4. R-influence on vowels

Before you study this chapter, check whether you are familiar with the following terms: allophone, centring diphthong, complementary distribution, diphthong, distribution, foreignism, fricative, full vowel, GA, hiatus, homophone, Intrusive-R, labial, lax, letter-to-sound rule, Linking-R, low-starting diphthong, minimal pair, monophthong, morpheme, nasal, non-productive suffix, non-rhotic accent, phoneme, productive suffix, rhotic accent, R-dropping, RP, tense, triphthong

This chapter mainly focuses on the behaviour of full vowels before an /r/, the phonological and letter-to-sound rules related to this behaviour and some further phenomena concerning vowels. As it is demonstrated in Chapter 2 the two main accent types of English, rhotic and non-rhotic accents, are most easily distinguished by whether an /r/ is pronounced in all positions or not. In General American, a rhotic accent, all /r/'s are pronounced while in Received Pronunciation, a non-rhotic variant, only prevocalic ones are. Besides this, these – and other – dialects may also be distinguished by the behaviour of stressed vowels before an /r/, briefly mentioned in the previous chapter.

To remind the reader of the most important vowel classes that will be referred to we repeat one of the tables from Chapter 3 for convenience.

	Tense	Lax
Monophthongs	iː, uː, ɔː[3]	ɪ, e, æ, ʌ, ʊ, ɒ, ɑː, ɜː, ɔː[1], ɔː[2]
Diphthongs and triphthongs	aɪ, eɪ, ɔɪ, aʊ, əʊ, ɪə, eə, ʊə, aɪə, aʊə	

Recall that we have come up with a few generalizations in Chapter 3, namely that all short vowels are lax, all diphthongs and triphthongs are tense, non-high long monophthongs are lax, except for /ɔː/, which behaves in an ambiguous way: sometimes it is tense, in other cases it is lax. For the details of this controversy, see Chapter 3.

Let us first consider the behaviour of tense vowels and the rule called **Pre-R Breaking**. Tense vowels may be further classified into two subgroups on the basis of their distribution, i.e., the environments in which they may occur.

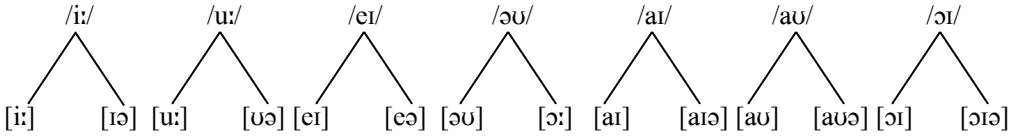
	Non-low-starting				Low-starting		
Plain-Tense	iː	(j)uː	eɪ	əʊ	aɪ	aʊ	ɔɪ
Broken-Tense	ɪə	(j)ʊə	eə	ɔː[3]	aɪə	aʊə	ɔɪə

The rule of Pre-R Breaking seems to be a very simple allophonic rule at first sight: the members of the Plain-Tense – Broken-Tense vowel pairs appear to occur in complementary distribution: Broken-Tense vowels only appear before *r* within the same word while Plain-Tense vowels occur everywhere else but never before *r* within the word.

Plain-Tense	Broken-Tense
b<u>ea</u>d [iː]	*b<u>ea</u>rd* [ɪə]
t<u>ea</u> [iː]	*t<u>ea</u>r* (n) [ɪə]
coh<u>e</u>sion [iː]	*adh<u>e</u>rence* [ɪə]
c<u>u</u>te [juː]	*c<u>u</u>rious* [jʊə]
f<u>u</u>tile [juː]	*f<u>u</u>rious* [jʊə]
<u>u</u>nity [juː]	*<u>Eu</u>rope* [jʊə]
b<u>a</u>by [eɪ]	*b<u>a</u>re* [eə]
st<u>a</u>ple [eɪ]	*st<u>a</u>ring* [eə]
Rum<u>a</u>nian [eɪ]	*Hung<u>a</u>rian* [eə]
st<u>o</u>ne [əʊ]	*st<u>o</u>ry* [ɔː][3]
cl<u>oa</u>kroom [əʊ]	*r<u>oa</u>ring* [ɔː][3]
br<u>o</u>ken [əʊ]	*gl<u>o</u>rious* [ɔː][3]

