

A spectrographic study of sound changes in nineteenth century Kent

Sidney A. J. Wood

Universities of Lund and Umeå, Sweden (retired)

The speech of eight rural Kentish informants, including the author H. G. Wells, all born in the closing decades of the 19th century, is reviewed with respect to ten on-going sound changes present in varying combinations in their regional Kentish speech. The recordings have caught moments in the period 1865-95, the birth years of the informants, when a modified accent was crossing rural Kent¹ from industrial towns along the shores of the Thames and its estuary, each informant exhibiting new and earlier Kentish pronunciations in fascinating individual mixes related to their age and location. The results indicate that the sound changes started at different times, each commencing from the north and northwest, and diffusing towards the east and south over several generations. The earliest of these particular changes seem to be FACE², PRICE and GOAT, estimated appearing around 1800 in estuary towns and spreading to most of Kent by 1865-1895. MOUTH and LOT were the most recent changes, having spread to about a quarter of rural Kent by 1895. The BATH change had not been acquired by any of these informants and did not emerge until around 1900, spreading during the 20th century. The FACE, PRICE, GOAT and MOUTH changes were some of the most recent steps of the Great Vowel Shift in Kent. It is also very likely that shifting TRAP away from DRESS was not exclusive to the changed accent, and a suggested explanation is that a residue effect of the BATH-TRAP split was being resolved across several variants of Southern British English, including RP³. Finally, similar sound changes were occurring throughout the home counties, although their precise progress was not within the scope of this chapter. It is concluded that these 19th century sound changes in Kent, and indeed in the home counties, are relevant for the debate about Estuary English.

¹ County names refer to the 1889 Local Government Act, ignoring any subsequent boundary reforms.

² Expressions like FACE, BATH, TRAP, LOT etc. are keywords (J. C. Wells 1982, Chapt. 2.2) representing the stressed vowels of words in lexical sets that have participated in various dialect sound changes. They are useful for referring to specific vowels when comparing accents and sound changes (where phoneme notation might be ambiguous since phoneme pronunciations are different or are being modified).

³ The expression *RP* is preferred for the sake of continuity although two rival names have been launched for this accent, *GB* (Lewis 1972) and *SSBE* (IPA 1999). Nineteenth century RP is understood as the accent detailed in the *Outline of English Phonetics* (Jones 1918 and later), while Gimson (1962) and J. C. Wells (1982) are referred to whenever necessary for revisions in RP to the 1950s and 1970s.

1. Introduction

This chapter traces ten sound changes that completely changed the character of the regional accent spoken in 19th century Kent, teasing out the routes and timing for how they were spreading. They concern one consonant /r/, and nine vowels (FACE, PRICE, TRAP, STRUT, THOUGHT, GOAT, MOUTH, LOT and BATH, Table 1, §2.2). Loss of rhoticity refers to the loss of /r/ in syllable codas, i.e. in words like *ca(r)t*. This “r-dropping” had begun in Lincolnshire and East Anglia by the 15th century, revealed by unusual spellings in manuscripts like wills and private letters (Wyld 1936: 298). Since then it has been spreading across the country (reviewed by Britain 2009) and had reached Kent by about 1850 (inferred from Ellis 1889). Seven of the informants were recorded by the *Survey of English Dialects* (SED) in the 1950s (Orton & Dieth 1962), while the eighth is the author H. G. Wells, recorded during a radio broadcast in 1931 (§3.1 and Figure 1). Additional recordings, from late 19th century *received pronunciation* (RP) and from 20th century Kentish speech, are included for comparison (§3.2). Informant anonymity is preserved by referring to them by their location and birth year (for example *Farningham1881*) unless they are public figures (when their names are used). Spectrographic analysis is used to visualize their individual vowel systems (§3.3). Statistical treatment is hardly justified for eight informants, one from each of eight places, however, it is possible to construct a model of the evolution of these sound changes by comparing the respective acquisitions of old or new pronunciations across the county (§4, §5.1 and Figures 4-8).

Traditionally, towns are considered to lead with innovative pronunciation while rural areas are said to be conservative. So far, virtually no information has been found on urban pronunciations in 19th century Kent. But there are two signs that pronunciation in rural areas and inland towns might not have differed. Firstly, Bromley (Figure 1) was growing into a town from the 1860s onwards, yet H. G. Wells’ vowel system is similar to that of the rural informants. Secondly, Torgersen & Kerswill (2004) reported conservative pronunciations by the generation born in the 1920s in Ashford. The towns along the River Thames from Gravesend to Sittingbourne and Sheerness were industrial (Figure 1), especially cement and paper manufacture, smelting and founding, brick making, ship building, dockyard resources for the Royal Navy, and coastal shipping services to London. Sheerness was a *New Town* of its day, established in the 16th century on uninhabited marshland round a new fortress, garrison and naval dockyard. There was less industry eastwards from Sheerness and Sittingbourne, the other coastal towns along to Margate being seaside resorts and residential with harbours serving the interior. Inland, away from the estuary, the South Eastern Railway’s locomotive works were relocated to Ashford from London in the 1840s. The London suburbs were also encroaching on the Kentish countryside, commuting on the new railways. Boundary areas gradually became part of London, Woolwich being incorporated into *Metropolitan London* in 1889, and Bromley into *Greater London* in 1965.

