>chute</i> . Inconsistent with more frequent long <i>o</i> sound in <i>so</i> (65), <i>go</i> (79), <i>no</i> (84), or <i>told</i> (383)	tu
is	7	The s could be soft, as in this (25), but is hard as in his (19).	iz
/ou	9	Unlike out (37), could (78), or young (305)	yu
was	12	The <i>a</i> is pronounced like u /uh/ rhyming with <i>fuzz</i> instead of <i>as</i> (17). The <i>s</i> is hard /z/ not soft /s/.	wuz
are	15	Inconsistent with the more common <i>care</i> (276), <i>bare</i> , <i>dare</i> . More common spelling of this pronunciation is <i>ar</i> as in <i>car</i> (274) or <i>part</i> (104).	ar
as	17	Inconsistent with was (12). The as is more typically pronounced as in ask (179), and last (224), but consistent with has.	az
nis	19	Could rhyme with <i>hiss</i> as in the first syllable in <i>history</i> .	hiz
they	20	The ending -ey is more typically pronounced as in money (389), key, and alley. Other exceptions are hey, obey, and prey. More typical is -ay as in way (57), day (77), may (95), say (134), play (158), always (264), lay (382).	thay
one	23	Rhymes with won , but in both words, the o is pronounced like u /uh/. No letter representing the initial sound. Does not rhyme with $done$ (424) or with $lone$. Violates the vowel-consonant-final e generalization.	wun/wuhn
have	24	Inconsistent with the long vowel-consonant-final <i>e</i> generalization, suggesting it should rhyme with <i>behave</i> . In speech, <i>have</i> is often pronounced as <i>of</i> .	hav/uv
his	25	Easy to decode, but inconsistent with is (7) and his (19).	this
rom	26	The o is pronounced like u as mum, sum, stadium. Contradicts mom and Tom.	frum
some	32	Rhymes with <i>from, mum, sum.</i> Contradicts <i>home</i> (162) or <i>dome</i> violating the long vowel-consonant final <i>e</i> generalization, as do several other common words: <i>come</i> (80), <i>give</i> (123), <i>move</i> (144), <i>love</i> (387)	sum
what	33	The <i>a</i> represents the u /uh/ sound as in <i>but</i> or <i>hut</i> . Inconsistent with <i>at</i> (22) and <i>that</i> (33) and many other words ending in <i>-at</i> (<i>sat</i> , <i>cat</i> , <i>mat</i> , etc.)	wut/whut
there	34	Contradicted by were (39), here (171), and their?	thayr/thair
other	38	The <i>o</i> represents the <i>u</i> /uh/ sound. <i>Inconsistent</i> with <i>both</i> (267) and <i>bother</i> , but like <i>brother</i> .	uhther
were	39	Inconsistent with there (34), here (171), where (110).	wur
our/	41	Inconsistent with <i>our</i> (124), <i>sour, pour, journey</i> , but consistent with <i>tour</i> . Possible confusion with <i>you</i> (9) and <i>were</i> (39)?	yur
ıse	44	Same spelling of two words with different pronunciations of s: hard /z/ or soft /s/	yuz/yus
word	45	Inconsistent with <i>order</i> (388), <i>record</i> (470), and <i>sword</i> ? Rhymes with <i>bird</i> (314) and <i>herd</i> , and the first syllables in <i>burden</i> and <i>murden</i> ?	wurd/ werd
now	46	Two possible pronunciations of -ow as in know (89), show (119), low (136), own (203), grow (210), slow (385) OR as in down (96), now (99), power (482), town (483).	NA
said	47	Two possible pronunciations of ai as in again (191), mountain (288), and certain OR as in rain (281), main (300), wait (413), plain (428) and tail (447). Exception: plaid, which rhymes with sad not pled or played	sed
each	49	Two possible pronunciations of <i>ea</i> as in <i>head</i> (201), <i>ready</i> (306), or <i>measure</i> (323), thus pronounced as in <i>etch</i> , or correctly as in <i>beach</i> .	eech

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words such as something, football, railroad, nowhere (although the latter could be now-here). But, like most phonics generalizations, there are enough exceptions and contradictions to make that approach potentially confusing. For example, coated is not co-ate-d, father is not fat-her, hotel is not hot-el, fatal is not fat-al, and the moth- in mother does not rhyme with the word moth.

