

The Pronsci English Rectangle charts

How to point words and phrases on the British and American English charts

Part 1: The rectangles used as a conventional phonemic chart

This document is best read with a separate key to the charts to hand. Keys are downloadable, free of charge, from the PronSci website.

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0 Introduction

The PronSci Rectangle charts can be used in two ways:

1. as conventional phonemic charts (simple inventories of the sounds of British and American English), or
2. as charts which allow the teacher to work more precisely on the stress and reduction systems of English, using the charts' advanced features.

In this **first** document, we describe how to use either of the PronSci English Rectangle charts as a conventional phonemic chart to point words and phrases, mainly illustrating this with examples that use the British English chart. Similar principles apply to pointing on the Spelling chart (also known as a Fidel).

We also discuss how to point words like *library* which can be pronounced with varying numbers of syllables.

We give further explanations and examples that show the minor differences in pointing that the American English chart requires.

In a **second** document, we describe how to use the advanced features of the charts.

In a **third** document, *Why to use a chart and a pointer for teaching pronunciation*, we discuss why these tools are so effective.

In a **fourth**, *How to use a chart and a pointer for teaching pronunciation*, we discuss techniques for pointing, how to introduce a chart, getting students to point, and so on.

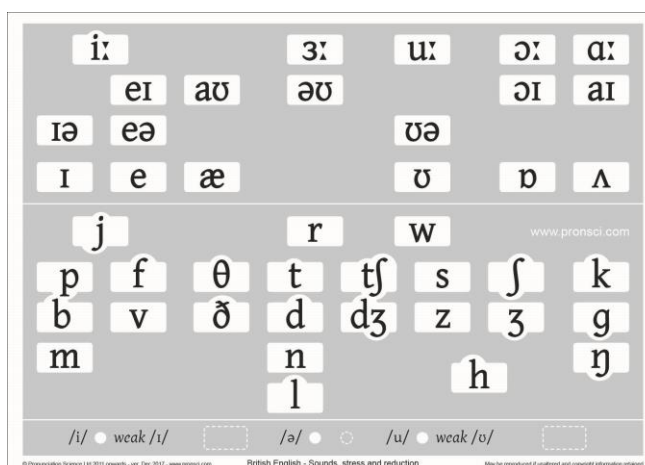
In a **fifth**, *Other aspects of using a chart and a pointer for teaching pronunciation*, we give further advice on technique, on pointing longer sequences, on more reasons for introducing sounds gradually and on pointing on other types of charts.

These are useful reading before using a Rectangle chart.

We use slanted brackets, e.g. /p/, for phonemic transcription, square brackets, [p^h], for phonetic transcription, and angle brackets, <gh>, for spelling (as in the /p/ of *hiccough*.)

1 Using a Rectangle chart as a simple phonemic chart

On the colour versions of the British and American English Rectangle charts, each separate sound is given its own colour. The charts are organised into three parts: vowels at the top; consonants in the middle; the schwa family of reduced (weak, low energy) sounds at the bottom.



British English Rectangle chart: colour and IPA versions. The layout, common to both, presents the inventory of sounds. This is organised within the categories listed upper left which describe both charts. When used as a simple phonemic chart—as an inventory of sounds—the dashed rectangles and dashed circle in the bottom section should be ignored.

The reasons for the particular arrangements of the vowels and consonants are explained in full in a separate document, *Phonetic guide to the English Rectangle charts*, and are noted in a document called *PronSci Rectangle charts: layout diagrams* which contains the black and white versions of the chart in a freely reproducible form. Both of these documents can be downloaded from the [PronSci website](http://www.pronsci.com). There is also a [playlist](#) of videos on the PronSci YouTube channel, called *The PronSci English charts*.

Briefly, however, note that both vowels and consonants are organised by the movements needed to produce them. The vowels are presented as either high or low energy, at the top and bottom of the chart respectively. This clearly differentiates the 'normal' vowels from schwa and the other reduced vowels. The consonants, in the middle section, are arranged by place and manner of production as conventionally done. But their grouping also reflects the distinctive articulatory setting of English.

