

Morphology in a Nutshell

By Dr. Tom Estes

In the beginning

The first thing one learns in reading is the skill of decoding print to speech. Automatic recognition of familiar words is the goal at this stage, and comprehension is not an issue. If they can learn to recognize instantly the 300 most common English words, readers will be able to decode about 65% of all written material. These 300 words are probably already in their speech and quite familiar to their ears. The goal of beginning readers is to learn to respond to these familiar words when they see them in print.

Often, beginners practice on print that they have dictated and seen written down on chart paper. This is a way of creating practice text. The “language experience approach,” as this technique is called, works well since it ensures that the text the beginner is asked to read is completely familiar and likely to contain many of the 300 most common words. Again, the only thing lacking is to recognize spoken language in its printed form. This is because, in the beginning, the act of reading is an attempt to decode print into speech, to say the words one sees. The currently advocated “scientifically based” reading programs are based on direct instruction in phonics, the principles governing how speech is encoded into print that can easily be decoded into speech. Whatever the particular method of beginning reading instruction, the goal is always the same—instant word recognition of the most familiar words in English.

To summarize with a slightly more technical term, the beginnings of learning to read involve “phonology,” the connections between sound and print known as the alphabetic principle. The alphabetic principle states that the letters of print represent the sounds of speech. As one child put it, “When we read, we look at letters and turn them into sounds. When we write, we think of sounds and turn them into letters.” At this beginning stage, words are built of sounds.

Beyond the beginning

As any good reader knows, there is much more to reading than merely saying the words one sees. Once the skills of simple word recognition are mastered, the purpose of reading changes. While phonology is always an important part of reading, beyond the stage of simple word recognition, reading involves a set of skills and understandings known as “morphology.” Morphology describes the connections between words and meaning known as the morphemic principle. To paraphrase the same child as before, “When we read, we look at words and turn them into meanings. When we write, we think of meanings and turn them into words.” At this stage, words are built of meanings.

Beyond beginning mastery of a few hundred “instant words,” the act of reading is an attempt to decode to meaning, to comprehend the words one sees in print. Many of these words may not be in the reader’s spoken vocabulary at all. Thus it is true for highly skilled readers that their reading vocabulary far exceeds their speaking vocabulary—they can read more words than they can say or would ever use in speech. How is this possible, and how does one ever become skilled at this level? What is this thing called morphology?

A brief foray into word study

A little word study at this point might help to illustrate the answer to that question. Look at the word “phonology.” How do you know how to pronounce it? You probably cannot remember when you learned that the letters “ph” make the sound of “f,” though you do know it. How do you know that the first vowel, “o,” represents the long sound of that vowel? That the second “o” is short, the third “o” is again long? That the final “y” is to be pronounced like the long vowel “e”? You know all this, and much more, because long ago you were either taught or you intuited the rules, or principles, of phonics. Though you are probably completely unconscious of them, you have long since mastered rules such as “the vowel at the end of a syllable almost always says its name” and “the vowel between two consonants almost always has its ‘short’ sound.” Even if you had never seen the word “phonology” in print, you could “sound it out” and come up with a fairly close approximation of its pronunciation. Then, if you had ever heard the word before, your ear would provide a check on your best guess and you could correct yourself on the fly. Though little or none of this is in your consciousness now, in the beginning of your journey toward literacy, way back in first grade or before, the process of “sounding out” was very conscious. Once the connections between sound and print were mastered, after months and perhaps years of practice reading, you no longer had to think about how letters encode sounds. Only rarely now do you have to call on this knowledge at a conscious level. With only 42 phonemes and an alphabet of only 26 letters, despite some notable exceptions, English is a fairly regular system of sound-symbol correspondences.

Now look at the word “phonology” again. The more important question, aside from how to pronounce it, is how do you know what it means? Certainly the context of the sentence is helpful, especially since in this particular sentence the definition follows the word (look again at the last paragraph of the first section.) But even out of its context, you have an idea of the meaning of this not-too-common word because you “see” its meaning in its parts, just as you “see” its sound. “Phon” means or has something to do with “sound” and “ology” is a common word part that means “word, speech; study, reason, or thought on a topic.” So, it is reasonable to conclude that “phonology” must mean or have something to do with study, reason, or thought about sounds. Again, this is not something you know at a very conscious level, but it is something you know well enough to call on when the meaning of a word you encounter in print is not immediately apparent. Using a combination of context and knowledge of word parts, you often can just as easily figure out what an unfamiliar word might mean as you can figure out how an unfamiliar word might be pronounced.