Another popular approach—teaching children to divide words properly into syllables—is even more problematic because of two paradoxes. First, to correctly syllabicate many words, you must already know how to read them. And, if you can already read them, proper syllabication is moot, at least for decoding. For example, an oftentaught rule for syllabication relates to open vs. closed syllables. The rule is this: When a syllable ends in a vowel, it is open and the vowel is long (says its name) as in meter (me-ter); when the vowel is between consonants, it has the short sound as in clever (clever). But the only way to correctly apply this rule in many instances is to know beforehand that m-e-t-e-r is pronounced with a long "e" sound (*/mee-ter/*) and that *c-l-e-v-e-r* is pronounced with a short "e" sound (/clehv-er/). Further, there are many exceptions (e.g., lat-er). Encouraging children to experiment with either a long or short sound to see if they recognize a word they know may work just as well as considering how to properly break it into syllables.

Such experimentation leads to a second and related paradox. It is not possible to be absolutely certain how a word breaks into syllables if the word is not in your listening or speaking vocabulary — that is, if you don't already know how to pronounce it. For example, you have probably never heard the real word cabotage. There are several reasonable ways that cabotage might be pronounced and thus broken into syllables. However, because this is a word you don't know, you can't be certain which one is correct (ca-bot-age or cab-o-tage or ca-bo-tage) until you ask someone who knows how to pronounce the word, or you look up its pronunciation and breakdown of syllables in a dictionary. Thus, again, knowing a pronunciation enables syllabication, but not vice versa.

In any event, as a skilled and knowledgeable reader, you are not likely to try dividing it properly into syllables at all. Instead, you are likely to guess that it is pronounced like a similarly spelled word that you do know, in this case maybe sabotage. This approach is called phonics by analogy (see White, 2005) and is sometimes taught to children, although it too has its drawbacks, especially with many common words (e.g., come is not a good analogy to home). There are other complications as well. Many people pronounce the word vegetable with three syllables (veg-ta-ble instead of four syllables (veg-e-ta-ble). If you are getting confused about syllabication, you can imagine how difficult it is to teach and for children to learn and try to apply.

Nonetheless, the difficulty in dividing words properly into syllables doesn't mean that dividing longer words into parts isn't helpful. For example, many longer words have standard interchangeable parts called affixes (prefixes at the beginning and suffixes at the end). Knowing a set of the common and highly predictable ones can greatly simplify decoding many longer words. For example,

there are more than 1,500 English words that begin with "pre-" and an equal number that begin with "ex-." There are just under 3,000 that end in "-ness" or "-tion" ("-sion" adds another 250 or so). That's a lot of bang for your phonics teaching buck. There is a bonus, too. These affixes are often clear clues to a word's meaning or function. A preview is obviously a view in advance when you know the meaning of "pre-."

The silence of the lambs.

English is littered with silent letters like the "b" in the word lamb. Others include island, indict, could/should/ would, mortgage, honest, colonel, sign, castle, debut/depot, yacht, calf, build, foreign, half, hymn, answer, pneumonia, corps, receipt, clothes, and the list goes on. Such silent letters can be stumbling blocks in teaching, learning, and applying phonics. Some are common and consistent enough that they might reasonably be taught (e.g., "mb" at the end of words such as lamb, comb, and bomb or "gn" at the beginning of words like gnat, gnome, gnaw). But others are so idiosyncratic that it makes little sense to teach them separately (e.g., the silent "w" in answer). Yet, the domain of silent letters in English is large and common enough to add complexity and increase confusion, especially compared to a language like Italian, in which there are no silent letters. Every letter or letter grouping connects to a specific sound.

