Project UNSPELL

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PROJECT UNSPELL allows children and adults to:

1. Learn to read and write English quickly and easily without having to take the time to memorize idiosyncratic spellings of thousands of common words.

2. Pronounce all English words correctly, even unfamiliar ones, without having to look them up or hear them first, and without memorization

3. Look up the meanings of unfamiliar words upon hearing them by how they sound, without having to guess at how they are spelled

What Unspell is not

It is not an attempt at spelling reform. Those interested in discussing or attempting to enact legislative changes to the way the English language is written are welcome to look elsewhere.

It is not a phonetic rendering of English. English is not a language that can be written phonetically, for two main reasons. The first is that English is spoken in a large number of different ways, using different sounds, and rendering English speech phonetically would fracture the language. The second is that English, like some other languages (Russian, Portuguese) has vowel reduction: unstressed vowels decay to a schwa. However, writing words using a schwa denatures them and hinders comprehension.

It is not an attempt to replace English spelling. The basic assumption is that the mainstream use of traditional English spelling will remain in place and unchanged forever, eventually joining classical Greek, Latin and Sanskrit in the pantheon of dead literary languages. English spelling is by now so divergent from the way the living language sounds that it essentially constitutes a dead language already.

It is not something that has ever been tried before. First, all previous attempts were either attempts to reform English spelling, or attempts at rendering English phonetically. Unspell is the first attempt to create an alternative, parallel orthography. Second, all previous attempts pre-dated the advent of networked portable computing and ubiquitous electronic text, and the widespread availability of electronic print-on-demand publishing and distribution via the internet. These developments made implementing Unspell a matter of writing some software and letting existing technology handle the rest.

What Unspell is

Unspell is an alternative orthography of the English language. It consists of a set of simple, exceptionless rules for writing down all English words using a distinct set of symbols which was designed to be as graphically simple and easy to learn as possible.

To avoid being specific to any given accent or dialect, Unspell uses a set of meta-phonemes. These are higher-level abstractions of speech sounds that are used to distinguish different words across accents and dialects, and are understood across accents and dialects, although they may sound slightly different in each. But because there are some large differences in how certain words are pronounced, there are two varieties of Unspell: North American (US and Canada) and World (British-influenced English, including all the Commonwealth countries).

Contents

Why is it needed?

English spelling poses a huge impediment to learning. Functional illiteracy rates in English-speaking countries run as high as 40%. English orthography was haphazard to start with; then, in the 18th century, the spellings of English words were fixed for all time, mistakes included. Since then, spoken English has evolved, but written English hasn't.

In the U.S., children spend eight years memorizing the spellings of words to achieve basic competence in written English. But eighth-grade-level reading and writing skills are too limited for most practical uses, such as understanding law, science, medicine, technology or commerce. In contrast, school-children in countries where the national language has a regular, consistent orthography achieve adequate literacy in just a year or two, by memorizing a small set of rules, and are then free to learn other things. It is little wonder that many of these countries are surging ahead while English-speaking countries are falling behind. UNSPELL can level the playing field.

To learn English spelling is to memorize thousands of obsolete spellings of words: “whale” still has an “h” in it; “gnat” still starts with a “g”. Children are forced to cram such non-information into their heads in order to pass tests that allow them to get on in life. Is this really necessary? No, not really!

The nature of the problem

Much of the trouble comes from the confusion that reigns in the minds of English speakers as to what is a word. They think that a word is some sequence of Latin letters, plus some way of pronouncing it that, more often than not, has to be learned separately. So, “there,” “they're” and “their” are all different words, even though they all sound exactly the same.

But another way to look at it—one favored by linguists—is that a word is a string of *phonemes*. A phoneme is the smallest phonetic unit in a language that is capable of conveying a distinction in meaning. In a well-designed, rational writing system, the *orthography* determines how a word is written down by mapping phonemes to *graphemes*, which are letters or combinations of letters. The mapping should be unambiguous: there should be exactly one way to write a word, and there should be exactly one way to pronounce a word, all according to simple, explicit rules. This makes a language as easy to read and write as it is to speak. Many languages, such as Finnish, follow this prescription quite closely, providing a short and relatively simple path to literacy for nearly everyone who speaks them.

English does not follow this prescription. Take the grapheme “th”: it corresponds to two phonemes: [θ] (the sound in “thing”) and [ð] (the sound in “this”). Therefore, it is not possible to determine how the grapheme “th” is pronounced. Going the other way, take the phoneme [i], which is the sound in “k**ee**n,” “b**ea**n,” “p**eo**ple,” “**fie**rce” and “cr**e**me.” There are many graphemes that correspond to it. Therefore, it is not possible to determine how the phoneme [i] is written. Unfortunately for those who seek to learn to read and write English, these two examples are typical cases rather than exceptions. Not a single letter in the English alphabet is pronounced unambiguously, and not a single sound of the English language is written unambiguously. The only way to learn to use a system like this is through rote memorization.

An additional problem is that many English words (some 1300 of them; a table of them is provided in Appendix I) sound the same but are written differently depending on what they mean. Some people are apt to say that having multiple spellings for many common words is somehow useful or efficient. They have yet to present any evidence in support of this claim. Indeed, the case is hard to make: there are many times more English words that are spelled the same in spite of having multiple meanings. Take the word “date”: it can be either a romantic get-together, a calendar day, or the fruit of the date palm. Nobody is confused by this, because our brains pick out the right meaning automatically and unconsciously.

The fact that many words have multiple meanings is not a problem to be solved. Even if it were, assigning a different arbitrary sequence of letters to each meaning, all of which then have to be memorized, is a solution that is much worse than the problem. But, in fact, it is not a problem at all. If it were, books on tape wouldn't exist because nobody would understand them, and television shows would require subtitles.

The extent of the problem

The following table illustrates the extent of the problem: all vowel sounds can be produced, arbitrarily, from multiple vowel patterns, and each vowel pattern can give rise to as many as five different vowel sounds. The situation is only slightly better with consonants.

a: m**a**ny, m**a**king, h**a**d, p**a**rt, f**a**ll	**o:** col**o**nel, n**o**t, w**o**man
a -e: m**a**d**e,** nuis**a**nc**e,** h**a**v**e, a**r**e,** f**a**ls**e**	**o -e:** s**o**m**e,** g**o**n**e,** c**o**n**e,** m**o**v**e**
ai: s**ai**d, m**ai**n, mount**ai**n, pl**ai**d	**o -ue:** t**o**ngu**e,** dial**o**gu**e,** r**o**gu**e**
au: g**au**ging, l**au**gh, rest**au**rant, h**au**l	**oe:** am**oe**ba, t**oe,** sh**oe**
e: b**e**ing, m**e**n, attach**e**	**oo:** fl**oo**d, fl**oo**r, g**oo**d, t**oo**
e -e: th**e**s**e,** l**e**dg**e**	**ou:** c**ou**ntry, **ou**t, f**ou**r, sh**ou**ld, s**ou**p
ea: each, h**ea**d, gr**ea**t, h**ea**rt	**ou -e:** h**ou**se, c**ou**rse, r**ou**te
eo: p**eo**ple, l**eo**pard, lunch**eo**n, y**eo**man	**ough:** pl**ou**gh, th**ou**ght, b**ou**gh, thr**ou**gh
ew: s**ew,** cr**ew,** f**ew**	**u:** b**u**ry, b**u**t, f**u**ll, tr**u**ly, h**u**man
ey: k**ey,** th**ey,** g**ey**ser	**u -e:** j**u**dg**e,** s**u**r**e, u**s**e**
i: s**i,** l**i**ngerie, memo**i**r, k**i**nd	**ua:** piq**ua**nt, g**ua**rantee, g**ua**rd
i -e: eng**i**n**e,** mar**i**n**e,** t**i**m**e**	**ue:** g**ue**ss, appliq**ue,** tr**ue,** d**ue**
i: -ue, ant**i**q**ue,** mer**i**ng**ue**	**ui:** mosq**ui**to, g**ui**ding, fr**ui**t, s**ui**t
ie: gr**ie**f, fr**ie**nd, lingerie**,** l**ie**	**ui -e:** g**ui**d**e,** br**ui**s**e**
	y: funn**y,** appl**y**

Unspell is not spelling reform

The assumption is that English spelling is not going to go away no matter what anyone does. English-speaking countries are culturally conservative. One of them still hasn't been able to convert to the metric system, remaining virtually alone in the world in using the old “imperial” measurements.

UNSPELL does not attempt to reform English spelling; it attempts to change how people approach

learning it and working with it. English spelling stays the same while the need to learn it is deferred, perhaps forever. The goals are: to save time, to eliminate aggravation, to avoid embarrassment and to provide access to written English for people who would otherwise not have any.

English spelling still needs to be taught, but it need not be taught to young children. Instead, spelling can be offered alongside multivariate calculus and molecular biology to students who are already literate and well-read, and whose minds are fully developed and able to memorize thousands of spellings of both common and uncommon words.

Previous similar projects

There has never been a project quite like UNSPELL. Previous efforts in this area (and there have been many) basically fall into two categories: spelling reform and phonetic transcription. English is resistant to reform, and efforts of the former category have all failed. Efforts of the latter category failed for an even better reason: *English cannot be written phonetically*. This is a rather important point, which requires an explanation.

English cannot be written phonetically because only some of the vowel phonemes within English words are audible. Only stressed vowels are guaranteed to be audible, while most unstressed vowels decay to a *schwa* or, depending on dialect and accent, to one of two other lax, indistinct vowels. This process is called *vowel reduction*. Languages that have vowel reduction cannot be written phonetically; instead, the unreduced, inaudible vowels have to be written down.

Take the example of the words “profit” and “prophet.” They sound exactly the same: in IPA transcription—['prɔfɪt], because in “profit” the ‘i’ is pronounced as ‘ɪ’ while in “prophet” the unstressed ‘e’ reduces to an ‘ɪ’. But we know that the ‘e’ exists because of a related word, “proph**e**tic,” in which the ‘e’ is stressed, and therefore isn't reduced. And we also know that the word “profit” contains an ‘ɪ’ rathern than a ‘e’ from its etymology: it is a French word (originally borrowed from Old French as *prufit* or *porfit,* and now agrees with modern French *profit*, in which the ‘i’ is audible). These are the two main ways in which we can almost always discover the vowels that lurk beneath the vowel reduction mechanism.

Thus, UNSPELL is not a phonetic transcription of English but an *alternative orthography* of English. Unlike conventional English spelling, there is no ambiguity in how any word is pronounced, but there is some amount of complexity to how certain vowels within polysyllabic words are written. But this is not arbitrary complexity, as with much of English spelling, but complexity based on choices motivated by the structure and the history of the language. This makes unspelled text somewhat harder to write but significantly easier to read. The underlying, unreduced forms of the reduced vowels are psychologically real and seeing them makes words much easier to learn and to recognize.

Why can't Unspell use the Latin alphabet?

There are quite a few reasons why UNSPELL doesn't use the Latin alphabet, but here are the top three:

1. UNSPELL uses a unique symbol to represent each English phoneme, but the Latin alphabet doesn't have enough letters to accomplish that. Various Latin-based languages use a number of additional characters, such as ç, ñ, å, š, ï and ø, but that approach wouldn't work for English-speakers, who tend to

ignore diacritics. Plus, it would make English look like a foreign language, and not in a flattering way.

2. Reusing the Latin alphabet for Unspell would cause *interference effects* with spelled English, forcing people to memorize which version of each word is unspelled and which isn't. Because the symbols Unspell uses look so different from the Latin alphabet, one's English spelling will not deteriorate from exposure to Unspell. Reading and writing Unspell uses an entirely separate set of perceptive and motor mechanisms than spelled English.

3. By creating an entirely new set of symbols, Unspell solved a range of additional problems:

- Unspell is designed to accommodate special needs students who have trouble with the complicated curved shapes of Latin letters.
- English language students whose native language is not Latin-based (especially if it is Chinese, Japanese or Korean) find the stroke-based graphics easier to learn than the curvilinear shapes of Latin characters.
- Unspell is easy to write quickly, but, because the shapes are so simple, very hard to write illegibly.
- It can be written calligraphically using a brush or a pen and stenciled without modification.
- When embossed, it can be read by touch, using one's fingertip. It is slightly less compact than Braille, requiring a 3x5 dot grid instead of 2x4, but then it provides a ready bridge between sighted and non-sighted reading that requires very little additional learning (beyond learning to read with one's fingertip).
- It is designed to be easy to carve, to embroider, to press into wet clay, to sky-write, etc., etc.
- It is simple enough to be accurately entered using a touchpad using stroke recognition software.
- It is simple enough to be processed by optical character recognition software even when hand-written.
- It supports low-resolution devices such as LED displays: because the symbols can be made entirely rectilinear without distortion, it scales down to very small bitmap sizes without loss of legibility.

