2

Sets and systems

2.1 The reference accents

2.1.1 Introduction

The accent which enjoys the highest overt prestige in England is known to phoneticians as **Received Pronunciation** (for short, **RP**). This name is less then happy, relying as it does on an outmoded meaning of *received* ('generally accepted'). But it is so well established that I have decided to retain it here. The accent in question is sometimes popularly referred to as 'BBC English' or even 'Standard English'. It is what English people mean when they say that someone 'hasn't got an accent' (though to Americans it is a typical British accent). I myself have elsewhere called it **Southern British Standard** (Wells & Colson 1971), inasmuch as it is generally taken as a standard throughout southern Britain (i.e. in England and perhaps Wales, but not in Scotland).

Geographically, RP is associated with England, though not with any particular locality within England. It is the most general type of educated British pronunciation (although there are many highly educated English people who do not use it). Socially, it is characteristic of the upper and upper middle class, insofar as members of the latter class, sociologically defined, speak with an accent not localizable within England. Occupations perhaps most typically associated with RP are barrister, stockbroker, and diplomat. Most of those who speak it have spoken it since childhood; they have not needed to go to speech classes in order to acquire it. Typically they belong to families whose menfolk were or are pupils at one of the 'public schools' (exclusive private schools standing outside the state education system). Until the early 1970s, this was the accent demanded in its announcers by the BBC.

Depending on the criteria used, RP may be circumscribed more

or less narrowly (a matter to which we return in vol. 2, 4.1). Even with the more generous definitions, though, not more than about 10 percent of the population of England could be considered as RP speakers.

With the loosening of social stratification and the recent trend for people of working-class or lower-middle-class origins to set the fashion in many areas of life, it may be that RP is on the way out. By the end of the century everyone growing up in Britain may have some degree of local accent. Or, instead, some new non-localizable but more democratic standard may have arisen from the ashes of RP: if so, it seems likely to be based on popular London English.

In the United States there is no accent whose status and rôle correspond to that of RP in England. Except to some extent in the east, it is grammar (morphology and syntax) rather than pronunciation that people make stereotypic judgments about (foreign accents and Black English are exceptions to this generalization). A recognizably local accent in the United States can only come from the east or the south. In particular, the accents of eastern New England, metropolitan New York, and the coastal and inland south are readily localizable as such.

'**General American**' is a term that has been applied to the two-thirds of the American population who do not have a recognizably local accent in the sense just mentioned. This is the type of American English pronunciation taught to learners of English as a foreign language – 'the type of American English which may be heard, with slight variations, from Ohio through the Middle West and on to the Pacific Coast' (Prator & Robinett 1972). Nevertheless, 'General American' is by no means a uniform accent; and this is one of the reasons why the name 'General American' is nowadays looked at somewhat askance, and why it is here written with defensive quotation marks (which are dropped from here on). We shall discuss the kind of variability found in General American (hereafter GenAm, for short) in vol. 3, 6.1. Meanwhile, it is convenient to use it as a basis for comparison. (We assume a relatively conservative variety, in which for example *don* is pronounced differently from *dawn* and *hoarse* differently from *horse*.)

2.1.2 The vowel system of RP

RP has a vowel system which may be set out as (46).

(46)

ɪ ʊ	iː		ɪə ʊə
e	eɪ ɔɪ	əʊ	eə ɜː ɔː
ʌ			
æ ɒ	aɪ	aʊ	ɑː
checked	*free*		

Not counting /ə/, which is restricted to weak (unstressed) syllables, there are nineteen vowels in the system. Of these the six traditionally 'short' vowels /ɪ, e, æ, ʌ, ɒ, ʊ/ are indeed of relatively short duration when compared with their 'long' counterparts in identical surroundings; nevertheless their duration does vary considerably according to phonetic environment, and they have certain quite long allophones. Distributionally, they stand apart in that – unlike the long vowels and diphthongs – they are subject to the phonotactic constraint that they do not occur in a stressed monosyllable with no final consonant. Hence they are labelled **checked**; the final consonant in *fit* /fɪt/, *rent* /rent/, *cat* /kæt/, *cup* /kʌp/, *shock* /ʃɒk/, *put* /pʊt/ can be interpreted as checking the pulse of air for the syllable and its vowel. But in *key* /kiː/, *play* /pleɪ/, *fear* /fɪə/, *snow* /snəʊ/, *two* /tuː/ etc. the vowel occurs free of any checking consonant; hence such vowels (or diphthongs) are labelled **free**. 'Free' vowels may also occur before a checking consonant (e.g. *keep* /kiːp/). This means that in the environment of a following final consonant the whole vowel system has the potentiality of occurrence, but in the environment —# only the free vowels are available.

The terms 'checked' and 'free' must be interpreted as applying to stressed syllables only: in RP both /ɪ/ and /ʊ/ can occur with no following consonant in an unstressed syllable. For /ɪ/ this is the case in a large number of words such as *happy* /ˈhæpɪ/, *city* /ˈsɪtɪ/, *coffee* /ˈkɒfɪ/; for /ʊ/ there are only a few optional words such as *value* /ˈvæljʊ ~ ˈvæljuː/ plus weak forms such as /tʊ/ for *to* (otherwise /tuː, tə/). In both cases the opposition between the short and the phonetically corresponding long vowel (ɪ – iː, ʊ – uː/) carries virtually no functional load in this environment.

The use of one vowel or another in particular words (lexical items) can be illustrated by tabulating their occurrence in the set of keywords (47), each of which – as established later in this chapter –

stands for a large number of words which behave the same way in respect of the incidence of vowels in different accents.

(47)

KIT	ɪ	FLEECE	iː	NEAR	ɪə
DRESS	e	FACE	eɪ	SQUARE	ɛə
TRAP	æ	PALM	ɑː	START	ɑː
LOT	ɒ	THOUGHT	ɔː	NORTH	ɔː
STRUT	ʌ	GOAT	əʊ	FORCE	ɔː
FOOT	ʊ	GOOSE	uː	CURE	ʊə
BATH	ɑː	PRICE	aɪ	*happ*Y	ɪ
CLOTH	ɒ	CHOICE	ɔɪ	*lett*ER	ə
NURSE	ɜː	MOUTH	aʊ	*comm*A	ə

Words such as *diary, sapphire* are often pronounced in RP with [aə] or [aː], thus ['daːrɪ, 'sæfaː], and it might be thought that this diphthong or monophthong ought to be included as a phoneme in the vowel system. It can, however, be treated as a realization of the phonemic sequence /aɪə/ rather than as a separate phoneme. See below, 3.2.9.

2.1.3 The vowel system of GenAm

GenAm has a vowel system which may be set out as (48).

(48)

ɪ	ʊ	i			u		
ɛ	ʌ	eɪ	ɔɪ		o	ɜ	ɔ
æ			aɪ	aʊ		ɑ	

checked *free*

There are also [ə] and [ɚ], which are restricted to weak (unstressed) syllables. Otherwise, the system comprises the fifteen vowels set out above. Vowel length (duration) is not as important in GenAm as in some other accents; all vowels vary somewhat in duration depending on their phonetic environment. We can still, however, distinguish two classes of vowel on the basis of phonotactic distribution. The five checked vowels, /ɪ, ɛ, æ, ʌ, ʊ/ are precluded from occurring in a stressed monosyllable with no final consonant, while the remaining vowels ('free') are not subject to this constraint.

The mid and close free vowels may be either monophthongal [i, e, u, o], or diphthongal [ɪi, eɪ, ʊu, oʊ], and either possibility

could be chosen as the basis for the phonemic symbol. Checked vowels, too, are often diphthongal, particularly in the environment of a following liquid, e.g. /hɪl/ [hɪəɬ] *hill*, /hɪr/ [hɪəɹ], /wɛl/ [wɛəɬ] *well*. It is simpler to write FLEECE, GOOSE and GOAT with single-letter symbols; but I have written FACE as /eɪ/ rather than /e/ to avoid confusion vis-à-vis RP DRESS.

There is also a problem of phonemicization in the vowel symbolized above as /ɜ/. It occurs in words such as *nurse* /nɜrs/, *sermon* /'sɜrmən/, and is always followed by /r/. Many pronouncing dictionaries and introductory phonetics courses for American students use a single symbol for /ɜr/, namely /ɝ/, thus /nɝs, 'sɝmən/. In favour of this analysis is the phonetic fact that in the usual GenAm pronunciation the r-colouring is spread throughout the whole vowel ([ɝ] = [ɜ] plus r-colouring). I have preferred the analysis and notation /ɜr/ because of its parallelism with /ɑr/ and /ɔr/. These, too, as in *farm* /fɑrm/ and *form* /fɔrm/, often involve an r-coloured vowel as the realization of /Vr/; and writing /ɜr/ allows us to regard the relationship between RP /fɜːm/ *firm* and GenAm /fɜrm/ as parallel to that between RP /fɑːm/ and GenAm /fɑrm/, RP /fɔːm/ and GenAm /fɔrm/.

If we treat [ɝ] as underlyingly /ɜr/, it is logical to treat [ɚ] as underlyingly /ər/, thus *further* /'fɜrðər/ ['fɝðɚ].

The opposition between [ɜr] and [ər] is tenuous and may be absent (a possible minimal pair is *foreword* /'forwɜrd/ vs. *forward* /'forwərd/). This raises the further possibility of treating '/ɜ/' and /ə/ as phonologically identical, so that [ɝ, ɚ] would be taken as underlyingly /ər/ (*further* /'fərðər/). And since there may be no real opposition between /ʌ/ (*love* /lʌv/) and /ə/, there is also the possibility of analysing [ɝ, ɚ] as /ʌr/.

Leaving aside this and other problems in the phonological analysis of GenAm, we turn to the question of the use of one vowel or another in particular words (lexical incidence). This can be shown, as in 2.1.2 above, by using the standard set of keywords, (49).

(49)

KIT	ɪ	FLEECE	i	NEAR	ɪr
DRESS	ɛ	FACE	eɪ	SQUARE	ɛr
TRAP	æ	PALM	ɑ	START	ɑr
LOT	ɒ	THOUGHT	ɔ	NORTH	ɔr
STRUT	ʌ	GOAT	o	FORCE	or
FOOT	ʊ	GOOSE	u	CURE	ʊr

BATH	æ	PRICE	aɪ	*happy*	ɪ
CLOTH	ɔ	CHOICE	ɔɪ	*lett*ER	ɚ
NURSE	ɝ	MOUTH	aʊ	*comma*	ə

In GenAm *diary* seems to be pretty consistently trisyllabic, /'daɪərɪ/, while *sapphire* is disyllabic, /'sæfaɪr/. Such words do not pose the problem of analysis they do in RP.

2.1.4 The two vowel systems compared

When we compare the pronunciation of particular words in the two accents, we find that in many respects there is a good match: for example, almost all words that have /iː/ in RP have the corresponding /i/ in GenAm, and vice versa: thus *creep*, *sleeve*, *key*, *people* and hundreds of other words. Likewise /aɪ/, transcribed identically for the two accents, and used in both cases for *ripe*, *arrive*, *high*, *try* and many other words.

In other cases, though, the match is not one-to-one but two-to-one or one-to-two. In *stop*, *dodge*, *romp*, etc., RP /ɒ/ corresponds to GenAm /ɑ/; but in *cough*, *gone*, *Boston*, etc., it corresponds to GenAm /ɔ/. Conversely, in *stop*, *dodge*, *romp*, etc., GenAm /ɑ/ corresponds to RP /ɒ/; but in *father*, *psalm*, *bra*, etc., it corresponds to RP /ɑː/. The matter of presence or absence of /r/ means that we also get a correspondence between the RP diphthong /ɪə/ (which we interpret as monophonemic) and the GenAm sequence /ɪr/ (which we interpret as biphonemic): thus *beer*, *fear*, *period*, etc.

Investigation shows that in spite of these complications we can successfully match the vowels in RP and GenAm forms of particular words for the vast bulk of the vocabulary. There is a residue of oddities like *tomato*, where RP /ɑː/ corresponds to GenAm /eɪ/, a correspondence reflected in very few other items. (Note also the different treatment of foreign words and names exemplified by *Rachmaninov*, RP /ræk'mænɪnɒf/, GenAm /rɑk'mɑnɪnɔf/.)

This matching furnishes us with the framework of **standard lexical sets** which we use not only for comparing RP and GenAm but also for describing the lexical incidence of vowels in all the many accents we consider in this work. It turns out that for vowels in strong (stressed or stressable) syllables there are twenty-four matching pairs of RP and GenAm vowels. We identify each pair,

and each standard lexical set of words whose stressed syllable exhibits the correspondence in question, by a keyword, which we shall always write in SMALL CAPITALS. Thus the correspondence between RP /iː/ and GenAm /i/ is the basis for the standard lexical set FLEECE. The keywords have been chosen in such a way that clarity is maximized: whatever accent of English they are spoken in, they can hardly be mistaken for other words. Although *fleece* is not the commonest of words, it cannot be mistaken for a word with some other vowel; whereas *beat*, say, if we had chosen it instead, would have been subject to the drawback that one man's pronunciation of *beat* may sound like another's pronunciation of *bait* or *bit*. As far as possible the keywords have been chosen so as to end in a voiceless alveolar or dental consonant: a voiceless consonant minimizes the likelihood of diphthongal glides obscuring a basic vowel quality, while coronality (alveolar or dental place) minimizes the possible allophonic effect of the place of a following consonant. An exception here is TRAP for the /æ/ correspondence, where no items in /-t, -s, -θ/ are altogether suitable; another one is PALM.

The list of the twenty-four correspondences and keywords follows, (50). In 2.2 below we analyse the content of the standard lexical set defined by each of them.

(50) The standard lexical sets

	RP	GenAm	keyword		RP	GenAm	keyword
1.	ɪ	ɪ	KIT	13.	ɔː	ɔ	THOUGHT
2.	e	ɛ	DRESS	14.	əʊ	o	GOAT
3.	æ	æ	TRAP	15.	uː	u	GOOSE
4.	ɒ	ɑ	LOT	16.	aɪ	aɪ	PRICE
5.	ʌ	ʌ	STRUT	17.	ɔɪ	ɔɪ	CHOICE
6.	ʊ	ʊ	FOOT	18.	aʊ	aʊ	MOUTH
7.	ɑː	æ	BATH	19.	ɪə[1]	ɪr	NEAR
8.	ɒ	ɔ	CLOTH	20.	ɛə[1]	ɛr	SQUARE
9.	ɜː[1]	ɜr	NURSE	21.	ɑː[1]	ɑr	START
10.	iː	i	FLEECE	22.	ɔː[1]	ɔr	NORTH
11.	eɪ	eɪ	FACE	23.	ɔː[1]	or	FORCE
12.	ɑː	ɑ	PALM	24.	ʊə[1]	ʊr	CURE

[1] with /r/ following before a vowel only.

In the rest of this work standard lexical set keywords will also be used to refer to (i) any or all of the words belonging to the standard lexical set in question; and (ii) the vowel sound used for the standard lexical set in question in the accent under discussion. Rather than using expressions such as 'short *i*' for example, we shall speak of the KIT vowel or simply of KIT.

It can be seen by comparing the vowel systems qua systems that the differences between the two accents in this respect are (i) that RP has a systemic contrast between /ɒ/ and /ɑː/ which is lacking in GenAm; and (ii) that RP has separate 'centring diphthong' phonemes /ɪə, ɛə, ʊə/, which are lacking in GenAm (although phonetic [ɪə, ɛə, ʊə] are found as allophones of /ɪ, ɛ, ʊ/). The first of these systemic differences is catered for by the standard lexical sets LOT, PALM, and CLOTH, the second by the sets NEAR, SQUARE, CURE and KIT, DRESS, FOOT. A diagram, (51), may make the relationship clearer. (For the latter group we include examples with /r/ after the vowel.)

		RP	GenAm	
(51a)	*father, bra*	ɑː	ɑ	= PALM
	stop, rod	ɒ	ɑ	= LOT
	cross, cough	ɒ	ɔ	= CLOTH
(51b)	*mirror, spirit*	ɪr	ɪr	= KIT
	nearer, weary	ɪər	ɪr	= NEAR
	fears, beard	ɪə	ɪr	= NEAR
	merry, herald	er	ɛr	= DRESS
	Mary, area	ɛər	ɛr	= SQUARE
	pairs, scared	ɛə	ɛr	= SQUARE

2.1.5 RP and GenAm: further comparison

In 2.1.4 we considered the vowel systems of the two reference accents and the lexical correspondences between them. We go further into this question as we consider each standard lexical set in

turn in 2.2 below. Meanwhile, it may be helpful to look briefly at the other respects in which the two accents differ from one another. In particular, we must consider their consonant systems, and examine the phonetic realization and phonotactic distribution of both vowels and consonants.

The consonant systems are easily disposed of: they are identical, and can be set out as follows (52).

(52)								
	Plosives, affricates	p		t		tʃ	k	
		b		d		dʒ	g	
	Fricatives	f	θ	s		ʃ		
		v	ð	z		ʒ		
	Nasals	m		n			ŋ	
	Approximants, liquids	w		l	r	j		h

The obstruents (plosives, affricates, fricatives) come in pairs distinguished by the phonological feature [± voice]; the sonorants are not so distinguished. (On the phonemic status of /tʃ/ and /dʒ/, see 1.2.5 above; on that of /ŋ/, see 1.2.11 above.)

In phonetic realization there are a number of differences between RP and GenAm, of which the most important are those relating to THOUGHT (RP /ɔː/, GenAm /ɔ/) and GOAT (RP /əʊ/, GenAm /o/). These are discussed in 2.2 below. In some instances a difference in symbolization might seem to imply a greater phonetic difference than in fact exists, as when we write DRESS /e/ in RP but /ɛ/ in GenAm. Among the consonants, there is a notable difference between the two accents in the realization of the liquid /l/, which is in general 'darker' (more velarized) in GenAm than in RP, particularly in intervocalic position in words such as *jelly*, *pillow* (GenAm ['dʒɛɬɪ, 'pɪ̈ɬoʊ]; RP ['dʒɛ̨lɪ, 'pɪləʊ]). There is also a difference in the realization of /t/ in intervocalic position, where GenAm usually has a voiced tap [ɾ], a pronunciation which is rare in RP (RP /t/ remaining voiceless in all environments): thus *letter*, *putting* (GenAm ['lɛɾɚ, 'pʊɾɪŋ], RP ['lɛ̨tə, 'pʊtɪŋ] (3.3.4 below).