Yet, as problematic as silent letters are for teaching phonics, they can enhance reading for meaning, as explained momentarily. And, it's possible to have some fun with them. For example, children may enjoy the humor in the book P is

for Pterodactyl: The Worst Alphabet Book Ever, by Raj Haldar, Chris Carpenter, and Maria Beddia (2018). That book might spur them to look for other examples in the words they encounter.

"Sensational spelling" isn't so sensational (for phonics).

It is only natural that some of the first words that children learn to read are not in school, but ones they see in their everyday surroundings. That includes words on advertising signs and packaging such as lite, kwik, trix, blu, kombat, and froot. Such words have been referred to as sensational spellings because it is how commercial products attract attention and establish a brand. Sensational spelling is a quirk of spelling in an irregularly spelled language like English, and not possible in more regularly spelled languages.

Sensational spellings can be a two-edge sword. On one hand, they may reinforce common spellings for various speech sounds, but they may also be confusing when children encounter the correct spelling of such words in school. On the other hand, it may also be an opportunity to explain to children that English spelling is complicated and, therefore, that learning to read using phonics can be a challenge that requires them to learn different ways sounds can be spelled.

"Y'all jist don't tawk or spayl raht."

That's dialect, and how it might be spelled. Dialect and other variations in spoken English further complicate teaching, learning, and applying phonics, and is equally problematic in learning to spell. For example, in some Southern areas of the U.S., the word will may rhyme with wheel

and pen with pin. In the Northeast the word aunt rhymes with gaunt or *flaunt*, more consistent with its spelling, but in many other regions with ant. In African American Vernacular English (AAVE), or black English (also called Ebonics) string is pronounced /sring/. Spoken English in all dialects also often elides or transposes pronunciations. For example, "Did you" becomes "didja" and "would have" becomes "would of" (some highly educated people have even been known to occasionally spell it that way), "nuclear" (correctly pronounced /new-clee-er/, not /new-cue-lar/ and "ask" (in AAVE) becomes "aks."

These variations in dialect and pronunciation can be a challenge to teaching phonics in any alphabetic language, but it is especially challenging in English which has so many alternative ways to represent the same speech sounds. For example, in Italian, regional differences in pronunciation are not particularly problematic for phonics, because the same letter may consistently represent the same sound to everyone who speaks the dialect. So, even if a pronunciation systematically varies from region to region, the sound-toletter correspondence often remains consistent. At least there are fewer of these issues to address. But, mixing dialect with the many idiosyncratic spellings of English creates a more complex cocktail and thus becomes a challenge for teaching, learning, and applying phonics.

Geographical mobility and the increasing sociocultural and linguistic diversity of the U.S. also means that a teacher is more likely to be teaching children who speak different dialects or who speak different

languages at home. Teaching a class of children with diverse dialects, linguistic heritages, and pronunciations can be quite a challenge for a teacher teaching phonics — especially when teachers come from a different language group than their students. Teachers who teach phonics may need to be aware of at least the rudiments of dialects and other linguistic differences among the students they teach and to consider ways to accommodate those differences.

Do you understand what I'm talking

All teachers must not only teach their students content and skills; they must teach them the meaning of the words they use to talk about what they are teaching. For example, in math, if a teacher tells students that today we are going to learn how fractions can be changed into decimals, students must know what fractions and decimals are. The teacher may go on to talk about dividing the numerator by the denominator. Such terms are what is called the language of instruction. Phonics has its own language of instruction and, because written English is complex and challenging for decoding, more terms are needed to talk about phonics than in more regular languages. Of course, the deeper teachers get into that irregularity and the more phonics they teach, the more terms need to be introduced, taught, and understood.