The design process

The design process is currently in its second year. The overarching principle that was applied throughout the design is the Principle of Least Astonishment: there are no surprises, except for the initial shock of encountering something radically new. A great deal of experimentation and testing went into creating a system that is easy to read, easy to write, and, most importantly, requires an absolute minimum of memorization. It was initially an iterative process, and each iteration went like this:

1. Select a minimal set of *meta-phonemes* that captures all the key distinctions of spoken English across all the major dialects. Meta-phonemes are generalizations of speech sounds which are psychologically real, and are the secret behind the minor miracle that all major dialects of English are mutually intelligible in spite of the fact that, across dialects, meta-phonemes can be pronounced in a wild variety

of ways. The goal was to be neither overly precise (making UNSPELL harder to learn) nor overly general (leading to incorrect pronunciation in one dialect or another). The number and significance of minimal pairs was taken into account; thus, UNSPELL distinguishes "pin" from "pen" and "full" from "fool", but (after a thorough investigation of various alternatives) does not distinguish "cot" from "caught." Certain phonetic distinctions, which do not convey differences in meaning but are instead used to convey class distinctions and regional affiliations, were disregarded as well.

2. Map the selected meta-phonemes to symbols. This was done in a way that renders the most common phonemes using the fewest strokes. As many symbols as possible were made to resemble the shapes of corresponding Latin letters; thus, ᴛ, ч and ɟ are *cognates*, and sound more or less as you'd expect, making them easier to learn. Vowels and consonants were made to look different at a glance, using the same set of symbols for both but distinguishing them by their height, thus halving the number of symbols that have to be learned. Paired voiced and unvoiced consonants, such as t/d, s/z, ch/j, sh/zh, etc., were distinguished using a single stroke—a voicing mark—giving us ᴛ/ᴛ́, ч/ч́, ɟ/ɟ́, ɟ̄/ɟ̄́, etc., further reducing the overall number of symbols that need to be learned. Similar sounds were assigned to similar-looking symbols.

The set of symbols was refined over time. The initial step involved a careful review of alphabetic and syllabic writing systems, including Latin, Cyrillic, Korean, Japanese *kana*, Arabic/Hebrew and others, along with the challenges they posed for dyslexics and people with impaired vision and limited dexterity. Out of this analysis were formed certain rules:

- The symbols had to be composed of a sequence of discrete, simple strokes. Strokes create a physical memory that makes the symbols easy to learn, can be rendered in a variety of media, and require minimal manual dexterity to reproduce faithfully.
- No S-curves: the strokes could be either curved or straight, but if curved the direction of curvature had to be constant. It has been shown that S-curves are harder to remember and to recognize.
- No loops, circles or closed shapes of any kind. This is useful for making stencils, but more importantly it makes the stroke order less ambiguous, making the symbols easier to learn to reproduce. It has been shown that loops are harder to remember and to recognize.
- No violations of *object constancy*. This is a big one. The human visual cortex is very good at recognizing that, say, a wristwatch, is still a wristwatch regardless of orientation. It automatically perceives symbols such as 'p', 'q', 'd' and 'b' as different orientations of the same object. Learning to read the (lower-case) Latin alphabet involves breaking an innate, evolved mechanism. (These lower-case characters evolved too—from the medieval scribes' need to save time and parchment—a need that is not exactly relevant today.)
- A consistent baseline. This was a take-away from examining Indian alphabets, such as Hindi, Punjabi and Gujurati, which have characters that hang down from a line. Having a baseline improves legibility by allowing the eye to track a single line through the text, picking up details using peripheral vision. Most UNSPELL symbols feature such a baseline. The most common UNSPELL symbol is simply a dash (−) mapped to the most frequent English phoneme ('ɪ' in "kit").

- An obvious way of distinguishing vowels from consonants. Vowels and consonants use different articulatory mechanisms (shaping airflow vs. restricting or interrupting it). Making this distinction immediately obvious makes UNSPELL easier to learn. Furthermore, consonants are generally shorter (in time) than vowels. Therefore, in UNSPELL, consonants are narrow and tall and vowels are wide and short. This makes it possible to learn to read Unspell by dragging a finger along at a constant rate.
- An obvious way of distinguishing voiced consonants from the paired unvoiced consonants. Since such pairs (b/p, d/t, etc.) are distinguished using a single phonological feature—[+voice]—representing each pair using the same symbol, distinguished by a voicing mark, makes UNSPELL easier to learn and also provides a more direct neural path from perception to articulation with the voicing mark acting as a switch that activates the voice box.

The resulting set of symbols is easy to read, easy to write quickly and legibly, and, because the features that distinguish the symbols are so few and so crisply defined, very easy to learn. Very importantly, the use of a completely separate set of symbols means that the neural mechanism created in the process of learning to read and write unspelled text is almost entirely separate from that used for reading conventional, spelled English. What this means is that these two ways of reading and writing English do not interfere: the use of UNSPELL does not degrade, or in any way affect, one's spelling (except possibly through neglect) because there is no confusion between the two.

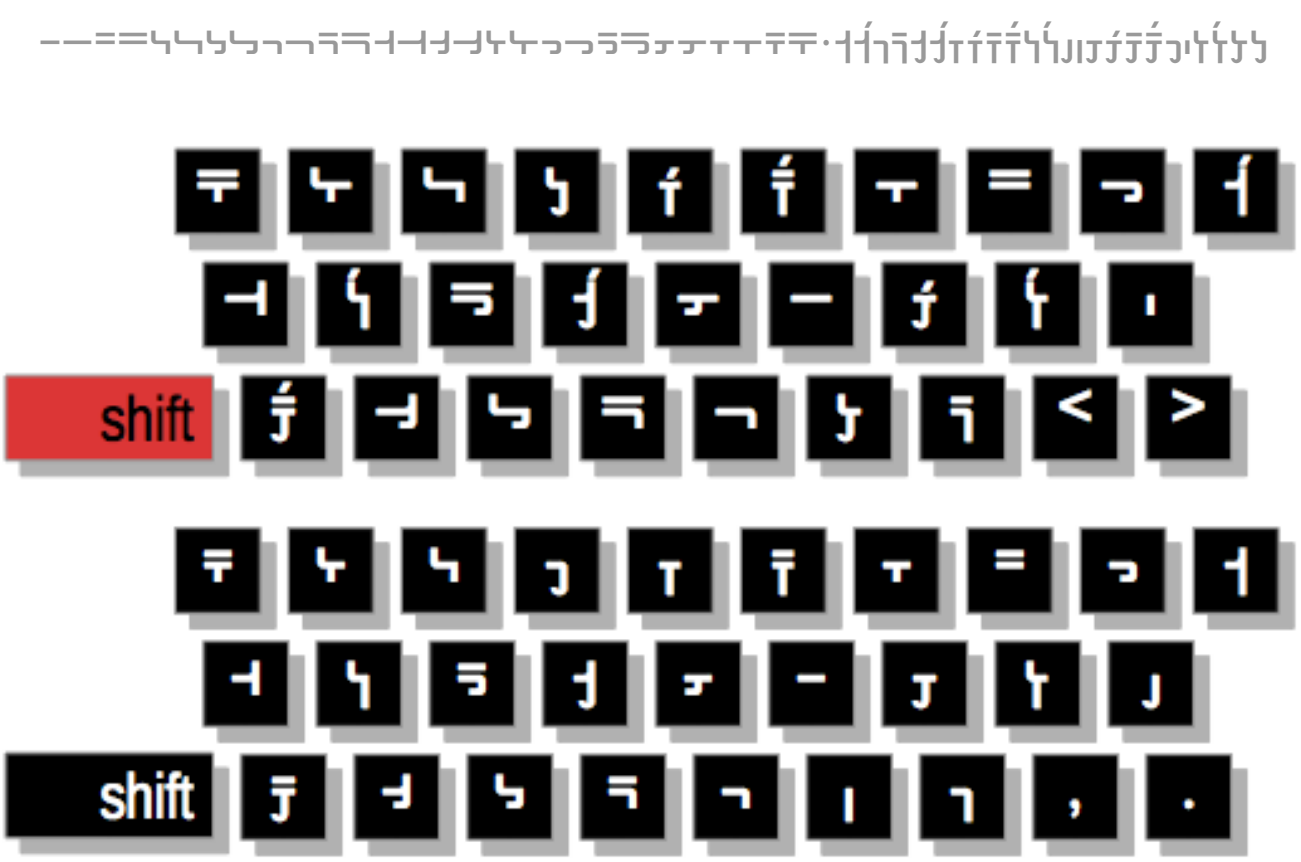
What was the initial motivation behind it?

UNSPELL's inventor is a trained linguist, a published nonfiction writer and an experienced software engineer. When he and his wife had a son, he decided to create a system that would allow their son to avoid having to suffer through all the rote memorization required to learn to spell English. To him, forcing children to learn English spelling seemed like some kind of child abuse. The English schoolmasters of old used the rod unsparingly to motivate their pupils to learn to spell. Nowadays corporal punishment is illegal, and instead children who are driven to distraction by English spelling are diagnosed with Attention Deficit Disorder and prescribed Ritalin. But it still seems like child abuse, and so he set out to create a way to avoid it.

How does one type it?

The UNSPELL symbols fit perfectly onto the QWERTY keyboard that is standard throughout the English-speaking world, taking up both upper- and lower-case registers. Stressed vowels (which are wider than unstressed ones) and the eight paired voiced consonants are accessed via the shift key. Those who can already touch-type English on a QWERTY keyboard will find that they have very little to learn.

Moving forward, the plan is to make it possible to enter unspelled English text using stroke recognition software through any touch device, and to scan in text using Optical Character Recognition (OCR) even for handwritten documents. This is possible because the symbol shapes UNSPELL uses are sufficiently simple for software to recognize reliably even when they are drawn by hand.



Does it have an accent?

It does indeed; it has *your* accent. UNSPELL uses a set of meta-phonemes, one level of generality above those used to phonetically transcribe English. The use of meta-phonemes allows speakers of UK English (including India, Australia, New Zealand, South Africa, etc.) to pronounce it one way, and speakers of North American English (including US and Canada) to pronounce it another way. The meta-phonemes cannot be heard directly and nobody has bothered to write them down until now, but they do have a definite psychological reality. They are the reason that all dialects of English are mutually intelligible without any sort of special training. Speakers of different dialects of English unconsciously calibrate their perceptive mechanism simply by listening to speakers of other dialects. Some people can also code-switch, switching back and forth between different ways of speaking English.

The use of meta-phonemes takes care of over 95% of the work of bridging the gap between different English dialects. The remaining 5% accounts for differences between North American and British English in how certain words are pronounced (“garage,” “schedule,” “tomato” etc.). These are dealt with by providing two different versions of Unspell: North American and World.

Who stands to benefit from it?

- The many adult illiterates and semi-literates who speak English fluently but who, for one reason or another, never learned to read and write well enough to be able to enjoy reading. They can learn to read UNSPELL by taking a brief on-line course. This will allow them to start reading any materials which they can understand when they are read to them.
- Special needs students who, because of various learning difficulties, are unable to learn English spelling. UNSPELL uses simple, easily distinguished, easy to draw shapes which were specifically designed with them in mind. UNSPELL avoids the use of flipped, mirrored or rotated shapes that give so much trouble to dyslexics, such as p/q/d/b, u/n, y/h, w/m and s/z.
- Home-schooled kids whose parents are pressed for time and want to get them reading anything from books on farming and animal care to masterpieces of world literature on their own quickly and without a lot of coaching.
- Kids who are otherwise precocious, but who struggle with English spelling, and are bored to distraction by grade-level drivel. The ability to leapfrog over it and jump right into Stevenson's *Treasure Island* or Twain's *Tom Sawyer* will teach them to love books and motivate them to tackle English spelling if and when their minds are ready for it. (It is notable that English spelling is far easier to learn for adults than it is for children.)
- ESOL students who currently have to face the hurdle of learning English spelling even though everything they need to read is available in their native language and the English skills they need are primarily oral. Numerous ESOL students attempt to learn written English but bog down early on; numerous others pick up English orally and consciously ignore written English. UNSPELL will provide both of these categories of ESOL students with an easy on-ramp to English literacy.
- Professionals around the world who already know how to work with written English. Many of them, being pressed for time, have never learned how to correctly pronounce many of the words they use. They then find themselves having to participate in discussions or give talks in English, and discover that their spoken English is so mangled that it is embarrassing and nearly impossible to understand. Written English is full of pitfalls, and a polyglot can casually flip around an English grammar, learn to read English with a dictionary, and never learn such distinctions as “to read/have read” or “to live/live show,” never mind subtleties such as “a house/to house” or “country's/countries.” UNSPELL can make them sound polished with minimal effort.
- English native speakers who would like to improve how they sound and lose their class or regional dialect in order to better ingratiate themselves into society. By reading in UNSPELL, they will be absorbing one of the prestige dialects: Standard American English or British Received Pronunciation of news broadcasters, Hollywood actors and Masterpiece Theatre.
- People with impaired vision whose eyes are strained by reading regular English text. The

symbols of UNSPELL are specifically designed to reduce eyestrain. Reading English text necessitates taking in each word in its entirety, causing the eye to backtrack, especially for longer words. In contrast, reading UNSPELL is a process of assembling words out of speech sounds by recognizing unambiguous phonetic symbols while tracking left to right along a baseline, at a constant rate, assembly-line fashion.