Strictly speaking, the Thames Estuary begins where the River Thames widens substantially (Figure 1). The stretch from Woolwich to beyond Gravesend is still the river. For this chapter, the location “*shores of the River Thames and its estuary*”

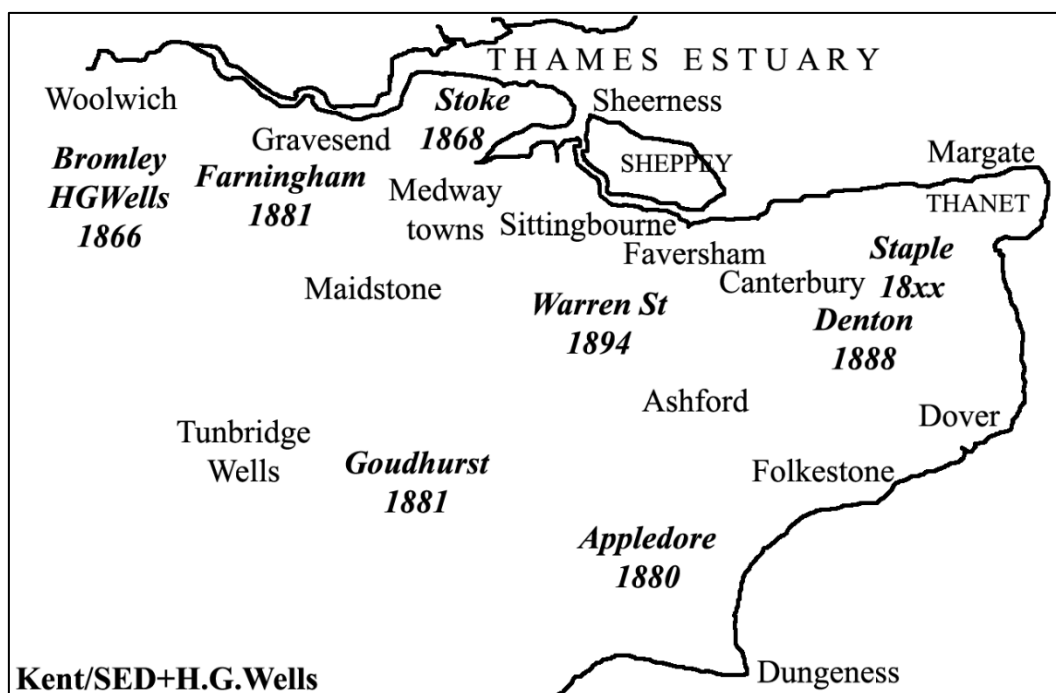


Figure 1. Rural locations and years of birth of the seven SED Kentish informants and H G Wells (each in bold italics), and other locations referred to in the text. The *Medway Towns* have always included at least Rochester, Chatham and Gillingham, and today they are amalgamated in the Medway Unitary Authority, along with surrounding rural areas like the Thameside marshland of the Hoo peninsula to the north (*Stoke 1868*). The Hoo peninsula was one of the rural areas excluded by Ellis (1889), having already lost the earlier accent.

will include this complete system, together with adjacent waters like the River Medway (from the Medway Towns to Sheerness) and the Swale (that separates the Isle of Sheppey from the mainland). Mostly, it will be summarized in expressions like *Thameside* or *estuary*.

The ten sound changes were not just local developments modifying Kentish a little, but were part of a much larger event in the 19th century. This was contact between migrating Londoners and the local populations of industrial towns along the shores of the estuary (§2.1) that resulted in a modified accent with a blend of popular London and local features. Ellis (1889) and the SED provide two snapshots of pronunciations separated by a few generations (Ellis' account was based on notes from correspondents and interviews with adult Kentish speakers born around 1840-50 and earlier, while the seven SED informants were born between 1865 and 1895). Similar contact sound changes were occurring in all directions from London, throughout the home counties (the counties that bounded directly onto London, or, more generously, also other neighbouring counties roughly within the triangle Kent–Hampshire–Northamptonshire). This was caught

Table 1. The earlier Kentish pronunciations of the nine vowels⁴, reported by Ellis (1889), and the new pronunciations of the informants, including partially new changes (P), listed in estimated new chronological order.

VOWEL	EARLIER	NEW
FACE	ai, eə	ɛi
PRICE	ɹi	ai
GOAT	ou	au (P: ɹu)
STRUT	ʌ	a
TRAP	close æ near DRESS	open æ
THOUGHT	ɔ:	o:
MOUTH	ɛu~ɛʰ	æɐ (P: æʰ)
LOT	ɑ	ɔ
BATH	a:	ɑ:

Table 2. The 19th century migrant London pronunciation model (Matthews 1938, Sivertsen 1960, Wells 1982), listed in the same order as Table 1.

VOWEL	PRONUNCIATION
FACE	ai, æi, ɛi
PRICE	ɑi
GOAT	au
STRUT	a
TRAP	ɛ, close æ near DRESS, open æ
THOUGHT	o:
MOUTH	æu~æʰ~a:
LOT	ɔ
BATH	ɑ:

⁴ Some phonetic characters are substituted for this chapter. The character **a** (*open front cardinal 4*) is used for vacant *open central*, the character for unshifted *closer TRAP* **æ** is retained also for shifted *open front TRAP*, the character **ɹ** is used for vacant *uvular rhotic approximant*.

by George Orwell (1939, Part II, Chapt. 7) in a novel that was set in the Thames Valley somewhere between London and Oxford in the late 19th and early 20th centuries (cited by Parsons 1998):

“In the Thames Valley the country accents were going out. Except for the farm lads, nearly everyone who was born later than 1890 talked Cockney”

For the Kentish part in this major 19th and 20th century levelling of regional Southern British English (SBE) in the home counties, it will be necessary to establish the previous accent (that the informants were changing from, Table 1 and §2.2), and popular 19th century London speech (the postulated model for the changes, Table 2 and §2.3).

I have not discovered any systematic evaluation of the Kentish accent since Ellis' survey of the earlier pronunciation. The more recent SED, based on recorded interviews with rural informants born at the end of the 19th century, has inspired studies on the lexicology and syntax of English dialects, but Rydland (1972), reviewing the SED, found it weaker on structural phonology. J. C. Wells (1982, vol. 2) devotes just half a page to Home Counties SBE, but several pages each to London SBE, East Anglian SBE and Western SBE, which presumably mirrors the research available to him in the 1970s for each of these regiolects. For some reason, Kentish speech (or home counties speech) does not seem to have attracted much attention in the past.

A pragmatic distinction is made between *dialect* and *accent* (despite the misgivings of Kerswill 2010a). A *dialect*, such as SBE, is a regional variant of a language and comprises both grammar and pronunciation. An *accent* refers to pronunciation only. A *regiolect* is a subdivision of a dialect, for example, Home Counties SBE, London SBE. Within each regiolect there are local *sociolects*, expressed here by a single continuous local sociolect scale (Wells 1982).