Plain-Tense	Broken-Tense
f<u>i</u>ght [aɪ]	*f<u>i</u>re* [aɪə]
toni<u>gh</u>t [aɪ]	*admi<u>r</u>e* [aɪə]
p<u>i</u>ne [aɪ]	*p<u>i</u>rate* [aɪə] or [aɪ]
p<u>i</u>nt [aɪ]	*<u>i</u>ron*[1] [aɪə]
t<u>ow</u>n [aʊ]	*h<u>ou</u>r* [aʊə]
cl<u>ou</u>d [aʊ]	*fl<u>ou</u>r* [aʊə]
D<u>ow</u>ning [aʊ]	*d<u>ow</u>ry* [aʊə] or [aʊ]
m<u>oi</u>st [ɔɪ]	*M<u>oi</u>ra* [ɔɪə] or [ɔɪ]

Since the members of the pairs are in complementary distribution and are phonetically quite similar to each other, we may just as well assume that they are variants, allophones of the same phoneme.



[1] Be careful with the word *iron* since its second vowel letter, <o> is silent, and the pronunciation of the <r> is determined accordingly: dropped in RP /ˈaɪən/, but not in GA /ˈaɪ(ə)rn/.

The vowel phonemes in the upper row of the chart on p.46 are divided into two major classes: the last three, the so-called low-starting diphthongs - /aɪ/, /aʊ/, /ɔɪ/, appearing in lighter shaded cells in the table, and the rest of the vowels - /iː/, /uː/, /eɪ/, /əʊ/. The differences between these two groups are twofold: on the one hand, in non-low-starting tense vowels the broken tense variant is typically a centring diphthong except for /ɔː/, in the darker shaded cell in the table. This tense /ɔː/[3] variant historically derives from the centring diphthong */ɔə/ now always pronounced as /ɔː/. Also, in these four vowel phonemes the second half of the vowel is changed into /ə/, if we think of a long monophthong as consisting of two identical short components (as opposed to diphthongs whose two components are different). In low-starting diphthongs the broken tense variant contains an extra element, /ə/, that is, it is always a triphthong.

Also, there is a difference between the nature of Breaking in the two vowel groups. While in non-low-starting tense vowels it is always obligatory, that is, whenever a tense vowel from this group is followed by an *r* in the same word it is always replaced by its Broken-Tense counterpart, in low-starting diphthongs it is not always so: in low-starting diphthongs Breaking is only obligatory if the *r* is at the end of a word or followed by a productive suffix (cf. Chapter 3). For instance, in words like *fire* /faɪə(r)/ the *r* is word-final; in *fired* /faɪəd/ and *firing* /ˈfaɪərɪŋ/ it is followed by a productive suffix (-*ed* and -*ing*) and as a result the stressed vowel always has to be realized by a Broken-Tense vowel, [aɪə]. On the other hand, if the low-starting diphthong is followed by an *r* which is morpheme-internal or followed by a non-productive suffix, then Breaking is optional, and the vowel may be Plain or Broken-Tense, e.g., *pirate* /ˈpaɪərət/ or /ˈpaɪrət/, *biro* /ˈbaɪərəʊ/ or /ˈbaɪrəʊ/.

A process that is closely related to Pre-R Breaking is the simplification of Broken-Tense vowels in fast casual speech, Smoothing, and its extreme form, the complete monophthongization of diphthongs or triphthongs. **Smoothing** influences the triphthongs resulting from the above-mentioned mechanism of obligatory or optional Breaking of low-starting diphthongs. Typically the middle component, [ɪ] or [ʊ], of the triphthong is dropped in casual speech; in faster speech even the last component, schwa [ə] may be dropped: this process is known as **monophthongization**. To make up for the loss of the second and third components of the triphthong, the first part is lengthened, a process often referred to as **compensatory lengthening** (for more detail, see below).