Turning to differences in phonotactic distribution, by far the most important are those relating to /r/. In RP the liquid /r/ is subject to the severe phonotactic constraint that it can occur only before a vowel: the sequences /rC/ and /r‖/ are excluded. GenAm is not subject to any such constraint. Thus where GenAm has /r/ followed by a consonant, RP lacks it; examples (with first the GenAm form, then the RP) are *sharp* /ʃɑrp/, /ʃɑːp/, *form* /fɔrm/,

/fɔːm/, *beard* /bɪrd/, /bɪəd/, *cures* /kjʊrz/, /kjʊəz/. Where GenAm has word-final /r/, RP lacks it unless the next word follows closely and begins with a vowel; examples are *car* /kɑr/, /kɑː(r)/, *war* /wɔr/, /wɔː(r)/ *fear* /fɪr/, /fɪə(r)/, *pure* /pjʊr/, /pjʊə(r)/. Where GenAm has /r/ followed by a vowel, so does RP; examples are *very* /'vɛrɪ/, /'verɪ/, *narrow* /'nɛro/, /'nærəʊ/, *serious* /'sɪrɪəs/, /'sɪərɪəs/, *arrive* /ə'raɪv/. (Syllabic [l̩], for this purpose, counts as a vowel: *coral* /'kɔrl̩/, /'kɒrl̩/.) As some of these examples show, there are also differing constraints in the two accents on the vowels which may occur before /r/.

The cluster /hw/ remains a possibility for many Americans, as in *white* /hwaɪt/, *which* /hwɪtʃ/. In RP this survives only as artificial pronunciations; the usual forms have plain /w/, thus /waɪt/, /wɪtʃ/. Many Americans also lack the clusters /tj, dj, nj/, as in *mature, during, nuclear* /mə'tʊr, 'dʊrɪŋ, 'nuklɪər/ (compare RP /mə'tjʊə, 'djʊərɪŋ, 'njuːklɪə/).

These and other differences between the two reference accents are discussed from a historical perspective in 3.2 and 3.3 below.

There are hundreds of words exhibiting differences of lexical incidence between RP and GenAm, thus *tomato* RP /tə'mɑːtəʊ/, GenAm /tə'meɪto/. Others differ in stress, as *address* RP /ə'dres/, GenAm usually /'ædrɛs/. As this example shows, there are many instances where the British incidence also has some currency in the United States (in this case, the less frequent GenAm /ə'drɛs/); or vice versa, as in the case of the GenAm form of *primarily*, /praɪ'mɛrəli/, which has made considerable headway in England at the expense of the traditional form, RP /'praɪmərɪlɪ/. A *cuckoo* is usually /'kʊkuː/ on both sides of the Atlantic; yet in America, but not in England, there is a variant /'kuku/.

A list of some other words with incidence differences follows. *Advertisement* RP /əd'vɜːtɪsmənt/, GenAm often /'ædvərtaɪzmənt/; *anti-* RP /'æntɪ/, GenAm usually /'æntaɪ/; *ate* RP usually /et/, GenAm /eɪt/ (i.e. the DRESS vowel in RP, the FACE vowel in GenAm; though FACE is also found in RP); *ballet* RP /'bæleɪ/, GenAm often /bæ'leɪ/; *Bernard* RP /'bɜːnəd/, GenAm usually /bər'nɑrd/; *beta* RP /'biːtə/, GenAm /'beɪtə/; *borough* RP /'bʌrə/, GenAm /'bɜro/; *clerk* RP /klɑːk/, GenAm /klɜrk/; *depot* RP /'depəʊ/, GenAm /'dipo/; *detail* RP /'diːteɪl/, GenAm usually /dɪ'teɪl/; *docile* RP /'dəʊsaɪl/, GenAm /'dɑsl/; *erase* RP /ɪ'reɪz/, GenAm /ɪ'reɪs/; *figure* RP /'fɪgə/,

GenAm /'fɪgjər/; *herb* RP /hɜːb/, GenAm usually /ɜrb/; *inquiry* RP /ɪŋ'kwaɪərɪ/, GenAm often /'ɪŋkwəri/; *iodine* RP /'aɪədiːn/, GenAm usually /'aɪədaɪn/; *laboratory* RP /lə'bɒrətrɪ/, GenAm /'læbrətɔri/; *leisure* RP /'leʒə/, GenAm /'liʒər/; *lever* RP /'liːvə/, GenAm usually /'lɛvər/; *lieutenant* RP /lef'tenənt/, GenAm /luː'tɛnənt/; *massage* RP /'mæsɑːʒ/, GenAm /mə'sɑʒ/; *neither* RP mainly /'naɪðə/, GenAm mainly /'niðər/ (but both pronunciations are found in both countries; similarly *either*); *nonsense* RP /'nɒnsəns/, GenAm /'nɑnsɛns/; *omega* RP /'əʊmɪgə/, GenAm /o'migə, o'meɪgə, o'mɛgə/; *process* (n.) RP /'prəʊses/, GenAm /'prɑsɛs/ (the plural in GenAm is often /'prɑsəsiz/); *progress* RP /'prəʊgres/, GenAm /'prɑgrɛs/; *quinine* RP /kwɪ'niːn/, GenAm /'kwaɪnaɪn/; *record* (n.) RP usually /'rekɔːd/, GenAm /'rɛkərd/; *schedule* RP /'ʃedjuːl/, GenAm /'skɛdʒul/; *shone* RP /ʃɒn/, GenAm /ʃon/; *suggest* RP /sə'dʒest/, GenAm /səg'dʒɛst/; *thorough* RP /'θʌrə/, GenAm /'θɜro/; *vase* RP /vɑːz/, GenAm usually /veɪs/ ('if it costs more than $9.95 it's a /vɑz/'); *vermouth* RP /'vɜːməθ/, GenAm /vər'muθ/; *wrath* RP /rɒθ, rɔːθ, rɑːθ/, GenAm /ræθ/; *Z* RP /zed/, GenAm /zi/. Note also the strong forms of *of*, *from*, and *was*, which all have /ɒ/ in RP but often /ʌ/ in GenAm.

2.2 Standard lexical sets

2.2.1 KIT

The standard lexical set KIT is defined as comprising those words whose citation form in the two standard accents, RP and GenAm, has the stressed vowel/ɪ/. The two accents agree substantially in the lexical incidence of this vowel in stressed syllables; some GenAm words with /ɪ/, however, belong with NEAR (2.2.19). Phonetically it is a relatively short, lax, fairly front and fairly close unrounded vocoid [ɪ], centralized from, and somewhat closer than, cardinal 2. Some of the words belonging to this lexical set are listed in (53).

The KIT vowel has the traditional name 'short I'. It derives in most cases from the short /i/ of Middle English, and is most commonly spelt *i* or, less commonly, *y*. Where /ɪ/ occurs in unstressed syllables it is spelt in a wide variety of ways.

Most accents have a vowel in KIT words generally similar to the above. Among the more noticeable variants, however, are the fol-

In local accents Long Mid Diphthonging has in some places happened only variably or not at all. It may well be a development for which the Long Mid Mergers are a precondition, so that from those who distinguish between *pain* and *pane* we should always expect a monophthong, [eː ~ ɐː], in the latter, or – as in Lincolnshire and Tyneside – a centring diphthong of the [eə] type. Even where the Long Mid Mergers have been carried out, we find monophthongs in many conservative accents, [eː ~ ɐː] in FACE and [oː ~ ɒː] in GOAT. Qualities such as these are found quite widely: in rural and conservative urban working-class accents of the north of England; rather more generally in Wales and Ireland; very generally in Scotland, where diphthongs may even be perceived as a mark of the anglophile; in cultivated West Indian speech, where it is often in sociolinguistic variation with a lower-prestige opening diphthong; and in the northernmost part of the midwest of the United States (Michigan, Wisconsin, Minnesota), particularly in the environment of a following voiceless consonant, thus *gate* [geˑt], *soap* [soˑp]; more widely in GenAm in unstressed pretonic syllables, as in the first syllables of *vacation*, *chaotic*, *donation*, and *oasis*; and lastly in Indian English and often in African and some other kinds of Third World English.

3.1.13 The great divide

We are now in a position to infer the approximate state of polite English pronunciation in the early or mid eighteenth century. It seems reasonable to fix the date 1750 as marking the end of the shared development of the forerunners of present-day RP and GenAm. Later RP innovations (3.2 below) either had no effect at all on American pronunciation, or had an effect that was sharply limited, geographically or otherwise. Likewise, later American innovations (3.3 below) have had little or no influence on British pronunciation patterns.

There are several sound changes along the path from Middle English to the present day which we have not considered in this chapter. This is because they have applied to all accents of current English (though not necessarily to all traditional-dialect speech), without leaving pockets of unchanged patterns (residualisms) in particular geographical areas. Examples of such sound changes

include Consonant Singling (double /dd/ in *ladder* becomes single /d/, and likewise other doubled consonants); the deletion of an initial velar before /n/, as in *know*, *gnat*; and the backing and rounding of /a(:)/ after /w/, as *wasp*, *swan*, *squat* (though not before a velar, as *quack*, *wag*).

For this period, then, we can infer a vowel system (137). We assume that /a:/ had by now achieved independent phonemic status, although the long [æ:] of BATH was still an allophone of /æ/. Diphthongal /ɪu/ already sounded old-fashioned in London, where the sequence /ju:/ was by now usual in its place. The diphthongs /aɪ/ and /aʊ/ were still realizationally [ʌɪ, ʌʊ] for many speakers.

(137)

ɪ	ʊ	i:				(ɪu)	u:
ɛ	ʌ	e:			ɜ:		o:
æ	ɒ	aɪ	ɒɪ	a:	ɒ:	aʊ	

checked *free*

Mid long /e:/ and /o:/ probably had diphthongal allophonic variants by now, [eɪ] and [oʊ]; before /r/ they may have retained older, opener qualities, [ɛ:] and [ɔ:]. Long /ɜ:/ was always followed by /r/, and was in all likelihood subject to a realization rule of R Coalescence, /ɜ:r/ → [ɜ˞:].

The table of lexical incidence looked like this, (138):

(138)

KIT	ɪ	FLEECE	i:	NEAR	i:r
DRESS	ɛ	FACE	e:	SQUARE	e:r
TRAP	æ	PALM	a:	START	a:r
LOT	ɒ	THOUGHT	ɒ:	NORTH	ɒ:r
STRUT	ʌ	GOAT	o:	FORCE	o:r
FOOT	ʊ	GOOSE	u: (, ɪu)	CURE	u:r (, ɪur)
BATH	æ [æ:]	PRICE	aɪ	*happy*	ʔi:
CLOTH	ɒ:	CHOICE	ɒɪ	*lett*ER	ər [ɚ]
NURSE	ɜ:r [ɜ˞:]	MOUTH	aʊ	*comma*	ə

3.2 British prestige innovations

In this section we consider certain phonological developments in the history of RP which took effect after the GenAm mainstream had separated off. Some of these developments applied also to the

majority of accents in England; others had a more restricted application. Some, at least, originated in popular accents and spread from there to 'polite English' and RP; they are thus innovations which have come to characterize RP, rather than innovations which necessarily first arose in RP. Mostly they apply also to the accents of the south-east of England and (perhaps with the exception of Smoothing) to those of the southern hemisphere, where English speakers first settled after these changes had taken place in England.

3.2.1 Vowels before /r/

In a Scottish accent the words *beer*, *chair*, *more*, and *sure* are pronounced [biːr, tʃeːr, moːr, ʃuːr]. In quality these vowels agree with those of FLEECE, FACE, GOAT, and GOOSE respectively, and are unhesitatingly assignable to the same respective phonemes. This accent is conservative in this respect, in that it has preserved the historical situation. The corresponding forms in RP are [bɪə, tʃɛə, mɔː, ʃʊə ~ ʃɔː], with vowels sharply distinct not only phonetically but also phonologically from those of FLEECE, FACE, GOAT, and GOOSE. The loss of final /r/ we shall deal with in 3.2.2, R Dropping; here we are concerned with the other changes. They are conveniently described under two heads, **Pre-R Breaking** and **Pre-Schwa Laxing**. The first of these must logically have preceded R Dropping; the second may be later.

We mentioned in 3.1.13 that in the eighteenth century /eː/ and /oː/ may have retained older, opener qualities, [ɛː] and [ɔː], in the environment of a following /r/, as in *chair* and *more*. According to this view, which is forcefully maintained by Dobson (1968: §§205–10), these words were phonemically /tʃeːr, moːr/ but phonetically [tʃɛːɹ, mɔːɹ], the usual raising from half-open to half-close quality being regularly inhibited before /r/. A difficulty with this view is that half-close, [eː, oː]-type qualities are to be found today in such words in accents spread quite widely around the world: in Scottish, Irish, West Indian, and some New England and American southern accents. If these accents do not represent the continuation of an English use of [eː] and [oː] qualities in the environment of a following /r/, then they must all separately have innovated the raising from half-open to half-close before /r/, which seems unlikely.

Be that as it may, the first development with which we are here concerned is Pre-R Breaking, which involves the epenthesis of a schwa between any of the vowels /iː, eː, oː, uː/ and a following /r/. This is a very natural kind of phonetic development. To pass from a 'tense' close or half-close vowel to the post-alveolar or retroflex posture associated with /r/ requires considerable movement of the tongue. If this is somewhat slowed, an epenthetic glide readily develops as the tongue passes via the [ə] area. This glide is non-syllabic, and can generally be regarded as a non-distinctive transition phenomenon: /iː/ and /uː/ acquire the pre-/r/ allophones [iːə] [uːə], and /eː, oː/ the allophones [eːə, oːə], (or, if Dobson is right, [ɛːə, ɔːə]). In its basic form, then, Pre-R Breaking is a low-level allophonic rule, statable as (139) and with effects as (140).

(139) $\emptyset \rightarrow$ ə / [−low, +long V] __ r

(140)

	beer	*chair*	*more*	*sure*
Input	biːr	tʃeːr	moːr	ʃuːr
Pre-R Breaking	biːər	tʃeːər	moːər	ʃuːər

Pre-R Breaking also applied to the diphthongs of PRICE and MOUTH, which end in closish qualities. In this environment, in fact, there is evidence for the epenthetic [ə] as early as the fifteenth or sixteenth century (Dobson 1968: §218). Examples are *fire*, *tower*, as in (141); whether the diphthongs were of the type [ʌɪ, ʌʊ] or [aɪ, aʊ] at the time is not relevant to this development.

(141)

	fire	*tower*
Input	faɪr	taʊr
Pre-R Breaking	faɪər	taʊər

The next stage, Pre-Schwa Laxing, involves the switch from a long ('tense') vowel to the corresponding short and lower ('lax') vowel in the environment of the following non-syllabic schwa inserted by Pre-R Breaking. Thus [iː, eː, oː, uː] become [ɪ, ɛ, ɔ, ʊ]. (Compare the very similar phenomenon of Smoothing in contemporary RP, vol. 2, 4.1.3 and 3.2.9 below). This development, like Breaking, can be seen as merely realizational (allophonic), since the diphthongs [ɪə, ɛə, ɔə, ʊə] which result are restricted to the environment __r, an environment from which the phonemic norms [iː, eː, oː, uː] are excluded. These complementary distributions will be upset only if (i) new instances of [ɪə], etc., arise from other sources in environ-

ments other than __r, or (ii) the /r/ which furnishes the conditioning environment itself disappears. In the history of RP both of these things happened, which is why the centring diphthongs achieved phonemic status.

There were various words in which one of the long close or half-close vowels /iː, eː, oː, uː/ was stressed and followed by an ordinary syllabic /ə/. Many of these were and are comparatively learned or specialist words, as *pyorrhoea*, *protozoa*, *skua*. But at least one is an everyday word, namely *idea*. Whereas the learned words fluctuate in their pronunciation through the uncertain influence of the spelling, *idea* is firmly /aɪˈdɪə/ in current RP, and is a word of two syllables only. Previously it must have been trisyllabic, /aɪˈdiː.ə/; hence we must conclude that its earlier final syllabic /ə/ became non-syllabic at some time, and that its earlier /iː/ participated in the Pre-Schwa Laxing process. Thus we have the developments shown in (142), where, for clarity, **non**-syllabic schwa is written explicitly as [ə̯].

(142)

	beer	*idea*	*chair*	*more*	*sure*
Input	biːr	-diːə	tʃeːr	moːr	ʃuːr
Pre-R Breaking	biːə̯r	-diːə	tʃeːə̯r	moːə̯r	ʃuːə̯r
Syllabicity Loss	–	-diːə̯	–	–	–
Pre-Schwa Laxing	bɪə̯r	-dɪə̯	tʃɛə̯r	mɔə̯r	ʃʊə̯r

This **Syllabicity Loss** of /ə/ after long vowels is also responsible for the fact that *theorem* now rhymes with *serum* (RP /ˈθɪərəm, ˈsɪərəm/) and for the old-fashioned pronunciation of *boa* (RP occasionally /bɔə/, now usually /ˈbəʊə/).

Given these forms [bɪər] *beer*, [aɪˈdɪə] *idea*, etc., one could already begin to argue for an independent phoneme /ɪə/. Nevertheless a theory of phonology allowing even a modicum of abstraction would still prefer a phonemicization corresponding to the top line of (142). It was the loss of final /r/ which triggered the restructuring of all the words in which historically /iː, eː, oː, uː/ had been followed by /r/, i.e. the lexical sets NEAR, SQUARE, FORCE, and CURE. The outcome was that one or more of the centring diphthongs, /ɪə, ɛə, ɔə, ʊə/, were added to the inventory of vowel phonemes in the various non-rhotic accents.

Breaking and Laxing were not restricted to the environment of a final /r/; they applied also before preconsonantal and prevocalic /r/.

In the environment __rC we have the examples set out in (143), and in the environment __rV, those of (144). Older /ɔə/ has now usually given way to monophthongal /ɔː/ in RP, and /ʊə/ is following the same path (3.2.5 below).

(143)		*beard*	*scarce*	*force*	*gourd*
	Input	biːrd	skeːrs	foːrs	guːrd
	Pre-R Breaking	biːərd	skeːərs	foːərs	guːərd
	Pre-Schwa Laxing	bɪərd	skɛərs	fɔərs	gʊərd
	(R Dropping	bɪəd	skɛəs	fɔəs	gʊəd)

(144)		*dreary*	*vary*	*glory*	*jury*
	Input	driːrɪ	veːrɪ	gloːrɪ	dʒuːrɪ
	Pre-R Breaking	driːərɪ	veːərɪ	gloːərɪ	dʒuːərɪ
	Pre-Schwa Laxing	drɪərɪ	vɛərɪ	glɔərɪ	dʒʊərɪ

There is no need to assume the extension of Breaking and Laxing to open vowels (START and NORTH).