What about the word “morphology?” That’s an uncommon word, but even if you have never seen or heard it, you at least know it must have some connection to the idea of “study, reason, or thought” about something. The “ology” part, you conclude, probably has the same meaning here as it does in other words where it occurs. But what about that other part of this word, “morph?” If you have young children you may be familiar with the Mighty Morphin Power Rangers of a few years back, or the toys known as Morphs that can change from one form to another using the same parts. By the end of third grade, science textbooks will have introduced the idea of metamorphosis and children will have observed with fascination as tadpoles turned into frogs. Maybe you are a Matrix movie fan and know the Laurence Fishburne character, Morpheus. There is a lot of morphing in the Matrix series of movies. So what might the word part “morph” mean? It means “form” or “shape.”

“Morphology,” defined literally, is the study of forms or shapes, and in the context we are using it here, it refers to the study of parts of words that have the same “form” in different words. This is the basis of “meaning families” of words. These parts, or various forms, are combined in almost limitless ways to encode meaning. The forms of which words are built, known as “morphemes,” include prefixes, suffixes, and roots. It will be worthwhile to think for a moment now of what these morphemes are.

A **ROOT** is a substantive morpheme, an actual thing or action or idea. Some roots can stand alone as words. Labor, for example, is a root that means “work,” and may stand alone a word itself, or it may join other morphemes to make other words, such as ‘laboratory’ (“a work place”) or ‘laborious’ (“full of work”). Other roots cannot ever stand alone as a word themselves, but must always join other morphemes to make words. For example, the morpheme ‘iatr’, which means ‘medical doctor’, is certainly not a word, but is a very common morpheme that combines with other morphemes to form such words as ‘pediatrician’ (“child’s doctor”) or ‘podiatrist’ (“foot doctor”).

A **PREFIX** is a morpheme that indicates an “aspect” such as amount, number, size, negation, time, place, quality, or togetherness. For example, “dys” means “bad,” as in the word “dysfunction.” The prefix “bene” means “good,” as in “benediction” (referring to good words) or “beneficial” (good deeds.) The prefix “trans” means “across,” as in the word “transport” (to carry across.) Some prefixes have multiple spellings, depending on what other morphemes they join. Often they will “assimilate” to, or “become similar to” the beginning sound of the word they are joining onto. For example, the prefix ‘con’, meaning ‘together’ or ‘with’, as in ‘convene’, “to come together”, is spelled ‘col’ in a word like ‘collaborate’, “to work together” and ‘com’ in a word like ‘compose’, “to put together.”

A **SUFFIX** may do either of two things to the morpheme to which it is attached. One thing a suffix can do is indicate a grammatical form such as person, number, or tense. For example, the suffix ‘ed’ turns a present tense word like ‘convert’ to its past tense, ‘converted’; an ‘s’ can show third person singular, as in ‘converts’. Alternatively, a suffix may completely change the part of speech of a word. For example, the verb ‘act’ (a morpheme meaning just as it appears— ‘act, or do’) may be converted into a noun with the suffix ‘ion’: action. The suffix ‘ive’ will turn the word into an adjective: active. Yet another suffix will turn ‘active’ into an adverb: actively.

Understanding the meaning of the common forms, or morphs, that make up English is crucial to decoding print to meaning. Just as phonemic awareness is fundamental to decoding the sounds of words in print, morphemic awareness is fundamental to decoding the meanings of words. **WORDBUILD** is a program to help in creating this awareness. What every reader needs to understand at some level of consciousness is that English is analogous to the pop beads they played with as young children. All words are concatenations, or combinations, of one or more letters that represent sounds and of one or more forms that represent meaning. We call this the principle of concatenations. To concatenate is to link or string together, the precise image of how words are formed.