The current theory for linguistic change generally and contact sound change in particular, based largely on the work of Labov, is summarized by Britain (1997, 2009), Fabricius (2000, 2002), and Kerswill (2003a, 2003b, 2010b). The ten sound changes reported here hardly amounted to a new *koine*, such as was proposed for the Fenlands by Britain (1997) and Milton Keynes by Kerswill & Williams (2000, 2002, 2005). In 19th century Kent, each of these sound changes was simply a direct modification. Koineization may well have occurred when regional variants merged into levelled Home Counties SBE, especially if syntax and the lexicon are included.

Equally, this chapter relies heavily on the role of child language acquisition for language change, recognized since the 19th century and summarized, for example, by Greenlee & Ohala (1980), Labov (1989) and Kerswill et al. (2013). Further, Kerswill, following Trudgill, admits *accommodation* (adaptation of pronunciation by adults) as an active process in diffusion. However, all recordings were made late in the lives of the informants, and it is assumed they still reflected their pronunciations from childhood, or at least adolescence. There are three obvious exceptions who had modified their accents towards their local standard sociolect (§§3.1, 3.2).

Any possible involvement of RP in these 19th century Kentish sound changes will be examined. At first sight it was not implicated, the postulated model being the speech of Londoners. In addition, there would have been few opportunities for Kentish inhabitants to hear RP in the 19th century. They probably heard very little RP before the BBC brought RP voices into homes.

2. Background

2.1. Kent, the home counties, and migrating Londoners

Accents rarely respect administrative boundaries, and there was no uniquely Kentish dialect, at least in more recent centuries. Ellis combined Kent (excepting NW) with East Sussex for what he called *Eastern Southern English*. He grouped West Sussex, NW Kent and Surrey with parts of Hampshire, Berkshire and Oxfordshire for *Eastern Mid Southern*. Essex was combined with Hertfordshire, Bedfordshire, Huntingdonshire and part of Northamptonshire for *Mid Eastern*. These three regiolects had previously been distinct and distinguishable according to Ellis, but, while he was collecting material for this book he found that the old pronunciations were giving way to features adopted from London speech. He was not concerned with how this happened, his objective being to collect what could still be found of the earlier dialect. However, Parish & Shaw (1888 p. vii) did give an introductory, albeit repugnant, account of how the London accent was being spread to Kent via a Thameside town:

“The purity of the dialect diminishes in proportion to the proximity to London of the district in which it is spoken. It may be said that the dialectal sewage of the Metropolis finds its way down the river and is deposited on the southern bank of the Thames, as far as the limits of Gravesend-Reach, whence it seems to overflow and saturate the neighbouring district.”

Dialectal sewage is a repulsive metaphor, but it is at least testimony that something was happening. It is also testimony that these sound changes were abhorrent to some circles, and might explain why so little effort has been spent on researching this accent. If this account is taken literally, the route followed by the sound changes was from Gravesend to the nearby SED location Farningham and to Bromley (Figure 1), and thence eventually to the other SED locations. However, the present study reveals an additional route further east, via the Medway Towns and their hinterland northwards to *Stoke1868* on the Hoo peninsula and southeast towards *WarrenStreet1894* (Figure 8a).

2.2. Earlier Kentish pronunciation

The earlier pronunciations of the vowels, as reported by Ellis, are summarized in Table 1 for reference. The sound changes are not all exclusive to the new accent, although the actual outcomes are typical features. For example, the loss of rhoticity has affected most accents of England and is still spreading westwards in SBE, while the changes to PRICE, MOUTH, FACE and GOAT were new steps in the Great Vowel Shift (GVS) just reaching Kent. The timbre shift of TRAP turns out to be common to other regiolects and sociolects of SBE, including RP. So there was probably more going on than just simple absorption of contemporary popular London speech into the local accent.

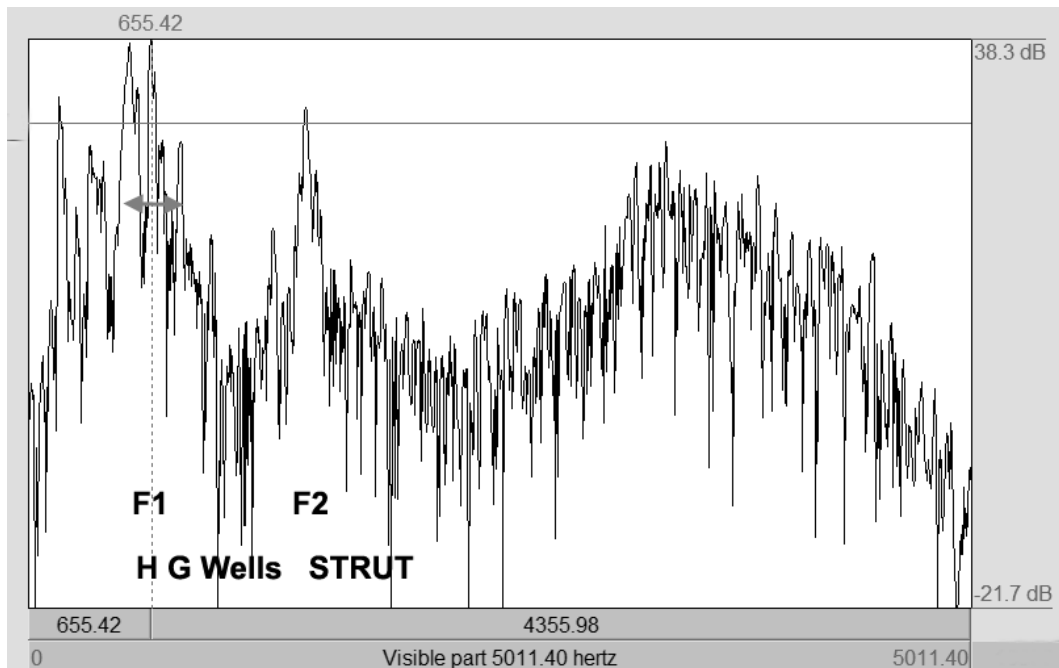


Figure 2. Example FFT narrowband slice showing the harmonic structure of formants, taken from an MP3 recording. Lossy MP3 compression should not alter frequencies, but it does change amplitudes locally, distorting the envelope and the shapes of individual harmonics. Assuming that formants are symmetrical and represented by the centre frequency, F1 here is three harmonics wide and the frequency is 655Hz.