Table 2 provides a sampling of such terms, not uncommon to teaching phonics in English. They may be used in teacher manuals, but many are also introduced to children. In some cases, teachers may create less-technical terms that may be easier for students to understand. For example, a teacher might use the term



Terms	Explanations/Examples		
Vowels	a, e, i, o, u (sometimes y)		
Short vowel sounds	as in bat, set, sit, lot, cut		
Long vowel sounds	as in bake, leak, right, lone, clue		
Vowel digraphs	consecutive vowels, one sound (bait, head, great, soap)		
Split digraphs	ending e connected with a preceding vowel (bake, bike)		
Diphthongs	gliding two vowel sounds together (boy, soil, out, how)		
R-controlled vowels	vowel sound influenced by an r sound (car, bird)		
Schwa sound	sound of an unstressed vowel (beneath)		
Consonants	Any letter not a vowel		
Consonant digraphs	two consonants that make one sound (ch, wh, ph)		
Consonant blends or clusters	string of consonants each representing a sound (black, spread, include)		
Soft/hard sounds	consonants with two sounds (c in cent/cat, g in gigantic)		
Voiced/Voiceless	using/not using vocal chords (th in threw vs. them)		
Words and Their Parts			
Syllables	word units containing a vowel		
Onset/Rime	initial sound(s)/subsequent sounds		
Open/Closed syllable	a syllable ending in a vowel/consonant		
Root/Base word	a word to which various parts can be added		
Affixes (prefix/affix)	parts before (<i>preview</i>) or after (<i>homeless</i>) a root word		
Inflectional ending	functions grammatically as in -ed, -s/es, -ing		
Compound words	conjoined words (homework)		
Homophones	pronounced the same, spelled differently (toe, tow)		
Homograph	spelled the same, pronounced differently (bow, bow)		
Silent letters	letters that represent no sound		
Miscellaneous			
Phonics	connecting letters and sounds		
Sounding out	decoding a word sequentially using letters to sounds		
Contractions	substituting ' for missing letter(s) (don't, I'll)		
Spelling pattern	patterns of vowels and consonants (CVC)		
Diacritical mark	a mark (') showing which syllable is stressed		
More for Teachers			
Phonemic awareness	ability to hear/identify individual speech sounds		
Phonological awareness	broader awareness such as syllables, rhyming, etc.		
Phonemes/Graphemes	smallest unit of speech sounds/how they are written		
Synthetic phonics	decoding words using sounding out		
Analytic phonics	decoding using diverse cues (e.g., decoding + context)		
Analogy phonics	decoding by comparing words with similar spellings		
Decodable words	spelled with predictable pronunciations; easy to decode		
Sight words	common words memorized as wholes		

letter teams instead of digraphs to talk about two letters that represent one sound. On the other hand, that may create confusion if a child has another teacher who uses different terms, perhaps when moving to another grade or school.

It stands to reason that the fewer of these technical terms that must be learned the better. However, some phonics programs use terms that go unnecessarily far. For example, they may introduce children to the difference between the voiced and voiceless sounds of "th." That is, when you speak some words with "th" such as them or this, you use your vocal cords for "th." For others, like threw or think, you do not. Most speakers and readers don't know, never knew, or ever think, about that difference, and for good reason. There are only a few words in English where spelling changes the pronunciation of "th": bath/bathe, breath/breathe, teeth/ teethe. And, in each of those pairs, the silent "e" and a shift to the long vowel sound brings the "th" along for the ride. Why make phonics in English any harder than it already is?

Who's ready to read?

Teachers must contend with a challenging array of individual variation. Students come to school with different language abilities and linguistic backgrounds (including nonnative speakers of English), different exposures to reading and reading-related skills outside of school, different motivation to read, and so forth. Some have attended preschools that help prepare them to learn to read. Others have not. Some begin kindergarten or first grade knowing the alphabet, having extensive vocabularies for their age, having been read to frequently by a

caregiver, and maybe having some basic knowledge of phonics. Others less so, if at all.

They may or may not have a positive attitude and an eagerness about learning how to read. Some have acquired all the fundamental prerequisites for learning phonics. Many will need help in acquiring those skills and understandings. Some may need little phonics instruction to crack the code, quickly becoming ready to engage in reading and extending their own understanding of phonics as they read independently. Others may need a great deal of explicit phonics instruction to arrive at the same point. Each has a unique profile that increases or decreases the odds that learning to read will be relatively easy or, occasionally, incredibly difficult.

