

## Spelling exceptions: Problems or possibilities?

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### **Abstract:**

Teachers who understand the patterns and complexities of English spelling can stimulate their students' interest in and mastery of printed language.

### **Article:**

As Mrs. Beckner (all names are pseudonyms) circulated around the room during writing workshop she paused to look over Ereka's shoulder as she proofread a folk tale she had written. She noticed that Ereka had spelled the word *prince* as PRINC but had not circled it. When Mrs. Beckner asked her if she could spell it another way, Ereka sighed and said, "But I spelled it just the way it sounds."

"You did," said Mrs. Beckner, "but there is a silent *e* at the end."

"How come?" asked Ereka. "I thought silent *e*'s made the vowel say its name. Why is there an *e* in that word?"

Mrs. Beckner admitted, "I don't know why it's there. It's just one of those words that breaks the rules."

English spelling has traditionally been considered a trial and tribulation to those who teach it and to those who must learn it. Most teachers of the language arts probably wish that all words were spelled with the simple one-to-one letter-sound correspondences in words such as *fast*, *bump*, and *job*; or at least according to familiar rules such as those that govern the long-vowel spellings in *make*, *see*, or *boat*. Instead we have words like *prince*, *give*, *fudge*, and *love*, which have no need of a silent *e* to mark the vowel long. There are other silent letters in words such as *knight*, *guest*, *track*, and *sign*, and the variety of vowel sounds and spelling patterns in words such as *son*, *plow*, *cloud*, *saw*, and *sauce* may seem downright capricious.

George Bernard Shaw, the renowned English playwright, used his spelling of *ghoti* for *fish* as a demonstration of how exasperating English spelling could be. He borrowed the *gh* from the ending sound in *rough*, the *o* from the first vowel sound in *women*, and the *ti* from the middle sound in *nation*. The result is interesting, but was Shaw justified in poking fun at spelling in this way?

Many words in English appear to have irregular or exceptional spellings but we may base our judgements on too limited a set of generalizations. Shaw overlooked an important aspect of English when he made up *ghoti*. Letter-sound relationships are governed as much by their environment, or their position in a word, as by simple letter-sound correspondences or phonics rules. *Gh* never represents the sound of /f/ at the beginning of a word, and *ti* for /sh/ occurs only in a medial position, never at the end of a word.

The intricacies of the English spelling system are not easily mastered by students or by teachers. Moats (1994) found that even experienced teachers often lack essential knowledge about the structure of printed English. My own preservice teacher education, which included training in basic phonics rules, did not prepare me to deal with questions such as the one Ereka posed.

Teachers of reading and spelling are in a position not only to instruct their students, but also to shape their students' attitudes about language. I'd like to share in this article some lesser known generalities and historical influences that have influenced the English spelling system. In turn, teachers can help students discover some of these insights and together explore the rich and fascinating story of how this printed language has developed and changed over time.

### Orthographic patterns and markers

Many words, which are irregular when judged from basic phonics rules, are very consistent from an orthographic pattern perspective (Venezky & Massaro, 1979). A well-known example is the silent *gh* that appears in words such as *light*, *bright*, *knight*, and *sight*. We recognize it immediately as a dependable orthographic pattern. (Because the *ight* pattern occurs in far more one-syllable words than the *ite* pattern we might even consider *kite*, *white*, and *bite* irregular, or at least less common, in this case.) The *gh* serves as a signal or a marker for the long *i* sound in *light* and *high* in the same way that the final *e* does in *kite* or *a* does in *boat*.

While consonants are more regular than vowels and more likely to correspond to just one sound, there are times when they do not. The letter *h* marks an alternative sound for *t*, *c*, *s*, and *p* in *think*, *chip*, *shy*, and *phase*. The Norman French invaders of the 11th century introduced the use of *h* as a diacritical marker during the Middle English period (Vallins, 1965). We now call these consonant pairs *digraphs* and teach students that the two letters stand for one sound.