The reduced sounds – schwa, schwi and schwu

To understand how to point words and phrases on the charts, the reduced sounds require more explanation. The pale yellow dot on the coloured versions of the charts represents schwa, /ə/.

The light pink dot on the left of the lower section of the chart, 'schwi', represents any unstressed [i]-type sound: unstressed /ɪ/, weak /ɪ/ or the so-called happy vowel. (For example in the first syllable of *believe* and the second syllable of the words *rabbit* and *happy*.)

Both ordinary and specialist pronunciation dictionaries leave the exact status of some of these sounds ambiguous. In the classroom, good results are obtained by ignoring the fine distinctions that phoneticians can draw between them, by treating them as one entity, schwi, and by pointing them all using the light pink dot. There are some differences in the sounds involved, but students will naturally get the sound right if, rather than listening to what it sounds like, they make sure it is unstressed. If the sounds they make are low energy and are produced towards the front of the mouth, then the mechanics of articulation will create a suitable sound in all cases.

The pale green dot on the right is a 'schwu', representing any unstressed [u]-type sound: unstressed /u/ or weak /ʊ/, for example in the second syllables of *thank you* or *influence*.

The choice of a dot rather than a rectangle to represent these sounds reflects the fact that the sound being pointed is different from a full vowel: shorter and produced with less energy.

In the examples of pointing shown in this document, we first use British English to illustrate the principles involved, and then add examples that are particular to American English, including the use of a fourth reduced sound, schwr.

Style of English illustrated

We show how to point words and phrases spoken in 'careful English'. We would describe this as the English used by a native speaker (NS) addressing non-native speaker (NNS) peers, politely, in a professional context. Once this style of pronunciation is in place, teachers may want to enlarge students' experience by giving them the chance to speak any given sentence faster or in a more colloquial style. In this case, more use of reduced sounds and possible changes in the pattern of stress will mean that the pointing of some words and phrases may change.

Grouping sounds – an important aspect of pointing

There is no agreed way to syllabify English, for either academic or pedagogical purposes. There are pros, but also cons, to all the approaches taken. Two of the three main pronunciation dictionaries of English (Longman and Cambridge) syllabify words differently, and the third (Oxford) has chosen not to indicate syllables at all.

In the examples below, we have not shown syllable divisions. This is not because syllabification is unimportant. Quite the opposite. It is a key skill, particularly for teaching and learning English which has a wider variety of possible syllable types than many other languages. For example, English can have closed syllables (i.e. syllables ending with a consonant rather than a vowel), syllables like *stretched* /stretʃt/ which start and/or finish with complex clusters of consonants, and even syllables with reduced vowels or no true vowel at all, as we discuss in section 3 below. Students will need to learn to produce all of these syllable types, and many students will have to expand their concept of what a syllable can be so as to encompass them.

The decision on how to group sounds should be made by the teacher on the basis of the particular students she is teaching and the difficulties they are having at a particular moment. Thus the teacher may first present a word using her preferred syllabification, but then need to override this in order to work on the articulation of a particular string of sounds within the word.

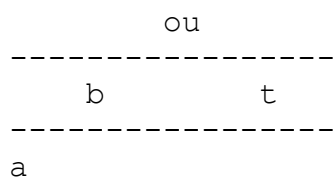
For example, she may present *dolphin* as /dɒl fɪn/ but discover that her Japanese students are saying /dɒ lu fɪn/. To help them with the transition from the /l/ to the /f/ she may create a grouping, /dɒlf ɪn/, that does not respect the syllable boundaries she originally chose.

As another example, she may present *heater* as /hi:tə/, and discover that her students are not differentiating between /ɪ/ and /i:/, so that it sounds like *hitter*. At this point, *heater* can be presented as /hi: tə/ and contrasted with *hitter* pointed as /hɪt ə/. (In English, lax vowels like /ɪ/ are always immediately followed by a consonant, and one's pointing should reflect this.)