- Anyone who has ever made a fool of themselves by not knowing how to pronounce a word or a name, or by pronouncing it incorrectly.

Does it have a revenue model?

The purpose of UNSPELL is to create a public good: a simple, easy-to-learn way to read and write English that removes barriers to literacy and learning by eliminating the need for formal education and rote memorization. But since no public entity is about to step in to create this public good, it is being created through private means. This, along the way, creates some opportunities for profit.

UNSPELL is copyrighted and will be made available under a specific license. The intent is to make UNSPELL free for public, non-profit uses in areas such as education, religion, publicly-funded social services and the like. It will also be free for personal, non-commercial use, as well as for all manner of artistic uses, such as designing and selling new fonts or incorporating UNSPELL in artistic installations and productions, whether for profit or not.

Opportunities for profit will exist wherever UNSPELL is used to extend or replace existing commercial offerings: selling unspelled versions of books and other publications, selling or licensing software, teaching tools and other materials. In all cases where a product is sold to the public, a royalty-based fee structure will apply. A separate fee structure will apply for uses of UNSPELL in advertising and political speech, along with certain restrictions on content, to prevent UNSPELL from being turned into a tool of economic or political exploitation.

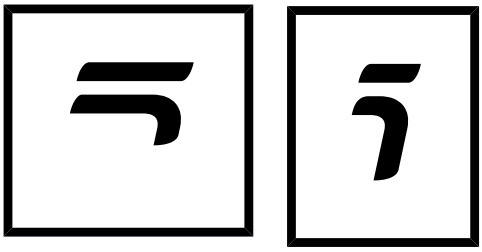
The initial revenue stream will come from reprints of books via print-on-demand, subscriptions for premium access to UNSPELL-related Internet resources, and from app downloads.

The Gory Details

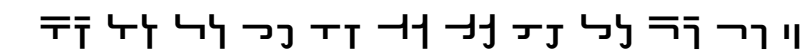
When considering what follows, please keep in mind that while UNSPELL is based on on a fair amount of linguistic analysis and a thorough understanding of English phonetics and phonology and how it varies across the major dialects, it is *not* a work of linguistic analysis or an effort to do science. Rather, it is a work of *synthesis*, a *design* that will be validated by its usefulness in helping students achieve English literacy with minimal effort. The rules and principles posited below may not be those that would please an academic linguist; yet they are rules and principles that students would be able to absorb and internalize with an absolute minimum of explanation—even students who are unmotivated, generally disinterested, exceptionally lazy, partially disabled or not at all smart.

Vowels and consonants

Vowels are short and wide, while consonants are tall and narrow. To put it in another way, vowels have landscape orientation while consonants have portrait orientation. Since vowels take longer than consonants to pronounce, this difference between them makes it possible to read unspelled text by dragging a finger along at a constant rate, allowing information to filter in smoothly as the eye glides along the line.



Here are the 12 symbols that are used as both vowels and consonants:

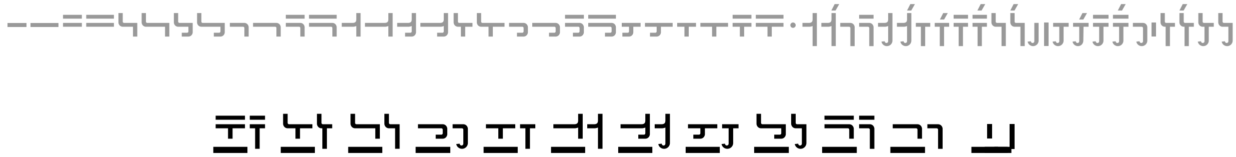


Since there are very few English words in which replacing a vowel with its corresponding consonant or vice versa results in another English word, or even in anything that can be pronounced, very little confusion results even from very sloppy handwriting. (The complete list of 20 potentially confusing cases is presented in Appendix III.)

The benefits of this approach are twofold:

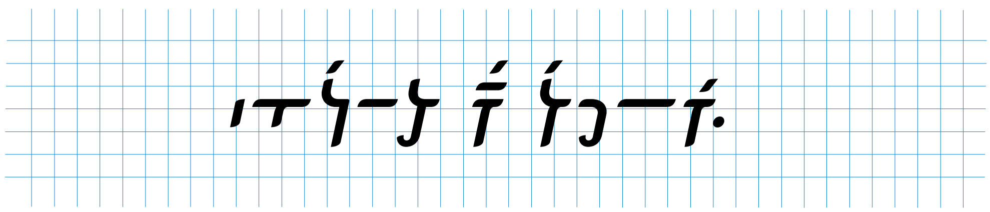
1. The number of symbols to memorize is reduced
2. Vowels and consonants can be told apart at a glance

One common initial criticism of this approach is that, to the untrained eye, vowels and consonants are hard to tell apart. This effect only lasts a few days, and there is a good way to speed up the process of training the eye to detect the difference—a sort of “training wheels”—by underscoring all the vowels:



The same trick can be used when writing by hand, in order to distinguish the ambiguous cases listed in Appendix III.

A good way to learn to write UNSPELL is by using narrow-lined paper or grid paper, as follows. Vowels extend one square down from the baseline; consonants extend two squares.



Stress

English has lexical stress: there is no single rule or even an arbitrarily complex set of rules for determining which syllable should be stressed in any given word. The meaning of many words and phrases varies depending on stress. Since spelled English does not show stress, it has to be memorized for words and reconstructed from context for phrases.

UNSPELL shows stress on almost every word in an unobtrusive yet obvious way: stressed vowels and diphthongs are a little bit wider:

Unstressed:	
Stressed:	

Abbreviations

There are two words that are so common that Unspell abbreviates them to a single character:

the	
and	**+**

Vowel Reduction

Along with some other languages, such as Russian and Portuguese, English has *vowel reduction*: the vast majority of unstressed vowels "decay" in accordance with a simple set of rules which are learned more or less unconsciously. Most vowels decay to an indistinct middle vowel called a *schwa*, which is represented by the IPA symbol 'ə', but some decay to other vowels. In general, tense vowels decay to their corresponding lax vowels. The exact rules vary by dialect and regional accent, but the good news

is that these rules need not be taught—they are absorbed unconsciously simply by listening. But the typical (North American) pattern is given by the following **Vowel Reduction Table**:

Full Vowel		Corresponding Reduced Vowel	
ᓵ	i	ᓭ	ɪ
ᓭ	ɪ		
ᓴ	ɛ		
ᓕ	æ	ᓭ	ə
ᓭ	ʌ		
ᓭ	ɒ, ɔ, ɑ		
ᓰ	ɑ		
ᓖ	oʊ		
ᓲ	u	ᓖ	ʊ
ᓕ	ɝ	ᓕ	ɚ

Conventions adopted by UNSPELL are as follows:

- Diphthongs except for ‘ᓖ’ (oʊ) are not reduced
- Diphthong ‘ᓖ’ (oʊ) is not reduced when it is at the end of a word
- Unstressed vowels that come before ‘r’ (‘ɹ’) are reduced explicitly. The combinations ‘ᓰᓗ’, ‘ᓭᓗ’, and ‘ᓴᓗ’ are shortened to ‘ᓕ’.
- Vowels that come before ‘ᓕ’ are not reduced.
- **In all other cases** unstressed vowels are reduced implicitly according to the table above.

The choice of unstressed vowel

Which unstressed vowels should be written down when unspelling a word? Since vowel reduction makes it impossible to hear any differences within these three groups of unstressed vowels, the choice may seem somewhat arbitrary. English dictionary publishers transcribe them all using a *schwa*, but UNSPELL is not a transcription but an alternative orthography, and a look at the orthographies of languages that have vowel reduction shows that none of them use the *schwa*.

The general strategy adopted by UNSPELL is as follows:

1. If possible, find a variant of the word, or a related word, in which the vowel in question is

stressed, and use that vowel[1]. For example, take the word “aristocrat.” In UK English the stress is on the first syllable, so we know that the first vowel is ‘╕’. In American English, the stress is on the second syllable, so we know that the second vowel is ‘–’. The third vowel is ‘ɔ’ because it is stressed in “aristocracy.” And the fourth vowel is ‘╕’ because it is stressed in “aristocratic.” Thus we have “╕ȷ—ɥтɔɥȷ╕т” in US English and “╕ȷ–ɥтɔɥȷ╕т” in UK English.

2. As a fallback, use the vowel that most closely approximates the vowel used to spell the word. This is especially useful if the word is of Latin or Greek origin. Consider the ‘e’ (‘ч’) “strategy” (“ɥтȷ╕тчɟ–”) or “category” (“ɭ╕тчɭɔȷ–”). In words of Latinate, Hellenic, Germanic or Slavic origin, map the *operatic vowels* A-E-I-O-U directly to their unspelled analogues— ˧·ч·=·ɔ·т. The front vowels Ä-Ö-Ü can be unspelled as ╕·ɔ̄·т̄.

3. As another fallback, check if the vowel in question is stressed in another English dialect: “garage” is “ɭ╕ȷ˧ɟ” in the UK but “ɭ╕ȷ˧ɟ” in North America, and can therefore unspelled using ‘╕’ in both North American and UK variants, but with a different vowel being stressed.

4. Finally, if all all fails, either unspell the vowel as a *schwa* (‘¬’) or, if it is followed by a syllabic consonant such as ‘l’ (‘ȷ’), ‘m’ (‘┐’) or ‘n’ (‘ɿ’), omit it altogether if possible. In general, UNSPELL avoids the use of *schwa* (‘¬’) as much as possible.

Does vowel reduction introduce ambiguity?

If all unstressed vowels are reduced according to the table above, the resulting ambiguity is limited to just the following three pairs of common words: “Mrs./misses”; “profit/prophet”; “rabbet/rabbit.” Even if we change the rules so that *every* unstressed vowel reduces to a *schwa* (as may happen with rapid speech or sloppy articulation) then the number of ambiguous cases increases somewhat to the ones listed in Appendix IV.

“How do you unspell that?”

How does one convey how a word is unspelled? With spelled English, the practice is to chant out the names of the vowels that make it up—a laborious, tedious practice that does not exist in any other language. (Spelling bee contestants have no idea how bizarre they sound to the average human.) With UNSPELL, the method is the same as with most other alphabetic languages that have vowel reduction: pronounce the word while stressing each syllable. If you need to tell someone how to unspell the word “bourgeoisie” (“ɭтȷɟ̄ɔ̄˧ɭ=”), all you need to do is to chant it out: “bour-geoi-sie” (“ɭтȷ·ɟ̄ɔ̄˧·ɭ=”).

Although it is quite easy to learn to read UNSPELL, because every word is pronounced based on a small set of rules, learning to write it is somewhat harder because it involves learning which unstressed vowels to use.

“Long” and “Short” Vowels

The short/long distinction existed in English at some point in the past but hasn't for centuries, but this

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[1] This is the strategy taught to Russian grammar school students in teaching them to write Russian, with some success.

terminology is still is use. The ‘i’ in “kit” is termed “short I” whereas the ‘i’ in “kite” is “long I.” This distinction may be useful in teaching English spelling, but as far as UNSPELL is concerned it does not exist.

Vowel	Short	Long
A	ㄱ	ㄴ
E	ㄴ	=
I	—	ㅓ
O	ㄱ	ㅜ
U	ㅜ	ㅣㅜ

However, this distinction does capture certain alternations, such as “n**a**tional/n**a**tion” (“ㅣㄱㅍㄱㅓㅓ/ㅣㄴㅍㄱㅣ”) and “v**i**rulent/v**i**ral” (“ㅓ—ㄱㅜㄴㅓㅣㅌ/ㅓㅓㄱㅓㅓ”). Unspell treats these as different words, although related, containing different vowels, not different versions of the same vowel. However, it may sometimes make sense to refer to the short/long distinction when initially explaining the vowels of UNSPELL.