Both Breaking and Laxing are foreign to Scottish accents, and also to Irish accents (though here there are some reservations, at least at the phonetic level). In England and Wales, though, Breaking seems to have taken place virtually throughout the country, though not always in the __rV environment exemplified in (144); it is perhaps possible to regard it as allophonic in rhotic accents, though in non-rhotic accents (including RP) it is clearly phonemic.

Laxing without Breaking, which for example makes *vary* a homophone of *very*, is restricted to North America. It is discussed in 3.3.3 below.

Pre-schwa Laxing is not universal in accents which have undergone Breaking. Pronunciations such as *beer* [biːə, bɪiə, biə] (whether monosyllabic or disyllabic) are not uncommon. Laxing seems to occur most readily in SQUARE, rather less readily in FORCE, and least readily in NEAR and CURE words.

A possible subsequent development is **Monophthonging**, which changes a centring diphthong [ɪə, ɛə, ɔə, ʊə] into a long monophthong [ɪː, ɛː, ɔː, ʊː]. Again, this seems to occur most readily in SCARCE and FORCE words (yielding the forms [skɛːs] *scarce*, [fɔːs] *force*). It is found, sometimes allophonically or variably, in many regional accents of England and Wales, and also in the southern hemisphere. In RP it is applicable to FORCE, but only as a minority pronunciation to SQUARE.

The following set of data (bottom line of 145), from a Cumbrian informant born around 1955, nicely reflects the operation of Laxing and Monophthonging in SQUARE and FORCE but not in NEAR and CURE. This informant, an undergraduate, considered the pronunciations [bɪə] *beer* and [ʃʊə] *sure* 'posh', and said she would have felt out of place using them.

(145)	*beer*	*weary*	*sure*	*jury*	*fair*	*fairy*	*store*	*story*
Early Modern English input	biːr	wiːrɪ	ʃuːr	dʒuːrɪ	feːr	feːrɪ	stoːr	stoːrɪ
Breaking	biːər	wiːərɪ	ʃuːər	dʒuːərɪ	feːər	feːərɪ	stoːər	stoːərɪ
Laxing	n.a.	n.a.	n.a.	n.a.	fɛər	fɛərɪ	stɔər	stɔərɪ
R Dropping	biːə	–	ʃuːə	–	fɛə	–	stɔə	–
Monophthonging	n.a.	n.a.	n.a.	n.a.	fɛː	fɛːrɪ	stɔː	stɔːrɪ
Happy Tensing (3.4.3)	–	wiːərɪ	–	dʒuːərɪ	–	fɛːrɪ	–	stɔːrɪ
Data = output	biːə	wiːərɪ	ʃuːə	dʒuːərɪ	fɛː	fɛːrɪ	stɔː	stɔːrɪ

(Note, by the way, that I would deprecate any suggestion that the top line of (145) necessarily constitutes the underlying synchronic representation of these words for this speaker; (145) is rather a display of the route by which the present stage developed historically from Early Modern English.)

Since the /aɪ/ and /aʊ/ in words such as *fire* and *tower* are diphthongs ending in relatively close vowel qualities, we naturally expect Pre-R Breaking in such words. Adding non-syllabic [ə̯] to what are already diphthongs, [aɪ̯] and [aʊ̯], produces triphthongs consisting of a first element [a] plus two successive non-syllabic components, thus [aɪ̯ə̯, aʊ̯ə̯]. It is hardly surprising that the option has existed since at least the sixteenth century of avoiding the phonetic intricacy of monosyllabic *fire* and *tower* by pronouncing them as disyllables, ['faɪ.ər, 'taʊ.ər]. The process whereby non-syllabic [ə̯] becomes syllabic [ə] (or in GenAm non-syllabic [ɹ̯] becomes syllabic [ɚ]) may be termed **Syllabicity Gain**.

Disyllabic sequences of PRICE plus /ə/ naturally occur in words such as *Jeremiah, pliant, higher*. If Syllabicity Gain allows monosyllabic *hire* to become homophonous with disyllabic *hire*, the converse process allows *higher* to become homophonous with monosyllabic *hire*. (This is a case of the Syllabicity Loss referred to above.)

Where PRICE or MOUTH is followed by /r/ plus a vowel, Breaking is evidenced in the usual RP forms /'aɪərɪʃ/ *Irish*, /'paɪərət/ *pirate*, /'maʊərɪ/ *Maori*. Phonetically, these words normally have two syl-

lables only; triphthongal /aɪə, aʊə/ may, just as in *fire* and *tower*, be subject to Smoothing (3.2.9 below) and monophthonging to give [aə], [aː] etc. Most accents of English, however, including some 'near-RP', retain unbroken PRICE and MOUTH, giving /ˈaɪrɪʃ, ˈpaɪrət, ˈmaʊrɪ/ etc.

3.2.2 R Dropping

RP has eliminated historical /r/ except in the environment of a following vowel. This came about in the eighteenth century, when /r/ disappeared before a consonant or in absolute final position. We shall refer to the development deleting /r/ in this way as **R Dropping**.

R Dropping had no effect on initial or intervocalic /r/, as in *red, thread, arrive, story, marry*, RP /red, θred, əˈraɪv, ˈstɔːrɪ, ˈmærɪ/. Nor did it affect the /r/ in words such as *fearing* /ˈfɪərɪŋ/, *barring* /ˈbɑːrɪŋ/, though it did affect *feared* /fɪəd/ and *barred* /bɑːd/.

A first approximation to the formulation of the rule of R Dropping is (146), which deletes /r/ in the environment of a following consonant or word boundary.

(146) $r \rightarrow \emptyset \; / \; \_\_ \left\{ \begin{matrix} C \\ \# \end{matrix} \right\}$

Considering first the environment __C, we have consequences such as (147), where the input assumes that Breaking and Laxing have already occurred; the vowels of *start* and *north* have undergone Pre-R Lengthening (3.1.8 above).

(147)

	beard	*scarce*	*start*	*north*	*force*	*gourd*
Input	bɪərd	skɛərs	staːrt	nɒːrθ	fɔərs	gʊərd
R Dropping	bɪəd	skɛəs	staːt	nɒːθ	fɔəs	gʊəd

Quality adjustments (aː → ɑː, ɒː → ɔː, ɔə → ɔː) later applied, to give current RP /bɪəd, skɛəs, stɑːt, nɔːθ, fɔːs, gʊəd/.

This development made pairs such as *laud–lord, stalk–stork, taught–tort* homophonous and made *lawn* a rhyme of *corn* (i.e. merged THOUGHT and NORTH); also *father–farther, calve–carve*, etc. (i.e. merged PALM and START).

R Dropping also applied after the mid central vowels, /ɜː/ and /ə/, with consequences such as (148). If, as suggested in 3.1.13 above,

sequences of these vowels plus /r/ had until now been subject to a realization rule of R Coalescence, it is clear that R Dropping supervened to inhibit this process, bleeding it in fact of all possible inputs. Syllabic [l̩], too, must be treated as /əl/ for purposes of R Dropping, which does not occur before it: *barrel* keeps /r/.

(148)

	nurse	*standard*	*barrel*	
Input	nɜ:rs	stændərd	bærəl	
R Dropping	nɜ:s	stændəd	–	= current RP
Later rule	–	–	bærl̩	= current RP

R Dropping also involves the deletion of /r/ at the end of a word spoken in isolation, as in (149).

(149)

	near	*square*	*far*	*or*	*four*	*cure*	*stir*	*letter*
Input	nɪər	skwɛər	fɑ:r	ɒ:r	fɔər	kjʊər	stɜ:r	lɛtər
R Dropping	nɪə	skwɛə	fɑ:	ɒ:	fɔə	kjʊə	stɜ:	lɛtə
Other changes	–	–	fɑ:	ɔ:	fɔ:	–	–	letə
Output = current RP	nɪə	skwɛə	fɑ:	ɔ:	fɔ:	kjʊə	stɜ:	letə

However, words are not usually spoken in isolation. In connected speech, where a word ending in historical /r/ occurs before another word beginning with a consonant, R Dropping operated as usual. But where the next word begins with a vowel, the /r/ usually remains, now as the special liaison feature known as 'linking /r/'. We have results as in (150).

(150)

	near me	*near us*	*far gone*	*far away*
Input	nɪər mi:	nɪər ʌs	fɑ:r gɒn	fɑ:r əweɪ
R Dropping	nɪə mi:	–	fɑ: gɒn	–

In this way the R Dropping innovation caused items which historically ended in /r/ to exhibit an alternation: where the word was said in isolation, or before another word or morpheme beginning with a consonant (including where a consonant-initial suffix was attached to it), the /r/ was deleted, i.e. had zero realization, as in *fear*‖, *fear death*, *fearful*, *fears*; but where a vowel followed, whether across a morpheme or word boundary or not, /r/ retained its usual phonetic realization, as in *weary*, *fear anything*, *fearing*. Thus *fear* acquired the alternating forms [fɪər] and [fɪə], *stare* the alternating forms [stɛər] and [stɛə], and likewise *car*, *for*, *store*, *pure*, *fir*, and *better*.

We can revise (146), therefore, to read as (146′) where $\#_0$ stands for 'zero or more major morpheme boundaries', i.e. an

optional morpheme or word boundary; || stands for the end of an utterance, a pause, or a major syntactic boundary, such as the boundary between two sentences.

$$(146') \quad r \rightarrow \emptyset \,/\, \_\_ \begin{Bmatrix} \| \\ \#_0 C \end{Bmatrix}$$

Note, by the way, that there is no justification for positing a rule of straightforward R Vocalization (r → ə) in place of Breaking plus R Dropping. This would work for *fears*, *near me*, etc., but not for *fearing*, *near us*, etc., where both [ə] and [r] are required in the output. Unlike many Americans, English people do not say *[fɪrɪŋ] or *[nɪr ʌs]. It follows that words such as *fire* and *tower* must be assumed to be underlyingly disyllabic by the time R Dropping occurred (since historical /faɪr, taʊr/ never give */faɪ, taʊ/); they retain the option of a monosyllabic (triphthongal) realization through the principle of Syllabicity Loss (3.2.1 above).

Accents which have undergone the change expressed in (146′) are termed **non-rhotic**; accents which have not undergone (146′), but have retained /r/ in all environments where it occurred historically, are termed **rhotic**. (An alternative terminology is **r-less** and **r-ful**; the difficulty with these words is that they are confusing if spoken in a non-rhotic accent, where *r-ful* may readily be mistaken for *awful*.)

Non-rhoticity is found not only in RP and in the local accents of the east and north of England, but also in most accents of Wales and New Zealand, in all native-English-speaking accents of South Africa and Australia, and also in some of New England and much of the south of the United States. The pattern of non-rhoticity in the United States attests its origin as an importation of a new pronunciation fashion from England: the non-rhotic accents are found in the areas around the major Atlantic seaports (Boston, New York, Norfolk, Charleston, Savannah). The pioneers who had already pushed westwards remained unaffected by the new development; rhoticity has prevailed as the American norm.

Non-rhoticity is the prestige norm in England and Wales, so that middle-class accents and, increasingly, working-class accents of the traditionally rhotic areas of the west and north-west of England now tend to exhibit no more than variable rhoticity. Variable rhoticity is also typical of the traditionally non-rhotic areas of the United States (eastern New England, the coastal south, black

speech), but in the United States of course it is rhoticity which tends more and more to be the prestige norm. Scotland and Ireland are fairly solidly rhotic, except for a relatively small number of speakers having close class connections with England and RP. West Indian accents vary from island to island, with for instance Trinidad and the Leewards being non-rhotic, but Barbados firmly rhotic.

Intermediate varieties also exist. It is not uncommon for R Dropping to have applied preconsonantally but not finally, i.e. in accordance with the simpler rule (146″)

(146″) $r \rightarrow \emptyset / \_\_ C$

With this restricted version of R Dropping, /r/ is lost from *beard*, *scarce*, *start*, *north*, *force*, *gourd*; but not from *near*, *square*, *far*, *or*, *four*, *cure*. The mid central vowels seem to behave idiosyncratically in respect of their influence on the retention or otherwise of a following /r/; many Americans whose speech is otherwise non-rhotic retain (or reacquire) /r/ in NURSE words and perhaps also in weak syllables (the *lett*ER words). Similarly in England: the *LAE* shows a patch of East Anglia as having /r/ in *worms* (map Ph58) but not in *darn* (map Ph19), while in North Yorkshire and Humberside there are localities with /r/ in *butter* (map Ph244) but not in *flour* or *four* (maps Ph155, Ph193). In Jamaica, /r/ is much more consistently present in *far* and *near* than in *start*, *beard*, and *letter*. Accents of this kind, if historical /r/ is retained consistently in some non-prevocalic environments but lost consistently in others, may be referred to as **semi-rhotic**.

Middle English had no native words ending in /ə/. All *comma* words (2.2.25 above) are borrowings from other languages, many of them belonging to specialist or learned vocabulary. It is not surprising, then, that rustic folk speech in rhotic areas of both England and America tends to make them conform to the very large number of native words in /-ər/ (the *lett*ER words). This produces pronunciations of the type *comma* /-mər/ (phonetically usually [-mɚ], *Cuba* /-bər/, *Samantha* /-θər/, etc., in all phonetic environments (contrast the possibility of identical forms arising in non-rhotic accents by R Insertion, 3.2.3 below). If, as commonly happens, GOAT is weakened to /ə/ in words such as *yellow*, *window*, then this schwa too may be regularized to /ər/, giving forms such as ['jɛlɚ ~ 'jælɚ],

['wɪndɚ]. This phenomenon may be referred to as **hyper-rhoticity**. It is nowhere standard.

An earlier, and quite separate, loss of /r/ before certain instances of /s/, /ʃ/, and occasionally other consonants, had already taken place by the sixteenth century (perhaps as early as 1300; see Dobson 1968: §401(c); also Hill 1940). It is this earlier development which is responsible for the standard pronunciation /'wʊstə(r)/ for the name spelt *Worcester*; also for the by-forms *cuss* (*curse*), *bust* (*burst*), *hoss* (*horse*) and the less widespread *passle* (*parcel*) and *cat-ridge* (*cartridge*); and for the fact that Americans write as *ass* the word which the British write as *arse* ('backside'; on this see Sprague de Camp 1971).

3.2.3 R Insertion

Sometime after R Dropping had become established in the precursor of RP and in many other accents of England, a related development took place: there occurred a rule inversion. Instead of these alternations being produced by an R Dropping rule operating on underlying forms containing /r/, a new generation of speakers came to infer underlying forms without /r/, a phonetic /r/ (i.e. [ɹ] etc.) being introduced in the appropriate intervocalic environment by a rule of R Insertion. Instead of (150), the alternations were accounted for as in (151).

(151)		*near me*	*near us*	*far gone*	*far away*
	New input	nɪə mi:	nɪə ʌs	fɑ: gɒn	fɑ: əweɪ
	R Insertion	–	nɪər ʌs	–	fɑ:r əweɪ

This restructuring had the advantage of rendering the new underlying form identical with the form used in isolation (in this example /nɪə, fɑ:/).

The R Insertion rule which superseded (146′) is expressed formulaically in (152). It inserts /r/ after certain vowels before a following vowel, optionally across a morpheme or word boundary.

(152) $\emptyset \rightarrow r \;/\; [ɜ:, ə, ɑ:] \_\_ \#_{0} V$

The [ə] in the left-hand environment of the structural description allows the rule to operate after the centring diphthongs /ɪə, ɛə, ɔə,

ʊə/, as well as after /ɜː/, /ɑː/, and /ə/; but not after /iː, ɪ, eɪ, aɪ, ɔɪ, ɔː, uː, əʊ, aʊ/. Thus (152) correctly inserts /r/ in *fearing*, *near us*, *fairest*, *square up*, *boring*, *four-all*, *curing*, *sure enough*, *stirring*, *stir up*, *barring*, *far away*, *lettering*, *better off*, but not in *seeing*, *tee off*, *greyer*, *say it*, etc.

What is the evidence for this rule inversion? In brief, the justification for positing the replacement of the R Dropping rule (146′) by the R Insertion rule (152), together with appropriate restructuring of phonological representations in the lexicon, is the well-known phenomenon of 'intrusive /r/' (e.g. Jones 1956: §361; Gimson 1980: 208). This is the occurrence of /r/ (i.e. [ɹ], [ɾ], etc.) in phrases such as *the idea isn't* /ðiː aɪˈdɪər ɪzn̩t/, *Ada ought* /ˈeɪdər ˈɔːt/. This /r/ is unetymological; it is apt to occur in RP and most other non-rhotic accents in the environment specified in (152), i.e. after /ɪə, ə/ and certain other vowels at a word boundary when the next word begins with a vowel.

The citation form of *beer* in RP is /bɪə/, while that of *idea* is /aɪˈdɪə/. The citation form of *trader* is /ˈtreɪdə/, while that of *Ada* is /ˈeɪdə/. Intrusive /r/ arises essentially from the natural tendency to give identical treatment to words with identical endings. Since /bɪə/ has an inherited prevocalic variant /bɪər/, it is reasonable to furnish /aɪˈdɪə/ with a parallel prevocalic variant /aɪˈdɪər/. Since /ˈtreɪdə/ has an inherited prevocalic variant /ˈtreɪdər/, it is reasonable to furnish /ˈeɪdə/ with a parallel prevocalic variant /ˈeɪdər/. As shown in (153), 'linking /r/' and 'intrusive /r/' are distinct only historically and orthographically.

