How Many Vowel Sounds Are There in English?

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The number of vowels in English is uncertain, not just because there are different varieties of English, but also because linguists differ in their analysis of a single variety such as Standard Southern British English. In particular, this affects triphthongs such as /aɪə/ and /aʊə/, and also the possibility that /juː/ is a vowel. This paper discusses why the various analyses differ and also considers how we might decide how many vowels there are in British English.

Introduction

How many vowel sounds do you think there are in English? First the easy bit: the answer is NOT five. While it is indeed true that there are five vowel letters in English, there are rather more than five vowel sounds. The problem is that the Roman alphabet only has five vowel letters, which is not enough to represent all the vowel sounds of English, so all of the letters double up to represent more than one sound. For example, consider the letter 'a', which is pronounced quite differently in the following words: *man, made, many, vary, father, fall, was*. Although not everyone produces seven different vowel sounds for the 'a' in these words, all speakers of English differentiate at least some of them.

So, to go back to the original question: how many vowel sounds are there in English? Unfortunately, the answer is not straightforward. (Is anything ever straight-forward in the study of language?) There are two complicating factors:

- different varieties of English
- different phonological analyses

Here we will consider the first issue by comparing British and American English, and then we will look at the second issue by discussing why two expert phoneticians, Peter Roach and Peter Ladefoged, list a different set of vowels even when they are describing exactly the same variety of English.

British English vs American English

Of course, there is huge variation in the pronunciation of English in Britain, but here we will just consider the British accent that is most familiar throughout the rest of the world, the one that is most often adopted as a model. It is variously referred to as RP (Cruttenden, 2001; Wells, 1982), BBC English (Roach, 2000; Ladefoged, 2001:70), and Standard Southern British (IPA, 1999:4; Deterding, 1997; Deterding & Poedjosoedarmo, 1998).

There is also substantial variation in American English, but it is possible to identify an accent termed General American (GA) that is non-regional and is commonly used by broadcasters (IPA, 1999:4). This is similar to the variety described as Midwestern American English by Ladefoged (2001:70).

None of these terms is without problems, so we will follow the practice of Ladefoged (2001:70) and refer to the two varieties simply as British English and American English while acknowledging that this is not very precise.

American English has fewer vowels than British English, for two basic reasons:

- /ɒ/, the vowel in words such as *hot* in British English, does not exist for most speakers of American English. Most people in America pronounce *hot* as /hɑːt/.
- /r/ can come at the end of a syllable in American English, but it can only occur before a vowel in British English. In consequence, the three centring diphthongs of British English /ɪə, eə, ʊə/ do not occur in American English, where *here, hair* and *tour* are /hɪr, her, tʊr/.

American English, then, has (at least) four fewer vowels than British English.

British English: Roach

You might think that expert phoneticians describing the same variety of English would list the same vowels. Surprisingly, however, this is not the case. First we will consider the vowels listed by Peter Roach and discuss a few issues that arise before we go on to look at those listed by Peter Ladefoged.

Roach (2000) lists a total of 20 basic vowels of British English: 12 monophthongs (Table 1), 5 closing diphthongs (Table 2), and 3 centring diphthongs (Table 3).

Table 1	The monophthongs of British English (Roach 2000:ix)

Vowel	Example Word
ɪ	pit
e	pet
æ	pat
ʌ	putt
ɒ	pot
ʊ	put
iː	key
ɑː	car
ɔː	core
uː	coo
ɜː	cur
ə	<u>a</u>bout

Table 2	The closing diphthongs of British English (Roach 2000:ix)

Vowel	Example Word
eɪ	bay
aɪ	buy
ɔɪ	boy
əʊ	go
aʊ	cow

Table 3	The centring diphthongs of British English (Roach 2000:ix)

Vowel	Example Word
ɪə	peer
eə	pear
ʊə	poor

This set of 20 distinct vowels in British English is fairly standard, and the same symbols are used in both the most widely-used pronouncing dictionaries (Jones, et al., 2003; Wells, 2000). However, there are a few issues that might be considered:

● /eə/ is basically a long monophthong for many, if not most, speakers nowadays (Cruttenden, 2001:144). As it is still distinct from all the other vowels, this only affects the choice of symbol to use, so maybe it is not too much of a problem.

● /ʊə/ is marginal for most speakers, as they have /ɔː/ in words such as *poor*. For these speakers, *poor* and *paw* are both pronounced as /pɔː/; and *sure* and *shore* are both pronounced as /ʃɔː/. Jones, et al. (2003:420) lists /pɔː/ as the preferred pronunciation for *poor*, and Wells (2000:593) gives a graph to show how /pɔː/ is becoming increasingly popular with the younger generation, being preferred by 82% of those born since 1973. But, /ʊə/ is generally listed as one of the vowels, as it continues to exist in a few words, particularly those with a /j/ such as *pure* and *cure*. However, it is at best marginal.