Diphthongs

English has a number of *diphthongs*, which are glides from one vowel to another. Some English diphthongs do not vary much across dialects and accents of English, contain certain vowels that are also found in isolation, and can therefore be unspelled as digraphs, by using these vowels plus the symbol for ‘y’ (‘ㅣ’):

Unproblematic Diphthongs	
yes	ㅣㄴ
yacht	ㅣㅓ
yon	ㅣㄱ
yoghurt	ㅣㅜ
yule	ㅣㅜ
boy	ㄱㅣ

English has another set of diphthongs, which vary wildly across dialects and accents, contain vowels that do not occur in isolation, and are in some dialects not diphthongs at all while in others are glides

from nowhere in particular to nowhere in particular (Canadian “about” is a case in point).

UNSPELL gives these troublesome diphthongs their very own symbols:

The Troublesome Diphthongs	
eight	ㄣ
light	ㅓ
boat	ㅗ
loud	ㅜ

Of these four, ‘ㅗ’ is particularly troublesome, since it is a diphthong, and yet it can undergo vowel reduction (except when it appears at the end of a word). The other three are pronounced fully whether or not they are stressed.

Vowel categories

To make the various groups of English vowels easier to discuss, we classify them according to categories based on the sound of the Latin letter that is closest to the way each one sounds—not in English, mind you, since English spelling, in its perversity, can ascribe almost any sound to almost any letter, but in Latin and in Romance languages such as Spanish and Italian that are directly derived from Latin, and in which the letter-to-sound correspondence is unambiguous. These are the *operatic vowels* that opera singers pronounce when practicing their scales: A-E-I-O-U (Ah-Eh-EE-Oh-OO). Since English also has so-called R-colored vowels, we added ‘Er’-class to the list.

Table of Vowels

Category	UNSPELL	IPA	Sample words
I-like	=	i	**ee**l
	−	ɪ	k**i**t
E-like	ㄣ	ɛ	b**e**d
	ㄣ	eɪ	**ei**ght
A-like	ㄲ	æ	c**a**t
	ㄱ	ʌ	str**u**t
	ㅓ	ɑ	p**a**lm, p**a**st**a**
	ㅓ	aɪ	**I**, l**i**ght
	ㅜ	aʊ	l**ou**d, h**ow**
O-like	ㅋ	o, ɔ, ɒ	l**o**t, cl**o**th, th**ou**ght

Category	UNSPELL	IPA	Sample words
	¬ı	ɔɪ	b**oy**
	ᴛ	oʊ	**owe**
U-like	₸	ʊ	w**oo**d
	ᴛ	u	p**oo**l
‘Er’-like	⌐	ɝ, ɚ	**ear**th, h**er**, f**ur**th**er**

I-like vowels

The vowels ‘—’ and ‘═’ appear in opposition in most dialects of English, with numerous minimal pairs such as “bit/beat” and “sit/seat.” But they are not contrasted in unstressed word-final position, as in the case of the very common ‘-y’ ending. For this reason, ‘=’ never appears at the end of the word; ‘–’ is used instead. Since it contains fewer strokes, it is faster to write and reduces visual clutter.

There isn't a lot of variation in the way English I-like vowels are pronounced. Some dialects exhibit something called “HappY-tensing”: the tendency to say “happEE” and “dEElicious.” Although UNSPELL can express this (“Ч⌐ɫ=”, “ɫ=ɹ—₸¬Ч”), this effect is generally ignored, and these words are unspelled as “Ч⌐ɫ–” and “ɫЧɹ—₸¬Ч” (letting vowel reduction do the work). There is also, in certain UK dialects, a “verEH posh” “ɫЧɹЧ ɫ¬₸” kind of tensing, where the word-final ‘–’ becomes ‘Ч’. Again, it is no problem to express this, although in general it is not done.

There is wide variation in the extent of tensing between regional accents, dialects, and even between individuals. There are some words, such as “economy” and “ecology” where such tensing has become common in educated speech and broadcast journalism, so that they are now pronounced “EEK-onomy” (“=ŀ¬ı¬ı–”) and “EEK-ology” (“=ŀ¬ɹ¬ɫ–”). But since ignoring such tensing is not yet considered an error, UNSPELL ignores it. Some other words, such as “ecosystem,” do require tensing (it is EEK-o-system, not ECHO-system), and since ignoring it would constitute an error, UNSPELL reflects it: “=ŀᴛŀ–ŀɪЧɪ.”

A-like vowels

The vowels ‘¬’ (IPA ‘ʌ’) and ‘⊣’ (IPA ‘ɑ’) are hardly ever contrasted: “but/Baht” is about the only minimal pair to be found. There are more pairs such as “putt/part” in UK English because of the silent ‘r’. In general, ‘¬’ is shorter and more tense than ‘⊣’ and is always followed by a consonant.

As an orthographic convention, neither ‘¬’ nor ‘¬’ may appear in word-final position; ‘⊣’ is used instead.

The R-colored vowel in “far” is always unspelled as ‘⊣ɹ’, never as ‘¬ɹ’.

Certain North American speakers tend to pronounce as ‘⊣’ an entire set of words such as (“lot,” “cot”, etc.) which are spelled with an O, and which in all other English dialects are pronounced with an O-vowel—which is uniformly unspelled as ‘¬’. This shift, called *O-lowering-and-fronting*, seems

especially prevalent in the Western states and the Pacific Northwest. In order to maintain a dialect-neutral representation, UNSPELL has to ignore this tendency, adhering to the rule that the letter ‘o’ is *never* unspelled as ‘⊣’—in one of the few instances where English spelling provides relatively unambiguous guidance. (There are a few words in which ‘o’ is unspelled as ‘¬’: “oven,” “other.”)

O-like vowels

The vowels ‘ℸ’ and ‘ɟ’ (IPA ‘oʊ’, as in “boat”) make up this category. The latter sounds like a diphthong in most dialects but doesn't behave like other diphthongs; rather, it behaves like a substitute for the missing pure ‘o’, which is why Spanish words like “burrito” sound like “burritoʊ” and why English broadcast journalists turned Sochi, where the winter Olympics were once held, into Soʊchi. These two are often used in contrast, in minimal pairs such as “cot/coat,” “rod/road,” etc. The former of these two covers a lot of territory, representing the three back vowels ‘o’, ‘ɔ’, and ‘ɒ’. These three back vowels are rarely used in contrast, and many English dialects (including all of Canada and much of Eastern US) have something called “cot/caught merger,” where ‘ɔ’ and ‘ɒ’ are not distinguished and pronounced as one or the other, or as an average of the two. The “cot/caught” distinction is far from vital, with “cock/caulk” being about the only minimal pair ever likely to cause any confusion (which is why Canadians tend to say “caulking” instead of “caulk”). UNSPELL assumes “cot/caught” merger throughout, representing both vowels as ‘ℸ’.

In addition, many North American speakers have *O-lowering-and-fronting* mentioned above, where ‘ɔ’ becomes ‘ɒ’ and then ‘ɑ’ (‘⊣’). UNSPELL ignores this dialect-specific shift. In general, there is a lot of drift in how ‘o’, ‘ɔ’, and ‘ɒ’ are used. For example, in the UK, older speakers tend to pronounce “lot” with an ‘o’ while younger ones are likely to use ‘ɒ’. Failure to distinguish ‘o’, ‘ɔ’, and ‘ɒ’ is not even perceived as accented speech, and Canadians who work in broadcast journalism in the US are rarely recognized as such. On the other hand, the use of ‘ɑ’ in place of ‘ɔ’ is perceived as a distinctly “American” accent. Since the goal of UNSPELL is to faithfully reflect unaccented speech, it ignores this shift.

U-like vowels

The vowels ‘┬’ (IPA ‘u’) and ‘∓’ (IPA ‘ʊ’) are rarely contrasted (in minimal pairs such as “pool/pull,” “fool/full” and a few others) but UNSPELL includes symbols for both since failing to distinguish them or mixing them up does produce a noticeable accent. Since they are not distinguished in English spelling, those who learn English are expected to memorize that “wood” is pronounced “╕∓ɟ” but “wool” is pronounced “╕┬ȷ” although many students never do. These two vowels are normally indistinguishable in unstressed syllables, since ‘┬’ reduces to ‘∓’. Unstressed full ‘ᴛ’ at the ends of words is quite common.

‘Er’-like vowels

At some point in its evolution, English shifted from a garden-variety trilled ‘r’ found in most languages to an exotic *retroflex approximant* ‘r’, the rarely-seen IPA symbol for which is ‘ɻ’, and which is formed by curling the tongue back toward the soft palate. Since this tongue-curling maneuver interferes with raising the back of the tongue to form I-type or E-type vowels and with rounding the lips to form U-

type vowels, syllables such as "ir," "ur" and unstressed "er" (except before a vowel) largely disappeared from the language, having merged into a single new vowel, the IPA symbols for which are 'ɝ' when stressed and 'ɚ' when unstressed.

Scottish is the only dialect to have retained the rolled, or trilled 'r', and is consequently the only dialect that can still distinguish "fur" from "fir." Unspell does not convey this distinction. In all other dialects, only "er," "or," "ar" and "jʊr" (the sound in "pure") remain. These are uniformly unspelled as "[illegible]," "[illegible]," "[illegible]," and "[illegible]," The vowel '[illegible]' is used in most other cases. For compactness and uniformity, the symbol '[illegible]' is used even in places where it is pronounced as 'əʳ', such as before a vowel.

The replacement of 'r' with 'ɻ' took place some centuries ago. More recently, another change has taken place in certain English dialects, most notably in the UK and those countries influenced by UK English (Australia, New Zealand, South Africa, India, etc.). Linguists refer to these dialects as *non-rhotic*, after the Greek letter rho (ρ). In these dialects, the retroflex approximant 'ɻ' became largely silent, and is now only audible before a vowel.

In these dialects, 'r' is sometimes inserted when linking two words, such as in "the idea-R-of." In all other places it is pronounced as 'ɜ' (which is an 'ɝ' without its R-like tail) when stressed, and as 'ɑ' or 'ə' when unstressed, and as 'əʳ' before vowels. The position UNSPELL takes with regard to the rhotic/non-rhotic distinction is that nothing needs to be done about it: each person is free to pronounce the symbols '[illegible]' and '[illegible]'as they see fit. It is not even something that needs to be taught, since each student learns to read UNSPELL with their own native accent. With regard to R-like vowels, UNSPELL follows English spelling rather closely in most respects, with regard to preserving distinctions that are audible, while eliminating distinctions such as "fur/fir" that are not audible (except in Scottish). While there is a lot of variation between dialects and regional accents, in general, the pronunciation of R-like vowels is as follows:

UNSPELL Symbol	Rhotic Dialects	Non-Rhotic Dialects
[illegible]	ɝ	ɜ
[illegible]	ɚ	ɑ / ə
[illegible]	ɑr	ɑː / ɑʳ (audible before vowel)
[illegible]	or	oː / oʳ (audible before vowel)
[illegible]	jʊr	jʊə

When followed by '[illegible]', '[illegible]' or '[illegible]', some vowels lose their oppositional nature: there is no distinction to be drawn between "[illegible]" and "[illegible]" and so "[illegible]" is used throughout, being simpler.

Avoided	**Encouraged**
=ɟ, ═ɟ	−ɟ, —ɟ
¬ɟ, ¬ɟ	⊣ɟ, ⊣ɟ
=ᄅ, ═ᄅ	−ᄅ, —ᄅ
=ʄ, ═ʄ	−ʄ, —ʄ

Some words contain the sequence “ᄅᄅ” (“squanderer,” “murderer,” “manufacturer,” “literary”). In these, the first ‘ᄅ’ is pronounced as (the orthographically invalid form) “¬ɟ” (“əʳ”) no matter whether the dialect is rhotic or non.

Word-final vowels

For the sake of consistency and predictability, and to eliminate inaudible differences between word-final reduced vowels, UNSPELL adheres to the following largely aesthetic rules:

Avoided	**Encouraged**
…=*	…= …–
…¬	…⊣ …⊣

---

* Except for personal pronouns such as “he,” “she,” “we,” etc.

Consonants

English has 8 pairs of voiced/unvoiced consonants, variously represented using Latin letters, with the most common representations being as follows: b/p, v/f, th/th (θ/ð), d/t, z/s, j/ch, zh/sh and g/k.

Since in English the voiced consonants occur less frequently than their unvoiced counterparts, UNSPELL distinguishes voiced consonants from unvoiced by adding a voicing mark.