(153)	*beer isn't*	*idea isn't*	*trader ought*	*Ada ought*
Inherited forms	ˈbɪər ˈɪznt	aɪˈdɪə ˈɪznt	ˈtreɪdər ˈɔːt	ˈeɪdə ˈɔːt
New citation forms taken as underlying	ˈbɪə ˈɪznt	aɪˈdɪə ˈɪznt	ˈtreɪdə ˈɔːt	ˈeɪdə ˈɔːt
R Insertion	ˈbɪər ˈɪznt	aɪˈdɪər ˈɪznt	ˈtreɪdər ˈɔːt	ˈeɪdər ˈɔːt
	linking /r/	intrusive /r/	linking /r/	intrusive /r/

Other examples include *Africa*/r/ *and Asia*, *Kenya*/r/ *and Uganda*, *Cuba*/r/ *is*, *if Libya*/r/ *attempts*, *put a comma*/r/ *in*, *the dilemma*/r/ *appears*, *ratafia*/r/ *and brandy*, *Edna*/r/ *O'Brien*, *guerrilla*/r/ *organization*, *Cana*/r/ *of Galilee*, *Lufthansa*/r/ *officials*, *visa*/r/ *application*, *Obadiah*/r/ *is the shortest*, *Nineveh* /ˈnɪnɪvər/ *is laid waste*, *the Messiah*/r/ *is born*, *in Judaea*/r/ *again*; *Korea*/r/ *and*

Vietnam, *India*/r/ *and Pakistan*, *an area*/r/ *of agreement*, *put my tiara*/r/ *on*, *the Victoria*/r/ *Embankment*, *a diarrhoea*/r/ *attack*, *gonorrhoea*/r/ *and syphilis*. (Some speakers apparently have the R Insertion rule blocked if the immediately preceding consonant is /r/, as in the last few examples.)

Across word boundaries, R Insertion is usually not a categorical rule: typically it is sometimes applied, sometimes not, depending on speech rate, contextual style, and no doubt also random factors. Literacy adds the complication that intrusive /r/, unlike linking /r/, is widely regarded as incorrect or slovenly ('pronouncing a letter which isn't there'); so that the speech-conscious may make some effort to avoid it. Usually, though, such an effort leads to the suppression of all sandhi /r/s, i.e. of every /r/ inserted by (152), whether 'intrusive' or merely 'linking'. One widespread tactic is the use of a glottal stop instead of /r/, thus *the* [bɪəʔ] *isn't*, *the* [aɪˈdɪəʔ] *isn't*, etc. This seems to be particularly common in South African English. In order to succeed in suppressing intrusive /r/ while retaining linking /r/, as a few do succeed in doing, the speaker must consult his knowledge of the spelling as the only guide to distinguishing the two cases. Given that even university students often write things like *the uvular is situated...*, *the Peninsula War* (instead of *the uvula*, *the Peninsular War*), it is clear that the average speaker is hardly going to be able to achieve the supposed goal of avoiding intrusive /r/ while keeping linking /r/.

R Insertion also applies word-internally. Even in accents where *fear* is /fɪə/, *fearing* is almost invariably /ˈfɪərɪŋ ~ ˈfɪərɪn/; so also *batter* /ˈbætə/ but *battering* /ˈbætərɪŋ/, *sober* /-bə/ but *soberer* /-bərə/, *cater–caterer*, *slender–slenderish*, *tender–tenderize*, *sculpture–sculpturesque*. Hence also the occasional instances of 'internal intrusive /r/' such as *polkaing* /-kərɪŋ/, *magenta-ish* /məˈdʒentərɪʃ/, *subpoenaing* /-nərɪŋ/, *propaganda-ize* /-dərəɪz/, *Kafkaesque* /ˈkæfkərˈesk/.

Words from certain lexical sets other than those considered so far may be involved in analogical R Insertion. In RP the vowels of PALM and START have fallen together as a consequence of R Dropping (*father* and *farther* are homophones), which means that the smallish number of PALM words ending in /ɑː/ become candidates for R Insertion. Just as *far* has the alternants /fɑː/ and /fɑːr/, so *Ma* acquires the alternant /mɑːr/ alongside its inherited /mɑː/, as in the sentence *Is Ma*/r/ *at home?* Newsreaders on the BBC very

generally referred to the (former) *Shah*/r/ *of Iran*. Television advertising proclaimed that *this bra*/r/ *is made of*... Other examples include *the Omagh*/r/ *area, an awful fracas* /'frækɑːr/, *isn't it*?, *bourgeois* /'bɔːʒwɑːr/ *ideas*, and (as I have sometimes described Breaking) *schwa*/r/ *insertion*. Word-internally, we have *cha-cha*/r/*-ing*.

The falling together of the FORCE and THOUGHT vowels opens up the large number of THOUGHT words ending in this vowel to R Insertion. As long as *store* /stɔə ~ stɔər/ had a different vowel from *law* /lɔː/, there was no reason for the latter to develop a prevocalic variant with /r/. As soon as FORCE and THOUGHT merge in free syllables (3.2.5 below), *store* (now /stɔː/, prevocalically /stɔːr/) ends identically with *law*, which therefore tends to come into line as /lɔː/, prevocalically /lɔːr/, as in *law and order* /'lɔːr ən 'ɔːdə/. Other examples of intrusive /r/ after /ɔː/ include *the Jackdaw*/r/ *of Rheims*, *I saw*/r/ *in the paper*, *the jaw*/r/ *opens*, *Shaw*/r/ *as a dramatist*, *a saw*/r/ *attachment*, *awe*/r/*-inspiring*, *the Whitelaw*/r/ *administration*, *some raw*/r/ *apple*. Word-internally, R Insertion is frequently to be observed in England in words such as *gnawing* /'nɔːrɪŋ/, *draw*/r/*ing*, *withdrawal* /wɪð'drɔːrəl/. There is, however, rather more sentiment against intrusive /r/ in this environment than in those previously mentioned, due no doubt partly to the fact that it constitutes a more recent development (since *manna–manner*, *Korea–career*, *Ma–mar* became homophonous before *law–lore* did); perhaps also to the fact that a large number of common monosyllables are potentially affected.

Speakers (such as myself) who without making any effort naturally pronounce an /r/ in the phrase *I store it* but not in the phrase *I saw it*, while *store them*, *saw them* rhyme at the phonetic level, and who have *soar* and *saw* as homophones but not *soaring* and *sawing*, have a slightly complicated phonology at this point. Either, we must assume, FORCE words have underlying /ɔə/ which is monophthonged to [ɔː] by a realization rule which also happens to make it identical with the realization of the /ɔː/ of THOUGHT words; or, alternatively, both FORCE and THOUGHT words have underlying /ɔː/ in the speaker's mental lexicon, but THOUGHT words are specially marked as exceptions to the rule of R Insertion. (In popular London speech, FORCE and THOUGHT are merged as [ɔə] rather than [ɔː] in word-final position, but this does not affect the general argument.)

Once R Insertion applies (categorically or variably) to /ɔː/, so that *core* and *jaw*, say, are equally likely to have or not have /-ɔːr/ forms before a following vowel, then the R Insertion rule can be expressed as (154) rather than as (152):

(154) $\emptyset \rightarrow r \,/\, [\text{-high V}]\_\_ \#_0 V$

The class of non-high vowels (i.e. mid and open vowels) is more satisfactory as a natural class than the [ɜː, ə, ɑː] of (152); no difficulty arises in connection with the non-high short vowels /e, æ, ʌ, ɒ/, since in any case they never occur word-finally. (It is arguable whether the truncated form of *yes*, usually spelt *yeah*, should be represented phonemically as (RP etc.) /je/ or /jɛə/, since its phonetic range seems to cover both possibilities. In any case, it certainly triggers R Insertion in England, as in *yeah*/r/ it is.)

The view that R Sandhi results from an insertion rule (rather than from underlying forms containing /r/) is supported by the readiness of speakers of the relevant accents to intrude /r/ when speaking other languages and in foreign names and expressions. In language classes in London I have often heard instances such as *j'étais déjà*/r/ *ici*, *ich bin ja*/r/ *auch fertig*, *tio estas interesa*/r/ *ideo*, *fe wela*/r/ *i rywbeth*. Choirmasters have to admonish against *alpha*/r/ *es et O*, *gloria*/r/ *in excelsis*, and *viva*/r/ *España*. When it is a matter of foreign words in an English sentence, examples I have noted in scholarly or intellectual discussions include *Degas* /ˈdeɪgɑːr/ *and Sickert*, *Dada*/r/*ism*, *the social milieu* /miːˈljɜːr/ *of Alexander Pope*, *the junta* /ˈxʊntər/ *in Chile*. R Insertion also applies after acronyms, as in the typical and authentic RP examples *as far as BUPA*/r/ *is concerned*; *we shall hear about Rosla*/r/ *again in a few months* (i.e. British United Provident Association; raising of the school leaving age). Given that these instances can only reflect an insertion rule, it is reasonable to conclude that all sandhi /r/ in contemporary RP and other non-rhotic accents reflects the same insertion rule.

Particular developments in phonetic realization may mean that in certain accents vowels of other lexical sets come to trigger sandhi /r/. In particular, the GOAT vowel in weak syllables is widely reduced to [ə] in working-class accents. In England, at any rate, the automatic consequence is /r/ before a following vowel, as in *tomato*/r/ *and cucumber production*, *the window*/r/ *isn't clean*, *eye-*

shadow/r/ *and make-up, Last Tango*/r/ *in Paris*, even *I 'don't know* /'dʌnər/ *if he 's*. (The reason this does not happen in RP is that RP /əʊ/ does not weaken in this way, but either remains [əʊ] or at most becomes [o] or [ʊ].)

In Cockney (working-class London speech) MOUTH can phonetically be [æə] or [æː]. In accordance with (154), this characteristically triggers /r/ in phrases such as *how*/r/ *are you*?; *now*/r/ *'e's done it*!

In many accents the pronoun *you* has a weak form /jə/ (conventionally spellable *ya* in the United States, but *yer* in non-rhotic-oriented England). This form tends to be eschewed in Mainstream RP, and in U-RP is even excluded, I think, from prevocalic position (where only /juː ~ jʊ/ occur). Those working-class accents which allow the /jə/ form prevocalically naturally tend, if non-rhotic, to insert /r/ after it; hence pronunciations such as [jəɪ 'ɑ̃ːʔ] *you aren't, I'll tell you how* [... jəɪ 'æː] (these examples both Cockney). In such cases, in fact, weakened *you* and *your* become homophonous, whatever their environment. *To*, too, has /tə/ as one of its weak forms; parallel considerations lead RP /tʊ 'iːt/ or /tuː 'iːt/ to compete with not only [tə 'ʔiːt] but also a popular /tər 'iːt/. The contractions sometimes written *wanna, gotta, hafta, oughta, gonna* follow the same pattern: as a scholarly syntactician of my acquaintance put it, 'in certain circumstances *want to* becomes /'wɒnər/ and *got to* becomes /'gɒtə/'. The /v/-less form of *of* has a prevocalic alternant /ər/, to my knowledge, in at least London, Norwich (Trudgill 1974a: 162), and West Yorkshire. So does the /v/-less form of weakened *have*, underlying Trudgill's Norwich example *he have often said* [hɛːɪ 'ɒfən 'sɛd] (1974a: 163); and *by* has a Norwich prevocalic weak form /bər/, as in *run over by* /bər/ *a bus*. R Insertion is in fact one of the most productive phonological rules in contemporary English English.

The earliest reference to intrusive /r/ of which I am aware dates from 1762, when T. Sheridan mentions it as a characteristic of London speech. It has probably characterized RP since the early nineteenth century, though no doubt regularly disapproved of and avoided by the speech-conscious. By now it is found very widely in non-rhotic British speech, as well as in New York and New England (to some extent) and in the southern hemisphere (though not much, I think, in South Africa, where R Insertion of all kinds seems relatively uncommon).

3.2.4 Glide Cluster Reduction

Pairs such as *whine* and *wine* are homophonous in many accents of English. In others they are distinct, as they were historically: /hwaɪn/ vs. /waɪn/ etc. The loss of /h/ from the cluster /hw/, which gives *whine* the same pronunciation as *wine*, may be referred to as **Glide Cluster Reduction**. Although in a sense this is a kind of H Dropping, its very different social evaluation makes it convenient to distinguish /hw/ reduction from generalized H Dropping (3.4.1 below).

The phonetic realization of /hw/, in accents not subject to Glide Cluster Reduction, may be a sequence representable as [hw], or alternatively a single segment [ʍ], a voiceless labial-velar fricative. In Scottish English, for example, [ʍ] seems to be the norm. An alternative phonemicization is then possible: we can recognize an additional phoneme /ʍ/ in the system, rather than admitting the phonological cluster /hw/, and /ʍ/ is then paired with /w/ in parallel with /p/ and /b/, /f/ and /v/, etc. Under this analysis, we should describe the change we are here discussing not as a cluster reduction (a phonotactic change) but as the loss of the phoneme /ʍ/ (a systemic change). In the remainder of this section, we shall assume the /hw/ analysis.

Glide Cluster Reduction characterizes most accents of England and Wales, the southern hemisphere, and the West Indies, and also some American speech; but not the accents of Scotland or Ireland. The only local accents in England which retain /hw/ are those of Northumberland and nearby.

Glide Cluster Reduction seems to have started in the south of England early in the Middle English period (Jordan 1934: §195), but for a long time it remained a vulgarism; educated speech retained /hw/. The plain [w] pronunciation became current in educated speech in the course of the eighteenth century, and was usual by 1800.

Present-day RP usage could be described as schizophrenic. For most RP speakers /hw/ is not a 'natural' possibility. The usual RP form of *whine* is /waɪn/; similarly *what* /wɒt/, *which* /wɪtʃ/, *whether* /weðə/, *whisper* /wɪspə/, *wheel* /wiːl/. Other RP speakers use /hw/, and say /hwaɪn, hwɒt, hwɪtʃ, hweðə, hwɪspə, hwiːl/, and this usage is

widely considered correct, careful, and beautiful. But I think it is true to say that those who use it almost always do so as the result of a conscious decision: persuaded that /hw-/ is a desirable pronunciation, they modify their native accent in this direction. Thus /hw/ is nowadays in England found principally among the speech-conscious and in adoptive RP (vol. 2, 4.1.3). It is often taught as correct for verse-speaking and dramatic declamation. Women seem to be more open to persuasion towards /hw/ than men.

Both Strang (1970: §34) and Gimson (1980: 216) imply that the decline of /hw/ is a current or recent phenomenon in RP. This is true, I think, only in the sense that ever fewer people are receptive to the puristic view that one ought to make the effort to use it. It has not been usual in unstudied RP for two centuries (Dobson 1968: §414).

In *who*, *whom*, *whose*, *whole*, and *whore*, the spelling *wh* corresponds to a pronunciation with simple /h/. In *whoop* there is now competition between /hu:p/ and a spelling pronunciation /(h)wu:p/. Otherwise, the speech-conscious users of /hw/ in England use it wherever the spelling has *wh*; but those who 'naturally' retain historical /hw/ in Scotland, Ireland, and North America, have a somewhat more complicated relationship between sound and spelling. The word *whelk* is reportedly /wɛlk/, not /hwɛlk/, in Scotland (Jones 1956: 380); but *weasel* has /hw/ in much of central and eastern Scotland (Mather & Speitel 1975: vol. 2, map 1).

Like other cases of /h/, the cluster /hw/ is sensitive to stress. Words such as *which*, *when*, *why* are often unstressed, and then pronounced with plain /w/ by those who would use /hw/ for the same word in stressed position.

Speech-conscious people who do not 'naturally' use /hw/ often produce hypercorrections when they attempt to incorporate /hw/ into their accent. A British television newsreader has been noticed saying things like /ˈhwɛəhaʊs/ for *warehouse*. (Most of her colleagues make no attempt to use /hw/. They incur no stigmatization for this.)

In North America /hw/ is still a widespread usage, with a consistent distinction between *whine* and *wine*, *where* and *ware*. But Glide Cluster Reduction is clearly on the increase, particularly in

large cities. The Linguistic Atlas shows plain /w/ in *whip* and *wheelbarrow* in three areas: a large area around New York, including not only metropolitan New York City itself but also Albany, Philadelphia, Harrisburg, and Baltimore; and two much smaller coastal areas in Massachussetts–Maine and South Carolina–Georgia, including the ports of Boston, Portland, Charleston, and Savannah. This geographical distribution suggests that in the United States Glide Cluster Reduction, like non-rhoticity, represents an innovation imported from England via the seaports which before the advent of air travel were the places in closest contact with Europe and its influences. On the other hand it is clear that by now it has spread well away from the east coast. I have been struck by /w/ for /hw/ in the speech of Californians, not least in words of Spanish origin, as /ˈmɛrəˈwɑnə/ *marijuana*, *the San* /wɑˈkin/ (*Joaquin*) *Valley*.

Many Americans consider the use of /w/ for /hw/ slipshod and erroneous. To quote one drama-oriented work on phonetics, 'this simplification is commonplace throughout the country and can be heard wherever thoughtlessness and laziness pervade speech patterns' (Blunt 1967: 30).

It might be expected that what applies to /hw/ also applies to /hj/. But this is not the case: RP retains historical /hj/ in words such as *huge*, *human*, *hew* (with a realization which may be either the two-segment sequence [hj] or else a single segment [ç]). In England, the omission of /h/ in these words is on a par with ordinary prevocalic H Dropping (3.4.1 below). The word *humour* is a special case, since it is a French word which when first borrowed had no /h/ (like *hour*, *honest*, etc.). Although the spelling pronunciation /ˈhjuːmə/ has now become the predominant RP form, /ˈjuːmə/ remains as an old-fashioned and increasingly rare alternative.

In America, Glide Cluster Reduction of /hj/ is apparently quite widespread in working-class speech, and not unknown in cultivated speech (Bronstein 1960: 124). In the word *humor*, Kenyon & Knott (1953) suggest the possibility of a different treatment according to meaning, with /ju-/ in 'sense of humor', 'mood', and for the verb, but /hju-/ in other senses. *PEAS*, on the other hand, calls /ju-/ 'the prevalent pronunciation' (178), and it is certainly true that, as McDavid (1952) says, 'it is far more widely current in standard speech in the United States than in England'.

3.2.5 Suffix vowels

Another innovation which has affected RP since the Great Divide (and has hence also, to a varying extent, affected other British accents and those of the southern hemisphere) concerns disyllabic suffixes in words of four or more syllables.