Although we have not indicated syllables, we do not mean to suggest that pointing should be metronomic. When you are presenting words, especially long ones, your pointing can and will indicate groupings of sounds. That said, this does not mean that you point the first syllable and then wait for the students to say it before going on to the next. Instead, you will be dividing the word into groups in your own mind as you point, and this will be reflected in your pointing. (The intervals between pointing sounds within syllables and pointing between syllables will be slightly different.) This will be enough to indicate the grouping you have chosen.

Examples of pointing words and phrases

about



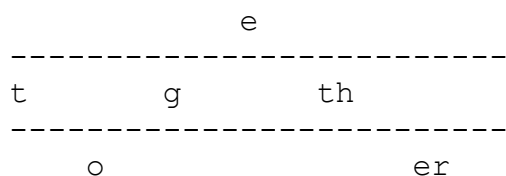
The first sound of the word *about* is pointed as a schwa, using the pale yellow dot at the bottom of the chart.

The second sound, /b/, is pointed in the consonants, using the dark green rectangle in the coloured versions of the charts.

The diphthong written <ou> carries the stress and is therefore pointed in the top section of the chart using the buff-and-pale-green rectangle representing /aʊ/.

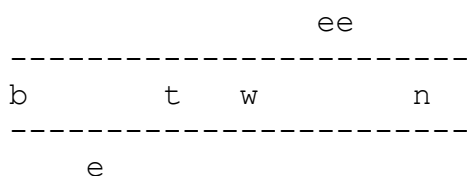
The /t/ is pointed in the consonants, by touching the fuchsia rectangle.

together



The word *together* is stressed on the second syllable, so /e/ is pointed in the upper section of the chart. The two unstressed syllables are pointed at the bottom of the chart using the pale yellow schwa dot.

between



The first syllable, written <be>, is found in many common words: *before*, *behind*, *begin*, *began*, *begun*, etc. It is followed by the element which gives each word its specific meaning and which

therefore takes the stress.

The correct way of pointing these words is to use schwi in the first syllable.

However, with those students who are still struggling with vowel reduction, we know from experience that we get better results when the first syllable is pointed as a pale yellow schwa. This is because the sound of all the members of the schwa family when they appear between consonants is reduced and somewhat indistinct. If our students try to make the difference between schwi and schwa in words like *between*, and start stressing the syllable in order to hear it better, then they will lose the more essential quality of the sound, which is its reduction. With these students, we find it better, at least to begin with, to keep schwi and schwu for places where one has no choice but to use them—at the end of words like *happy*, before other reduced sounds (*heavier*), in suffixes like *~ing*, etc—and to point all other reduced sounds as schwa.

heavier

```
      ea
-----
h      v
-----
           i  er
```

Words like *heavy* preserve their final syllable when made comparative, although the spelling changes to <heavier>. The stress in this word falls on the first syllable. The second syllable is pointed schwi in both forms of the word, and the final syllable of the comparative is pointed with pale yellow schwa.

tier

```
      ier
-----
t
-----
```

Contrast *heavier* with the word *tier*, of which the final three letters are the same but which ends in a diphthong; *tier* has just one syllable and therefore its vowel is pointed at the top of the chart.

influence

i

n f l n ce

u e

The word *influence* is stressed on the first syllable. The second and third syllables are both reduced. The letter <u> is pointed as a schwu and the letter <e> is pointed as a pale yellow schwa.

accordingly

or

cc d ng l

a i y

The word *accordingly* is stressed on the second syllable. The first syllable is pointed as a pale yellow dot. The vowels in the third and fourth syllables are pointed as the pale pink dot, schwi.

to Italy

I

t t l

o a y

There are four syllables in the phrase *to Italy*.

The first syllable is reduced, so its vowel is pointed in the schwa family section of the chart. The pale green dot, schwu, is used because the word *to* is pronounced /tu/ before any word which starts with a vowel. (In some varieties of American English, *to* is pronounced /tə/ whatever the following sound, so the reduced vowel would be pointed as a schwa.)