Unvoiced							
[Unspell glyph]	[Unspell glyph]	[Unspell glyph]	[Unspell glyph]	[Unspell glyph]	[Unspell glyph]	[Unspell glyph]	[Unspell glyph]
p	f	θ	t	s	tʃ	ʃ	k

Voiced							
[Unspell glyph]	[Unspell glyph]	[Unspell glyph]	[Unspell glyph]	[Unspell glyph]	[Unspell glyph]	[Unspell glyph]	[Unspell glyph]
b	v	ð	d	z	dʒ	ʒ	g

The benefits of this approach are threefold:

1. Voiced and unvoiced consonants can be distinguished at a glance
2. The voiced consonants do not need to be taught separately; instead, the voicing mark can be explained as a “switch” that turns on the voicebox: “[Unspell glyphs].”
3. There are eight fewer symbols to memorize

Thus, while UNSPELL uses a total of 39 symbols, there are only 19 symbols to remember. If you consider the symbols with a double horizontal “open” stroke (‘[Unspell glyph]’, ‘[Unspell glyph]’, ‘[Unspell glyph]’, ‘[Unspell glyph]’) as variants of those without, there are only 15 symbols to learn.

Table of Consonants

UNSPELL	IPA	Sample words
[Unspell glyph]	p	**p**it
[Unspell glyph]	b	**b**it
[Unspell glyph]	m	**m**ap
[Unspell glyph]	w	**w**e
[Unspell glyph]	f	**f**at
[Unspell glyph]	v	**v**at
[Unspell glyph]	θ	**th**in

UNSPELL	IPA	Sample words
	ð	**th**en
	t	**t**in
	d	**d**in
	s	**s**ap
	z	**z**ap
	l	**l**eft
	n	**n**ap
	tʃ	**ch**eap
	dʒ	**j**eep
	ʃ	**sh**e
	ʒ	mea**s**ure
	r	**r**un
	j	**y**es
	k	**c**ut
	g	**g**ut
	ŋ	ba**ng**
	h, x	**h**am, lo**ch**

Lexicographic order

The English alphabetical order is arbitrary: there is no reason why B follows A and C follows B. The order of symbols used by UNSPELL is mostly logical, based on human anatomy: vowels progress from back of the mouth [i] to front of the mouth [u]. Consonants progress from the lips [p] to the back of the throat [h]. Pops come first, then hisses, then hums. (Linguists use the terms “stops”, “affricates,” “fricatives”, “liquids” and “approximants,” and you can too if you want.) Voiced consonants follow unvoiced ones. Symbols with bars follow symbols without bars. You don't have to remember the ordering; you just need to remember the principles on which the ordering is based. The names of UNSPELL symbols are simply the sounds they produce.

ɪ	i	ɛ	eɪ	ʌ	æ	ɑ	aɪ	aʊ	ɔ	ɝ	oʊ	u	ʊ

pə	bə	mə	wə	fə	və	tə	də	θə	ðə	sə	zə	lə	nə	tʃə	dʒə	ʃə	ʒə	rə	jə	kə	gə	ŋə	hə

Punctuation

UNSPELL uses the same punctuation as spelled English, with one difference: since the dash (–) is used for the vowel [ɪ], a dot is used instead. In hyphenated words, each of the parts is unspelled as a separate word and contains a single stressed vowel: "same-day service" is "[illegible]".

Acronyms

Acronyms are unspelled by unspelling each letter. Here is the English alphabet, unspelled:

A	B	C	D	E	F	G	H	I	J	K	L	M	N
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

O	P	Q	R	S	T	U	V	W	X	Y	Z
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FBI is [illegible], CIA is [illegible]. Now you know how to unspell your [illegible], 26 letters from [illegible] to [illegible].

Capitalization

Since UNSPELL does not have the upper-case/lowercase distinction, there is no capitalization. Lower-case letters are a medieval European invention, designed to save time and parchment when transcribing books. For a time, all text was lower-case. Uppercase letters were reintroduced to make text more beautiful, and for a time English writers were Capitalizing whichever Word they wished to Emphasize.

Now capitalization is a matter of convention, and conveys some amount of useful information. But many languages, including Arabic, Hebrew, Chinese, Japanese, Korean and the many Indian languages, do not have this distinction. UNSPELL does embrace another medieval innovation, which is to put spaces between words.

Apostrophes

If there is a particularly vexed symbol within English orthography, it's the apostrophe. It's used for abbreviations ("it's" = "it is"). It is also used for possessives ("someone's") but *not* with pronouns ("its"). A sizable chunk of the English-speaking population confuses "its" with "it's"; another sizable chunk uses so-called *grocer's apostrophe*: "carrot's, potato's," etc. Most people don't know whether to write "hornets nests," "hornet's nests" or "hornets' nests."

The apostrophe is inaudible and adds very little to legibility ("isnt" isn't any harder to read than "isn't").

For these reasons, UNSPELL doesn't use the apostrophe. The apostrophe key is used instead for the "full circle," used to indicate unstressed full vowels.

Appendix I: Table of Homonyms

The following table contains a relatively complete list of English *homophonic heterographs* (same-sounding differently-spelled words). Unspell gets rid of these spurious distinctions.

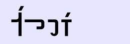
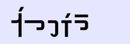
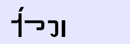
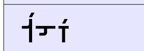
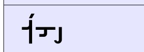
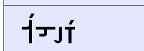
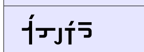
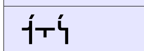
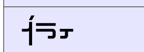
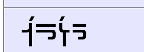
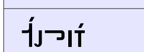
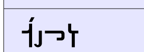
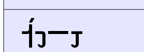
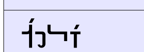
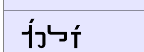
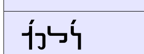
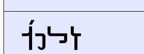
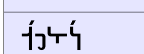
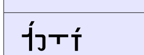
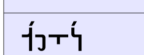
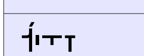
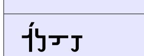
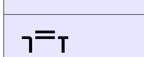
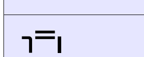
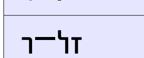
The table contains just over 1400 spellings for some 600 pronunciations, some of which are quite troublesome. In comparison, the number of *homophonic homographs* (same-sounding same-spelled words that have multiple unrelated meanings) such as “tick” (check mark/clicking noise/small biting insect) is in the tens of thousands, but nobody is confused by them or even notices that they exist.

	ins *(and outs)*; inns *(hotels)*
	inc. *(incorporated)*; ink *(writing fluid)*
	its *(whose?)*; it's *(it is)*
	elude *(avoid)*; illude *(deceive)*
	air *(atmosphere)*; e'er *(ever)*; ere *(eventually)*; err *(mistake; stray)*; heir *(inheritor)*
	airy *(breezy)*; aerie *(eagle's nest)*
	eight *(8)*; ate *(ingested)*
	ade *(beverage)*; aid *(help)*; aide *(assistant)*
	ad *(advertisement)*; add *(perform addition)*
	ads *(advertisements)*; adds *(performs additon)*; adze *(axe)*
	ant *(insect)*; aunt *(parent's sister)*
	auntie *(parent's sister)*; ante *(preliminary bet)*
	axle *(wheel)*; axel *(figure skating)*
	mall *(sheltered walk)*; maul *(sledgehammer; to wound with claws)*; moll *(gangster's girlfriend)*
	away *(absent)*; aweigh *(clear of the bottom)*
	assent *(agreement)*; ascent *(climb)*
	allowed *(permitted)*; aloud *(out loud)*
	ark *(vessel)*; arc *(curve)*
	eye *(visual organ)*; aye *(naval affirmative)*
	isle *(island)*; aisle *(walkway)*
	eyelet *(hole for shoelaces)*; islet *(small island)*
	hour *(unit of time)*; our *(belonging to us)*

[illegible]	hours *(units of time)*; ours *(belonging to us)*
[illegible]	awful *(terrible)*; aweful *(full of awe)*
[illegible]	ought *(should)*; aught *(anything)*
[illegible]	odd *(strange)*; awed *(in awe)*
[illegible]	all *(everything)*; awl *(hand tool)*
[illegible]	alter *(change)*; altar *(ceremonial table)*
[illegible]	or *(either...)*; oar *(paddle)*; ore *(mined metal)*
[illegible]	oral *(of the mouth)*; aural *(of hearing)*
[illegible]	auger *(drill)*; augur *(foretell)*
[illegible]	haut *(high)*; oh *(interjection)*; owe *(be indebted)*
[illegible]	O's *(more than one O)*; owes *(is in debt)*
[illegible]	ooze *(slime)*; oohs *(sighs of admiration)*
[illegible]	earn *(make money)*; urn *(jar)*
[illegible]	pea *(green legume)*; pee *(urinate)*
[illegible]	peace *(opposite of war)*; piece *(part)*
[illegible]	pieced *(assembled from pieces)*; piste *(track of compacted snow)*
[illegible]	peal *(ringing sound)*; peel *(fruit skin)*
[illegible]	pealed *(rung)*; peeled *(skinned)*
[illegible]	peak *(mountaintop)*; peek *(furtive look)*; pique *(irritation)*
[illegible]	peer *(an equal)*; pier *(wharf)*
[illegible]	pincher *(one who pinches)*; pinscher *(terrier)*
[illegible]	picnick *(outdoor meal)*; pyknic *(stocky figure)*
[illegible]	pair *(2 of something)*; pare *(cut down)*; pear *(fruit)*
[illegible]	pencil *(writing implement)*; pensile *(hanging down)*
[illegible]	paced *(walked back and forth)*; paste *(spreadable mixture; dress jewelry)*
[illegible]	pail *(bucket)*; pale *(light colored; restricted area)*
[illegible]	pain *(suffering)*; pane *(panel)*
[illegible]	past *(before present)*; passed *(went by)*
[illegible]	pallet *(platform; bed)*; pallette *(selection of colors)*
[illegible]	packed *(gathered)*; pact *(agreement)*

ᓰᓱ	pie *(baked dish)*; pi *(3.1416...)*
ᓰᓵᓴ	pause *(interruption)*; paws *(animal's feet)*
ᓰᓵᓕ	pall *(lose appeal; coffin drapery)*; Paul *(man's name)*; pawl *(ratchet lock)*
ᓰᓵᓖ	pore *(tiny hole in skin; to study carefully)*; pour *(to dispense liquid; to flow freely)*
ᓰᓭᓕ	pole *(stick)*; Pole *(Polish person)*; poll *(vote; opinion survey)*
ᓰᓭᓕᔆ	polar *(Arctic)*; poler *(one who poles)*
ᓰᓭᓕᔆᑦ	poled *(using a stick)*; polled *(covered by opinion survey; lacking horns)*
ᓰᓭᓀᐨ	pony *(small horse)*; pone *(dealer's opponent)*
ᓰᓕ	per *(for each)*; purr *(cat's happy sound)*
ᓰᓕᓕ	pearl *(gem)*; purl *(round stitch)*; Perl *(scripting language)*
ᓰᓕᓴᓵ	please *(make happy)*; pleas *(requests; admissions of guilt)*
ᓰᓕᓴᓱ	plate *(dish; flat metal; to coat with metal)*; plait *(braid)*
ᓰᓕᓴᓴ	place *(location)*; plaice *(flounder)*
ᓰᓕᓴᓀ	plain *(not fancy; flat ground)*; plane *(surface)*
ᓰᓕᓴᓀᔆ	planer *(planing tool)*; planar *(flat)*
ᓰᓕᓵᓂ	plum *(fruit)*; plumb *(vertical; connect with pipe)*
ᓰᓕᓭᓖᓂ	plural *(more than one)*; pleural *(relating to lungs)*
ᓰᓖᓴ	pray *(to worship)*; prey *(to hunt; hunted animal)*
ᓰᓖᓴᓵ	praise *(approval)*; prays *(worships)*; preys *(hunts)*
ᓰᓖᓱᑦ	pride *(high opinion of oneself)*; pried *(opened by prying)*
ᓰᓖᓱᓵ	prize *(award; bounty)*; pries *(does pry)*
ᓰᓖᓭᓵ	prose *(ordinary language)*; pros *(positives; experts)*
ᓱᓕᓱ	beat *(strike)*; beet *(edible red root)*
ᓱᓕᔆ	beach *(sandy shore)*; beech *(tree)*
ᓱᓐᔆ	beer *(malt beverage)*; bier *(coffin frame)*
ᓱᓐᓱ	bit *(small piece, stung)*; bitt *(cleat)*
ᓱᓐᔆᑦ	build *(construct)*; billed *(beaked; invoiced)*
ᓱᓴᔆ	bare *(naked)*; bear *(animal)*
ᓱᓴᓱᔆ	better *(superior)*; bettor *(gambler)*
ᓱᓴᔆ	bel *(Indian thorn tree)*; Bel *(Babylonian god)*; bell *(chime)*; belle *(beauty)*