Words ending in *-ary*, such as *secretary*, *necessary*, *momentary*, used to have, and still do have in GenAm, a strong penultimate vowel (GenAm /ˈsɛkrətɛrɪ/, /ˈnɛsəsɛrɪ/ etc.; these penultimate syllables may also have a non-accentual stress, thus /ˈsɛkrəˌtɛrɪ/ etc.) In RP the penultimate vowel is normally weakened, and may be entirely elided (RP /ˈsekrətrɪ/, /ˈnesɪsrɪ ~ ˈnesəs(ə)rɪ/; but near-RP often preserves a strong vowel). The earliest evidence for the weakening of these vowels in England dates from the end of the seventeenth century (Dobson 1968: §1). Other suffixes involved are *-ory*, as in *category* (GenAm /ˈkætəgɔrɪ ~ -gori/, RP /ˈkætɪg(ə)rɪ/), *reformatory*, *lavatory*, *regulatory*, *conciliatory*; *-mony*, as in *testimony* (GenAm /ˈtɛstəmonɪ/, RP /ˈtestɪmənɪ/), *alimony*, *ceremony*, *matrimony*; *-borough*, *-boro*, *-burgh*, as in *Scarborough* (GenAm /ˈskɑrbɜro/, RP /ˈskɑːb(ə)rə/), *Edinburgh*, *Peterboro*; *-berry*, *-bury*, as in *strawberry* (GenAm /ˈstrɔbɛri/, RP /ˈstrɔːb(ə)rɪ/), *Newbury*, *Waterbury*; also such words as *dysentery* (GenAm /ˈdɪsn̩tɛri/, RP /ˈdɪsn̩trɪ/).

In the word *primarily*, the traditional RP form is /ˈpraɪm(ə)rɪlɪ/. GenAm usage is somewhat varied, since trisyllabic words in *-ary*, such as *primary* and *library*, often have the vowel weakened in the suffix, and this is extended to the adverb form in *-arily*. But there has also developed an emphatic variant in GenAm, /praɪˈmɛrəli/, and this variant has within my lifetime caught on in Britain too, giving a new and quite anomalous RP form /praɪˈmerəlɪ/.

In some quadrisyllabic words RP has reduced the number of successive weak syllables by shifting the stress from the first syllable to the second: thus *corollary* (GenAm /ˈkɔrəlɛri/, RP /kəˈrɒlərɪ/), *capillary* (GenAm /ˈkæpəlɛri/, RP /kəˈpɪlərɪ/). Compare, though, *coronary*, where all accents keep the stress on the first syllable (GenAm /ˈkɔrənɛri/, RP /ˈkɒrən(ə)rɪ/). In *laboratory* the older RP form /ˈlæb(ə)rət(ə)rɪ/ (GenAm /ˈlæbrətori/etc.) has now been displaced by the stress-shifted /ləˈbɒrət(ə)rɪ/, although its abbreviation remains /læb/ *lab*.

The suffixes *-ile* and *-ization* exhibit just the contrary behaviour. In England they have /aɪl/, thus *missile* /ˈmɪsaɪl/, *docile* /ˈdəʊsaɪl/, *hostile* /ˈhɒstaɪl/, *organization* /ˌɔːgənaɪˈzeɪʃn̩/ *mechanization* /ˌmekənaɪˈzeɪʃn̩/. In American speech the suffix vowel is usually weakened, thus GenAm /ˈmɪsl̩/, /ˈdɑsl̩/, /ˈhɑstl̩/, /ˈɔrgənəˈzeɪʃən/, /ˈmɛkənəˈzeɪʃn̩/.

3.2.6 BATH and CLOTH

In the mid-eighteenth century we tentatively left the precursor of RP with [aː] in PALM and [aːr] in START, but [æː], phonemically perhaps still /æ/, in BATH (3.1.13 above). By the twentieth century all three lexical sets had /ɑː/, i.e. a vowel which is not only long but also (relatively) back. The details and timing of the changes involved are not altogether clear. Presumably, though, two stages are involved: the phonemic split of TRAP and BATH, and the backing of BATH–PALM–START from [aː] to [ɑː].

The **TRAP–BATH Split** became implicitly established once it was clear that lexical diffusion meant that some lexical items previously said with [a ~ æ] now had a long vowel ([æː ~ aː], later to become [ɑː]), while others, although involving an identical phonological environment, retained the short vowel. Thus nowadays in RP, in the environment __s#, we have /ɑː/ in *pass*, *glass*, *grass*, *class*, *brass*, but /æ/ in *gas*, *lass*, *morass*, *amass*, *mass* (in physics), *cuirass*, *crass*, and *bass* (fish, fibre, or beer), and usually also in *mass* (eucharist) and *ass*. GenAm, however, with no corresponding TRAP–BATH Split, keeps the same vowel in all such words. In other relevant phonetic environments similarly inconsistent developments characterize RP and other 'broad-BATH' accents, as examplified in (155).

(155)	Current RP /ɑː/	Current RP /æ/
__f#	*staff*, *laugh*, *giraffe*, *calf*, *half*	*gaff*, *gaffe*, *chiffchaff*
__fC	*craft*, *shaft* etc., *after*, *laughter*	*Taft*
__θ#	*path*, *bath*	*math(s)*, *hath*, *strath*
__st	*last*, *past*, *mast* etc., *master*, *disaster*, *nasty* etc.	*hast*, *bast*, *enthusiast*, *aster*, *Astor*, *raster*, *Rasta(farian)*
__sp#	*clasp*, *grasp*, *rasp*, *gasp*	*asp*
__sk	*ask*, *flask*, *mask* etc., *basket*, *casket*	*Aske*, *casque*, *gasket*, *Ascot*, *mascot*
__sl̩	*castle*	*tassel*, *hassle*, *vassal*
__sn̩	*fasten*	*Masson*

__ns	*dance, chance, France* etc., *answer, chancel* etc.	*manse, romance, expanse, cancer, cancel, fancy* etc.
__nt	*grant, slant, aunt* etc., *advantage, chanter* etc.	*rant, ant, cant, extant, banter, canter, antic* etc.
__n(t)ʃ	*branch, blanch* etc., *stanchion*	*mansion, expansion, scansion*
__nd	*demand, command, remand, slander, commando* etc.	*stand, grand, hand* etc., *gander, panda, glissando* etc.
__mp̩l	*example, sample*	*ample, trample*

It is noteworthy that many Australians use short /æ/, rather than their long /aː/ of START, in all BATH words which have the vowel followed by a nasal (i.e. the last five lines of (155), (59b) of 2.2.7 above). Thus they say /staːf, paːθ, laːst/ etc., but /dæns, grænt, əgˈzæmp̩l/. So do Leeward Islanders. Other Australians and West Indians have the long START vowel in all the BATH words, as do New Zealanders and South Africans. This may well be because in eighteenth-century south-east England these *dance*-type words were still fluctuating between short and long vowel; or indeed they may still generally have had a short vowel, and have gone over to the long vowel only later. (The issue is complicated by the fact that *dance* had a diphthong /aʊ/ in Middle English, as did several other BATH words; what needs to be explained with them is really the short /æ/ of GenAm and various other accents. I am assuming that they had joined *bath* etc. before the great divide.)

The TRAP–BATH Split thus represents the ossification of a half-completed sound change, which seems to have come to a stop well before completing its lexical diffusion through the vocabulary which met the structural description of the lengthening rule. In 3.1.9 we stated this structural description as merely vowel plus voiceless fricative, while noting that vowels before /ʃ/ were unaffected. The *dance*-type words suggest that the other relevant environment was nasal plus voiceless consonant; but here we see that *sample* and *example* are the only __mp words affected, while there are no __ŋk words affected at all (RP /æ/ in *damp, bank, ankle*). On the other hand, several __nd words do have lengthening in the environment of a nasal plus a **voiced** consonant; but in this they are unique (RP /æ/ in *amber, anvil, flange, anger*). The inconsistency of this change has had the effect of increasing the functional load of the /æ/ vs. /ɑː/ opposition in broad-BATH accents.

In RP and the south-east of England, the earlier [aː] of

BATH–PALM–START has undergone a change of quality, becoming the relatively back [ɑ+ː]. This **START Backing** probably happened early in the nineteenth century. Many English provincial accents retain a front [aː]; this applies both to broad-BATH accents, which have [aː] in all three lexical sets, and to flat-BATH accents, which have [aː] only in PALM and START. (Examples of the latter are the urban accents of Liverpool and Leeds.) But other provincial accents have back [ɑː] (e.g. Stoke-on-Trent). The geographical spread of START Backing is neither well described nor historically explained. In the southern hemisphere, START Backing is notable for the fact that South African English has undergone it, but Australian and New Zealand English not.

As we saw in 3.1.9, Pre-Fricative Lengthening extended to [ɒ] in early Modern English, giving a long [ɒː] in the CLOTH words. Then R Dropping left *cloth* a perfect rhyme of *north*: [klɒːθ, nɒːθ]. Since then, the NORTH–THOUGHT vowel has got steadily less open in RP, passing through the now old-fashioned [ɔː] to the current nearly half-close [o̞ː]. It would be expected that CLOTH would share this quality adjustment, to yield current [klo̞ːθ] etc.; but in fact this pronunciation is restricted to older U-RP and older working-class south-of-England speech. Mainstream RP, and accents of England in general, now have the /ɒ/ of LOT in CLOTH words. What must have happened, for reasons that are by no means clear, is that the short vowel which persisted in the north of England in CLOTH (just as in BATH) succeeded in regaining lost ground in the south and RP. The change in fashion as far as RP is concerned was a twentieth-century development: Sweet (1888: §807) assumes /ɔː/ in CLOTH as the norm (while noting /ɒ/ as 'still common'), while Wyld (1921: §245) gives /ɔː/, 'though not among all speakers'. At the time of writing (1980) the use of /ɔː/ in CLOTH is perceived as a laughable archaism of 'affected' or aristocratic U-RP. The period of fluctuation or sociolinguistic variation in CLOTH words in England is thus now drawing to an end, with /ɒ/ re-established as not only standard but nearly universal. The Pre-Fricative Lengthening innovation has succeeded in BATH but failed in CLOTH.

3.2.7 The FORCE Mergers

It was only when R Dropping became usual that English grammarians seem to have become aware of the opener quality of FORCE

as compared to GOAT. As long as the /r/ remained, the [ɔə] which resulted from Breaking and Pre-Schwa Laxing (3.2.1 above) was no more than an allophonic variant of /oː/. With the loss of /r/, /ɔə/ became established as a distinct phoneme, particularly since in all other environments early Modern English /oː/ became diphthongal (3.1.12 above): *coat* and *court*, *stow* and *store* were now minimal pairs for /oʊ/ vs. /ɔə/.

R Dropping had already led to a merger of THOUGHT and NORTH, so that *caught* and *short* rhymed as [-ɒːt] (3.2.2 above). This vowel became less open, i.e. [ɔː], by the nineteenth century; since then it has merged with the phonetically similar [ɔə] resulting from earlier /oːr/, so that nowadays RP *sport*, *short*, and *caught* all rhyme, with /-ɔːt/. Thus FORCE has merged with NORTH, which had already merged with THOUGHT. We refer to the merger of FORCE and NORTH as the **First FORCE Merger**. It results essentially from the Monophthonging of [ɔə] (3.2.1) to give [ɔː]. These developments are tabulated in (156).

(156)	THOUGHT (*caught, flaw*)	NORTH (*short, Thor*)	FORCE (*sport, floor*)
Input (early Modern English)	ɒː	ɒr	oːr
Pre-R Lengthening	–	ɒːr	–
Pre-R Breaking and Laxing	–	–	ɔər
Quality adjustment (ɒː → ɔː)	ɔː	ɔːr	–
R Dropping	–	ɔː	ɔə
First FORCE Merger (Monophthonging)	–	–	ɔː
Output (current RP etc.)	ɔː	ɔː	ɔː

The First FORCE Merger was not complete in RP until the current century, though by now pairs such as *for–four*, *horse–hoarse*, *warn–worn* are normally entirely homophonous in RP, as also generally in the south of England, in the southern hemisphere, and increasingly everywhere else. On the evidence of the *English Pronouncing Dictionary* (*EPD*), the opposition persisted longest in word-final position: in the last edition to be edited by Jones himself (the twelfth, 1963), /ɔə/ is included as a (less usual) alternative to /ɔː/ in all FORCE words where the vowel is final (e.g. *store*, *four*, *core*, *door*), but usually not in FORCE words where there is a following consonant (e.g. *force*, *forge*, *afford*, *torn*, *story*). No NORTH or THOUGHT words are given with /ɔə/. Exceptionally, certain FORCE words where there is a following consonant are given /ɔə/ as an

alternative: they include *sword* and those spelt *our* or *oar* (*court*, *board*, *coarse*, *hoarse*). One is driven to ask whether the spelling might not have had some influence upon Jones, who did not himself make the distinction consistently. (Or of course the spelling may have exerted some influence upon speech-conscious Englishmen in general, encouraging them to retain the opposition only where it was reinforced by the orthography, e.g. *horse* vs. *hoarse*, but not otherwise, e.g. *short* vs. *sport*, *fork* vs. *pork*, *corn* vs. *torn*.)

As from Gimson's *Introduction* (first edition 1962) phoneticians describing RP have abandoned all lingering mention of /ɔə/ as a phonemically distinct entity. The First FORCE Merger is completed – except in some provincial, Celtic, West Indian, and American accents.

London speech has tended to generalize the diphthong [ɔə] in word-final position, but [ɔː] preconsonantally. This makes *flaw* and *floor* homophonous as [flɔə] (compare RP, both [flɔː]).

The FORCE set includes words of two distinct Middle English origins, /oːr/ (e.g. *coarse*) and /uːr/ (e.g. *course*; the Great Vowel Shift often failed with /uːr/). In the seventeenth century there was apparently a great deal of fluctuation in FORCE words between [oː] and [uː], with [oː] prevailing generally by the eighteenth century (and hence current RP /ɔː/ via Breaking and Laxing). The close vowel won out, however, in *boor*, *poor*, and *moor* (possibly owing to the preceding labial). The /uːr/ in these words was phonologically identical with the /uːr/ which had arisen in words such as *cure*, *pure* as the falling diphthong [ɪ̆ʊ̆] gave way to a rising [ɪ̃uː] (3.1.10 above): *poor* and *pure* now rhymed as /puːr/, /pjuːr/. Through Breaking and Laxing this /uːr/ developed into [ʊər], then through R Dropping to the current /ʊə/. Certain other words are believed to have been attracted to the CURE set through the influence of spelling pronunciation (e.g. *amour*, *gourd*); others are recent loan-words (e.g. *tour*; compare also the *Ruhr*, RP /rʊə/). New spelling pronunciations of this kind may yet arise: my father, a clergyman, regularly distinguished *mourning* from *morning* (which after the First FORCE Merger would regularly be homophonous) by consciously insisting on pronouncing the former with /ʊə/: Dobson (1968: §209) calls this, no doubt correctly, 'rare and artificial and generally confined to theatrical and clerical pronunciation'.

Any such efforts will be rendered vacuous through a further

development which is now under way, the **Second FORCE Merger**. (= CURE Lowering), whereby the /ʊə/ of CURE undergoes a lowering, sometimes via intermediate stages such as [oə] and [ɔə], to [ɔː], which is identical phonetically with the /ɔː/ of FORCE–NORTH–THOUGHT. Thus *sure* comes to be a homophone of *shore* and *Shaw*; *poor* falls in with *pore*, *pour*, and *paw*. *Your* and *you're*, attracted to the CURE category through the influence of the close vowel in *you*, become homophones of *yore* and *yaw*. See further vol. 2, 4.1.5.

3.2.8 The realization of GOAT

Long Mid Diphthonging (3.1.12 above) gave GOAT the realization [oʊ]. While it remains a back monophthong or narrow diphthong in American English (with some exceptions), the starting-point of the diphthong used in current RP, the south of England, and the southern hemisphere is now not back but central, i.e. [ɜʊ] or, with Diphthong Shift, [ʌʊ]. Hence the phonemic notation /əʊ/ introduced by Gimson (1962). We might refer to this development as **GOAT Advancement**; it has presumably been current since at least the nineteenth century, although [ɜʊ] has only quite recently (since the Second World War?) ousted [oʊ], or perhaps rather [öʊ], as the ideal image of a 'correct' or 'beautiful' RP GOAT diphthong. Some forms of RP have a further advanced variant, [ëʊ]. Others retain some rounding, having a rounded mid central vocoid as the first element of a diphthong [ɵʊ]. The second element tends to be very weak, which makes the distinction between [əʊ] (GOAT) and [ɜː] (NURSE) a small one, sometimes potentially neutralizable. Then *own* may be mistaken for *earn* and vice versa. This is particularly likely before /l/ (*goal–girl*), where RP characteristically lacks the pre-/l/ allophone [ɒʊ] of many other accents. On the other hand the possibility of maintaining a degree of closing-diphthong glide in GOAT, but without lip action, gives a variant [ɜɪ] which is very similar to some varieties of FACE. It remains to be seen whether the functional load of the oppositions involved (GOAT vs. NURSE, GOAT vs. FACE) is so great that these prospective mergers will be avoided, or whether they will nevertheless take place, thus bringing about important systemic realignments.

The *SED* shows [ʌʊ] for GOAT in Essex, Suffolk, and Hertfordshire, as well as London; everywhere else is recorded as having

a monophthong or diphthong with back rounded starting-point (*LAE* map Ph137, *nose*). The *SED* materials contain no mention of the [ɜʊ] type of RP.

In the United States the [ɜʊ] type (or its rounded equivalent, [ɵʊ]) is particularly associated with three regions of the country: the Philadelphia area, the Pittsburgh area, and in north-eastern North Carolina (*PEAS* map 20). Presumably these constitute independent indigenous innovations unconnected with British GOAT Advancement. According to Bronstein (1960: 168–9), the use of [ɜʊ] is on the increase in the United States, although 'persons who use this form in speaking studiously avoid it in singing'.

3.2.9 Smoothing

In RP and some other accents, when diphthongs of part-systems B and C occur in a prevocalic environment, there exists the possibility of a monophthongal realization. Thus /eɪ/ in *chaos* may be pronounced [eː], thus ['keːɒs]. This is an optional realization rule; there is also the possibility of ['keɪɒs], with the ordinary diphthongal realization of the FACE vowel.

We may refer to this monophthonging process as **Smoothing**. The quality of the monophthong which results from the Smoothing of a diphthong is that of the starting-point of the underlying diphthong. Thus it gives RP /eɪ/ the realization [eː], /əʊ/ a quality ranging from [öː] through [ɜː] to a centralized [eː], and /aɪ, aʊ/ realizations ranging from front [aː] to centralized-back [ɑː]. Not everyone extends Smoothing to /ɔɪ/, but for those who do /ɔɪ/ takes the form [ɔː]. Examples: *player* ['pleːə], *saying* ['seːɪŋ], *mower* ['mɜːə], *going* ['gɜːɪŋ], *science* ['saːəns], *trying* ['traːɪŋ], *coward* ['kɑːəd], *ploughing* ['plɑːɪŋ]; for some, *buoyant* ['bɔːənt], *annoying* [ə'nɔːɪŋ].