Triphthong	Middle component dropped	Last component dropped + first component lengthened
fire [ˈfaɪə(r)]	[ˈfaə(r)]	[ˈfaː(r)]
tired [ˈtaɪəd]	[ˈtaəd]	[ˈtaːd]
hours [ˈaʊəz]	[ˈaəz]	[ˈaːz]
dowry [ˈdaʊərɪ]	[ˈdaərɪ]	[ˈdaːrɪ]

It is interesting to note that in many dialects of English, for instance in Southern dialects of American English, the low-starting diphthongs /aɪ/ and /aʊ/ may also be simplified, i.e., replaced by a long monophthong, in a non-pre-R environment:

Diphthong	Second component dropped
wh<u>y</u> [waɪ]	[waː]
I'm [aɪm]	[aːm]
w<u>o</u><u>w</u> [waʊ]	[waː]
ab<u>ou</u>t [əˈbaʊt]	[əˈbaːt]

Another similar process by which certain diphthongs become simplified concerns the pronunciation of the diphthongs /(j)ʊə/ and /eə/. The tendency especially in the speech of younger speakers of RP is to pronounce /(j)ʊə/ as /(j)ɔː/ and /eə/ as a long half-open unrounded front /eː/. In some dialects, like Australian English for instance, /eɪ/ is also being replaced by [eː], that is, the tendency does not only influence the Broken-Tense but also the Plain-Tense variant of the vowel.

/(j)ʊə/ [ɔː]	/eə/ [eː]
poor [pʰɔː(r)]	stairs [steːz̥]
purify [ˈpj̩ɔːrɪfaɪ]	parent [ˈpʰeːrənt]
Europe [ˈjɔːrəp]	hairy [ˈheːrɪ]
rural [ˈrɔːr̬]	repair [rɪˈpʰeː(r)]
tourist [ˈtʰɔːrɪst]	Hungarian [hʌŋˈgeːrɪən]
bureau [ˈbjɔːrəʊ]	fairness [ˈfeːnɪs]

Note, however, that this monophthongization only affects those /(j)ʊə/'s which are the result of Breaking; the same sequence arising from hiatus, as in *f<u>ue</u>l* or *rit<u>ua</u>l*, is left uninfluenced.

Pre-R Breaking, then, is one of the most salient allophonic rules affecting RP vowels. Some might argue, on the basis of minimal pairs like *bee* /biː/ vs. *beer* /bɪə/, *bead* /biːd/ vs. *beard* /bɪəd/, that the plain and broken vowels are independent phonemes, at least in non-rhotic accents like RP. However, notice that the spelling of Broken-Tense vowels always involves an <r> (cf. *beer, beard*), which means two things. On the one hand, Pre-R Breaking also qualifies as a letter-to-sound rule: whenever a tense vowel is followed by the letter <r> within the word, it is broken. On the other hand, it is possible to analyse all Broken-Tense vowels as the outputs of R-influence, in such a way that the trigger itself (the /r/) is subsequently deleted if the conditions of R-dropping are met. All in all, the status of Pre-R Breaking in English phonology is not straightforward, therefore we will simply follow the traditional practice of indicating Plain-Tense and Broken-Tense vowels separately in phonological transcriptions, that is, *beer* /bɪə/, *beard* /bɪəd/, etc.

As regards GA, the lack of the rule of R-dropping results in the absence of apparent minimal pairs like *bee* and *beer*, GA /biː/ and /bɪ(ə)r/, respectively. It is also shown in the transcriptions that consequently, Pre-R Breaking is never obligatory in GA, not even in the case of non-low-starting tense vowels (except for the /oʊ/-/ɔː/ pair, which behaves in the same way as in RP, cf. *stone – story* GA /stoʊn/ – /ˈstɔːrɪ/), and it practically never occurs before a syllable-initial /r/ (e.g., *hairy* /ˈherɪ/). As a further result, descriptions of GA do not normally consider Pre-R Breaking as either a phonological rule or a letter-to-sound regularity – the occasional appearance of the schwa is usually taken to be the result of an optional schwa-insertion rule taking place before syllable-final /r/. A consequence of this is that the GA inventory of diphthongs is much smaller than that of RP (no centring diphthongs) and triphthongs are missing altogether. It also follows that smoothing and

monophthongization are not as extensive in GA: *fire* is always /faɪ(ə)r/, *sure* and *poor* are usually /ʃʊ(ə)r/ and /pʊ(ə)r/, respectively, and in *stairs* and *hairy* the monophthong is automatically created if the schwa is not inserted (cf. /ste(ə)rz/, /ˈherɪ/).