Ellis rejected several areas because the earlier dialect was no longer spoken there, particularly the Hoo peninsula (north of the Medway Towns, *Stoke 1868* in Figure 1), the Isle of Sheppey (including Sheerness), and the Isle of Thanet (including Margate, just north of *Staple 18xx*), all located along the estuary coast.

Ellis reported the Kentish /r/ as a “burr”, which usually meant *uvular* (Sweet 1892: 31, but not trilled in Kent). This is how I also perceive the informants’ /r/, and my own, a uvular approximant. This is something that deserves further investigation since the traditional accounts of English pronunciation usually only refer to the *Northumbrian burr* as uvular. Additionally, the standard textbook account of the production of uvular consonants like [q ɢ χ ʀ ʁ] is unfortunately misleading. Direct visual inspection of uvular articulations is obscured posteriorly by the faucial arches and the oropharyngeal isthmus, hence the traditional, but deceptive, focus on the visible uvula as the place of articulation for “uvular” consonants. However, the critical constriction (or occlusion for stops) is located in the upper pharynx, at the level of the superior pharyngeal constrictors, the same location as is used for [o ɔ] (Wood 1979, 1997, 2006). Rosewarne (1984) puzzled the phonetics community by describing a unique *Estuary English /r/*, “similar to a general American r but it does not have retroflexion”. He might have been unwittingly referring to this same uvular approximant.

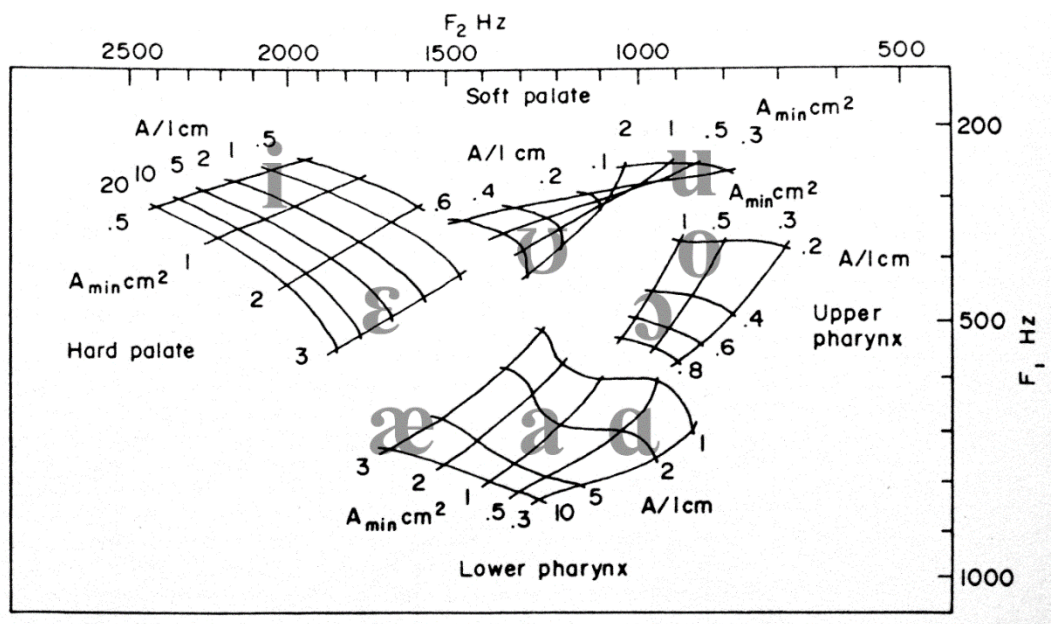


Figure 3. Vowel F_1 and F_2 obtained by varying the degree of constriction (A_{min},cm^2 vocal tract cross-section area in the constriction, smaller for narrower constrictions) and the degree of mouth opening (A/lcm , spreading $>2cm$, rounding $<0.5cm$) at the four constriction locations in a simple model vocal tract, modified from Wood (1979, Fig. 5) and based on the Stevens & House (1955) nomograms. The location of a constriction by the tongue body was set as d_0 cm from the glottis on the original nomograms, values of 12, 8.5, 6.5 and 4.5 respectively being chosen to represent the four constriction locations. The upper pharyngeal constriction is also the location for *uvular* consonants.

Ellis had heard fully rhotic speech in the towns of Tunbridge Wells and Maidstone, but gave no ages of informants or dates. Otherwise, */r/* had “a tendency to degenerate into the ordinary English vocal *r*, a mere vowel ($\text{ə } \text{e}$) ... the form it retains in London”. In the coastal town of Margate, a student teacher’s */r/* “followed London use” including “euphonic insertion”, which I understand is non-rhotic with linking and intrusive *r*. Regarding a student teacher at Charing (just SE of *WarrenStreet1894*, Figure 1) Ellis noted “the (*r*) was quite Cockney”. These student teachers, presumably born around 1850, demonstrate that loss of rhoticity was not only occurring on the estuary coast but had also spread to rural areas inland. They were training at the esteemed Whitelands College in Chelsea (now Roehampton University) but there was no suggestion they were modifying their obviously regional speech towards RP.