Smoothing applies particularly readily to /aɪ/ and /aʊ/ in the environment of a following /ə/. As well as historically disyllabic words like *science* and *coward* above, there are the words like *fire* and *tower* which owe their present underlying disyllabicity to Breaking and Syllabicity Gain (3.2.1 above). The option of Syllabicity Loss (making [ə] non-syllabic after a vowel) gives such words a monosyllabic variant; and this remains true when Smoothing applies. Hence *fire* may be phonetically ['faĭə] (two syllables), [faĭə̆] (one syllable, triphthongal, by Syllabicity Loss), ['faːə] (two syllables, by

Smoothing), or [faə̆] (one syllable, diphthongal, by Syllabicity Loss and Smoothing). Although the distinction between monosyllabic and disyllabic variants may be difficult or indeed impossible for the hearer to perceive, it seems to be valid for the speaker; poets have long exploited these options. Syllabicity loss is particularly usual in cases where the /aɪ, aʊ/ is unstressed, such as *empire*, *sapphire*, *safflower* (all normally disyllabic); so also *scientific*, *hierarchic* (three syllables).

The centring diphthongs derived from underlying /aɪə/ and /aʊə/ respectively may or may not be identical. A common possibility in RP is a fronter starting-point in [faə] *fire* than in [tɑə] *tower*. Cockney speakers, on the other hand, regularly have a back starting-point in [fɑə ~ fɒə] *fire*, a front one in [tæə] *tower*. Some speakers have new homophones by smoothing /aɪə/ and /aʊə/ to identical qualities, e.g. *tire–tower* [tɑə], *shire–shower* [ʃɑə], *hired–Howard* [hɑəd].

Yet another optional process now comes into play. The centring diphthongs derived from /aɪə, aʊə/ may become monophthongal, with qualities ranging from [aː] to [ɑː]. Whereas Smoothing is restricted to the environment of a following vowel, this **Monophthonging** is context-free. Hence *fire* has the fifth realizational possibility, [faː]. while *tower* may be [tɑː], homophonous with *tar*. Those who merge *tire* and *tower* may or may not make both homophonous with *tar*; many do. Similarly, *shire*, *shower*, and *Shah* can merge as [ʃɑː], *hired*, *Howard*, and *hard* as [hɑːd]. Other speakers have *tar* distinct from *tire–tower*, or *tire* distinct from *tower–tar*.

The link between [aː ~ ɑː] and its putative underlying representations /aɪə, aʊə/ is now so complex that one is not surprised to find evidence of restructuring. This may be seen in spelling mistakes such as *sar* for *sour*, which shows that phonetic [ɑː] is reinterpreted as the realization of START, /ɑː/.

As someone who has an [aː] in words like *fire* which is much fronter than the realization of /ɑː/ (START–BATH–PALM), I am aware that I use [aː] in a number of words where there is no historical justification for an /aɪə/ analysis. They include *reservoir* ['rezəvwaː] *soirée* ['swaːreɪ], *moiré* ['mwaːreɪ], and *savoir-faire* ['sævwaː'fɛə]. All are French loan-words, though *reservoir* is a word I knew long before I started to learn French. *EPD* offers only /ɑː/ (and sometimes /ɒ, ɔː/) in these words. Although they may be no more than a

personal idiosyncrasy, they led me to infer phonemic status for my /aə/ (Wells 1962).

Returning to the disyllabic, Smoothed forms such as ['fɑːə], ['sɑːəns], ['trɑːɪŋ], ['kɑːəd], ['gɜːɪŋ], ['mɜːə], etc., it is noteworthy that R Insertion is not a possibility in these words. We conclude that Smoothing is ordered after R Insertion.

Smoothing can apply across word boundaries where one word ends in one of the relevant diphthongs and the next word begins with a vowel. Thus we have *way out* [weː aʊt], *they eat* [ðeː iːt], *how odd* [hɑː ɒd], *my aunt* [mɑː ɑːnt], *go off* [gɜː ɒf], *so early* [sɜː ɜːlɪ] (in this last example it is not in my opinion necessarily the case that 'some movement towards [ʊ] and lip-rounding normally takes place', as Gimson claims (1980: 141); but Smoothing remains optional, and if the option is not exercised there will remain some gesture towards [ʊ]).

In RP Smoothing can also apply to /iː/ and /uː/. It has the phonetic effect of laxing them to [ɪː] and [ʊː] respectively. (This can be interpreted as evidence in favour of analysing FLEECE and GOOSE as underlyingly diphthongal, /ɪi, ʊu/; Smoothing then has its usual effect of producing a monophthong with the phonetic quality of the starting-point of the underlying diphthong.) Examples include *Thea* ['θɪːə], *seeing* ['sɪːɪŋ], *fluent* ['flʊːənt], *doing* ['dʊːɪŋ]; across word boundaries, note for instance ['tʊː əˈklɒk], ['θrɪː əˈklɒk].

Syllabicity Loss can then make disyllabic [ɪːə, ʊːə] into monosyllabic [ɪə̆, ʊə̆], which are identical in realization with NEAR and CURE respectively. Hence *freer* (comparative of *free*) may be a perfect rhyme of *dear*, and *truer* of *sure*; *theory* may rhyme with *dreary*, and *brewery* with *jury*; *don't be a fool* may have [bɪə] exactly like *beer*, and *I can't do a thing* may have [dʊə] exactly like *dour*.

Some speakers have optional Syllabicity Loss with weak [ɪ], too. Then *ruin* and *doing* become monosyllabic, with a diphthong [ʊɪ̆]; *poet* and *going* similarly have [ɜɪ̆] (old-fashioned [oɪ̆]).

Neither the social nor the geographical spread of Smoothing has been much investigated. As Gimson correctly remarks (1980: 140) *shire–shower–Shah* homophony is 'criticized as an affectation and also as a Cockney vulgarism, but widely heard amongst educated RP speakers'. Smoothing (with Syllabicity Loss) in *player* and *snowing* likewise seems to be shared by all social classes in London (RP [pleə, snɜɪŋ]; Cockney [plʌə, snʌɪn]). Trudgill (1974a: 159–66)

has analysed the slightly different scope of Smoothing in the local accent of Norwich ([plæː, snɒːn]). Smoothing of /iː/ and /uː/ is perhaps socially more restricted, though characteristic of both extremes of the social scale: on the one hand, I have sometimes found people called *Ian* or *Stuart* reacting to my pronunciation of their name as [ɪən], [stjʊət] as 'affected', but on the other hand Cockney has [traːn] *trying*, [grʌːən] *growing*, [dəːt] *do at* (all from Beaken 1971), while Norwich has [sɛːn] *seeing* and [bɔːn] *booing*.

In looking at dialectological evidence, we must obviously discount cases where PRICE, MOUTH, etc., are monophthongal in preconsonantal or final environments. With that proviso, *SED* shows Smoothing in *fire* only in a small area centred on London and reaching up into Cambridgeshire (*LAE* map Ph112), in *flour* only in Norfolk (map Ph155), and in *throwing* nowhere (*SED* VIII.7.7). At the turn of the century, Wright's discussion of *fire* (1905: §179) contains no hint of Smoothing, though in 1914 Shaw has Eliza Doolittle saying 'flahrz' for *flowers*. It seems reasonable to conclude that Smoothing of /aɪ/ and /aʊ/ originated in London and/or East Anglia towards the end of the nineteenth century; but whether it spread up the social scale into RP or down from it I do not know. At the present day it is certainly found in broad Cockney as well as in U-RP. (I have the impression that it is more prevalent at the two ends of the social scale than in between.)

The first phonetician to give detailed attention to Smoothing in RP seems to have been Daniel Jones. In the first edition of his *Pronunciation of English* he drew attention to the pronunciation of *fire* as [faː], commenting that this phenomenon was 'especially frequent in unstressed syllables, e.g. *irate*' (1909: §126). By the first edition of *EPD* (1917), *chaos* is given an entry which in our notation implies ['keɒs] alongside ['keɪɒs]; and similarly in many other cases. Jones 1954 is largely devoted to this topic.

The phenomenon has sometimes been referred to as 'levelling' (so Jones 1956: §414). But this term usually implies something rather different. I did for a time think of calling it 'correption' (mindful of the Latin grammarians' phrase *vocalis ante vocalem corripitur*), but have now decided to propose Smoothing as a more generally acceptable term.

In the United States, the neutralization of the opposition between /aɪ/ and /ɑ/ in the environment of a following /r/ is not

uncommon. This 'characteristic feature of Midland speech' (*PEAS*: 122) has the effect of making *fire* and *far* homophonous, which is one of the possible effects of RP-style Smoothing; but it does not apply, as Smoothing does, in prevocalic environments. In the non-rhotic south, where /aɪ/ is often monophthongal [aː] or barely diphthongal, [aə], the distinction between *tied* and *tired* tends to be neutralizable, since both may be [taːəd]; but again this is rather a different phenomenon from Smoothing.

We conclude that Smoothing is as yet a purely English development. Gimson may well be right in his claim (1980: 140) that 'this monophthongization of /aɪə/ and /ɑʊə/ and their coalescence with /ɑː/ is likely to be one of the most striking sound changes affecting southern British English in the twentieth century'.

3.3 Some American innovations

In this section we consider phonological developments in the history of GenAm which took effect after the separation from Britain. Some of these developments apply to all North American accents; others were more restricted in their effects. They have in common that they do not generally speaking apply to British accents or those of the West Indies or southern hemisphere. They may thus constitute innovations upon American soil. It is wise, though, not to be too categorical in claiming them as indigenous American innovations, since most of the developments discussed in this section can be found somewhere or other in local accents of England. It is clear that GenAm is in fact a rather conservative accent when compared with RP.

Two further American developments, currently still in progress, are discussed not here but in vol. 3, 6.1: they are the merger of /ɑ/ and /ɔ/ and the splitting of /æ/.

3.3.1 Vowels before /r/

We have followed Kenyon & Knott (1953), Thomas (1958), Bronstein (1960) and many other scholars in assuming that the correct phonemicization of NEAR words in GenAm is with /ɪr/, e.g.

beard /bɪrd/, *beer* /bɪr/. It is clear, though, that for most Americans (not those with eastern or southern accents) there is a neutralization of certain paired vowels in the environment of a following /r/: in the case of NEAR, the vowel before the /r/ reflects a neutralization of the opposition /i/ (FLEECE) vs. /ɪ/ (KIT). The grounds for preferring to identify it with /ɪ/ rather than with /i/ are twofold: first, its phonetic quality, which is comparable with the often rather diphthongal [ɪə] /ɪ/ of *bid*, and secondly the fact that in such an accent *spear it* is a likely homophone of *spirit*, both being /'spɪrɪt/, while *nearer* and *mirror* rhyme in /-ɪrər/.

On similar grounds we write GenAm SQUARE words with /ɛr/ and CURE words with /ʊr/. For the majority who do not distinguish FORCE from NORTH, the merged vowel in both sets is appropriately written /ɔr/. (See further vol. 3, 6.1.5.)

If we compare the current GenAm pronunciation of such words with the early Modern English of 3.1.13 above, the relationship appears very straightforward, as shown in (157).

(157)

	NEAR (*beard, beer, weary*)	SQUARE (*scarce, bare, Mary*)	FORCE (*forge, four, glory*)	CURE (*poor, during*)
Input (early Modern English)	iːr	eːr	oːr	uːr
GenAm	ɪr	ɛr	ɔr	ʊr

We can derive the GenAm vowels by applying a simple rule of Laxing, which lowers and centralizes tense (long) vowels in the environment of a following /r/. (Compare the Laxing rule of 3.2.1 above, which operated in the environment of a following schwa.) Thus we might assume that in the history of GenAm phonology there is a rule of the form (158).

(158) $V \rightarrow$ [-tense] / __r

Although this simple hypothesis fits the present-day facts, the truth seems to have been rather more complicated. As we saw in 3.2.1, Pre-R Breaking, as an allophonic rule at least, is datable to the sixteenth century; it is mentioned by Gil in 1619 for a large number of words. Pre-Schwa Laxing, too, is likely to have been taken to America by the earliest settlers, since it is datable to the late six-

teenth or early seventeenth century (Dobson 1968: §203–9). Thus the structural description for the posited rule (158) could not have been met (at least at the realizational level). Rather, the special characteristic of GenAm in this connection is the subsequent addition to Breaking and Laxing of a third rule, **Pre-R Schwa Deletion**, whereby non-syllabic [ə] disappeared between a vowel and a following /r/. Thus three successive developments took place (159–161).

(159) $\emptyset \rightarrow$ ə̆ / [−low, +long V] __r Breaking

(160) V → [-tense] / __ə̆ Laxing

(161) ə̆ → Ø / V __r Schwa Deletion

It is (161) which is responsible for the fact that in GenAm *nearer* rhymes with *mirror* and *sharing* with *herring*. (There is, however, a problem here, since all GenAm vowels may often have some degree of non-significant [ə] glide, particularly in the environment of a following liquid – in *mirror* as much as in *nearer*, in *herring* as much as in *sharing*. Perhaps instead of (161) we should widen (159) to apply to all V __r environments.) Rather than (157), we have derivations as (162).

(162)

	NEAR	SQUARE	FORCE	CURE
Input (early Modern English)	i:r	e:r	o:r	u:r
by (159)	i:ə̆r	e:ə̆r	o:ə̆r	u:ə̆r
by (160)	ɪə̆r	ɛə̆r	ɔə̆r	ʊə̆r
by (161)	ɪr	ɛr	ɔr	ʊr

The last line of (162) corresponds to contemporary GenAm. The result is the same as if only (158) had been added, but the route is more complicated. Once this result had been achieved, a restructuring no doubt took place: there is no reason to impute to present-day speakers of GenAm any knowledge of the historical difference between *herring* and *sharing*, *Mary* and *merry*.

We have already noted (3.1.8) the Second NURSE Merger in GenAm, which leads to the rhyming of *furry–hurry*, *stir it–turret*. Combined with the developments just outlined, the result is a considerable reduction in the subsystem of vowels contrasting in the environment of a following /r/.

Many Americans have /ær/ rather than /ɛr/ in SQUARE. Some even have an opposition between the two possibilities (as in

Kenyon's own pronunciation, 1958: §362, with /ær/ in *precarious* and *fairy*, /ɛr/ in *barbarian*, *Sarah*). Increasingly, however, the opposition between /æ/ and /ɛ/ is lost in the environment of a following /r/. This gives an identical sequence (identifiable on phonetic grounds as /ɛr/ rather than as /ær/) not only in SQUARE words and in words such as *herald*, *very*, *merry* (RP etc /er/), but also in words such as *narrow*, *charity*, *marry* (RP etc /ær/). This gives three-way homophony in sets such as *merry–marry–Mary*, *Kerry–carry–Carey*, something found nowhere outside North America.

There are certain words in which RP has /ɪr/ where the usual GenAm pronunciation is not /ɪr/ but /ɜr/. Examples are *squirrel* and *syrup*. These forms may well have been brought over from England; they appear to be of considerable antiquity (Dobson 1968: §213).

3.3.2 LOT Unrounding; loss of distinctive length

The vowel of LOT was rounded in Middle English; it has remained rounded in RP and the southern hemisphere, as well as in most British accents. In North America, on the other hand, only a minority use a rounded vowel; the majority, including the speakers of GenAm, have an unrounded [ɑ] (phonetically ranging from back to centralized front). We may refer to this development as **LOT Unrounding**. Scholars differ as to whether it is in fact an independent innovation on American soil. Some see it rather as 'a survival of the pronunciation that was current in Britain at the time of colonization' (Hanks 1979: xxvi). Others, e.g. Lass (1976: 139), argue that it is an indigenous American development, dating probably from the late seventeenth or early eighteenth century. Since [ɑ] in LOT is so relatively uncommon in present-day British speech, I incline to agree. Apart from North America, though, LOT Unrounding is also characteristic of the accents of southern Ireland and most of the West Indies.

The unrounding of LOT while retaining its distinctiveness vis-à-vis TRAP must not be confused with a merger of LOT and TRAP as [a] which is known as a sixteenth- and seventeenth-century vulgarism (Dobson 1968: §87). It was this earlier merger which, originating as early as the thirteenth century and seeping into standard speech in a

few lexical items, is responsible for the by-forms *strap* alongside *strop* and *by Gad* alongside *by God*. But actual merger of LOT and TRAP is quite unknown in North America (and nowadays found only in certain popular West Indian accents).

The merger which did occur in the history of GenAm (though not by any means for all American accents) is exemplified by the pair *bother–father*, which is GenAm rhyme as /'bɑðər, 'fɑðər/ (compare RP /'bɒðə/ but /'fɑːðə/). This implies the **loss of distinctive length** in open vowels, since the PALM–START set, long in other accents, is merged with the LOT set, short in other accents.

Although it is convenient to write the resultant vowel, GenAm /ɑ/, without length marks, the result of the merger is phonetically usually a rather long vowel, as is immediately audible if one compares RP /'bɒðə/ with GenAm /'bɑðər/ ['bɑːðɚ]. The phonetic development is thus essentially one of lengthening open vowels, as is clear also from the comparison of GenAm and RP /æ/ in words such as *manner*, *ladder*. It so happens that the lengthening of TRAP had no systemic consequences, while the lengthening of LOT, because of its unrounding, did.

This tendency to lengthen traditionally short vowels is sufficient justification for the non-use of length marks in transcription of GenAm. All vowel contrasts are now ones of quality rather than length. Even the merging of vowels before /r/ through Pre-R Schwa Deletion (3.3.1 above) fits this pattern: the vowels in pairs such as *merry* and *Mary* in accents which distinguish them often differ mainly in duration rather than in quality; GenAm, by abandoning length contrasts, naturally lost the distinction.

Some Americans retain a length contrast only in a very restricted range of environments. It is not unusual to have a distinction before nasals only, so that *Tom* and *con* have short [ɑ], while *calm* and *Kahn* have a longer [ɑː]; but the same speaker would rhyme *bother* and *father* and have *dolly* and *Dali* as homophones. (There are of course relatively few environments in which PALM and LOT contrast, even at the best of times; most common PALM words are vowel-final, e.g. *bra*, while LOT is always checked.)

The lengthened vowel of CLOTH words was not affected by LOT Unrounding. In the environments illustrated by *cloth* itself and by *strong* the earlier short [ɒ] had been lengthened (3.1.9 above); this lengthened vowel remained rounded. Later, like other vowels, it

lost its distinctive length. It can be seen that logically the two developments must have occurred in that order. The fact that LOT Unrounding preceded loss of distinctive length explains why the lengthened former allophone of /ɒ/ became phonemically distinct in GenAm (merging at some stage with the long /ɔ/ of THOUGHT) while the inherited lengthened allophone of /æ/ in BATH did not. In tabular form, we have successive GenAm developments as in (163).