Interestingly, the sound of *th* was originally represented by one unique letter called *thorn* (see Figure 1). When William Caxton brought the first printing press to England from Holland in 1476 he had no *thorn* in his set of letters, and *th* replaced the single Anglo Saxon letter. In Scotland typesetters substituted the letter *y* for *thorn* (Venezky, 1999). This resulted in the curious spelling of the as *ye*, which we still see used in names such as "Ye Olde Shoppe" (Henderson, 1990).

Figure 1  
The Old English letter *thorn*



### Marking short vowels

Vowels have always presented the greatest challenge to spellers of English, mainly because we have so many vowel sounds and so few letters. The Old English period, which extended from 500 AD to the 12th century, was marked by relatively phonetic spelling, but still vowels had to be marked in some way. Toward the end of this period the convention developed of marking short vowels (the actual sounds were different from the ones we know today but that is another story) with doubled consonants. Some of these doublets continue to be present in words like *stiff*, *buzz*, *hill*, and *pass*, and we employ the convention when two syllables come together (*butter*, *giggle*, *silly*, *summer*) or when certain endings are added (*running*, *batted*). Without the doubled consonant the short vowel in *hopping* becomes the long vowel in *hoping*. While most one-syllable words with a short vowel end in a single consonant in Modern English (the consonant-vowel-consonant pattern of CVC words), the old convention of doublets accounts for some curious, but highly predictable, spellings.

Consider the words listed in Table I that all end with *k*. Look at the spelling of the words in each column. What

do you notice? Now read down each column aloud and listen for the vowel sound. What did you find'?

In words like *lick* and *truck* the *ck* is actually a doublet, which marks a short vowel. Over the centuries, the combinations *cc* and *kk* were used, but early printers preferred the *ck* mix and it became established (Vallins, 1965; Venezky, 1999). Notice that in words with long vowels or vowel pairs (*like*, *leak*) that the doublet does not occur and there is a single *k*.

An even less obvious doublet is the *tch* pattern in words such as *match*, *itch*, and *clutch*. Remember that *ch* is a digraph that represents one sound. If the *ch* were doubled to mark a short vowel the result would have been *chch*. Middle English scribes employed *cch* in their handcopied texts, but Caxton preferred a *tch* so it was adopted in printed material (Vallins, 1965). There are a few common words that do not follow the convention (*rich*, *such*, and *much*) but in other cases an unaccompanied *ch* comes only after vowel digraphs as in *coach*, *teach*, and *screech*.

**Table 1**  
Words ending in *ck* and *k*

|       |       |       |
|-------|-------|-------|
| lick  | leak  | like  |
| truck | cheek | make  |
| check | croak | joke  |
| thick | sleek | spike |
| clock | peak  | fluke |
| track | soak  | smoke |

**Table 2**  
Words ending in *g*

|        |       |        |
|--------|-------|--------|
| ledge  | leg   | cage   |
| badge  | brag  | huge   |
| judge  | frog  | stage  |
| pledge | flag  | page   |
| ridge  | twig  | refuge |
| dodge  | shrug | rage   |

*Gh*, *ck*, and *tch* are not well known as vowel markers but they play a very predictable role in many common English words. We are most likely to regard them as a reliable pattern or chunk. The vowel marker that we are most familiar with is silent *e*, but you may be surprised to find that it does more than indicate long vowels.

### The many roles of silent *e*

We are very accustomed to thinking of silent *e* as a marker for long vowels in words such as *stove*, *price*, and *cage*, and this may have given rise to the common assumption that the following words are irregular: *have*, *give*, *love*, *live*, *dove*, *glove*. When presented with a group of words like this you can probably detect a regular pattern. In English, *v* never occurs in final position. The practice of doubling consonants after a short vowel could have been confusing in the case of *v* because it would have resulted in a doubled *v*, making *have* look like *haw*. Somewhere along the way the convention arose of using *ye* at the end of these words. It may be curious but it is very consistent. On a related note, words in English seldom end in a single *z*, and that accounts for the *e* at the end of words like *freeze*, *sneeze*, and *seize*.