Again, this is an issue when learning phonics in any alphabetic language, but the deep complexity of English letter-to-sound correspondences in English amplify its influence on instruction and increase the need for accommodating differences in background and readiness.

Why is English spelling so complicated?

You may be asking yourself that question, and maybe another one: Why not reform English spelling to make it more regular and therefore easier to teach, learn, and apply phonics? The answer to the first question is a long and fascinating history of how English developed and how its spelling became standardized. As for a reboot of English spelling, it's been seriously proposed for centuries, including by creative and influential thinkers such as Ben Franklin and Mark Twain. But it hasn't happened. It isn't any more likely that more

than 1.2 billion people who currently speak and read English as a first or additional language will relearn English spelling and reading than it is to convince Americans to adopt the much simpler metric system of measure used by the overwhelming majority of other countries.

But, more importantly, the idiosyncratic spellings of English words that make decoding difficult can be an advantage when reading for meaning. To understand why, consider a main street that runs through our hometown for several miles. From one side of town to the other, its name changes four times, which is difficult and confusing to visitors (and their GPS directions). But, for those of us who live here, saying that a new restaurant is on [insert one of the street's four names] narrows down its location considerably.

Similarly, spelling English words phonetically would make it much easier for beginning readers to decode using phonics. But it would make reading for meaning much more difficult because different spellings clearly signal differences in meaning. That point is illustrated in the following set of sentences contrasting phonetic and standard English spellings (Figure 2). The phonetic spellings would be easier for a new reader, but the meaning is much clearer with the idiosyncratic spellings of standard English.

There are already approximately 150 common words in English that have the same spelling but different meanings depending on context (e.g., bank, can, date, fall, leaves, right), including some multisyllabic words that are spelled the same but pronounced differently (invalid, extract, convict, etc.). As the sentences in Figure 2 demon-



Figure 2. Examples Contrasting Phonetic and Standard English Spellings

Ate yooz ate ahl thuh grane, but yoozd onelee sum wahter.

Eight ewes ate all the grain, but used only some water.

Thuh boy markt thuh site ware thuh boy fisht.

The buoy marked the site where the boy fished.

Ide ide thuh new kar before I new its name.

I'd eyed the new car before I knew its name.

Ile go too ile wun too get thuh prize I wun.

I'll go to aisle one to get the prize I won.

strate, spelling all words phonetically would greatly expand that number at the expensive of clarity.

Finally, phonetically irregular spellings can signal meaningful relationships among words. Consider the word *signal* in the previous sentence. The root word is *sign*, in which the silent "g" forges a connection for the pronunciation and the meaning of *signal* or related words like *signify* and *significant*. On balance, what makes decoding using phonics in English difficult also makes reading for meaning easier.

Implications for Teaching, Learning, and Applying Phonics

What does this all mean for teachers, parents, grandparents, and others who want to help children learn to read? First, there are some fundamental points:

- English is an alphabetic language. Thus, it would be foolish not to acquaint beginning readers with how letters and sounds relate in other words, phonics.
- Before phonics instruction can be useful, children must have adequate proficiency

- with oral language, know conventions of English texts (e.g., what a word is, reading left to right), be familiar with letters and their names, and be able to distinguish separate speech sounds (phonemic awareness).
- Phonics is a consciously applied skill for decoding letters into speech sounds. Its aim is to help beginning readers start on the path to automatic word recognition allowing full attention to meaning, which is real reading. Phonics is a means toward that end, not the end itself.

However, what we have highlighted here is an additional, but often little-recognized, underappreciated, or ignored point: Phonics in English, unlike more regular alphabetic languages, is incredibly complex. To capture the totality of how letters and sounds are connected in English would require hundreds of generalizations and many exceptions. That stands in contrast to written languages like Italian in which there are relatively few phonics rules, with no exceptions, that can be learned in an hour of casual study and practice.

This lack of awareness is understandable. Most adults who speak English do not know another language, like Italian, that offers a point of comparison to phonics in English. Further, due to the paradox of expertise, their automatic recognition of words may delude them into thinking that phonics is relatively easy and straightforward with few exceptions. For those heavily invested in teaching a great deal of phonics, including commercial interests that sell programs and materials, phonics' complexity and challenges may be an inconvenient truth.