An additional 19th century source is the text of *Dick and Sal at Canterbury Fair*, a humorous imitation of local speech written in verse by John White Masters (1791-1873, a horticulturist and pioneer of the Assam tea trade), published in Canterbury around 1820 and reproduced by Parish & Shaw as hard evidence of early 19th century pronunciation. Here is an example of yod coalescence in rural Kent

before 1820 (*teejus* for *tedious*). The phonetic transcription is mine:

“*He sed dare was a teejus fair*” [i sed dɛR wɔz ə 'ti:ɟəs fɛR]

All the Kent SED informants have glottal stops, vocalized /l/, and /h/-dropping, in common with people all over the country, so these are not uniquely Kentish or London features. I assume they are older. There is also a distributional difference. None of the SED Kent informants had intervocalic glottal stops, perhaps because instead they had /t/-voicing (laxing, lenition, flapping) between syllabics, especially when stress was weakened or absent. Some examples: *get home* [ged 'aom] (*Appledore*1881), *knock it on* [nɔk id 'ɔn] (*Staple*18xx), *at half past* [əd af 'pɑ:st] (*Goudhurst*1881). With full focal stress, there is more likely to be an aspirated [tʰ]; examples by *Stoke*1868: *pays better* [pɛɪz 'bɛtʰə], *a lot of* [ə lɔtʰ əv].

2.3. The popular London model

Matthews (1938, Chapt. 6) stated firmly that East End Cockney had continued unchanged since the 19th century, on the evidence of 80 and 90 year old informants he had interviewed in the 1930s (providing a view back to the 1840s or 1850s). That suggests the 19th century model was similar to the 20th century popular London accent, or at least that of the 1930s. The expected 19th century London pronunciations of these nine vowels are summarized in Table 2, based on Matthews (1938), Wells (1982) and Sivertsen (1960).

The migrants presumably came from any part of London, not just the Cockney homeland in the East End. Both Matthews, and J. C. Wells (1982, Chapt.4.2), emphasize that the differences between popular and standard sociolects were greater than any local differences between East End Cockney and the rest of London, which is relevant for the model pronunciation since the migrants would have included skilled craftsmen, foremen, engineers, and managers when whole industrial concerns relocated to the estuary towns.

Mugglestone (2003, Chapt. 3) quotes evidence from the late 18th century that popular London speech was already non-rhotic. Matthews gives even earlier examples of deviant spellings found in church accounts and minutes, including *chorst* ('cost') as early as 1573.

Regarding the precise timbre of TRAP, Matthews (1938, Chapt. 1) gives examples of deviant spellings for TRAP, DRESS and KIT since the 16th century, suggesting confusion arising from having TRAP very close to DRESS, with compression of DRESS and KIT towards FLEECE. This is very puzzling at this early date, supposedly before the BATH-TRAP split, when BATH should have shared the same timbre as TRAP and been subject to similar deviant spellings (although none are reported for BATH). This could mean that the BATH-TRAP split was already in progress in 16th century London, and the almost [ɛ]-like TRAP was evidence for it. Wyld (1936: 196-205) certainly states that TRAP was fronted after the split. The timbre of London TRAP might even have been [ɛ] rather than [æ]. Matthews (1938:Chapt.6) quotes from an 1882 report on the pronunciation of London schoolchildren, that “*Cab is keb, bank is benk, strand is strend*”, and gives more examples of his own up to the 1930s. Sivertsen (1960, Chapt. 3.3), writing about Bethnal Green Cockney, stated that the vowel of 'bad' “*is an unrounded, front half-open vocoid*”

Table 3. The numbers of informants with new pronunciations (**N**), partially new (**P**) and old (**O**), for each of the ten sound changes, ordered from the left by the total number of **O** acquired, assuming a progression from the earliest to the most recent. The grand total for each sound change is 8, the number of informants. The percentages for remaining old pronunciations are rounded up.

	FACE	PRICE	GOAT	STRUT	TRAP	THO'T	RHO	M'TH	LOT	BATH
N	8	7	4	6	6	5	3	2	2	0
P			3				1	2		
O	0	1	1	2	2	3	4	4	6	8
%O	0	15	15	25	25	40	50	50	75	100

Table 4. The number of new (**N**), partially new (**P**) and old (**O**) pronunciations of the ten sound changes by each informant, ordered from the left by the number of **N**.

	W'n St	Farn'm	Brom	Stoke	G'h'rst	Staple	A'dore	D'nt'n
N	8	8	7	5	5	4	3	3
P	1			2		2	1	
O	1	2	3	3	5	4	6	7

[bɛd], and J. C. Wells (1982, Chapt. 4.2) cites /kɛtʃ/ ('catch'). Whether or not London TRAP was cardinal [ɛ], all this suggests that its timbre was at least still close to DRESS. So shifting TRAP away from DRESS might or might not have been part of the London model pronunciation, and the stimulus for the Kent informants to shift the timbre of TRAP may have come from elsewhere.

For LOT, J. C. Wells (1982, Chapt. 4.2), suggests both [ɔ] and [ɒ] ("*modified towards RP*"). Sivertsen (1960, Chapt. 3.4) states that the phonemic norm for Cockney, "*as we know it from /pot/ [pɒt] pot, differs from that of RP in being slightly closer ... a rounded, back half-open vocoid*". I assume therefore that the unmodified model LOT of the migrants was [ɔ].

2.4. Interpreting vowel articulations

The established method for describing vowel articulation is the Bell model (Bell 1867:15-16,71) or some version of it such as Jones (1932:Chapts.7-8). Unfortunately, the Bell model has never been validated (for example, Jones' failed to corroborate the assumed articulation of his cardinal vowels by using X-ray photographs, described by Collins & Mees in 1999:Chapt.7.6). *Lower height (more open)* simply means higher F1, and *more front* means higher F2 (Essner 1947, Joos 1948) without implying any causal explanation (whether Essner's or Joos').