Let's look at another group of words that may seem irregular in its use of final *e*. Why does a word like *ledge* have a silent *e* when the vowel is short? Consider the first two columns of words in Table 2. What do you notice about each group? Read down the columns and listen for the sound of the final *g*. What did you discover?

In these words the *ge* pattern stands for the "soft" sound of *g* (/j/) at the end of each word. Compare the words in the second column that do not end in *e*. Words like *leg* and *brag* all end with the "hard" sound of *g*. The silent *e* is a consonant marker for the soft sound of *g* in these words, and other words such as *sponge*, *orange*, *marriage*, and *village*. The need to mark the *g* also accounts for the *e* in *dungeon*, *pigeon*, and *gorgeous*, and it may help you remember the difference between *angle* and *angel*.

Now that you understand that there is a reason for the *e* at the end of words like *ledge* and *badge*, let's consider the *d*. You might believe you "hear" the *d* but it is more likely that you "feel" it when your tongue flaps against the roof of your mouth to form the /j/ sound of *g*. Try it and see. The *d* is silent but it is easy to believe it isn't when we already know how to spell these words. Now compare the words in the first and last column in Table 2. Listen for the vowel sounds. What can you conclude?

Remember our discussion of short-vowel markers in the previous section? The *dge* ending is analogous to the *tch* ending. Rather than doubling the *g* (double *g*'s occur as final consonants only in the word *egg*), the *d* was paired with *g* to mark the short vowel (Venezky, 1999). The *dge* spelling pattern is another good example of a pattern that may not correspond to any simple phonics rule but is very regular orthographically.

Next let's consider the problem faced by Erika and Mrs. Beckner. What accounts for the final *e* in *prince*? If we examine a group of words that end the same way we may discover what is going on. Consider *dance*, *prince*, *once*, *glance*, *fence*, and *since*. As in the *ge* ending discussed previously, the *e* has nothing to do with the vowel, but is there to mark the soft consonant sound of *c* (/s/). Without a final *e*, the sound of *c* would be hard (/k/) as in *zinc*, *picnic*, *magic*, and *panic*.

Other vowels besides *e* influence the particular sound that *g* or *c* will have in a word. A good way to see this is to arrange a collection of words by the vowel that follows *g* or *c* (see Table 3). *G* and *c* before *a*, *o*, and *u* tend to use their hard sound, while before *e*, *i*, and *y* the soft sound occurs. However, there are many common words that begin with *gi* that have the hard sound, as in *girl*, *give*, *gift*, and *giggle*. A look through the dictionary reveals that there are about as many that do as there are of those that don't. While the generalization is not very consistent for *gi*, words that are spelled with *ci* look very consistent.

There are a number of words that end with *se* as compared with just *s*. Read aloud these pairs to figure out why: *dense/dens*, *tense/tens*, *moose/moos*, *curse/curs*, *false/falls*. Rest your finger gently on your larynx to feel the difference between the unvoiced /s/ of the first word in each pair and the voiced /z/ in the second word. Your vocal chords vibrate for voiced sounds. There is a subtle sound difference, but the *e* is actually serving as a clue that we are not dealing with a plural form. This is true in some cases where the *s* is voiced in both words: *tease* versus *teas* and *please* versus *pleas* (Balmuth, 1982; Venezky, 1970, 1999). Consider also *choose*, *cheese*, and *grease* (the verb), which end with a voiced *s* sound.

Let's end this section on silent *e* markers with one more case. There are not a great many of these words but they are interesting. Consider the sound of *th* in these pairs: *bath/bathe*, *breath/breathe*, *teeth/teethe*, *cloth/clothe*, *length/lengthen*, and *strength/strengthen*. Can you see what happens? In some cases the vowel sound changes from short to long with the addition of an *e*, but in all cases the sound of *th* changes from unvoiced to voiced when followed by an *e* (Venezky, 1970, 1999).