● triphthongs such as /aɪə/ and /aʊə/, the vowels in words such as *hire* and *hour*, might be considered as single vowels. However, it is not clear if they should be treated as single vowels or a sequence of two vowels, a diphthong followed by /ə/.

The third issue is the most complex. It rests on a judgement about how many syllables there are in *hire* and *hour*. If the answer is one, then triphthongs must exist as single vowels, as each syllable can only have one vowel. But if *hire* and *hour* are judged to be bisyllabic, then we can say the first syllable has a diphthong and the second syllable has /ə/, and in this case there is no need to include triphthongs as single vowels. To make things worse, many people consider *hire* to be monosyllabic but *higher* to be bisyllabic, even though they are pronounced in exactly the same way.

Roach (2000:24) lists five potential triphthongs, the vowels in *liar*, *hour*, *layer*, *loyal* and *lower*, but he leaves it open whether they should be regarded as separate vowels or not.

■ British English: Ladefoged

Ladefoged (2001:29) also lists 20 vowels in British English. However, the set is slightly different from that of Roach:

● /ə/ is omitted. This is because it is not used in stressed words, so is generally not contrastive with the other vowels.

● /ʊə/ is omitted. As noted above, this vowel is now marginal for most speakers. While Ladefoged (2001:31) notes that some speakers use it, he clearly believes it is no longer a vowel for most speakers.

● /aə/, the vowel in *fire* and *hire*, is included. Ladefoged (2001:31) states that, for some speakers, these words are bisyllabic, but he believes that for most, they are single syllables.

● /juː/ is listed, under the heading "Note also the following", so its status as a vowel in English is uncertain.

Let us consider the third and fourth of these issues, the vowels /aə/ and /juː/ in a little more depth.

The vowel in *fire* and *hire* is more usually shown as /aɪə/, but it is well established that in rapid speech this vowel undergoes a process known as smoothing which results in the omission of the medial [ɪ] (Cruttenden 2001:139). Ladefoged believes smoothing is so common that it is best to represent the vowel as /aə/. However, it is not clear if /aə/ should also be used for words like *hour* and *power* that are traditionally shown with /aʊə/, where smoothing would remove the medial [ʊ].

The rationale for the inclusion of /juː/ involves a detailed consideration of syllable structure (McMahon, 2000:120). The occurrence of most vowels is not influenced by the preceding consonant, so for example any vowel can occur after /tr/ or after /pl/. We usually say, therefore, that the initial consonants belong in the onset of the syllable, while the vowel belongs in the rhyme, and there are no co-occurrence restrictions

between the onset and the rhyme. However, if a syllable starts with any consonant followed by /j/, then the only vowels that can occur are /ʊə/ (for some speakers) and /uː/, so for example /kjuːt/ is a good word of English but */kjɑːt/ is not. This unexpected restriction between the /j/ and the following vowel suggests that /j/ belongs not in the onset, but in the rhyme, and we should then regard /juː/ as a vowel of English.

Furthermore, we might note that /h/ can never be followed by another consonant, so */hræt/ and */hlɪp/ are not possible syllables in English. But note that *hue* /hjuː/ and *huge* /hjuːdʒ/ are perfectly good words of English. If /h/ cannot be followed by a consonant but /hjuː/ is a good word of English, this again suggests that /j/ should be part of the vowel and not part of the onset.

However, note that all the other diphthongs in English are falling diphthongs, with the first part being the main part of the vowel. So, for example, with /aɪ/, it is the [a] that is the main part, and the final [ɪ] is called an offglide. But if /juː/ is regarded as a vowel of English, it is a rising diphthong, with the second part of the vowel being the main part and the initial [j] being an onglide. In consequence, it is the only rising diphthong in English, and the need to introduce this category to deal with just one vowel makes this analysis rather unattractive (Deterding & Poedjosoedarmo 1998:28). As usual, there is no simple answer.

■ Conclusion

It is not easy to determine exactly how many vowels there are in English. American speakers have about sixteen vowels (though some have fewer), and British speakers may have about twenty vowels, though there may be more depending on the analysis adopted.

In fact, there are further issues that could be considered. For example, one way of representing American English suggests that there are no diphthongs at all, for just as /w/ can occur at the start of a syllable, one could say that a word such as *cow* ends with /w/, so we might transcribe it as /kaw/ rather than /kaʊ/. Similarly we might allow /j/ at the end of a syllable and transcribe *buy* as /baj/ rather than /baɪ/. If we allow /w/ and /j/ at the end of syllables, there is no need for diphthongs (Ladefoged 1999:42) (though this cannot easily be extended to deal with the centring diphthongs of British English).

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