Thus, an overarching implication is that anyone helping children use phonics in English needs to be aware of and appreciate its complexity and difficulty. That means not assuming nor giving children the impression that sounding out words by individual letters or letter combinations is foolproof decoding, nor the essence of reading. Knowing some of the challenges created or amplified by this complexity, as highlighted in previous sections, is also helpful. That knowledge can serve as a starting point for considering how to address them, including even the possibility of transforming them into constructive opportunities to learn the phonetic anomalies of English.

For teachers, and for those who directly support their efforts, a deeper and more nuanced understanding of phonics in English is necessary. However, the base of that understanding and how to manage it should be built on accepting that teaching phonics in English means making concessions to its complexity. A few overarching concessions follow.

Evaluating and prioritizing generalizations and skills

Because it is unreasonable to teach every possible phonics generalization, a logical implication is the need to decide which generalizations merit more attention than others. Which are more or less reliable, have the fewest exceptions, or are easier to explain and apply with fewer technical terms? Which help with words that children are more likely to encounter? Data might inform such questions — for example Clymer's (1963) study of

teaching formal syllabication rules is paradoxical as a decoding skill.

Determining when to move away from or cease phonics instruction There is a relatively small set of immutable phonics rules, and it is clear when it has been taught and mastered. In English, it is unreasonable to teach all phonics generalizations. Thus, there is an assumption,

often not explicitly acknowledged,

that at some point phonics will be

phased out so that children can

All this means that there is not a single optimal program of phonics instruction for all children, although such approaches are not uncommon. A consequence of phonics' complexity, then, is a heightened need for professional judgement and flexibility. Much like a good doctor who will vary treatments and dosages for individual patients, teachers need to merge deep knowledge of phonics and their students with their professional experience to make wise decisions.

the percentage of words consistent with taught generalizations in the texts children were asked to read. Data about the frequency of words and certain spelling patterns are also relevant (e.g., Fry, 1998, 2004).

Prioritizing also suggests that some generalizations or skills may merit no attention at all. For example, we offered the /oot-yoot/ generalization facetiously as one unlikely to ever be taught because of its complexity and limited application. Likewise, teaching children the distinction between the voiced and voiceless sound of "th" adds complexity and is likely unnecessary. And, as we have argued, begin to sort out independently the remainder of English's idiosyncrasies on their own. That begs a key, but debatable, question: When should this occur? Or even more relevantly, when will it occur for any particular child?

Supplementing phonics with other approaches and strategies for decoding

As the previous two concessions suggest, phonics alone is not up to the full job of completely reliable decoding in English. Putting all your eggs in the phonics basket is not likely to be entirely effective

or efficient. Other approaches and strategies might, and often do, fill the gap by supplementing phonics.

Examples from previous sections include teaching a set of highfrequency, irregularly or ambiguously spelled words by sight, as opposed to phonics. Another strategy is encouraging children to compare and contrast similar spelling patterns in words and to use them to identify new words by analogy (e.g., White, 2005). Teaching root words, grammatical endings, affixes, or common word parts called phonograms (see Fry, 1998) are other examples. Although it is controversial, the use of contextual meaning in conjunction with phonics to predict words also gains impetus given the complexity of phonics in English. Decoding can be enhanced when meaning and phonics are used in tandem.

Accommodating individual differences requires professional judgment

The greater complexity of phonics in English and the more instruction that complexity demands, means that individual differences among children will exert greater influence than when phonics is simple and straightforward. Those differences manifest themselves both as differences in preparedness for phonics instruction when children arrive at school, differences in the rate of mastering an extensive phonics curriculum, and differences in when children achieve a level of word recognition that enables them to move into independent reading without more explicit phonics instruction.

All this means that there is not a single optimal program of phonics instruction for all children, although such approaches are not uncommon.