According to Venezky (1999) final *e* has at least 13 different roles to play in English spelling. We have investigated some of them here. While it is not necessary for teachers to learn or teach all of these, it is worthwhile to understand that final *e* does more than mark the long-vowel sound. In many of these cases simply collecting a number of examples and sorting them by sound or pattern (Bear, Invernizzi, Templeton, & Johnston, 2000) will help you and your students discover a principle at work in words. Now let's consider some historical events and how changes over time have influenced the English spelling system.

## Historical influences and changes in pronunciation

All languages are subject to variations in the particular way words are pronounced. Regional dialects abound in the United States. Bostonians drop their final *r*'s (as in "cah" for *car*), and some Southern Appalachian natives add them (as in "feller" for *fellow*). A language as old and as widespread as English has undergone many changes over hundreds of years and long distances. Sometimes spelling was altered in response to shifts in pronunciation, but once printed material became widely distributed there was great reluctance to alter the orthography. Changes in pronunciation account for the silent letters in words such as *knight*, *gnarl*, and *guard*.

Table 3  
Words beginning with hard and soft *g* and *c*

| Hard sound |        |      | Soft sound |        |        |
|------------|--------|------|------------|--------|--------|
| gang       | goat   | gush | gem        | gist   | gym    |
| gap        | gobble | guy  | germ       | giant  | gypsy  |
| gas        | goose  | gum  | general    | ginger | gyrate |
| castle     | comb   | cute | cent       | civil  | cyst   |
| cake       | cost   | curb | cease      | circle | cymbal |
| candle     | cobra  | cuff | center     | cider  | cynic  |

## Silent letters once pronounced

The *kn* spelling in words such as *knack* and *knife* and the *gn* spelling in *gnaw* and *gnat* may seem very curious. The history of these words reveals that they go back as far as Old English, when English was closer to its continental origins. The *k* is now silent, but was originally pronounced as it is now in German and French. We can hear the sound in the Yiddish word *knish* that has come into English in more recent times. The *gn* of *gnaw*, *gnat*, and *gnarled* shares a similar history (Balmuth, 1982).

The *gh* in words such as *knight*, *might*, *height*, and *right*, as well as *high*, *rough*, and *bough*, was once pronounced as a breathy /hi or a guttural /gh/ as in the German *ich* or the Scottish *loch*. While the *gh* fell silent in many words, it changed to /f/ in several: *rough*, *laugh*, *cough*, and *enough* (Baugh & Cable, 1978; Scragg, 1974; Vallins, 1965). The /f/ sound can be represented by *gh* only in this final position, not in the initial position as George Bernard Shaw tried to do in his spelling of *ghoti* for *fish*.

The *u* in words such as *guard*, *guest*, *guide*, and *guess* may have once been pronounced as /w/, as it still is in *penguin* and *language*. While the *u* has no sound after initial *g*, it does serve to keep the *g* hard in by isolating it from the *e*'s and *i*'s that would signal its soft sound (Venezky, 1970; 1999). The *w* in *sword* is another example of a lost sound that has resulted in a curious spelling.

There are other consonant letters that are mysteriously silent. Why is there a final *b* in *bomb*, a *g* in *sign*, or an *n* in *hymn*? Consider some derived forms: *bombard* or *bombardier*, *signal* or *signature*, and *hymnal* (Vallins, 1965, Venezky, 1999). Now we can hear those sounds! *Limber* derives from *limb*, *crumble* from *crumb*, and *condemnation* from *condemn* in the same way. In order to keep the spelling of the root word consistent the silent consonant must be retained (Henderson, 1990).

## The story of *u*, *v*, and *w*

Some of the curious spellings of English can be explained because of the complex and convoluted history of three letters: *u*, *v*, and *w*. Old English did not have *v* and *w*. The letter *u* was used for the consonant sounds of *v* and *w* as well as different vowel sounds (Balmuth, 1982; Scragg, 1974). *U* continues to represent the consonant sound of /w/ in words such as *penguin*, *suite*, and *persuade*, as mentioned previously, and in the familiar *qu* combination of *queen*, *quick*, and *quack*. Old English employed *qu* for /kw/ and then later replaced it with *cu* or *cw* so that *queen* would have been spelled *cuen* or *coven*. The French then reintroduced the *qu* after the Norman Conquest of 1066, and it eventually became established as it spread among the scribes.