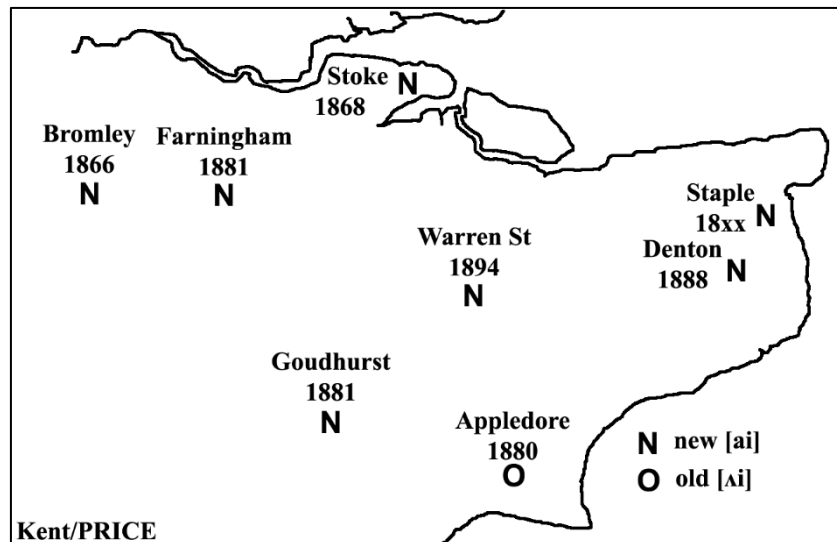
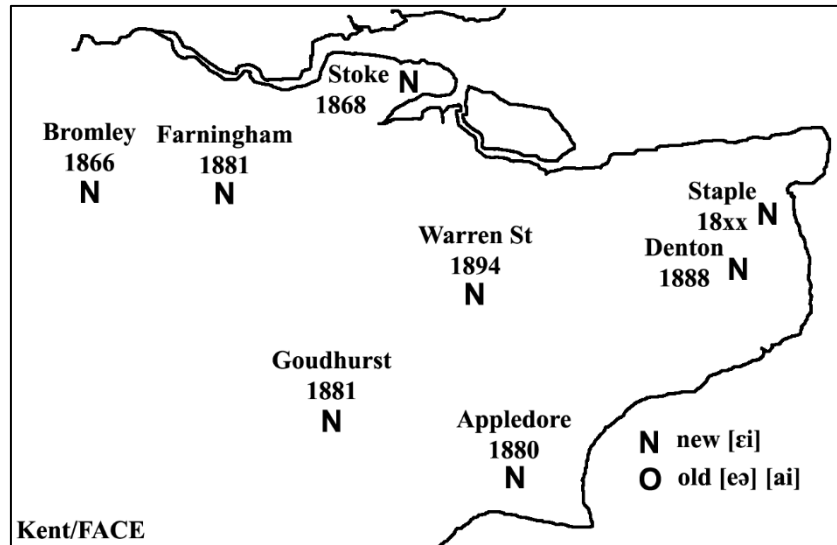


Figure 4. The distributions of FACE and PRICE pronunciations. (a) Above: 8/8 with the new FACE. (b) Below: 7/8 with the new PRICE.

Chiba & Kajiyama (1941) and Fant (1960) demonstrated that each formant corresponds to a standing wave from the lips to the glottis, allowing any number of formants. The frequency of any formant is modified selectively by local narrowing or widening at several locations in the vocal tract, for example by tongue body movement, tongue blade movement, lip and mandible movement. Wood (1979) examined 38 sets of X-rayed vowel profiles from 15 languages, published from 1900 to the 1970s, and two new X-ray motion films, and found that all consistently showed just four locations where the vocal tract was constricted by the tongue body for monophthongs. Figure 3 summarizes the F1 and F2 regions obtained at these four locations. This is referred to when necessary for deducing articulations

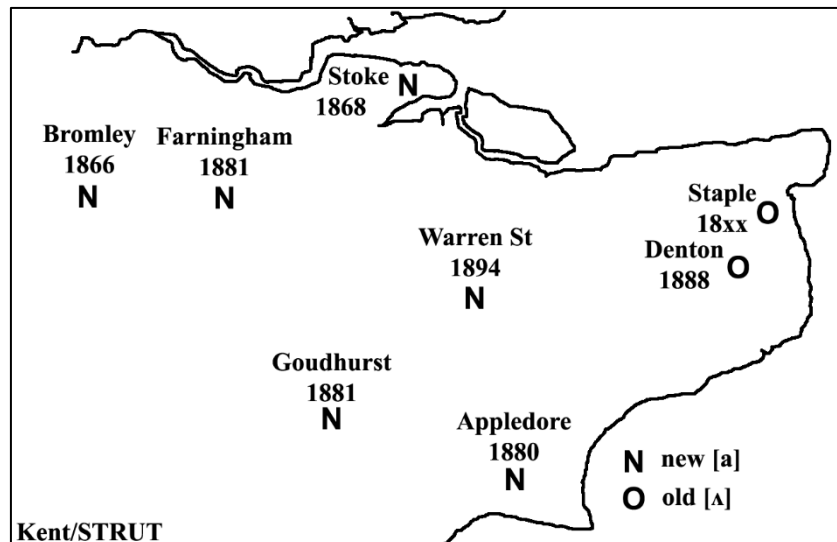
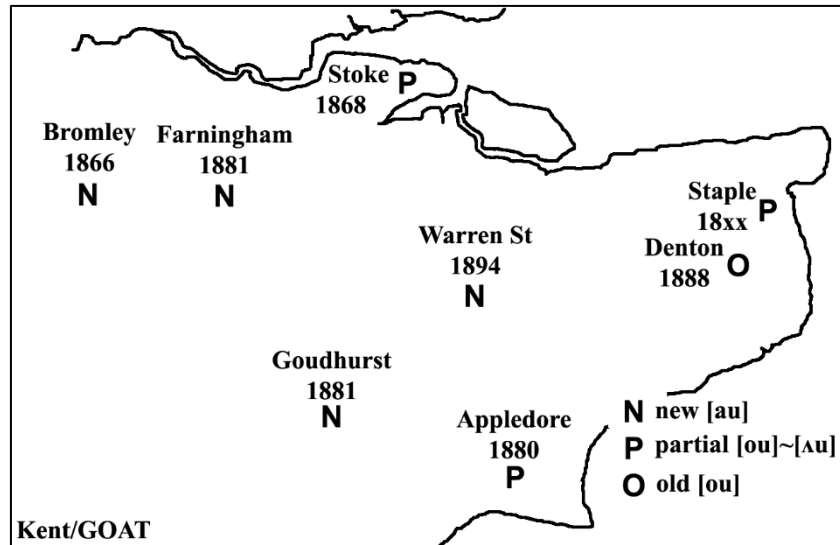


Figure 5. The distributions of GOAT and STRUT pronunciations. (a) Above: 4/8 with the new GOAT, and 3/8 with partially new. (b) Below: 6/8 with the new STRUT.

from formant frequencies. For example, *open* vowels exclusively have F1 higher than about 600Hz, with a low pharyngeal constriction. In real life, that boundary might be slightly higher, depending on individual factors like vocal tract size. A second example is [o] and [ɔ]. Figure 3 shows that the only difference is more lip rounding for [o] with the same tongue body activity (upper pharyngeal constriction). In real life there might also be a *tense-lax* difference (more ongoing activity for [o]: more lip rounding, more tongue blade depression, more larynx depression, more ATR in the lower pharynx).