The stress falls on the first syllable of the word *Italy* and this vowel is therefore pointed in the upper section of the chart.

The third syllable is unstressed so it is pointed in the schwa section of the chart. The last syllable is pointed using the pale pink dot. Schwi is used for the so-called 'happy' vowel.

There are a lot

Th re re l t

 e a a

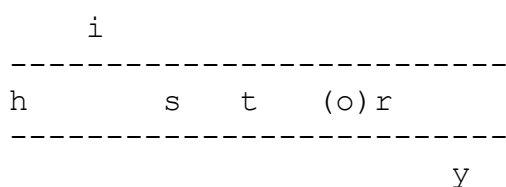
In British English, a normally silent written final <r> reappears as a sound when it precedes a vowel, creating a liaison. In isolation, the first three words would be /ðə/, /ə/ and /ə/, but together, the string becomes /ðə rə rə/.

2 Pointing words with a variable number of syllables

Some words, spelled as if they had a strong-weak-weak stress pattern within them, have either lost the first weak syllable completely or lose it in colloquial speech. This is called 'syncope'. Examples of complete loss include *history*, *camera* and *secondary*, and examples of loss at speed include *library*, *boundary*, and *January*. This phenomenon usually involves a syllable preceding an /r/ sound but not always: for example, the vowel precedes an /l/ in *chocolate* and an /n/ in *business*, *prisoner* and *personal*. (Generally speaking, speakers of British English use syncope more extensively than American English speakers.)

There is no problem pointing these words on the Rectangle chart: you simply point the sounds that are actually made.

history



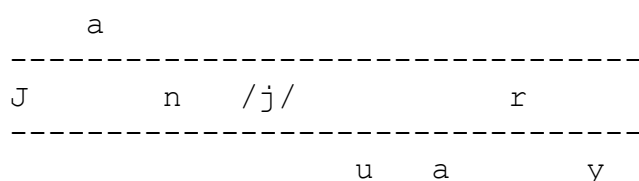
On the Spelling chart, we suggest that where both 'long' and 'short' versions of a word are possible, you point the 'long' version, and invite students to work out how a syllable can be lost in the word. This will help them to develop a feel for how syncope functions.

Where the word is now only pronounced by native speakers in a 'short' version (e.g. *different*, *chocolate* or *camera*) the necessary spelling can be created using the three grey circles in the /r/, /n/ and /l/ sections. Each circle indicates that any vowel letter can appear in this slot, or even two letters as in *favourite*. One way to indicate the spelling is to 'drag' the appropriate letter(s) up from the schwa section at the bottom of the chart. Another way is to touch the grey circle with the pointer and at the same time 'write' the letters in the air with the other hand.

Words like these make it clear that there is a system behind the way that English drops syllables.

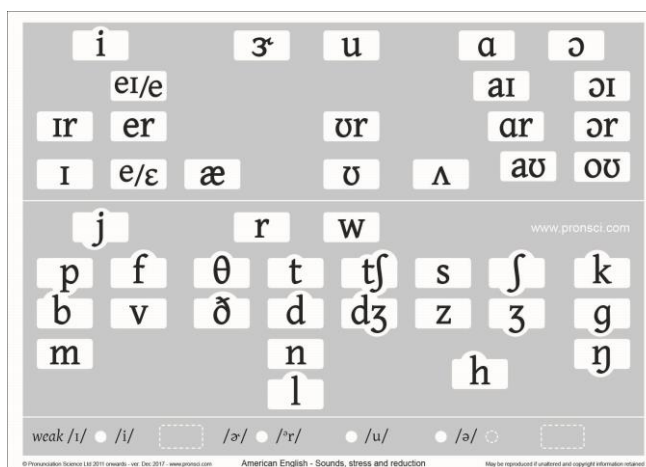
January

January and *February* are two of the words with the most complicated relationship between pronunciation and spelling.