The *u* and *w* flip-flop in several vowel pairs. Consider the words in Table 4 in which each sound is spelled two different ways, sometimes with *w* and sometimes with *u*. Notice that either spelling pattern can occur in the

medial position but only one (with *w*) is allowed in the final position. The explanation is that final *u* is seldom allowed in native English words (*you* is a notable exception) (Venezky, 1970, 1999). When the long *u* sound occurs at the end of a word it is spelled *oo* as in *zoo*, as *ew* as in *few*, or a final *e* is added as in *blue*.

**Table 4**  
Vowel sounds spelled with *u* and *w*

| aw/au |        | ow/ou |        |
|-------|--------|-------|--------|
| final | medial | final | medial |
| saw   | sauce  | cow   | couch  |
| draw  | fault  | plow  | loud   |
| paw   | taught | vow   | pound  |
| straw | launch | now   | shout  |
| thaw  | caught | bow   | count  |
| claw  | pause  | wow   | doubt  |
| law   | haunt  |       | pouch  |
|       | lawn   |       | crowd  |
|       | crawl  |       | frown  |
|       | hawk   |       | fowl   |

The sound of long *u*, like most other vowels, can be spelled in a number of ways (*fruit, cute, true, boot, brew*), but doubling the *u*, as we do with *ee*, would have looked like a *w*. This visual confusion was avoided in part by adopting the French *ou* in words such as *through, group, and soup* (Scragg, 1974). However, pronunciation changed in words like *house* (originally /boos/), and now there are a number of sounds spelled with *ou*: *could, rough, ounce, group, and pound*.

Today we are left with a rather complicated jumble of vowel sounds and spelling patterns for *u* and *w*, but one that can be navigated with middle elementary students when words are collected and sorted by sounds and patterns. Table 4 might be a starting point for such study.

### Visual confusions

The effort to avoid visual confusion accounts for some of the *o, u,* and *w* complexity, but it accounts for other curious spellings as well. For centuries paper was an expensive and scarce commodity. Scribes and printers, in an effort to get as much on a page as possible, put letters very close together. Pages would have so much ink on them that the style of lettering came to be known as "black letter." Unfortunately some of the lowercase letters with strong vertical strokes (or minims) became very hard to distinguish when they were crammed closely together. Look at the sequence of *i, n, m, u, v, w,* and *r* in Figure 2. Certain combinations of letters such as *uv, un, ur, mun,* and *wu* would have been very hard to decipher (and remember that *u* often substituted for *v* and *w*, adding to the confusion). Closing the *u* into an *o* made the vowel more visually distinct from the surrounding letters (Scragg, 1974; Venezky, 1999). Now we have an explanation for the *o* that represents the short *u* sound in *love, son,* and *money,* as well as the unusual spelling of *or* in *worry*.

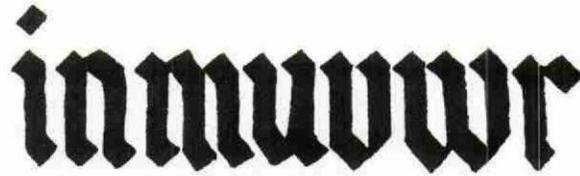
The dot over the lowercase letter *i* was not adopted until later so combinations such as *im* or *wim* in black letter would also have been visually confusing. This resulted in the spelling of WIMEN as *women*. Shaw borrowed this correspondence for his spelling of *fish* as *ghoti* but it is the only case in English where short *i* is spelled with an *o*.