ᚼᚳᚸᚾ	berry *(fruit)*; Barry *(man's name)*
ᚼᚴᚴᚳᚱ	besot *(get drunk)*; besought *(implored)*
ᚼᚳ	bay *(cove; bark)*; bey *(Turkish official)*
ᚼᚳᚱ	bait *(torment)*; bate *(lessen)*
ᚼᚳᚱᚾᚩ	baiting *(tormenting)*; bating *(lessening)*
ᚼᚳᚱᚳᚷ	baited *(tormented)*; bated *(lessened)*
ᚼᚳᚳ	bass *(guitar; fish)*; base *(bottom)*
ᚼᚳᚳᚳᚴ	bases *(bottoms)*; basses *(guitars; fish)*
ᚼᚳᚳᚱ	based *(founded)*; baste *(drench)*
ᚼᚳᚴ	bays *(coves; barks)*; beys *(Turkish officials)*; beize *(green felt)*
ᚼᚳᚸ	bail *(bucket handle)*; bale *(bundle of hay)*
ᚼᚳᚸᚾ	bailee *(holder of goods)*; bailey *(outer wall of castle)*; bailie *(Scottish official)*
ᚼᚳᚸᚾᚩ	bailing *(pumping)*; baling *(wire)*
ᚼᚳᚸᚷ	bailed *(pumped)*; baled *(gathered into bails)*
ᚼᚻᚱ	bat *(stick; flying rodent)*; batt *(flat pad)*
ᚼᚻᚳᚳᚱ	bask *(savor)*; basque *(bodice)*; Basque *(Pyreneean)*
ᚼᚻᚳᚷ	band *(group)*; banned *(forbidden)*
ᚼᚩᚳ	bus *(coach)*; buss *(kiss)*
ᚼᚩᚳᚱ	bust *(sculpture)*; bussed *(transported; kissed)*
ᚼᚩᚳᚱ	bunt *(tap)*; bundt *(cake)*
ᚼᚪᚸᚷ	bard *(poet)*; barred *(locked)*
ᚼᚪᚸᚱ	bark *(of tree or dog)*; barque *(ship)*
ᚼᚫ	buy *(purchase)*; bye *(farewell)*
ᚼᚫᚻ	buyer *(purchaser)*; byre *(cow barn)*
ᚼᚫᚱ	bite *(mouthful)*; byte *(8 bits)*; bight *(rope)*
ᚼᚢ	bow *(front; respectful nod)*; bough *(tree branch)*
ᚼᚩᚷ	baud *(bits per second)*; bawd *(brothel manager)*; bod *(sexy body)*
ᚼᚩᚸ	ball *(sphere)*; bawl *(cry)*
ᚼᚩᚸᚷ	bald *(hairless)*; bawled *(cried)*; balled *(had sex)*
ᚼᚩᚹ	bore *(gave life; diameter; uninteresting person)*; boar *(wild pig)*; Boer *(Afrikaner)*; boor *(vulgarian)*

	board *(plank)*; bored *(drilled out; not interested)*
	boarder *(lodger)*; border *(boundary)*
	born *(given life)*; borne *(carried)*; bourn *(stream; boundary)*
	boy *(male child)*; buoy *(aid to navigation)*
	box *(container)*; bocks *(dark beers)*
	bow *(shoots arrows)*; beau *(male friend)*
	bode *(omen)*; bowed *(curved)*
	bowl *(dish)*; bole *(trunk)*; boll *(seed pod)*
	bold *(brave)*; bowled *(knocked over)*
	bolder *(braver)*; boulder *(rock)*
	booze *(whiskey)*; boos *(loud disapproval)*
	burrow *(dig)*; borough *(municipality; township)*
	birth *(beginning)*; berth *(anchorage)*
	burger *(hamburger)*; burgher *(merchant)*
	blond *(light-haired man)*; blonde *(light-haired woman)*
	bloc *(alliance)*; block *(stop; cube)*
	blue *(color)*; blew *(moved air)*
	breach *(break through)*; breech *(the back part)*
	bread *(a loaf)*; bred *(mated)*
	braid *(weave)*; brayed *(cried like a donkey)*
	braise *(cook in oil and water)*; brays *(cries like a donkey)*
	brake *(stop)*; break *(split; pause; violate)*
	brows *(forehead)*; browse *(graze)*
	brewed *(fermented or steeped)*; brood *(family)*
	brews *(beers)*; bruise *(contusion)*
	butte *(hill)*; beaut *(beauty)*
	brooch *(ornament)*; broach *(raise)*
	meat *(flesh)*; meet *(meeting)*; mete *(to dispense; boundary)*
	mean *(meaning; cruel)*; mien *(manner)*
	mist *(fog)*; missed *(skipped; flew past)*

	minx *(vixen)*; minks *(stoats)*
	men's *(of men)*; mens *((guilty)* mind)
	marry *(to wed)*; merry *(happy)*
	made *(created)*; maid *(young woman; servant)*
	maize *(corn)*; maze *(labyrinth)*; Mays *(several spring months)*
	mail *(postal service)*; male *(masculine)*
	main *(primary)*; mane *(back hair)*
	mast *(upright pole)*; massed *(assembled)*
	mask *(facial disguise)*; masque *(amateur dramatics)*
	manner *(method)*; manor *(mansion)*
	mustard *(spicy vegetable seed)*; mustered *(assembled for roll call)*
	marshal *(to gather; highest rank)*; martial *(military)*
	mark *(sign)*; marc *(coarse brandy)* MARC *(train service in Maryland)*; marque *(brand; license)*
	might *(power)*; mite *(tiny insect; small amount; a little)*
	miner *(one who mines)*; minor *(small; child)*
	mind *(brain; to care)*; mined *(excavated)*
	more *(in addition)*; moor *(coastal swamp; to anchor)*; Moor *(North African Moslem)*
	morn *(morning)*; mourn *(to grieve)*
	morning *(start of day)*; mourning *(grieving)*
	moire *(optical illusion)*; moray *(eel)*
	moat *(ditch)*; mote *(tiny piece)*
	mode *(manner)*; mowed *(cut down)*
	moan *(groan)*; mown *(cut down)*
	mood *(emotional state)*; mooed *(lowed)*
	moose *(elk)*; mousse *(dessert; hair styling foam)*
	muse *(creative inspiration)*; mews *(stables)*
	mule *(offspring of horse and donkey)*; mewl *(to whimper)*
	we're *(we are)*; weir *(dam or fence for catching fish)*
	weave *(to make cloth)*; we've *(we have)*
	wheel *(round)*; weal *(welt; public benefit)*

	wield *(to hold)*; wheeled *(having wheels)*; weald *(rural area)*
	weak *(not strong)*; week *(7 days)*
	whither *(opposite of "whence")*; wither *(to shrivel up)*
	wit *(cleverness; sense of humor)*; whit *(very small part or amount)*
	wig *(hairpiece)*; whig *(member of an extinct British/American party)*
	ware *(merchandise)*; wear *(attire)*; where *(here or there)*
	weather *(state of the atmosphere)*; whether *(or not)*; wether *(castrated ram)*
	wet *(covered or soaked with liquid)*; whet *(sharpen blade; stimulate)*
	weld *(metal joint formed by melting)*; welled *(poured forth)*
	when *(interrogative adverb or conjunction)*; wen *(boil or swelling; runic letter)*
	wary *(careful)*; wherry *(light row boat)*
	way *(path)*; weigh *(to measure weight)*; whey *(watery fraction of milk left after forming curds)*
	wave *(sea; oscillation)*; waive *(to give up rights)*
	waiver *(contract for giving up rights)*; waver *(one who is waving)*
	wait *(delay)*; weight *(mass acted upon by gravity)*
	wade *(to walk through water)*; weighed *(past tense of "to weigh")*
	waist *(area between ribs and hips)*; waste *(trash; scrap; to use up carelessly)*
	whale *(large marine mammal)*; wail *(tearful or frightened cry)*; wale *(ridge; plank; band)*
	whales *(large marine mammals)*; wails *(tearful or frightened cries)*; wales *(ridges; planks; bands)*; Wales *(country in the west of Great Britain)*
	wain *(wagon)*; wane *(decrease)*; Wayne *(man's name)*
	WACs *(members of Women's Army Corps)*; wax *(substance produced by bees)*; whacks *(strikes, blows)*
	one *(1)*; won *(didn't lose)*
	one's *(of one)*; ones *(more than one)*
	why *(for what reason)*; wye *(forked support)*; Wye *(river running between Wales and England)*
	while *(during; to waste time)*; wile *(cunning)*
	wild *(untamed)*; whiled *(wasted time)*
	wine *(fermented grapes)*; whine *(annoying cry or noise)*
	wind *(turn)*; wined *(served wine)*; whined *(made unpleasant noise)*
	want *(desire; lack)*; wont *(accustomed)*

	war *(armed conflict)*; wore *(past tense of "to wear")*
	warrantee *(one who is protected by a guarantee)*; warranty *(guarantee)*
	warn *(to give warning)*; worn *(past tense of "to wear")*
	walk *(to move on legs; excursion)*; wok *(Chinese cooking pan)*
	walks *(3ps of "to walk'; excursions)*; woks *(Chinese cooking pans)*
	woe *(despair)*; whoa *(command to stop a horse)*
	were *(past tense plural of "to be")*; whir *(swishing or buzzing noise)*
	word *(a sequence of phonemes that has meaning)*; whirred *(made a whizzing or buzzing sound)*
	worst *(opposite of best)*; wurst *(sausage)*
	world *(the Earth)*; whirled *(paste tense of "to whirl")*
	feat *(accomplishment)*; feet *(more than one foot)*
	fill *(make full)*; Phil *(short for "Philip")*
	filter *(screen)*; philter *(love potion)*
	finish *(completion)*; Finnish *(of Finland)*
	fisher *(fisherman)*; fissure *(crack)*
	fair *(just; light)*; fare *(payment; food; travel)*
	fairy *(magical person)*; ferry *(passenger vessel)*
	faring *(traveling)*; fairing *(streamlining)*
	farrow *(litter of pigs)*; pharaoh *(Ancient Egyptian emperor)*
	fays *(fairies)*; faze *(stun)*; phase *(part of a sequence)*
	fain *(willing)*; feign *(pretend)*
	faint *(to pass out)*; feint *(misdirection)*
	faker *(deceiver)*; fakir *(Hindu ascetic)*
	fay *(fairy)*; fey *(strange)*; Faye *(woman's name)*
	file *(folder; hand tool)*; phial *(small glass bottle)*
	find *(locate)*; fined *(penalized)*
	fowl *(poultry)*; foul *(offensive)*
	for *(not against)*; fore *(in front)*; four *(4)*
	forward *(ahead)*; foreword *(introduction)*
	fort *(fortification)*; forte *(strong point)*

	forego *(precede)*; forgo *(abstain)*
	faux *(fake)*; foe *(enemy)*
	fir *(evergreen tree)*; fur *(animal hair)*; furr *(separate with wood strips)*
	flee *(escape)*; flea *(insect)*
	flair *(natural ability)*; flare *(widening; distress signal)*
	flex *(to bend)*; flecks *(specs)*
	flour *(milled grain)*; flower *(blossom)*
	flocks *(groups of birds)*; phlox *(scented plant)*
	flow *(movement of liquid)*; floe *(floating sheet of ice)*; Flo *(woman's name)*
	flu *(influenza)*; flue *(chimney)*; flew *(traveled by air)*
	freeze *(cold spell)*; frieze *(wall decoration)*; frees *(releases)*
	friar *(monk)*; fryer *(chicken)*
	few *(not many)*; phew *(expression of relief)*
	very *(extremely)*; vary *(to differ; to change)*
	vale *(valley)*; veil *(head scarf; shroud)*
	vane *(wind indicator)*; vain *(proud; worthless)*; vein *(blood vessel)*
	vice *(bad habit)*; vise *(bench-mounted)*
	vial *(small glass container)*; vile *(despicable)*; viol *(stringed musical instrument)*
	throw *(to cast)*; throe *(spasm of pain)*
	throws *(3ps of "to throw")*; throes *(spasms of pain)*
	throne *(royal seat)*; thrown *(past participle of "to throw")*
	through *(from end to end)*; threw *(past tense of "to throw")*
	their *(whose?)*; they're *(they are)*; there *(where?)*
	tea *(herbal infusion)*; tee *(golfball stand)*; ti *(musical note B)*
	team *(group of horses)*; teem *(to swarm)*
	teaming *(pairing)*; teeming *(swarming)*
	teas *(more than one tea)*; tees *(more than one golfball stand)*; tease *(make fun of)*
	tear *(shed when crying)*; tier *(horizontal row)*
	timber *(wood for building)*; timbre *(musical quality of sound)*
	tic *(twitch)*; tick *(click; parasitic insect)*

	tics *(twitches)*; ticks *(clicks; parasitic insects)*
	tear *(to rip)*; tare *(allowance for weight of packing materials)*
	tenor *(tendency; high-pitched male voice)*; tenner *(10-pound note)*
	taper *(thinner at one end; thin candle)*; tapir *(Malaysian mammal)*
	tail *(rearmost part of an animal)*; tale *(narrative)*
	tack *(small nail; direction of sail)*; tach *(tachometer)*
	tax *(government levy)*; tacks *(small nails; directions of sail)*
	tough *(difficult)*; tuff *(stratified)*
	ton *(200 lbs.)*; tonne *(1000 kg)*; tun *(a large cask)*
	tongue *(muscular organ of the mouth)*; tung *(Chinese tree and oil)*
	tie *(a draw; fastening; part of formal attire)*; Thai *(of Thailand)*
	tire *(to grow tired; rubber wheel cover)*; tier *(one who ties)*
	time *(goes from past to future)*; thyme *(herb)*
	tighten *(to make tight)*; titan *(a giant)*
	tide *(ebb and flow of ocean water)*; tied *(past tense of "to tie")*
	taut *(stretched tight)*; taught *(past tense of "to teach")*
	tall *(high)*; toll *(tax or charge)*; tole *(painted)*
	told *(past tense of "to tell")*; tolled *(past tense of "to toll")*
	tort *(wrongful act or infringement)*; torte *(sweet cake or tart)*
	toxin *(poison)*; tocsin *(alarm bell or signal)*
	toxins *(poisons)*; tocsins *(alarm bells or signals)*
	toe *(finger on foot)*; tow *(to pull along)*
	toed *(having toes)*; toad *(amphibian)*; towed *(pulled along)*
	to *(toward; infinitive)*; too *(also, excessively)*; two *(2)*
	turn *(to rotate; change of direction)*; tern *(a shorebird)*; terne *(alloy of lead and tin)*
	tray *(platter)*; trey *(having 3 of something)*
	tract *(a plot of land)*; tracked *(past tense of "to track")*
	trust *(faith)*; trussed *(tied up)*
	troupe *(company of actors)*; troop *(company of soldiers)*
	trooper *(private soldier; state police officer)*; trouper *(staunch colleague)*