Let us now turn our attention to the other major group of full vowels, and their behaviour before *r*. Lax vowels may also be divided into two major groups: Plain-Lax vowels and Broad-Lax vowels. Short (lax) vowels all belong to the former group while the three long lax vowels all fall into the latter as indicated in the following table:

Plain-Lax	æ	ɒ	e	ɪ	ʌ	ʊ
Broad-Lax	ɑː	ɔː[2]	ɜː			

The rule of **Pre-R Broadening** seems to be very similar to Pre-R Breaking as Broad-Lax vowels will replace their Plain Lax counterparts before *r*. Note, however, that this is not so as it will be clear from the discussion below. Instead, it will turn out that Pre-R Broadening is a practical rule concerning the relationship between the spelling and pronunciation of vowel letters before *r*. Also, from the table above it is obvious that four of the Plain Lax vowels, namely /e, ɪ, ʌ, ʊ/ share a Broad Lax counterpart, /ɜː/, which also makes Pre-R Broadening different from Pre-R Breaking as in the latter all Plain-Tense vowels had a Broken-Tense counterpart of their own.

On the other hand, Pre-R Broadening, unlike Pre-R Breaking, cannot be considered an allophonic rule as the distribution of Plain-Lax and Broad-Lax vowels is not complementary, i.e., the two types of vowel do appear in the same environment – with certain limitations. Since these Plain-Lax – Broad-Lax vowel pairs do not occur in complementary distribution, the

sample word pairs have been set up on the basis of spelling: the Plain-Lax – Broad-Lax vowel pairs are represented by the very same vowel letter in the pairs.

Plain-Lax	Broad-Lax
c<u>a</u>t [æ]	*c<u>a</u>r* [ɑː]
f<u>a</u>n [æ]	*f<u>a</u>r* [ɑː]
b<u>a</u>d [æ]	*b<u>a</u>r* [ɑː]
f<u>o</u>nd [ɒ]	*f<u>o</u>r* [ɔː][2]
b<u>o</u>nd [ɒ]	*ab<u>o</u>rt* [ɔː][2]
cl<u>o</u>ck [ɒ]	*l<u>o</u>rd* [ɔː][2]
st<u>e</u>m [e]	*st<u>e</u>rn* [ɜː]
s<u>e</u>nd [e]	*s<u>e</u>rve* [ɜː]
h<u>ea</u>d [e]	*h<u>ea</u>rd* [ɜː]

Plain-Lax	Broad-Lax
f<u>i</u>t [ɪ]	*f<u>i</u>rm* [ɜː]
b<u>i</u>ngo [ɪ]	*b<u>i</u>rd* [ɜː]
st<u>i</u>ck [ɪ]	*st<u>i</u>r* [ɜː]
h<u>u</u>t [ʌ]	*h<u>u</u>rt* [ɜː]
c<u>u</u>tlery [ʌ]	*c<u>u</u>rl* [ɜː]
sp<u>u</u>n [ʌ]	*sp<u>u</u>r* [ɜː]
p<u>u</u>t [ʊ]	*p<u>u</u>rr* [ɜː]
b<u>u</u>sh [ʊ]	*b<u>u</u>rst* [ɜː]
b<u>u</u>ffet [ʊ]	*b<u>u</u>rp* [ɜː]

Having taken a look at the examples containing a Broad-Lax vowel, we may notice that although there is always an *r* in spelling in these words, it is not pronounced in non-rhotic accents like RP, either because it is followed by a consonant – e.g., *abort*, *stern*, *bird*, *burp* – or it is word-final and is followed by a pause – e.g., *car*, *for*, *stir*, *purr*.