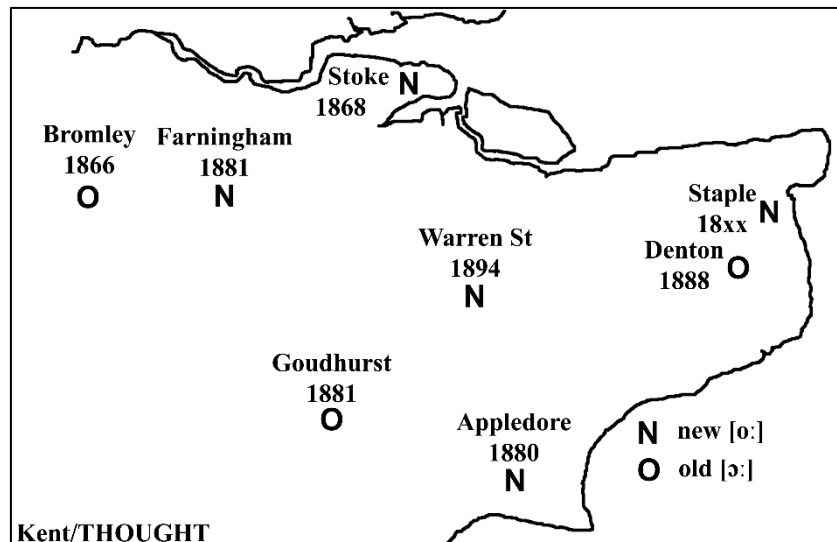
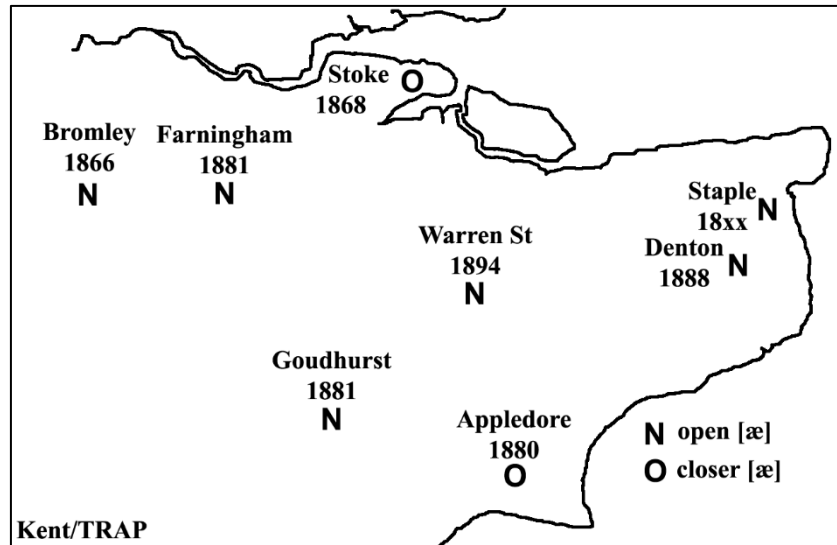


Figure 6. The distributions for TRAP and THOUGHT. (a) Above: 6/8 with new *open* TRAP shifted away from DRESS. (b) Below: 5/8 with new THOUGHT.

3. Procedures

3.1. Recordings and informants

The SED recordings, made in the 1950s, are available online in MP3 format from the British Library Sound Archive. These informants were born between 1865 and 1895 and were selected for their lifelong residence in their rural locations. They are referred to (Figure 1) by their location and birth year, thus: *Farningham1881*. No birth year was provided for the informant from Staple, so he is just identified as *Staple18xx*. They were all male, with such varied occupations as blacksmith, coal miner, farmer, groom, and traction engine driver. A radio broadcast made in

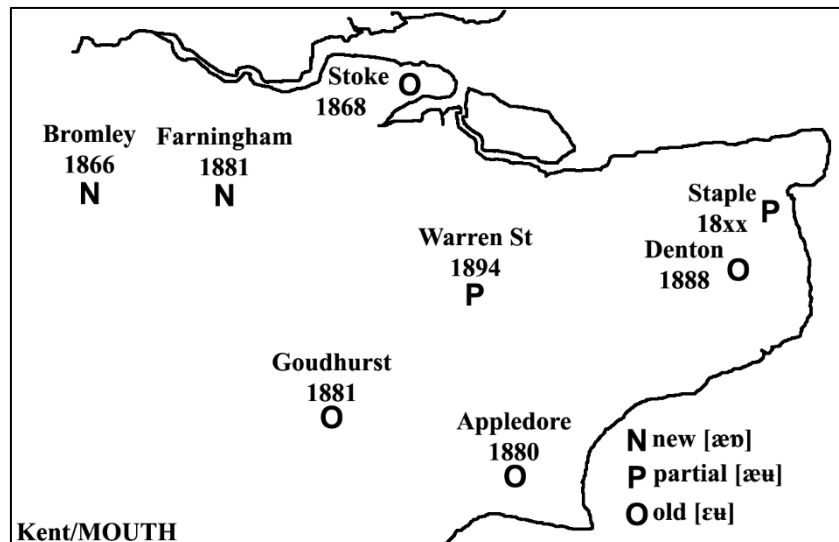
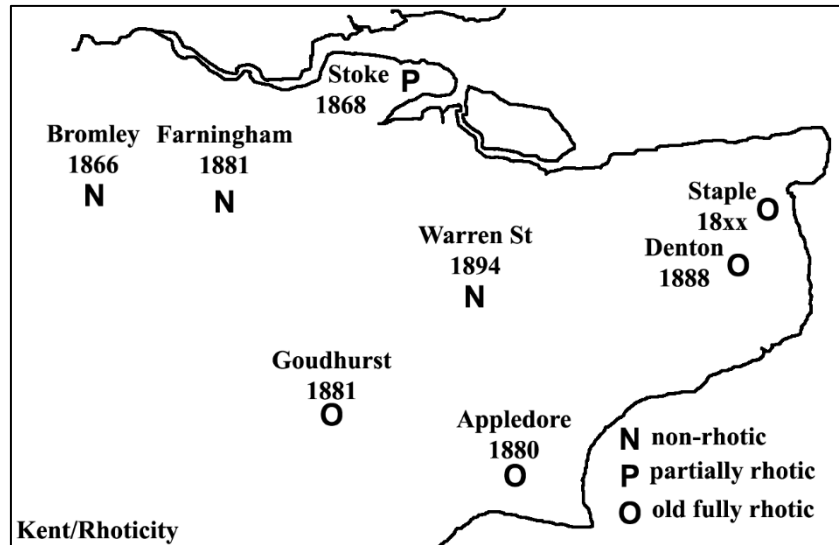