___ Teaching

A consequence of phonics' complexity, then, is a heightened need for professional judgement and flexibility. Much like a good doctor who will vary treatments and dosages for individual patients, teachers need to merge deep knowledge of phonics and their students with their professional experience to make wise decisions. To accommodate this concession, schools, districts, and state departments of education must value and appreciate the need for professional judgment and they must create structures and curricula that allow and foster it (see Pearson, 2007).

Expecting and accommodating debate and controversy

The complexity of phonics in English creates a large space for debate and controversy. For decades in the U.S., phonics has been the center of a 'Great Debate' about how to teach reading, or more stridently referred to as 'The Reading Wars.' Most recently, many advocates of systematic, intensive phonics have advanced their views by claiming that it is based on a 'Science of Reading' which has generated more debate (Goodwin & Jimenez, 2020).

There are no such debates or wars in Italy, given that Italian has consistent letter-sound relationships. Neither are there literally tens of thousands of research studies about phonics supported, in part, by millions of dollars in federal funding; there are no governmental commissions on phonics; no state laws legislating phonics instruction; no commercial programs earning substantial profits for corporate publishers and well-paid consultants that extol phonics; and no ongoing academic disputes about

interpretations of what the research says about teaching phonics.

All these things in English-speaking countries are offspring of the controversies rooted in the greater complexity of phonics in English and the consequent challenges of teaching, learning, and applying it. That complexity creates fertile ground for competing perspectives, interpretations, priorities, philosophies, beliefs, and so forth. It manifests itself as factions engaged in sometimes emotional debates, often about the relative importance of phonics, yet unadorned with attention to its unique complexity in English. Unfortunately, in our view, much attention to phonics has been reduced to and driven by attempts to win debating points or to settle arguments grounded in an assumption that phonics in English is no more complex or difficult than any other alphabetic language.

A Final Word

Our intent has been to show how phonics in English cannot be fully understood, nor effectively addressed, without acknowledging its inherent complexity and the consequent difficulties and challenges to teaching, learning, and applying it. In essence, what that reality reveals is that a central issue of phonics in learning to read in English is carefully and strategically managing its complexity. There is little to be gained by ignoring that complexity nor pretending that phonics in English and the unique challenges it creates are of little consequence in making strategic decisions about what, how, when, or how much phonics is taught to whom under what circumstances.

Unlike in more regular alphabetic languages, contending with phonics in English is not a smooth freeway that moves nonreading children to independent reading. Instead, it is more like a complex maze of country back roads that must be navigated thoughtfully based on a number of contingencies. Teachers and other adults need to play the role of an intelligent, adaptable GPS.

Managing the complexity of phonics in English is not only a more realistic perspective. It is likely to be a more productive stance in generating effective and efficient instruction. That stance has the added benefit of transcending the narrow, and often simplistic, views that can embroil practitioners, researchers, politicians, and even parents in sometimes acrimonious debates about phonics. When complexity is foregrounded, it opens up deeper understandings that can guide practice, entertain new questions and data, raise new considerations, and perhaps mitigate, if not eliminate, partisan debates about phonics.

Mastering phonics in English is a fluid and dynamic process of coordinated concessions to complexity, not checking off mastery of items in a random set of generalizations. Perhaps most importantly, an appropriate appreciation and knowledge of complexity provides the important perspective that there is not one, but many reasonable ways to deal with it. It also suitably makes room for professional judgment grounded in teachers' knowledge of their own students and in their professional experience, both the successes and the inevitable failures.

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About the Cover

Determination is Gavyn's middle name! He is always up for some competition on the court or on the field. The same determination that helps him excel in year-round sports helped him progress in Reading Recovery as well. Reading Recovery gave Gavyn the confidence to pick up a book and feel positive about himself while reading. He has grown into a skilled reader and writer and a confident learner. Gavyn—full of tricks himself—loves reading texts about giants playing tricks on the townspeople. He is also an independent writer who takes control of the pen and paper. Using his high level of determination, he is delighted to see what he can accomplish in second grade. Look out NBA or NFL, Gavyn is coming for you!