Back to the beginning

Think again of the story of beginning reading for just a moment. Literacy researchers have firmly established the fact that word recognition is built on the ability to segment, substitute, and manipulate the sounds of words and the letters that represent them. Take letters away, see what you have left. Substitute another letter, see what you create. Move letters around, see what the effect is. Teach the skills of phonemic segmentation, substitution, and manipulation and a better oral reader will be the result. By studying the sound patterns of language in print and speech, children learn that there are great consistencies in printed English, that they can make fairly accurate and informed guesses as to the pronunciation of hundreds of words. Words like “run” and “fun” and “bun” and “sun” and “gun” and “pun” and so on all have a common ending sound that makes them rhyme, aside from what they might mean. Endings such as “un” are pronounceable as units and are the basis of “sound families” that young readers study. It doesn’t matter that the young reader doesn’t yet know what a “pun” is. The point is that s/he can pronounce the word by substituting the sound represented by the letter “p” in “pet,” for example, for the first letter of any “-un” word and come up with a new word, “pun.” Notice how easy it will be for this same reader to decode other words that have these same phonetic elements, same beginnings and endings. Very quickly, with the proper guidance and timing, the child will be taking away various phonetic elements of words—beginnings, middles, and endings— and moving them around, substituting other letters to come up with dozens and dozens of new words for practice. Exercises in taking letters away, substituting other letters for them, and manipulating the letters and sounds that make up simple words—this is the basis of instruction in beginning reading, the stage at which words are built of sounds. Activities such as these work so well in providing a foundation for successful reading that it is no exaggeration to suggest that they are essential to any beginning reading program.

Back to beyond the beginning

Now, back to morphology. In a similar fashion to the way sound is accessed from the printed forms of words, the ability to access meaning in language rests on the ability to segment, substitute, and manipulate the parts of words that bear meaning and the forms that represent them. Teach the skills of morphemic segmentation, substitution, and manipulation and a better comprehending reader will be the result. Many skilled readers know, at some level of consciousness, that all of the words in English containing the meaningful form “ology” have something to do with the “word, speech; study, reason, or thought” about whatever the other part of the word refers to. Try it yourself. Think of all the words you know or can create that contain this word part: biology, ecology, psychology, physiology, oncology, astrology, geology, and so on for dozens of examples. To figure out the meanings of these words, you need only to know what the initial part of the word means, the part called the leading morpheme. These words are actually compound forms, similar to the compound words children learn in the early grades, like baseball, football, sidewalk, birdhouse, boyfriend, etc. It also helps to know that the first part of the word modifies the second part. What kind of a ball? walk? house? friend?

Look again at the “ology” words. All the words ending in this morpheme have in common the meaning “study of, or reason and thought about.” So, biology is “the study of life” because the leading morpheme in this word, “bi,” means “life.” (Another morpheme with the same spelling means “two,” but only as a prefix; that’s another story similar to the story of other homonyms in English.) Ecology is the study of the environment in which we live because the leading morpheme

“ec” refers to “household” or “habitat.” “Psychology” is “the study of mind” because the leading morpheme “psych” refers to “mind.” And in this way the meanings of thousands of English words are built right into their spellings, as apparent to good readers as are the sounds of words that are also encoded by letters and letter combinations.

Unfortunately, reading is often taught as if decoding to sound were its major objective. Not so, actually. The major objective of reading is to decode to meaning, as efficiently and effectively as possible. And what that requires is knowledge of how meaning is encoded in almost limitless concatenations and combinations of meaningful forms. The ability to see and to segment words into distinct elements of meaning is fundamental to reading for meaning. It begins early, as the second grade reader learns the meaning of the “-ed” ending on regular verbs (pronounced in several different ways, but always meaning “past”) and the same reader learns that “ ’s” (apostrophe s) means “possesses,” but “s” and “es” usually mean “more than one” or they may change a verb to its “3rd person” form (I walk, you walk, he/she/it walks.) These are the first morphemes, parts of words that bear some of the meaning of a word, that fledgling readers learn. As they mature in their abilities, they come to understand progressively more complex forms. That is, they do so if they are taught how the system works. This is where the WORDBUILD program comes into play.

Underlying WORDBUILD is a database of prefixes, roots, and suffixes that can combine in thousands of ways to constitute meaningful words. The program enables the teacher to produce a limitless variety of instructional exercises that will move readers toward an understanding of how meaning is encoded in print. No longer will vocabulary development need to be based on memorizing the particular spellings and meanings of words that bear little or no relationship to one another, as if English were to be learned one word at a time. By custom-creating engaging practice exercises around words built of similar and contrasting morphemes, teachers can help students to master the most important of all literacy skills—the ability to look at an unfamiliar word and know something immediately about its meaning. WORDBUILD is a practical, efficient aid to the teacher. The exercises it helps the teacher create will help students to gain insights about the English language that will be invaluable for a lifetime of literacy. Now they will see words with new eyes, discerning meaningful parts in all words where before there were seemingly random strings of letters that did a rather poor job of representing sounds. The certain result will be better comprehension for readers who master the ideas behind how meaning is encoded in printed words.