(163)	*trap*	*bath*	*lot*	*cloth*	*thought*
Inherited form (with Pre-Fricative Lengthening)	træp	bæːθ	lɒt	klɒːθ	θɔːt
LOT Unrounding	–	–	lɑt	–	–
Loss of distinctive length	–	bæθ	–	klɒθ	θɔt
CLOTH–THOUGHT Merger	–	–	–	klɔθ	–
Output	/træp/	/bæθ/	/lɑt/	/klɔθ/	/θɔt/

3.3.3 Later Yod Dropping

In 3.1.10 above we discussed Early Yod Dropping, the loss of /j/ from /juː/ after palatals, /r/, and clusters with /l/. In GenAm this process has been extended so that /j/ tends to be absent after all coronal consonants. It remains after labials and velars (*beauty*, *cute*).

The environments in which **Later Yod Dropping** has eliminated /j/ from historical /ju/ (or, where there is a following /r/, from /jʊ/) are: /t__/ *tune*, *student*, *attitude*; /d__/ *duke*, *reduce*, *during*; /n__/ *new*, *numerous*, *avenue*; /θ__/ *enthusiasm*, *Thule*; /s__/ *suit*, *assume*, *pseudonym*; /z__/ *presume*, *resume*; /l__/ *lewd*, *allude*, *solution*. In these environments GenAm predominantly has plain /u/, thus, /tun, duk, nu/ etc. Some easterners and southerners, however, have either /ju/ or the diphthong /ɪu/, and GenAm usage is not entirely uniform.

The discussion so far relates to strong syllables: either stressed syllables (*tune*, *new*) or syllables where there is no possibility of vowel reduction and where some would identify a secondary (some, a tertiary) degree of stress (*attitude*, *avenue*). In the case of weak syllables, the complete elimination of the palatal is less widespread; but here GenAm shows a marked tendency towards **Yod Coalescence**. Thus GenAm *situate* is /ˈsɪtʃueɪt ~ ˈsɪtʃəweɪt/, with an affricate /tʃ/ corresponding to the /tj/ of RP /ˈsɪtjʊeɪt/ (in England the /tʃ/ pronunciation is felt to be rather vulgar, whereas

American dictionaries prescribe it unhesitatingly). So also with the voiced affricate /dʒ/, where RP has /dj/, as in *education*, GenAm /ˈɛdʒəˈkeɪʃən/ (compare RP /ˌedjʊˈkeɪʃn/). In America *issue* typically has /ʃ/, /ˈɪʃʊ/ etc., whereas in RP the pronunciation with /sj/, /ˈɪsjuː/, is at least as generally heard. In each of these cases an alveolar consonant has coalesced with the following palatal semivowel to produce a palato-alveolar. It is my impression that something comparable may happen with /nj/ and /lj/ in American speech, giving [ɲ] or [j̃] in *annual*, [ʎ] or [j] in *failure*.

The example *education* given above also illustrates another GenAm tendency, namely towards [ə] in weak syllables deriving from /(j)u/. So also *monument*, GenAm /ˈmɑnjəmənt/; in RP /ˈmɒnjəmənt/ is on the whole only a casual-speech variant of /ˈmɒnjʊmənt/. Before, vowels, however, as in *arduous*, /u ~ ʊ/ remains; even those who have what could perhaps be regarded as [ə] in such words have a [w] glide after it.

3.3.4 Tapping and T Voicing

One of the most striking characteristics of American pronunciation to the ears of a non-American is the intervocalic consonant in words such as *atom*, *better*, *waiting*. To English people it sounds like /d/ rather than /t/. Phonetically it is usually a rapid tap rather than a more deliberate plosive; it is also frequently voiced. But it is an oversimplification just to call it [d].

The process of **Tapping** optionally affects both /t/ and /d/ in GenAm, giving them a tap realization, [ɾ̥] and [ɾ] respectively. It operates in certain syllable-final prevocalic environments, both word-internally and across word boundaries: thus *atom* [ˈæɾ̥əm], *getting* [ˈgɛɾ̥ɪŋ], *get it in* [ˈgɛɾ̥ɪɾ̥ ˈɪn]; *ready* [ˈɹɛɾi], *reading* [ˈɹiɾɪŋ], *bad egg* [ˈbæɾ ˈɛg]. A necessary condition is that the preceding segment be a sonorant (vowel, liquid, or nasal); the following segment must not be a consonant (other than syllabic [l]). We can formulate the rule as (164):

(164) Alveolar Stop → Tap / Sonorant __ $\left\{\begin{matrix} V \\ \| \end{matrix}\right\}$

Thus we may have *party* [ˈpɑɹɾ̥i], *builder* [ˈbɪɬɾ̥ɚ], *dental* [ˈdɛ̃ɾ̥ɬ̃]. Usually, though, [ɾ̥] represents only a theoretical, half-way stage, since the output tap ends up voiced.

Scholars are in some disagreement over the appropriate classification and transcription of what I have called a tap and written [ɾ]. Recent American discussion of the phenomenon has popularized the term 'flapping'; but if we follow Abercrombie (1967: 49) in distinguishing between taps (one-tap-trills) and flaps (ballistic movements), then the medial consonant in GenAm *atom* is a tap, not a flap. It remains true, however, that it is not identical with the [ɾ] allophone of Spanish /r/, which has a somewhat different configuration of the front of the tongue (see x-ray tracings in Monnot & Freeman 1972). This leads Kenyon to reject the view that 'voiced t' is a tap, since 'to the author's ear the two are quite distinct' (1958: §163). Bronstein (1960), on the other hand, regards them as 'almost identical'; Bloomfield (1933: 100) calls 'voiced t' a 'tongue-flip'. Some, furthermore, describe it as fortis (e.g. Trager & Smith 1951: 32), others as lenis (e.g. Bronstein 1960: 73). As far as notation is concerned, the voiced tap as a realization of /t/ is often written [t̬]; but Chomsky (1964: 74) writes [D], while Wise (1957: 123) is content with [d]. *LAUM* distinguishes [t̬] from [ɾ], and finds the second twice as common as the first in the word *attic*, but [t̬] commoner than [ɾ] in *thirty* (*LAUM*: 322).

When the intervocalic tap realization of /t/ undergoes the second process, that of T Voicing (165), the result may be the neutralization of the opposition between /t/ and /d/. This makes *atom* and *Adam* homophonous, ['ærəm]; likewise *bitter* and *bidder*, ['bɪɾɚ], and *waiting* and *wading* ['weɪɪŋ], *parity* and *parody*, ['pæɹəɾi]. Oswald (1943) demonstrated that American listeners could not consistently hear a difference when tested on sentences such as *The injured lamb was bleating/bleeding*.

(165) [tap] → [+ voice] / __ V

This, then, is the basis for the British impression that Americans pronounce /d/ instead of /t/. Such a claim is commonly denied by the phonetically naive; and T Voicing is widely regarded by the speech-conscious as undesirable. A typical view is that expressed by Thomas (1958: 48), when he opines that

> the principal shortcoming among native speakers is an excessive weakening of the sound ... [t] may then change to a weakly articulated [d], [*or*] to a variety of [r] produced by a short tap of the tip of the tongue against the gum ridge.... Though opinions differ as to what is standard and what is substandard in this type of variation, the weakened allophones of [t] frequently

heard in such words as *little*, *better*, ... can usually be somewhat strengthened without laying the speaker open to the charge of artificiality.

The typical RP form, involving a voiceless alveolar plosive for /t/ in such words, is often perceived by Americans as artificial, prissy, or effeminate.

It is possible to have T Voicing without the neutralization of the opposition between /t/ and /d/. In this case /t/ has the intervocalic realization [ɾ], while /d/ is [d]; the difference between them is then primarily one of rate of articulation, i.e. a difference in the duration of the alveolar contact. This is the kind of pronunciation described by Kenyon, who writes (1958: §163) 'voiced *t* is not the same as *d*. and does not belong to the *d* phoneme, since Americans do not confuse such words as *latter–ladder* or *putting–pudding*'. Trager & Smith (1951), too, assume without question that 'voiced fortis [t]' belongs to the phoneme /t/ and is distinct from the [d] of /d/.

This view was first challenged by Oswald (1943), with his demonstration that /d/ is also affected and that the /t/–/d/ opposition can be neutralized as a consequence. Ten years later, Lehmann (1953) was reporting hypercorrections in Texan speech (e.g. ['rɛtɪ] as a careful pronunciation of *ready*), as well as 'graphic evidence' in the form of *t-d* spelling mistakes in the writings of University of Texas students. In 1966 McDavid recognized that 'neutralization of the contrast between intervocalic /-t-/ and /-d-/, as in *latter* and *ladder*, ... is an innovation that seems to be spreading, especially among the younger and better educated speakers'. If this perception is accurate, we are indeed dealing with an American innovation and a fairly recent one. There is, on the other hand, a possible British source in the west of England, where the *SED* records [d] in *butter* throughout the south-western counties: see *LAE* map Ph239. Another source could be Ulster.

T Voicing is sometimes to be observed in southern-hemisphere English (Australians assure me, though, that it is only younger speakers there who do it), and also in certain casual styles in British accents ranging from RP to Cockney. It is not altogether clear whether these non-American cases of T Voicing represent the diffusion of an American innovation, or independent innovations in several different places. I suspect the former, and see T Voicing as the first distinctively American phonetic innovation likely to spread in time to all accents of English.

As pointed out by Joos (1942) and elaborated upon by Chomsky (1964: 82–3), T Voicing gives rise to an interesting phonological problem in certain accents (notably those of Canada and parts of the north, east, and south of the United States). These are accents in which the PRICE vowel has positional allophones conditioned by the voicing or otherwise of the following consonant, e.g. [ʌɪ] before a voiceless consonant, [aˑɪ] elsewhere. But before voiced /t/ the allophone used is that appropriate to a following voiceless consonant (even though the consonant is actually voiced), which means that pairs such as *writer* and *rider* do not fall together: they remain distinct, e.g. as ['ɹʌɪɾɚ] and ['ɹaˑɪɾɚ] respectively. Thus what is underlyingly a consonantal distinction, /t/ in *writer* vs. /d/ in *rider*, is realized phonetically as a vowel distinction, [ʌɪ] vs. [aˑɪ]. This analysis depends crucially upon the admissibility of rule ordering in phonology, since in order to achieve the correct result the rule assigning appropriate realizations to /aɪ/ must precede the rule of T Voicing (1.2.13 above).

In GenAm T Voicing applies not only intervocalically but also between a vowel and a following syllabic lateral, as in *battle* [bæt̬l̩]. Here the phonetic result is a laterally released tap. There is also the possibility of a tap with lateral approach, as in *guilty* ['gɪɬt̬i]. Another variant is used by some Americans when the preceding consonant is /r/, namely a retroflex flap, [ɽ], thus *party* [pɑɹɽi], *dirty* [dɝɽi]; this is the only environment in which a genuine flap, as opposed to a tap, is to be encountered.

Although T Voicing may apply before a syllabic lateral, it does not apply before a syllabic nasal. In words such as *button* Americans keep a voiceless /t/, realized either as a nasally released alveolar [tᴺ] or as a glottal [ʔ]. In words such as *sentence*, where English people usually have an orally exploded [t] plus [ən], thus ['sentəns], many Americans use [ʔ] plus [n̩]; when this is combined with a nasalized vowel as a realization of vowel plus /n/, the resultant ['sɛ̃ʔn̩ts] can be difficult for non-Americans to recognize correctly.

I am not sure whether a tap with a nasal approach is a genuine possibility in a word such as *hunting*, although Trager & Smith (1951: 32) speak of this word having a 'flap-release short nasal'. More usual, it seems to me, is ['hʌ̃ɪɪŋ], in which the /n/ is again realized as nasality during the vowel. Although I find it exceedingly difficult to discriminate between *winter* and *winner* in casual American pronunciation, there appears to be at least the theoretical

possibility of ['wĩɾɚ] *winter* vs. ['wɪnɚ] *winner*. If Stampe is right in claiming (1972: 55) that Tapping also applies to /n/ in the same environments as it applies to /t/ and /d/, with an output which is a nasalized tap [ɾ̃], then the contrast may be between ['wĩɾɚ] and ['wɪɾ̃ɚ]. There is little doubt that this subtle distinction may be completely lost.

Actually, there is clearly geographical variation in North America with respect to treatment of /nt/ in *winter*, *hunting*, etc. Southerners tend to have in their phonology a rule simply deleting /t/ in this environment, (166); this turns /'wɪntɚ/ into ['wɪnɚ], which is then a potential input for an N Tapping rule.

(166) $t \rightarrow \emptyset$ / 'Vn __ V

Northerners, on the other hand, particularly those from the east coast, may preserve a firm distinction between *winter* and *winner*. The first may be ['wĩɾɚ], as against ['wɪnɚ] for the second (Trager 1942: 146, specifically states that [ɾ̃] and [n] are in contrast in his speech). Or the first may be ['wɪnɾɚ], having a nasal [n] with tap release as the soft palate cuts off nasal escape fractionally before the tongue tip leaves the alveolar ridge. Or the first may even have a British-style [nt], thus ['wɪntɚ].

3.4 Some further British innovations

In this section we consider some further sound changes which have spread reasonably widely in the English-speaking world. H Dropping and Diphthong Shift must have become established in England (though not in RP) by the beginning of the nineteenth century, since they seem to have been taken to the southern hemisphere by settlers; they are not, however, found in the New World, so presumably postdate the colonization of North America in the seventeenth and eighteenth centuries. The same may be true of L Vocalization and of *Happy* Tensing, though here the patterns are more complicated and the facts more difficult to establish. T Glottalling in intervocalic environments is a more recent development in Britain, as attested by its absence from accents of English elsewhere. All these developments are characteristics of popular

speech in the south-east of England, but not of RP in the traditional sense.

3.4.1 H Dropping

Initially in words such as *hit*, *hammer*, *happy*, *hedge*, standard accents have /h/, which is realized as [h] – conventionally referred to as a voiceless glottal fricative, but more accurately described as a range of voiceless approximants varying with the quality of the following vowel. This /h/ contrasts with zero (which may sometimes include the realization [ʔ]), as shown by minimal pairs such as *hedge* vs. *edge*, *heat* vs. *eat*, *hall* vs. *all*. The phoneme /h/ also occurs intervocalically (though still syllable-initially), as in *ahead*, *rehearse*, *behind*, *to heat*; here it is sometimes realized as [ɦ], the 'voiced glottal fricative' more accurately described as comprising a range of breathy-voiced vocoids.

In the working-class accents of most of England, **H Dropping** prevails. That is to say, the [h] of standard accents is absent: words such as *hit*, *hammer*, *happy*, *hedge*, begin with a vowel (or sometimes [ʔ]).

There seem in principle to be two possible synchronic phonological accounts of H Dropping. In one view, perhaps the obvious one, we claim that there is simply no /h/ in the phoneme system. It follows that *hedge* and *edge*, *heat* and *eat*, *hall* and *all*, are perfect homophones with identical phonological representations in the lexicon. The phone [h] occurs, if at all, only as a variable marker of emphasis (like initial [ʔ]). This means that both *hedge* and *edge* may on occasion be pronounced [hɛdʒ], although both are usually [ɛdʒ]. Historically speaking, this state of affairs results essentially from a sound change deleting /h/ (167), perhaps with the addition of a rule (168) which variably adds [h] before an initial vowel as a mark of emphasis.

(167) $h \rightarrow \emptyset$

(168) $\emptyset \rightarrow h \; / \; \_\_ \; V \; / \; [+\text{emphasis}]$

In the other possible view, we maintain that /h/ remains in the phoneme system, but acquires an optional zero realization. This means that *hedge* and *edge* are phonologically distinct in the

speaker's mental lexicon, as /hɛdʒ/ and /ɛdʒ/ respectively; but /hɛdʒ/ may sometimes be realized as [ɛdʒ] (or [ʔɛdʒ]) rather than as [hɛdʒ]. In this case, *edge* would be expected never to be pronounced [hɛdʒ]. There may be other consequences: several words in English have alternating forms sensitive to the vowel vs. consonant character of the initial segment of the following word, and even an underlying /h/ with zero phonetic realization may be able to trigger the preconsonantal variant. Thus for example we may have [ə 'ɛdʒ] *a hedge* but [ən 'ɛdʒ] *an edge*; or *your edge* with linking /r/ and *your hedge* without it. This seems to be a correct account of the usage of some working-class Londoners. On the other hand there are plenty who do say, for example, [ʌʊvər 'ɪə] *over here*, or *Wolverhampton* [wʊlvər'æmptən].

Perhaps the most realistic view combines elements of both the above. In the basic phonological system acquired in childhood there is no /h/. But social pressures from teachers and others, supported by the effects of literacy, lead to the partial and inconsistent addition of /h/ to the phoneme inventory, often with some uncertainty as to whether or not it is appropriate in some given word.

H Dropping does appear to be the single most powerful pronunciation shibboleth in England. A London school teacher tells me he has only to look sternly at any child who drops an /h/, and that child will say the word again, this time correctly. The correlation between H Dropping and social factors has been confirmed by sociolinguistic research. Among London schoolchildren, Hudson & Holloway (1977) found that middle-class boys dropped only 14 percent of possible /h/s, while working-class boys dropped 81 percent. In Norwich, a city in whose rural hinterland /h/ is still to some extent preserved, Trudgill (1974a: 131) found that in casual speech the percentage of /h/ dropped ranged from 6 for the middle middle class through 14 for the lower middle class and 40 for the upper working class to 59 for the middle working class and 61 for the lower working class.

There are certain complications here. In standard accents the pronouns *he*, *him*, *her*, *his* (and sometimes *who*), together with the auxiliaries *has*, *have*, *had*, regularly lack [h] if neither stressed nor postpausal. Thus RP *tell him* ['telɪm] must not be counted as an

instance of H Dropping in the sense discussed above. Nevertheless, it is my impression that some middle-class speakers, perhaps in a genteel anxiety not to do something so vulgar as dropping an /h/, tend to insist on giving even these unstressed pronouns and auxiliaries [h], thus ['telhɪm]. The near-RP [-həm] in *Birmingham* and *Nottingham* (RP /'bɜːmɪŋəm/, /'nɒtɪŋəm/) has a similar explanation.