Thus we can conclude that Pre-R Broadening does apply if the *r* after the Lax vowel is silent, i.e., it is dropped because of the R-Dropping rule (Chapter 2). As a result of this one might easily find a very attractive explanation for the lengthening component of broadening: since the *r* is dropped in these environments, its now empty position becomes available for the vowel before it. That is, the vowel lengthens to make up for the loss of

the *r* in the word – the kind of process referred to above as **compensatory lengthening**.

The diagrams above demonstrate compensatory lengthening: the X's stand for timing units. If a sound segment is linked to one timing unit, it is short while if it is linked to two, it takes twice the time to pronounce, i.e., it is long. Both *star* and *hard* originally contain four short segments. When the *r* in the words is dropped, its "place" is preserved, and the preceding lax vowel lengthens by becoming linked to this empty timing unit, as the broken lines indicate. The process is very similar to what frequently happens in certain non-standard varieties of Hungarian, where the other liquid, *l*, can be dropped before a consonant.

bolt 'shop' *zöld* 'green'

In such Hungarian examples the *l* is deleted but its timing unit is retained, and as a result the preceding vowel is lengthened. Notice that the effect of compensatory lengthening is very similar to the so-called law of mass preservation in the physical world: we have the same amount of material – that is, the same number of timing units – on both sides of the equation.

Pre-R Broadening, then, can be accounted for with reference to compensatory lengthening. Nevertheless, note that however attractive this

explanation may be, it cannot be true in all cases. While there is evidence that there is an /r/ phoneme in words like *star* as the word final /r/ is often realized as a Linking-R (see Chapter 2), words like *hard* pose a problem for babies aquiring a non-rhotic dialect like RP. They will always hear such words pronounced without *r* as there is no environment in which the *r* of *hard* would be present in actual pronunciation, and as a result they will have to assume that these words do not contain an /r/ phoneme. However, if there is no /r/, then it is actually not dropped and thus the vowel is not lengthened *because* the *r* has been dropped.

While it seems that we have to give up our idea of compensatory lengthening as a *motivation* for Pre-R Broadening, in many cases it can be shown to be a *component* of this rule, and it still is a useful kind of explanation when teaching pronunciation. All the more so as a major difference between RP and GA can only be accounted for if we separate Broadening proper (influencing the quality of the target vowel) and compensatory lengthening (responsible for vowel quantity). As GA is a rhotic accent, no *r*'s are dropped; consequently, compensatory lengthening is impossible. Therefore in GA we find the same vowels in *car, lord, stern, firm, hurt* as in RP, only they are short: /kɑr/, /lɔrd/, /stɜrn/, /fɜrm/, /hɜrt/ – Broadening, but not compensatory lengthening, has taken place.

The next question that we turn to is what happens if the *r* following the lax vowel is realized in pronunciation. Let us take a look at some sample words containing such a sequence:

[æ]	[ɒ]	[e]	[ɪ]	[ʌ]
b<u>a</u>rrier	*b<u>o</u>rrow*	*b<u>e</u>rry*	*<u>i</u>rritate*	*b<u>u</u>rrow*
c<u>a</u>rrot	*c<u>o</u>rridor*	*b<u>u</u>ry*	*l<u>y</u>rical*	*c<u>ou</u>rage*
ch<u>a</u>riot	*M<u>o</u>rris*	*J<u>e</u>rry*	*m<u>i</u>racle*	*c<u>u</u>rrent*
H<u>a</u>rry	*s<u>o</u>rrow*	*m<u>e</u>rit*	*m<u>i</u>rror*	*c<u>u</u>rry*
m<u>a</u>rriage	*s<u>o</u>rry*	*s<u>e</u>rendipity*	*p<u>i</u>rouette*	*f<u>u</u>rrier* (n)
n<u>a</u>rrow	*tom<u>o</u>rrow*	*t<u>e</u>rrible*	*p<u>y</u>ramid*	*f<u>u</u>rrow*
wheelb<u>a</u>rrow	*t<u>o</u>rrent*	*t<u>e</u>rror*	*sp<u>i</u>rit*	*h<u>u</u>rry*