ɪɔ⊤ɫ⅂ɥ	troopers *(private soldiers; state police officers)*; troupers *(members of a troupe)*
ɪ−⅂	dear *(beloved)*; deer *(animal)*
ɪ−ɥɣɔ=ɪ	discreet *(confidential)*; discrete *(individual)*
ɪɥɥ⅂ɪ	desert *(abandon)*; dessert *(sweets)*
ɪɿɥ	days *(more than one day)*; daze *(bewilder)*
ɪ⅂ɿ	dam *(waterworks)*; damn *(curse)*
ɪ⅂ɿɪ	dammed *(prevented from flowing)*; damned *(cursed)*
ɪ¬ı	done *(completed)*; dun *(grey-brown)*
ɪɟ	die *(to become dead)*; dye *(color)*
ɪɟ−ƽ	dyeing *(coloring)*; dying *(near death)*
ɪɟ⅂	dire *(desperate)*; dyer *(one who colors)*
ɪɟɪ	died *(became dead)*; dyed *(colored)*
ɪɟɥ	dies *(becomes dead)*; dyes *(colors)*
ɪɟı	dine *(sup)*; dyne *(unit of energy)*
ɪɔɣ	dock *(berth)*; doc *(medic)*
ɪ⊤	do *(note C)*; doe *(female deer)*; dough *(unbaked bread)*
ɪ⊤ɥ	does *(female deer)*; doughs *(more than one dough)*; doze *(to nap)*; dos *(more than one note C)*
ɪɔ⅂ɫɪ	draft *(version of manuscript; keg beer)*; draught *(of wind; of boat; portion of drink)*
ɪı⊤	due *(payable)*; dew *(morning condensation)*
ɪı⊤ɥ	dues *(payments)*; dews *(condensation)*
ɥ=	sea *(ocean)*; C *(letter C)*; see *(to look)*
ɥ=ɿ	seem *(to appear to be)*; seam *(row of stitches)*
ɥ=ɿɥı	seamen *(sailors)*; semen *(seminal fluid)*
ɥ=ɿɥ	seams *(rows of stitches)*; seems *(it appears to be)*
ɥ=ɪ	seed *(germ of a plant)*; cede *(to give)*
ɥ=ɪ−ƽ	seeding *(planting)*; ceding *(giving)*
ɥ=ɪ⅂	seeder *(one who plants seeds)*; cedar *(evergreen tree)*
ɥ=ɥ	seize *(to grab)*; seas *(oceans)*; sees *(3ps of "to see")*
ɥ=ɹ	seal *(fasten)*; seel *(close someone's eyes, archaic)*
ɥ=ɹ−ƽ	ceiling *(top of room)*; sealing *(gluing shut)*

ᓴ═ᐁ	scene *(visual location)*; seen *(observed)*
ᓴ═ᐊ	seek *(to look for)*; Sikh *(Hindu religious sect)*
ᓴ═ᐊᓴ	seeks *(looks for)*; Sikhs *(more than one Sikh)*
ᓴ─ᓕ	cere *(beak)*; sear *(scorch)*; seer *(prophet)*; sere *(natural succession)*
ᓴ─ᓐ═ᔆ	series *(sequence)*; Ceres *(Roman goddess of agriculture)*
ᓴ─ᓐ─ᔅ	cereal *(grain)*; serial *(in series)*
ᓴ─ᐊ	sick *(ill)*; sic *(to set upon; Latin for "thus")*
ᓴ─ᐊᓴ	six *(6)*; sics *(sets upon)*
ᓴ─ᐁᐃᐊᔨ	cygnet *(young swan)*; signet *(authenticating seal)*
ᓴ─ᐃᐊᔫ	sink *(to submerge; drain)*; synch *(to synchronize; synchronized)*
ᓴᐊᓐ	cell *(small room)*; sell *(to exchange for money)*
ᓴᐊᓐᓕ	seller *(one who sells)*; cellar *(space under a house)*
ᓴᐊᐁᔆ	scent *(smell)*; sent *(dispatched)*; cent *(1/100th of a dollar)*
ᓴᐊᐁᔆᓴ	scents *(smells)*; cents *(1/100ths of a dollar)*
ᓴᐊᐃᓐᓕ	sensor *(detector)*; censor *(one who impedes flow of information)*; censer *(incense dish)*
ᓴᐊᔅᔭᐁ	session *(group meeting)*; cession *(giving up)*
ᓴᐊᔪᓕ	saver *(one who saves)*; savor *(to relish a taste)*
ᓴᐊᓐ	sail *(sheet of canvas)*; sale *(opposite of purchase)*
ᓴᐊᐁ	sane *(mentally normal)*; seine *(fishing net)*
ᓴᐊᐁᓕ	saner *(more sane)*; seiner *(fisherman)*
ᓴ═ᐊᓴ	sacks *(bags)*; sax *(saxophone)*
ᓴ═ᔅᔭᓘ	sachet *(little bag)*; sashay *(strut)*
ᓴᓐᐣ	some *(a few)*; sum *(result of addition)*
ᓴᓐᐣᓕ−	summary *(description)*; summery *(summer-like)*
ᓴᓐᐁ	son *(male child)*; sun *(star)*
ᓴᓐᐁ−	sunny *(lit by the sun)*; sonny *(diminutive for male child)*
ᓴᓐᐁᐠᓘ	Sunday *(first day of the week)*; sundae *(ice creme with syrup)*
ᓴᓐᐊᓕ	succor *(relief)*; sucker *(chump; one who sucks)*
ᓴ─ᔪ	psi *(Greek letter)*; xi *(Greek letter)*; sigh *(sad or tired breath)*
ᓴ─ᔪᐣ	cite *(reference)*; sight *(vision)*; site *(location)*

	sited *(located)*; sighted *(seen; able to see)*; cited *(referred to)*
	sites *(locates)*; sights *(sees, views)*; cites *(refers to)*
	side *(left or right part)*; sighed *(breathed sorrowfully)*
	size *(magnitude)*; sighs *(breathes sorrowfully)*
	sign *(display; indication; symbol)*; sine *(trigonometric function)*
	sawed *(past tense of "to saw")*; sod *(turf)*
	soar *(to fly up)*; sore *(hurt; skin ulcer)*
	sword *(weapon)*; soared *(flew up)*
	sew *(to stitch together)*; sow *(to broadcast seeds)*; sol *(musical note G)*
	sole *(only)*; soul *(eternal)*
	sue *(to file a lawsuit)*; sou *(French coin of 5 centimes)*; sough *(soft sound)*; Sioux *(Native American tribe)*
	sewer *(sanitation)*; sower *(planter)*; suer *(one who sues)*
	surf *(breaking wave)*; serf *(slave peasant)*
	serge *(twilled fabric)*; surge *(forceful push)*
	spade *(shovel)*; spayed *(sterilized female animal)*
	spoor *(animal trail)*; spore *(single cell reproductive body)*
	suite *(ensemble; apartment)*; sweet *(sugary)*
	swayed *(past tense of "to sway")*; suede *(split leather)*
	steal *(to borrow without permission)*; steel *(iron alloy)*
	stair *(step on a stairway)*; stare *(to gaze)*
	step *(measure; unit of walk)*; steppe *(level; grassland)*
	staid *(reserved)*; stayed *(remained)*
	stationary *(not moving)*; stationery *(writing paper)*
	stake *(wooden pole; bet)*; steak *(cut of meat)*
	style *(mode)*; stile *(narrow passage)*
	story *(narrative)*; storey/story[US] *(floor)*
	stoop *(small porch; to bow down)*; stoup *(drinking cup)*
	straight *(not bent)*; strait *(narrow navigation channel)*
	sleigh *(sled)*; slay *(to kill)*
	sleight *(cunning skill)*; slight *(not large or strong)*

	sloe *(blackthorn berries)*; slow *(not fast)*
	slew *(past tense of "to slay")*; slough *(bog, sadness)*; slue *(to swing around)*
	skull *(head bone)*; scull *(to row)*
	scarf *(garment)*; scarph *(joint)*
	lea *(meadow)*; lee *(downwind)*; li *(0.5km in China)*
	least *(minimally)*; leased *(rented)*
	leas *(meadows)*; lees *(dregs)*
	lean *(not fat; to rest at an angle)*; lien *(claim on property)*
	leach *(wash out)*; leech *(sucking parasite)*
	limb *(arm)*; limn *(to illuminate)*
	limbs *(arms)*; limns *(illuminates)*
	literal *(direct meaning)*; littoral *(coastal)*
	links *(connections)*; lynx *(wild cat)*
	lead *(heavy grey metal)*; led *(did lead)*
	lay *(recline)*; lei *(flower necklace)*
	lays *(does lay)*; laze *(be lazy)*; leis *(flower necklaces)*
	lane *(narrow street)*; lain *(was laying)*
	lam *(escape)*; lamb *(baby sheep)*
	lax *(undisciplined)*; lacks *(is missing)*
	lumber *(milled wood)*; lumbar *(lower back)*
	lama *(Buddhist preacher)*; llama *(pack animal)*
	lie *(untruth)*; lye *(caustic substance)*
	liar *(one who lies)*; lyre *(harp)*
	lightning *(flash in the sky)*; lightening *(making lighter)*
	liken *(compare)*; lichen *(fungus)*
	lot *(quantity; plot of land)*; Lot *(Biblical character)*
	lots *(quantities; plots of land)*; Lot's *(Biblical character's)*
	lock *(security device; boat elevator; strand of hair)*; loch *(lake)*
	locks *(security devices; boat elevators; strands of hair)*; lochs *(lakes)*; lox *(smoked salmon)*
	lo *(interjection)*; low *(not high)*