### Exploring spelling in the classroom

Teachers of spelling may bemoan phonetic mismatches and the imperfections of English spelling. When English is looked at in terms of the utility of broad generalizations it isn't hard to conclude that they are of limited usefulness (Clymer, 1963). This may leave teachers and children with the impression that English

spelling is hopelessly irregular and that the only strategy for mastering it is brute memorization (Henderson, 1990). There is good evidence however, that capable readers and spellers respond to patterns rather than rules, and these patterns more accurately capture the complexity of English (Adams, 1990; Seidenburg & McClelland, 1989). An approach to spelling that helps children see that most words fit categories—some large, some small—will encourage them to make sense of the system.

Figure 2  
A visually confusing letter string representing *i, n, m, u, v, w, and r*

The image shows a single line of text in a blackletter or gothic font. The letters are 'i', 'n', 'm', 'u', 'v', 'w', and 'r'. The 'i' has a diamond-shaped dot above it. The 'n' and 'm' are connected at their base. The 'u' and 'v' are also connected. The 'w' and 'r' are connected at their base. The overall appearance is a single, continuous, and visually complex string of characters.

When students pose a question such as Erika's, it should be seen as a learning opportunity for both the teacher and student. Teachers need not know all the answers in advance but can model their own curiosity about spelling. A shared spirit of inquiry may inspire everyone to make the study of words and spelling a lifelong pursuit. A good response to Erika's question might be, "I don't know. I wonder if there are other words like that. Let's start a collection and see if we can figure out if there is something going on." Collected words may be listed on charts or in notebooks, and then students can actively sort them into categories and discuss what they discover. Four examples of word sorts have been provided in Tables 1-4 and serve as examples of how this might be done. Bear, Invernizzi, Templeton, and Johnston (2000) is a source for more word sorts.

English spelling is complex, but I hope these examples reveal that there are interesting explanations for many of these complexities, and that there is often an underlying consistency that is not immediately obvious. Many of the sources listed in the references for this article provide additional information and make fascinating reading. As Vallins (1965) reminded us: "Though spelling may be difficult, it need not be dull. It is indeed, by no means the least interesting element in the structure of our rich, living, and complex language" (pp. 25-26).

## References

- Adams, M.I. (1990). *Beginning to read: Thinking and learning about print*. Cambridge MA: MIT Press.
- Balmuth, M. (1982). *The roots of phonics*. New York: McGraw Hill.
- Baugh, A.C., & Cable, T. (1978). *A history of the English language*. Englewood Cliffs, NJ: Prentice Hall.
- Bear, D., Invernizzi, M., Templeton, S., & Johnston, F. (2000). *Words their way: Word study for phonics, vocabulary, and spelling*. Upper Saddle River, NJ: Merrill/Prentice Hall.
- Clymer, T. (1963). The utility of phonic generalizations in the primary grades. *The Reading Teacher*, 16, 252-258.
- Henderson, E.H. (1990). *Teaching spelling* (2nd ed.). Boston: Houghton Mifflin.
- Moats, L.C. (1994). The missing foundation in teacher education: Knowledge of the structure of written language. *Annals of Dyslexia*, 44, 81-102.
- Scragg, D.G. (1974). *A history of English spelling*. New York: Barnes & Noble.
- Seidenburg, M.S., & McClelland, J.L. (1989). Sublexical structures in visual word recognition: Access units or orthographical redundancy. In M. Coltheart (Ed.), *Attention and performance XII: The psychology of reading* (pp. 245-263). Hillsdale, NJ: Erlbaum.
- Vallins, G.H. (1965). *Spelling*. Tonbridge, England: Tonbridge.
- Venezky, R.L. (1970). *The structure of English orthography*. The Hague, The Netherlands: Mouton.
- Venezky, R.L. (1999). *The American way of spelling: The structures and origins of American English orthography*. New York: Guilford Press.
- Venezky, R.L., & Massaro, D.W. (1979). The role of orthographic regularity in word recognition. In L.B. Resnick & P.A. Weaver (Eds.), *Theory and practice of early reading* (Vol. 1, pp. 85-107). Hillsdale, NJ: Erlbaum.