There are two possible conclusions that can be drawn on the basis of the data in the table: on the one hand, it does not contain sample words containing an [ʊ] before a pronounced [r] as this vowel does not regularly appear in such a position with a few exceptions like *courier* /ˈkʊrɪə(r)/; on the other hand, it is also clear that Pre-R Broadening does not apply in any of the above words. Thus we may claim that Pre-R Broadening only applies if the *r* is dropped, i.e., the *r* is syllable-final (cf. Chapter 2). As the absence of Broadening is typical in words like *carrot*, where the *r* is followed by a pronounced vowel, this regular absence of Broadening is usually referred to as **the Carrot-Rule**. The Carrot-Rule is often indicated in spelling by the doubling of the *r*, e.g., *marriage, borrow, Jerry, mirror, curry*, although it does not always happen, e.g., *bury, miracle, courage*.

We have seen so far that normally it is Broad-Lax vowels that occur before an *r*. If the /r/ is not silent, however, the lax vowel before it will be a Plain-Lax vowel as the Carrot-Rule will block the application of Broadening, i.e., it results in a group of regular exceptions. The Carrot-Rule itself is not without exceptions, either. In GA, for instance, although in most cases it applies in the same way as in RP, a few irregular words are exempt from it – that is, Broadening *does* take place even though the following /r/ is not

syllable-final. E.g., *cour*age, *c*urrency, *c*urrent, *c*urry, *h*urry, *M*urray, *occ*urrence, *t*urret, *w*orry, all with /ʌ/ in RP but /ɜ/ in GA, and *squ*irrel RP /ɪ/ vs. GA /ɜ/.

In certain cases when the *r* is pronounced, i.e., the Carrot-Rule should block Broadening, it does not do so and as a result Broadening will apply resulting in a Broad-Lax vowel before a pronounced *r*. This is the case when the *r* is followed by a vowel-initial productive suffix (again! – cf. the discussion of Pre-R Breaking above) or a vowel-initial word. Non-productive suffixes, on the other hand, behave as if they were not separate morphemes and the word was morphologically simple. For example, Broadening affects both *occur* (with a syllable-final /r/) and *occurring* (with productive -*ing*), in contrast to *occurrence* (with non-productive -*ence*), which exhibits the same pattern as, say, *current*.[2]

syllable-final		followed by non-productive suffix	
*occ*ur	/əˈkɜː(r)/	*occ*urr+*ence*	/əˈkʌrəns/
*b*ar	/bɑː(r)/	*b*arr+*en*	/ˈbærən/
*e*rr	/ɜː(r)/	*e*rr+*or*	/ˈerə(r)/
*cl*ergy	/ˈklɜːdʒɪ/	*cl*er+*ical*	/ˈklerɪkl/

[2] Note, however, the differences between RP and GA, discussed above, concerning words like *occurrence* and *current*.

syllable-final		followed by productive suffix	
occ<u>u</u>r	/əˈkɜː(r)/	*occ<u>u</u>rring*	/əˈkɜːrɪŋ/
bl<u>u</u>r	/blɜː(r)/	*bl<u>u</u>rring*	/ˈblɜːrɪŋ/
ref<u>e</u>r	/rɪˈfɜː(r)/	*ref<u>e</u>rring*	/rɪˈfɜːrɪŋ/
f<u>u</u>r	/fɜː(r)/	*f<u>u</u>rry*	/ˈfɜːrɪ/
b<u>a</u>r	/bɑː(r)/	*b<u>a</u>rring*	/ˈbɑːrɪŋ/
st<u>a</u>r	/stɑː(r)/	*st<u>a</u>rring*	/ˈstɑːrɪŋ/

It is clear from the tables above that if a non-productive suffix follows – e.g., *-ence*, *-ical* –, then the Carrot-Rule will block the application of Broadening as expected. However, if the *r* precedes a productive suffix – e.g., *-ing*, *-y* –, then the Carrot-Rule will not be able to block Broadening, which will hence normally apply to the vowel making it Broad-Lax.

Thus it seems that one half of the original suggestion concerning Broadening has already been borne out: before an *r* lax vowels are not always Broad-Lax as in some cases, as a result of the Carrot-Rule, they will remain Plain-Lax. Let us now take a look at the other half of the story and see some examples in which Broad-Lax vowels appear in environments other than before *r*, i.e., cases of **Broadness without *r***.[3]

[3] Most of these examples are repeated in Chapter 12 as groups of deviating words.