3 American English

There is no standard model of American English that determines an inventory of sounds for teaching. In some parts of North America, speakers do not make a distinction between the vowels in *cot* and *caught*. Some speakers use just a single sound for the first vowels in *Mary*, *merry* and *marry*. Other speakers use two sounds for the three words but there is no uniformity about which word is pronounced differently from the other two. All three possibilities are found.¹



The American chart has been designed to allow the maximum range of distinctions possible. Vowel sounds which are conflated by some people are articulated in similar ways so they are positioned near each other on both the Rectangle chart and the Spelling chart. For example, the

¹ Many of the American teachers we have consulted about their pronunciation have considered that their inventory of sounds was universal. One teacher lamented that he had spent many years trying to get his students to distinguish sounds they found difficult to make or hear, only to discover that about 50% of his fellow countrymen do not distinguish these sounds either; worse, that he had never noticed this. He vowed never to try to teach this distinction again!

/ɑ/ of *cot* is next to the /ɔ/ of *caught*. So teachers who do not distinguish between certain sounds can easily tell their students that, “in this part of the United States/Canada, these two rectangles [or groups of graphemes on the Spelling chart] are pronounced in the same way.”

The retroflex /r/ in diphthongs

There is another major difference between British English RP and most varieties of American English. This is the presence in American English of a weak, retroflex /r/. It has been treated on the charts as a fourth member of the schwa family. We call it the ‘schw’ and represent it with a pale orange dot. This is in keeping with the analysis of the rest of the language represented on the charts. The schw, like the schwa, the schwi and the schwu can be the final element in diphthongs. Thus the three diphthongs which move in the direction of schwa in British English finish with schw in American English: *here*, *there* and *sure*.

Additionally, the letter <r> is pronounced in American English in the words *arm* and *north*, and in both contexts the vowel sounds behave as if they were diphthongs.

The retroflex /r/ in reduced syllables

In British English words containing an unstressed syllable final <r> are pronounced using a schwa and no /r/ sound is heard: in *teacher*, for example. In American English a distinction is made between unstressed syllables written with and without an <r>. For example, American speakers make a difference between *tuna* and *tuner*. The first is pronounced with a schwa, the second with a schw. In British English, they are pronounced identically.

Pointing words on the American charts

In words like *red*, *prince* or *correct* in which the letter <r> occurs before the vowel of the syllable, this letter will be pointed using the light orange consonant rectangle at the top of the consonant section of the chart.

A letter <r> which appears after the vowel will be pointed in one of three ways:

1. In diphthongs

In words like *near*, *there*, *sure*, *arm* and *north* the diphthong will be pointed using one touch of the pointer in the top section of the chart for the vowel element of the word.

near, there, sure, arm, north

| | | | | |
|-------|-------|-------|-------|-----------|
| ear | ere | ure | ar | or |
| ----- | ----- | ----- | ----- | ----- |
| n | th | s | m | n th |
| ----- | ----- | ----- | ----- | ----- |

2. The /ɜ:/ vowel

The /ɜ:/ vowel contains a retroflex 'r' automatically. Words like *earth*, *her* and *early* will be pointed simply using the 'blush' colour rectangle corresponding to the vowel /ɜ:/:

earth, her, early

| | | |
|-------|-------|-------|
| ear | er | ear |
| ----- | ----- | ----- |
| th | h | l |
| ----- | ----- | ----- |
| | | y |

3. The schwr as an unstressed syllable

Many words end in schwr as a simple unstressed syllable. These are pointed using the schwr dot on the Rectangle chart, or the schwr spellings on the Spelling chart, rather than the schwa.

father

| |
|-------|
| a |
| ----- |
| f th |
| ----- |
| er |

future

| |
|-------|
| /j/u |
| ----- |
| f t |
| ----- |
| ure |

For *future* the letter <f> would be pointed pale violet. On the Spelling chart, the letter <u>, pronounced /ju:/, would be pointed pink-and-green. The letter <t> is fuchsia-and-blue, and the letters <ure>, pale orange schwr.