In words such as *historic*, *hysteria*, the traditional RP principle of no [h] in unstressed syllables gave the old-fashioned standard pronunciations [ɪ'stɒrɪk], [ɪ'stɪərɪə]. It was natural to pronounce, and write, *an* rather than *a* in the phrase *an historic event*. Nowadays such words are usually pronounced with a restored [h], but the literary convention persists (to an extent) of writing *an*, and even of pronouncing it, before the following *h* ([h]).

There are several instances of words adopted into English via French from Latin where the /h/ now customary in standard accents reflects no more than a spelling pronunciation. Thus *habit*, *heritage*, *host*, and *Humphrey* (amongst others) are known to have been /h/-less in the early Modern English period (Dobson 1968: §426 n. 3). In *hour*, *heir*, *honest*, *honour* and their derivatives the /h/-less pronunciation has persisted in spite of the spelling. In *herb*, GenAm /ɜrb/ reflects an earlier form than RP /hɜːb/, which has /h/ from the spelling. In *humble*, the earlier /h/-less form is still found in the American south. In *hotel*, the form with spelling-derived /h/ has largely displaced the earlier /h/-less form (though /əʊ'tel/ remains in U-RP, together with *an hotel*).

In nouns, verbs, and adjectives, and leaving aside special cases such as we have just been considering, H Dropping has been known in popular London speech since at least the eighteenth century. (It was obviously very well established by Dickens's day!) Explicit condemnation of H Dropping is first found at the close of the eighteenth century (Strang 1970: 81). The fact that H Dropping is unknown in North America strongly suggests that it arose in England only well after the American colonies were founded. Australians, on the other hand, tend to drop /h/ just like the English, as we should expect from their settlement history.

Historical details of the spread of H Dropping through England are lacking. In 1905 Wright wrote (§357), 'initial *h* has remained before vowels in ... Sc. Irel. Nhb. and perhaps also in portions of

n. Dur and n. Cum. In the remaining parts of Eng. it has disappeared.' More than half a century later, the *SED* researches demonstrated that Wright may have been somewhat overstating the case, since there are pockets of /h/ in the south of England (relic areas). But H Dropping does not seem to have gained more territory since Wright's day.

On the other side of the Atlantic, some Jamaicans, Bahamians, and Guyanese exhibit H Dropping. Others do not. It is not known whether this West Indian H Dropping represents the importation of a popular British speech habit, or whether it is an independent local innovation.

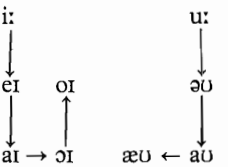
The fact that Northumbrians, Scots, Irish, Americans, and Barbadians do not incline to H Dropping is sufficient proof, if proof were needed, that there is no truth in the popular English view that H Dropping is a product of laziness and original sin. Or are there no lazy Americans?

3.4.2 Diphthong Shift

When the Reverend A. J. D. D'Orsey, Professor of Public Reading at King's College in the University of London, pointed out that in popular London speech 'such words as *paper*, *shape*, *train* are pronounced *piper*, *shipe*, *trine*' and went on to hold the teachers of English responsible in that 'the very first letter of the alphabet [was] thus wrongly taught' (quoted by Matthews 1938: 63), his understanding of the way linguistic changes are propagated and of the relationship between orthography and pronunciation may have been faulty; but his observation was basically accurate. Cockney, and also the local accents of much of the south of England and the midlands, together with those of Australia and New Zealand, exhibit a set of phonetic changes almost as fundamental as the Great Vowel Shift of half a millenium ago. This is the **Diphthong Shift**.

In schematic and drastically simplified form, the Diphthong Shift can be diagrammed as (169).

(169)



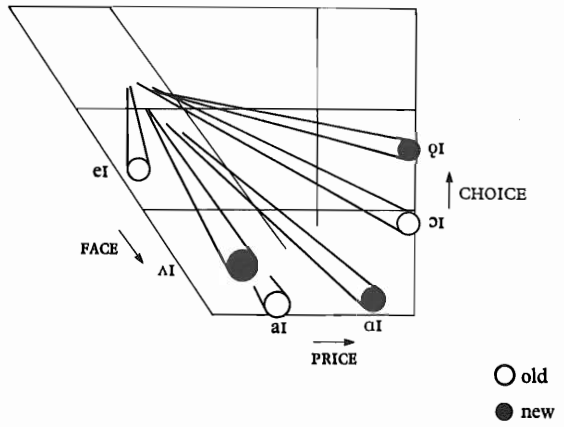


Fig. 7 The Diphthong Shift in part-system B

Thus FLEECE shifts from [iː] to [eɪ],or more commonly actually [əi]; FACE shifts from [eɪ] to [aɪ], or sometimes just to [ʌɪ] (where the symbol [ʌ] denotes a central half-open vowel); PRICE shifts from [aɪ] to [ɔɪ] or sometimes just to [ɑɪ] or [ɒɪ]; CHOICE moves up from [ɔɪ] to [oɪ]. There is thus a rearrangement among the members of part-system B. Similarly, in part-system C, GOOSE shifts from [uː] to [əʊ], though usually with the competing possibility of [ʉː]; GOAT moves from earlier [oʊ] or [əʊ] to [ʌʊ], [œʊ], or even as far as [aʊ]; MOUTH shifts forwards to [æʊ ~ æə ~ ɛʊ]. To an outsider it does indeed seem as if *paper* is pronounced 'piper', *tie* 'toy', and *no* 'now'.

It is not known when the Diphthong Shift arose. Probably it originated in London; presumably it was well under way by the first half of the nineteenth century, so that early settlers took it to Australia. Since Long Mid Diphthonging (3.1.12 above) must logically have preceded it, and in RP is dated to the beginning of the nineteenth century, we can infer that Long Mid Diphthonging operated in popular speech well before it did in cultivated speech.

3.4.3 *Happy* Tensing

What we have called the *happy* vowel – the final vowel in words such as *happy*, *lucky*, *coffee* – was between the seventeenth century and 1950 regularly analysed by phoneticians as [ɪ] and implicitly assigned to the KIT phoneme. Latterly, though, there has been an

increasing tendency throughout the English-speaking world to use a closer quality, [i(ː)], and for speakers to feel intuitively that *happy* belongs with FLEECE rather than with KIT.

Where and when the [i] pronunciation arose is not certain. It has probably been in use in provincial and vulgar speech for centuries (though Wright 1905, for example, makes absolutely no mention of it). It is the customary form in southern-hemisphere accents, which suggests that it was already prevalent in the local accents of south-east England by the early nineteenth century. Kenyon (1958: §253; first edition, 1924) speaks of 'a tendency in the younger generation of the North and West [of the United States]' to use /i/; by 1960 Bronstein is writing (147) that 'most speakers use ... /i/'. RP has always traditionally been described as having /ɪ/, but by 1962 Gimson comments (§7.10) that '/ɪ/ is increasingly replaced in the speech of the younger generations by a short variety of /iː/'.

It is clear, therefore, that a trend towards what we may refer to as ***Happy* Tensing** is currently in operation both in Britain and the United States.

3.4.4 L Vocalization

The RP allophonic rule for /l/ provides for the clear allophone (with a frontish tamber) in the environment of a following vowel, but the dark allophone (with back tamber) elsewhere, i.e. before a consonant or in final position. Thus [l] occurs in *let*, *look*, *valley*, and [ɫ] in *milk*, *bulb*, and (prepausal) *feel*, *fall*, *middle*. Of the semivowels, /j/ is treated like a vowel (clear [l] in *million*), but /w/ as a consonant (dark [ɫ] in *always*). Ignoring this slight complication, we can formulate the rule as (170), which treats the clear allophone as basic.

$$(170)\quad l \rightarrow ɫ \,/\, \_\left\{ \begin{array}{c} \| \\ \#_0\ C \end{array} \right\}$$

This rule generally takes no account of word boundaries: thus *feel upset*, *fall off* have clear [l], and it is only when prepausal or when followed by a word beginning with a consonant that *feel* and *fall* have [ɫ].

The development we call **L Vocalization** converts [ɫ] into a non-syllabic back vocoid, [ɤ], or its rounded equivalent, [o]. (The precise quality varies. We could equally well write [o] or [ʊ].) Thus *milk*

comes to be pronounced [mɪŏk], *shelf* [ʃɛŏf], and *bulb* [bʌŏb]. Prepausal *feel* becomes [fiːŏ] (etc.; there may also be special developments in the preceding vowel), *fall* [fɔːŏ]. Syllabic dark [ɬ] becomes syllabic [o] (etc.), thus *middle* ['mɪdo]. Instead of (170) we have (171).

$$(171)\quad l \rightarrow o \,/\, \_\_ \begin{Bmatrix} \| \\ \#_o\ C \end{Bmatrix}$$

L Vocalization has potentially massive implications for the reorganization of the vowel system, comparable in its magnitude to the effects of R Dropping. Just as it was R Dropping which assured phonemic status for the diphthongs /ɪə, ɛə, ɔə, ʊə/, so L Vocalization offers the prospect of eventual phonemic status for new diphthongs such as /ɪʊ/ (*milk*), /ɛʊ/ (*shelf*), etc. (Note the formal similarily between (170) and (146′) of 3.2.2 above.) It will also, incidentally, simplify the foreign learner's task: most will find ['mɪdo] a good deal easier than the laterally released [d] plus dark [ɬ] of ['mɪdɬ].

This development seems to be a recent one. There have been droppings or vocalizations of /l/ in various environments in the earlier history of English (*walk*, *calm*) and of traditional-dialects (*owd* for *old*, etc.). But the precise development now under discussion is probably less than a century old in London. For all his orthographic contortions in his Cockney characters' speech, Shaw leaves Eliza Doolittle with *l* in 'gel, spawl' (*girl*, *spoil*); even Drinkwater in *Captain Brassbound's Conversion* (1900) is allowed *call* and *little* (Shaw could easily have invented something like *caw*, *li'oo* to represent the current Cockney pronunciation). The *LAE* shows *uncle* and *weasel* with [u] in a stretch of the south of England from Sussex to Essex. Jones seems again to be the first to describe the phenomenon accurately (1956: §298; first edition 1909), attributing it to 'London dialectal speech'.

From its putative origins in the local accent of London and the surrounding counties, L Vocalization is now beginning to seep into RP. It seems likely that it will become entirely standard in English over the course of the next century.

A different kind of L Vocalization is found in the American south (generally as an optional realization rule). It changes nonprevocalic /l/ into a velar lateral (vol. 3, 6.5.9). This may well be a historically unconnected development.

3.4.5 Glottalization

The voiceless plosives /p, t, k/, and also the affricate /tʃ/, are in England often preceded in certain syllable-final environments by a glottal stop [ʔ]. Either this is a new, twentieth-century, phenomenon, or else no phonetician had previously noticed it. Because the [ʔ] is inserted before the oral closure is effected, and thus masks the approach phase of the oral plosive, it is referred to as **Preglottalization**, or Glottal Reinforcement.

The precise details of the environments favouring Preglottalization are intricate and variable. The following conditions appear to apply: (i) it occurs only when /p, t, k, tʃ/ are in syllable-final position (including in certain syllable-final clusters); (ii) it occurs only when /p, t, k, tʃ/ are preceded by a vowel, a liquid, or a nasal. Subject to these conditions, consider the cases set out in (173) below. The expression 'true C' (true consonant) covers obstruents and nasals, but not liquids or semivowels. 'L' stands for non-syllabic liquids, 'S' for semivowels. 'Word-internal' includes cases where a clitic (such as *it*) is attached. The effect of Preglottalization can be formulated as (172).

(172) $\emptyset \rightarrow$ ʔ / V (L or nasal) __ [Voiceless Plosive]

(173)	/p/	/t/	/k/
(a) __ # true C	*stop talking*	*quite good*	*look down*
(b) __ # L or S	*stop worrying*	*quite likely*	*look worried*
(c) __ # V	*stop eating*	*quite easy*	*look up*
(d) __ pause	*Stop!*	*Quite!*	*Look!*
(e) __ true C	*stopped, capsule*	*nights, curtsey*	*looks, picture*
(f) __ L or S	*hopeless*	*mattress*	*equal*
(g) __ [m̩, n̩, ŋ̩]	(*happen*)	*button*	(*bacon*)
(h) __ V or [l̩]	*happy, apple, stop it*	*butter, bottle, get 'im*	*ticket, buckle, lick it*

(For case (g) to be relevant, underlying /ən/ must have coalesced to [n̩] by Syllabic Consonant Formation; for *happen* and *bacon*, moreover, [n̩] must have become bilabial or velar respectively through Progressive Assimilation.)

In RP, Preglottalization may apply to any of cases (a, b, d, e, f). Some speakers do not have it at all; others have it only in (a, b, e) (where it is difficult to perceive). Strangely, no social value appears to attach to Preglottalization in the environments where it is very clearly audible, namely (d) and (f): English people do not have

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strong feelings about which is more elegant of ['həʊpləs, 'həʊʔpləs], ['mætrəs, 'mæʔtrəs], ['iːkwəl, 'iːʔkwəl].

The affricate /tʃ/ is more widely preglottalized, including in the environment corresponding to (h) of (173) (*teacher*, ['tiːʔtʃə], *watch it* ['wɒʔtʃɪt]).

Preglottalization is not particularly associated with the south of England rather than the north. Indeed, my subjective impression is that in environment (d) it is at least as common in northern accents as in southern (thus [stɒʔp, kwaɪʔt, lʊʔk]). An emphatic articulation of the glottal component will readily convert this into an ejective, thus [stɒp', kwaɪt', lʊk']; both northerners and southerners may be found who use these forms under appropriate stylistic conditions.

Another possibility is the use of a glottal stop which masks the release stage of the oral plosive. This is not easily distinguished perceptually from complete replacement of the oral articulation by [ʔ]. In the local accents of London, Glasgow, Edinburgh, in many rural accents of the south of England and East Anglia, and increasingly in urban accents everywhere in England, such **Glottalling** is now to be observed for /t/ in all the environments mentioned in (173). Sometimes it applies to /p/ and /k/ as well, though here there appears always to be the potential of some kind of labial or velar gesture respectively to distinguish /p/ and /k/ from /t/ (where no alveolar gesture is necessary). T Glottalling is well-known as a Cockneyism in words such as ['bʌʔə], ['bɒʔo]. These forms are sharply stigmatized; but T Glottalling in environments (a, b, e) must be considered to fall within current mainstream RP. Some younger RP speakers even use plain [ʔ] for /t/ in environment (c).

I know of no systematic investigation of Preglottalization and Glottalling in American speech; but T Glottalling is clearly to be observed in the speech of some Americans in environments (a, b, g).

The *LAE* shows [ʔ] for /t/ only in a small area around London and in East Anglia (map Ph239). Wright (1905: §287) recognizes it only in 'west-mid Scotland, Lothian, and Edinburgh', and then only before /ə/ plus a liquid (*kettle*, *water*). But by 1909 Jones, in the first edition of his *Pronunciation of English*, writes 'In Scotland and London *t* is often replaced by the glottal plosive ʔ', giving the London example [ɑaiŋgɔʔwan] *I haven't got one*. The very widespread dissemination of [ʔ] for /t/ at the present day suggests, therefore, that Glottalling must have spread very fast in the course of the present century.

3.4.6 The *-ing* variable

We have already noted the sociolinguistic variability of the ending *-ing*, in which the final nasal may be either velar or alveolar (1.1.5, .6, .8). Although this variability is neither exclusively British nor a recent innovation, we discuss it in this section of chapter 3 for lack of anywhere better.

In a word such as *running* the form ['rʌnɪŋ] is on the whole associated with higher social class and more formal speech, ['rʌnɪn ~ 'rʌnən] with lower social class and less formal speech. The special spelling *runnin'* is sometimes used to show the [n] form. There is a phonetic variant [n̩] alongside [ən] where Syllabic Consonant Formation allows, thus ['raɪdn̩] *riding* etc.; this means that *eating* and *eaten* may be homophonous, ['iːʔn̩] etc. Less common phonetic variants include [iŋ] and [əŋ].

The *-ing* in question is not only the verbal ending (*calling*, *trying*, *stopping*), but also the *-ing* of nouns such as *ceiling*, *morning*, *shilling*, *pudding*, and of adjectives such as *cunning*, which can hardly be called a separate morpheme, at least from a synchronic point of view. Names such as *Hastings*, *Buckingham*, *Headingley* also exhibit the alternation. But words such as *string*, *fling*, *redwing* never have [-n]: that is, the alternation is restricted to weak syllables.

It is probably not correct to regard [n] for [ŋ] in *-ing* as an innovation (as implied by Ekwall 1975: §125). Both alveolar and velar forms are to be found in early Middle English: they were at one time distinct, *-inde* forming the participle and *-ing(e)* the verbal noun (Strang 1970: 238). Although the spelling *-ing* became established for both, the pronunciation with [n] appears to have been very much more widespread in educated speech at one time than it is today. The fashionable pronunciation in eighteenth-century England was [-ɪn], and this remains in English folk-memory as the U-RP stereotype of *huntin'*, *shootin' and fishin'*. Wyld (1936: 289) regards [-ɪŋ] as an innovation, indeed a spelling pronunciation, which arose in the 1820s.

At the present day it seems that almost every English-speaking community exhibits a social or stylistic alternation between the two possibilities, the form with the velar nasal being 'high' and that with the alveolar 'low'. But there is evidently geographical variation in respect of the point in social or stylistic stratification at which the

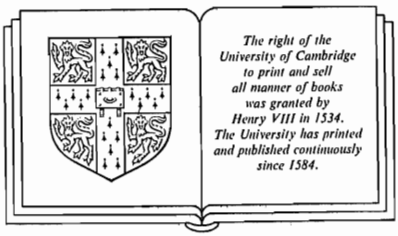
changeover occurs. In Birmingham, England, it appears that the velar form extends well down into working-class speech, while in Birmingham, Alabama, the alveolar form extends well up into middle-class or educated speech. It is safe, though, to make the generalization that where there is an English-speaking working class at least some speakers have [-n]. The one native-English-speaking territory where everyone uses [-ŋ] is South Africa: and the South African working class does not have English as its first language.

Hypercorrection gives rise to would-be elegant pronunciations such as ['tʃɪkɪŋ] *chicken*, ['gɑːdɪŋ] *garden* (= *guarding*), *a braz*[ɪŋ] *hussy*, *Badmi*[ŋ]*ton*.

Accents of English I

An Introduction

J. C. WELLS



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