/ɑː/
1. Foreignisms imitating the original Greek, French or Italian pronunciation (so called DRAMA-words): *bourgeois* /ˈbʊəʒwɑː/, *bra* /brɑː/, *drama* /ˈdrɑːmə/, *gratis* /ˈgrɑːtɪs/, *Shah* /ʃɑː/, *sonata* /səˈnɑːtə/, *spa* /spɑː/.
2. The vowel letter <a> followed by a voiceless fricative or a nasal+consonant cluster (so called ASK-words): *ask* /ɑːsk/, *aunt* /ɑːnt/, *bath* /bɑːθ/, *brass* /brɑːs/, *can't* /kɑːnt/, *class* /klɑːs/, *dance* /dɑːns/, *last* /lɑːst/, *laugh* /lɑːf/, *pass* /pɑːs/, *path* /pɑːθ/, *task* /tɑːsk/.[4]
3. The vowel letter <a> followed by a silent <l>+labial consonant cluster (so called CALM-words): *almond* /ˈɑːmənd/, *balm* /bɑːm/, *calm* /kɑːm/, *palm* /pɑːm/, *calf* /kɑːf/, *half* /hɑːf/, *halve* /hɑːv/, *psalm* /sɑːm/.[5]
4. Irregular cases: *father* /ˈfɑːðə(r)/, *lather* /ˈlɑːðə(r)/, *rather* /ˈrɑːðə(r)/.[6]

/ɔː/
1. The vowel letter *a* followed by a pronounced *l*+consonant or nothing or by silent *l+k* (so called CALL-words): *bald* /bɔːld/, *ball* /bɔːl/, *calling* /ˈkɔːlɪŋ/, *fallen* /ˈfɔːlən/, *stalk* /stɔːk/, *talk* /tɔːk/, *tall* /tɔːl/, *walk* /wɔːk/, *wall* /wɔːl/.
2. *-ough* or *-augh* (so-called THOUGHT-words): *bought* /bɔːt/, *caught* /kɔːt/, *fought* /fɔːt/, *sought* /sɔːt/, *thought* /θɔːt/.
3. *-au* or *-aw* word-finally, before a voiceless consonant or a nasal (so-called SAUCE-words): *author* /ˈɔːθə(r)/, *claw* /klɔː/, *dawn* /dɔːn/, *law* /lɔː/, *lawn* /lɔːn/, *raw* /rɔː/, *sauce* /sɔːs/, *saw* /sɔː/.
4. Irregular cases: *abroad* /əˈbrɔːd/, *broad* /brɔːd/, *water* /ˈwɔːtə(r)/.

[4] Recall from Chapter 1 that all these words are pronounced with /æ/ in GA.

[5] Some of the examples, e.g., *calf, half, halve* have /æ/ in GA. Note irregular *salmon* /ˈsæmən /, too.

[6] In GA, *lather* and *rather* contain /æ/.

/ɜː/
1. Only in one word: *colonel* /ˈkɜːnl/.[7]

These examples of Broadness without *r* illustrate that, on the one hand, Broadening is not always predictable (sometimes it takes place without a potential trigger being present in the word), and on the other hand, numerous pairs of homophones exist, although in non-rhotic English only, with an *r* in one member but with no *r* in the other. For example, words like *roar* and *raw*, *pore* and *paw*, *spar* and *spa*, *baa* 'make the bleat of a sheep' and *bar* are totally indistinguishable for a non-rhotic speaker – a fact which contributes to the emergence of the so-called Intrusive-R, mentioned in Chapter 2 but treated in detail in Chapter 7.

[7] Although this word is generally considered to be an exception, that is, one with a Broad vowel without an /r/, the corresponding rhotic pronunciation, /ˈkɜrnl/, shows that in fact the <l> after the stressed vowel represents an /r/, and the second <o> is silent. Consequently, the /r/ is in syllable-final position, and dropped in non-rhotic accents like RP. This means that this word actually falls under the same rubric as, say, *kernel*.