⠇⠕⠁⠙	load *(cargo)*; lode *(mineral vein)*; lowed *(mooed)*
⠇⠕⠁⠝	loan *(borrowing)*; lone *(by itself)*
⠇⠕	lieu *(instead)*; loo *(British toilet)*; Lou *(man's name)*
⠇⠕⠏	loop *(circular pattern)*; loupe *(magnifying glass)*
⠇⠕⠞	loot *(booty)*; lute *(stringed instrument)*
⠇⠕⠎	lose *(fail to win)*; loos *(British toilets)*
⠇⠕⠝	loon *(water fowl)*; lune *(crescent shape)*
⠝⠒⠏	neap *(lowest tide)*; neep *(turnip)*
⠝⠒⠙	need *(require)*; knead *(work dough)*
⠝⠔⠞	nit *(louse egg)*; knit *(make garments out of yarn)*
⠝⠔⠞⠝	nits *(louse eggs)*; knits *(does knitting)*
⠝⠔⠅⠻⠎	knickers *(women's underwear)*; nickers *(those who nick)*
⠝⠁	nay *(no)*; neigh *(horse's cry)*
⠝⠒⠏	nap *(short sleep)*; knap *(crest of a hill; break with a hammer)*
⠝⠔⠝	none *(not any)*; nun *(female monk)*
⠝⠪⠞	night *(darkness)*; knight *(honorary title)*
⠝⠪⠝	nice *(pleasant)*; gneiss *(coarse-grained rock)*
⠝⠕⠃	nob *(rich person)*; knob *(handle)*
⠝⠕⠞	knot *(fastening)*; naught *(nothing)*; nought *(zero)*
⠝⠕⠙	nod *(head tilt)*; gnawed *(chewed)*
⠝⠕⠅	knock *(to rap)*; nock *(notch in an arrow)*
⠝⠕⠎	nose *(part of face)*; knows *(is informed)*; noes *(votes against)*
⠝⠥	new *(not old)*; knew *(were informed)*
⠚⠒⠏	cheap *(inexpensive)*; cheep *(peep)*
⠚⠔⠚	chilly *(cool)*; Chile *(South American country)*; chili *(dried red pepper)*
⠚⠓⠅	check *(tick; receipt; examine)*; Czech *(Bohemian)*
⠚⠓⠎⠞	chased *(pursued)*; chaste *(celibate)*
⠚⠗⠛⠙	chard *(spinach-like vegetable)*; charred *(burnt)*
⠚⠕⠅	chalk *(soft white rock)*; chock *(wedge)*
⠚⠒⠝⠎	jeans *(pants)*; genes *(chromosomes)*

	gym *(gymnasium)*; Jim *(short for "James")*
	jam *(squeeze)*; jamb *(side post of doorway)*
	joule *(unit of energy)*; jewel *(precious stone)*
	sheer *(thin; abrupt turn)*; shear *(to cut)*
	sheers *(turns abruptly)*; shears *(cuts)*
	shake *(vibrate)*; sheik *(Arab prince)*
	shoe *(footwear)*; shoo *(to send away)*
	shoes *(footwear)*; shoos *(sends away)*
	shoot *(fire a weapon)*; chute *(inclined trough; parachute)*
	reading *(gerund of "to read")*; reeding *(an architectural ornament)*
	reads *(3ps of "to read")*; reeds *(more than one blade of marsh grass)*
	reek *(smell bad)*; wreak *(inflict)*
	rigor *(discipline; symptoms of high fever)*; rigger *(one who rigs)*
	ring *(circle)*; wring *(twist)*
	read *(past tense of "to read")*; red *(color)*
	read *(to read)*; rede *(advice)*; reed *(tall marsh grass)*
	retch *(vomit)*; wretch *(miserable person)*
	reck *(to pay heed)*; wreck *(ruin; to destroy)*
	review *(survey)*; revue *(theatrical sketches)*
	recede *(to move backward)*; reseed *(to plant again)*
	ray *(shaft of light)*; re *(musical note D)*
	raise *(increase)*; rays *(more than one ray)*; raze *(to demolish completely)*
	rain *(liquid precipitation)*; reign *(period of rule)*; rein *(part of horse's harness)*
	rap *(knock; blame)*; wrap *(covering)*
	rapped *(knocked)*; rapt *(spellbound)*; wrapped *(covered)*
	rack *(shelf; torture device)*; wrack *(seaweed; shipwreck)*
	racket *(illegal scheme)*; racquet *(sports equipment)*
	rum *(liquor made from sugar cane)*; rhumb *(compass course)*
	rough *(coarse)*; ruff *(pleated collar)*
	wry *(mocking; twisted)*; rye *(grain)*

	rhyme *(verse; correpond)*; rime *(frost)*
	right *(opposite of left)*; write *(opposite of "to read")*; wright *(maker)*; rite *(ritual)*
	rise *(stand up; elevation)*; ryes *(grains)*
	route *(path of travel [US])*; rout *(force out; disorderly retreat)*
	rot *(decay)*; wrought *(made)*
	row *(straight line; to pull an oar)*; rho *(Greek letter)*; roe *(fish eggs)*
	roam *(to wander)*; Rome *(capital of Italy)*
	rote *(by memory)*; wrote *(past tense of "to write")*
	road *(trail)*; rode *(travelled; anchor chain or rope)*; rowed *(propelled by oars)*
	rose *(thorny flowering bush)*; rows *(lines)*
	role *(part)*; roll *(rotate; bun; list)*
	rue *(regret)*; roux *(sauce)*
	room *(compartment)*; rheum *(mucous)*
	roomy *(spacious)*; rheumy *(having mucous)*; roomie *(roommate (colloquial))*
	rumor *(gossip)*; roomer *(tenant)*
	root *(underground part of a plant)*; route *(path of travel)*
	rude *(impolite)*; rood *(cross)*; rued *(regretted)*
	leak *(escape of liquid)*; leek *(variety of onion)*
	yack *(make smalltalk)*; yak *(Tibetan ox)*
	y'all *(you all)*; yawl *(sailboat with mizzen mast stepped abaft the rudder post)*
	your *(belonging to you)*; yore *(the past)*
	yoke *(part of a harness)*; yolk *(nucleus of an egg)*
	yokes *(parts of harnesses)*; yolks *(egg nuclei)*
	ewe *(sheep)*; yew *(tree)*; you *(pronoun)*
	use *(to apply)*; ewes *(sheep)*; yews *(trees)*
	you'll *(you will)*; yule *(Christmas)*
	eunuchs *(castrated men)*; UNIX *(operating system)*
	key *(opens locks)*; cay *(island)*; quay *(wharf)*
	cast *(to throw; to pour metal)*; caste *(social class)*
	caster *(thrower; small wheel (US))*; castor *(oil; small wheel (UK))*

calendar *(chart of days)*; calender *(paper press)*	
can *(metal container)*; Cannes *(city in France)*	
canon *(body of law)*; cannon *(gun)*	
canvas *(fabric)*; canvass *(solicit; discuss)*	
can't *(unable)*; cant *(bevel; jargon)*	
canter *(gallop)*; cantor *(singer)*	
cash *(money)*; cache *(stash)*	
cashed *(converted to money)*; cached *(stashed)*	
carat *(200mg of precious stones)*; karat *(1/24 of otherwise pure gold)*	
copped *(arrested)*; copt *(Egyptian to a Roman)*	
copse *(stand of trees)*; cops *(police officers)*	
coffer *(strongbox)*; cougher *(one who coughs)*	
codling *(unripe apple)*; coddling *(spoiling)*	
cause *(reason)*; caws *(cries of crows)*	
call *(to summon)*; caul *(amnionic membrane)*; col *(mountain pass)*	
choler *(yellow bile)*; collar *(worn around neck)*; caller *(visitor)*	
core *(inner part)*; corps *(body)*	
choral *(sung by a chorus)*; coral *(marine polyps)*	
cord *(rope)*; chord *(group of notes)*; cored *(without seeds)*	
course *(path)*; coarse *(rough)*	
coin *(money)*; quoin *(cornerstone)*	
cocks *(roosters)*; cox *(steersman)*; Cox *(apple)*	
conk *(blow to the head)*; conch *(marine mollusk)*	
crater *(impact hole; top of volcano)*; krater *(ancient Greek jar)*	
crude *(coarse)*; crewed *(manned)*	
chorale *(choir)*; corral *(horse pen)*	
coat *(outer garment; finish)*; cote *(small animal shed)*	
coal *(fossil fuel)*; cole *(plant of crucifer family)*	
cold *(low temperature)*; coaled *(fueled)*	
coax *(persuade)*; cokes *(sugary beverages)*	

	coup *(blow)*; coo *(murmur)*
	cursor *(indicator)*; curser *(offender)*
	colonel *(military officer)*; kernel *(seed)*
	choir *(singers)*; quire *(1/20 of a ream of paper)*
	click *(tick)*; clique *(exclusive group)*
	clack *(chatter)*; claque *(group of sycophants)*
	climb *(ascend)*; clime *(climate)*
	clause *(section of contract)*; claws *(nails)*; Klaus *(Santa)*
	clue *(hint)*; clew *(corner of sail)*
	creak *(squeak)*; creek *(stream)*
	craft *(manual occupation)*; kraft *(strong paper)*
	croc *(crocodile)*; crock *(pot)*
	cruise *(sea voyage)*; crews *(more than one crew)*
	cue *(signal)*; queue *(waiting line)*; Kew *(Gardens)*
	quartz *(crystalline rock)*; quarts *(more than one quart)*
	guilt *(culpability)*; gilt *(gold-plated)*
	gilled *(having gills)*; gild *(cover with gold)*; guild *(society of craftsmen)*
	gait *(manner of walking or running)*; gate *(fence door)*
	gays *(non-heterosexuals)*; gaze *(stare)*
	gaff *(spear; spar)*; gaffe *(mistake)*
	guise *(appearance)*; guys *(fellows)*
	gourd *(hollow hard-shelled fruit)*; gored *(injured with horns or tusks)*
	gorilla *(large ape)*; guerrilla *(unofficial military group)*
	grieve *(to mourn)*; greave *(leg armor)*
	grieves *(mourns)*; greaves *(leg armors)*
	grease *(lubricant; cooking fat)*; Greece *(Mediterranean country)*
	grill *(barbecue)*; grille *(latticework)*
	great *(very good or large)*; grate *(latticed covering)*
	grade *(slope)*; grayed *(turned gray)*
	grays *(tones of gray)*; graze *(eat grass)*

graft	graft *(transplant)*; graphed *(plotted)*
grown	grown *(become bigger)*; groan *(complaining)*
heal	heal *(cure)*; heel *(hind part of foot)*; he'll *(he will)*
hear	hear *(listen)*; here *(not there)*
hair	hair *(fiber)*; hare *(rabbit)*
hairy	hairy *(hirsute)*; Harry *(man's name)*; harry *(harass)*
heroin	heroin *(opiate drug)*; heroine *(female hero)*
hay	hay *(dried grass)*; hey *(exclamation)*
haze	haze *(poor visibility)*; hays *(dried grasses)*
hail	hail *(ice)*; hale *(healthy)*
have	have *(possess)*; halve *(break in two)*
haves	haves *(the rich)*; halves *(more than a single half)*
hangar	hangar *(garage for airplanes)*; hanger *(hook)*
heart	heart *(blood pump)*; hart *(stag)*
hi	hi *(greeting)*; high *(tall)*
hire	hire *(employ)*; higher *(opposite of lower)*
hide	hide *(animal skin)*; hied *(hurried)*
hoar	hoar *(white frost)*; whore *(prostitute)*
hoard	hoard *(store or stock of value)*; horde *(crowd)*; whored *(prostituted)*
horse	horse *(animal)*; hoarse *(rough voice)*
ho	ho *(exclamation of surprise)*; hoe *(farming tool)*
hoes	hoes *(farming tools)*; hose *(flexible pipe)*
hole	hole *(perforation; pit)*; whole *(entire)*
holy	holy *(sacred)*; holey *(perforated)*; wholly *(entirely)*
hold	hold *(to grip)*; holed *(having a hole)*
herd	herd *(group of animals)*; heard *(listened)*
hue	hue *(tint)*; hew *(chop)*; Hugh *(man's name)*
humorous	humorous *(funny)*; humerus *(funny bone)*

Appendix II: Table of Homographs

The following table contains another list of common English annoyances: *homographic heterophones (different-sounding words that are spelled the same)*.

abstract	[illegible]
abuse	[illegible]
address	[illegible]
advocate	[illegible]
affect	[illegible]
ally	[illegible]
appropriate	[illegible]
articulate	[illegible]
associate	[illegible]
attribute	[illegible]
bass	[illegible]
bow	[illegible]
can	[illegible]
close	[illegible]
combine	[illegible]
complex	[illegible]
compound	[illegible]
concrete	[illegible]
conduct	[illegible]
construct	[illegible]
consult	[illegible]

Appendix III: Vowel/consonant ambiguities

The following table contains all the words which would be unspelled the same way, and therefore potentially confused, if the height/width distinctions between vowels and consonants were to be ignored *(as shown in the left column)*.

Ambiguous Rendering	Possible Meanings
	art, pot
	huh, aim
	spot, sort
	straw, store
	haute, chew
	yet, net
	year, near
	nor, yore
	yew, gnu
	yews, gnus
	raw, ore
	roux, aught
	rye, of, off
	oft, rite
	bored, broad
	thought, threw
	draw, door
	taught, true
	coarse, cross
	out, coo

Appendix IV: Ambiguities Induced by Vowel Reduction

These are the words that can be confused in rapid or sloppy speech in which all unstressed vowels are reduced to a *schwa*. Of these, only the bolded ones regularly cause trouble; these can be considered as problems with the English language itself—something that UNSPELL cannot address.

carrel	carol
wicker	Wicca
awful	offal
barren	baron
edition	addition
effect	**affect**
accept	**except**
enable	unable
complement	**compliment**
complacence	complaisance
complacent	complaisant
Mrs.	misses
profit	prophet
resonate	resinate
rabbet	rabbit
census	senses
status	statice