Figure 7. The distributions for rhoticity and MOUTH. (a) Above: 3/8 were new non-rhotic, and 1/8 partially rhotic. (b) Below: 2/8 with new MOUTH, and 2/8 with partially new.

1931 by the novelist, biologist, and political commentator H. G. Wells is also included (BBC Archive 1931a). He was born in 1866 at Bromley, at that time a large village growing into an urban area, and today incorporated as a SE London Borough. His recorded speech is phonologically comparable to that of the contemporary SED informants, and like them he has a mixture of new sound changes and earlier Kentish pronunciations. Mugglestone (2003, p. 263) states he “*shed the Cockney markings of his youth*”. Judging by his recorded speech, he simply moved his Kentish accent up the local sociolect scale. His enunciation is clear, with hardly any syllable reductions, no intervocalic glottal stops and no vocalic //.

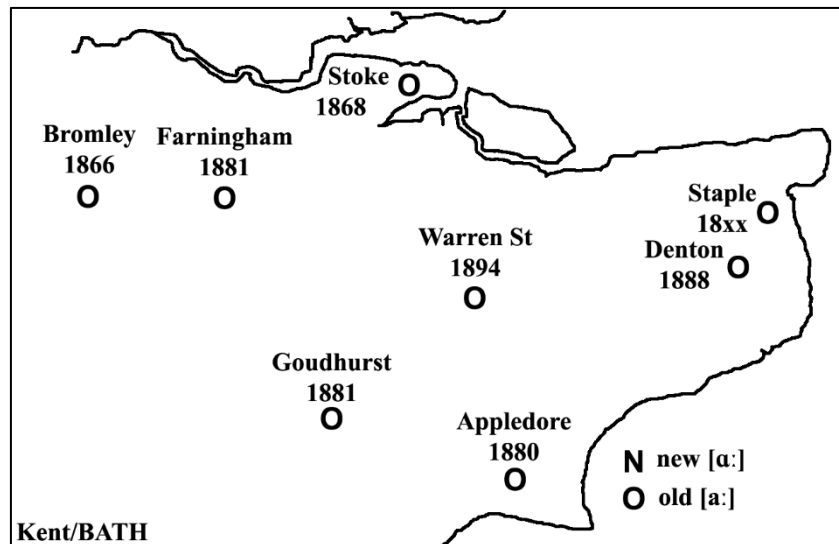
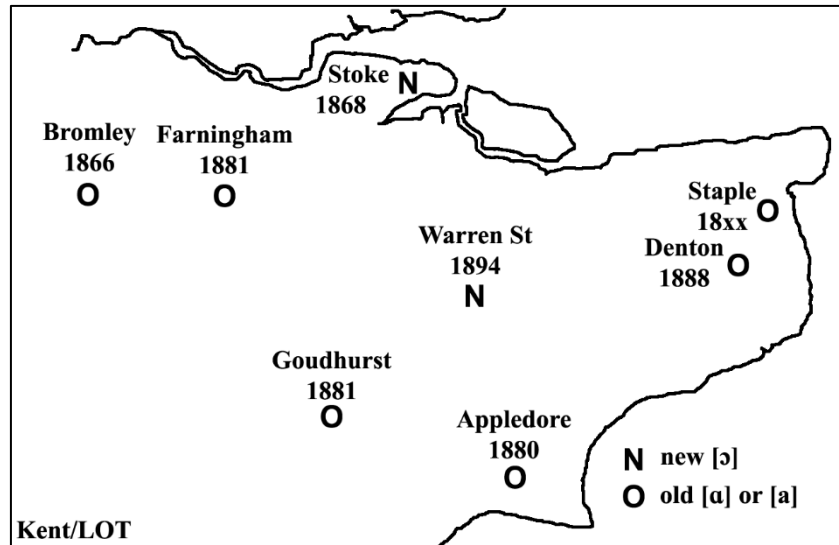


Figure 8. The distributions for LOT and BATH. (a) Above: 2/8 with the new LOT. (b) Below: 0/8 with the new BATH.

But he still had uninhibited GOOSE fronting, general preglottalization of /p t k/ in various syllable-final contexts, and free yod coalescence, all unheard of in the RP of the day but typical for these Kentish informants.

3.2. Supplementary recordings

Reference recordings are also included from two RP speakers who were contemporaries of the Kentish informants. One is Stanley Baldwin (1867-1947, Harrow School, Cambridge University, politician, Prime Minister 1923-24, earl), taken from a political broadcast (BBC Archive 1931b). The other is Daniel Jones (1881-1967, Radford College and University College School, Cambridge University and

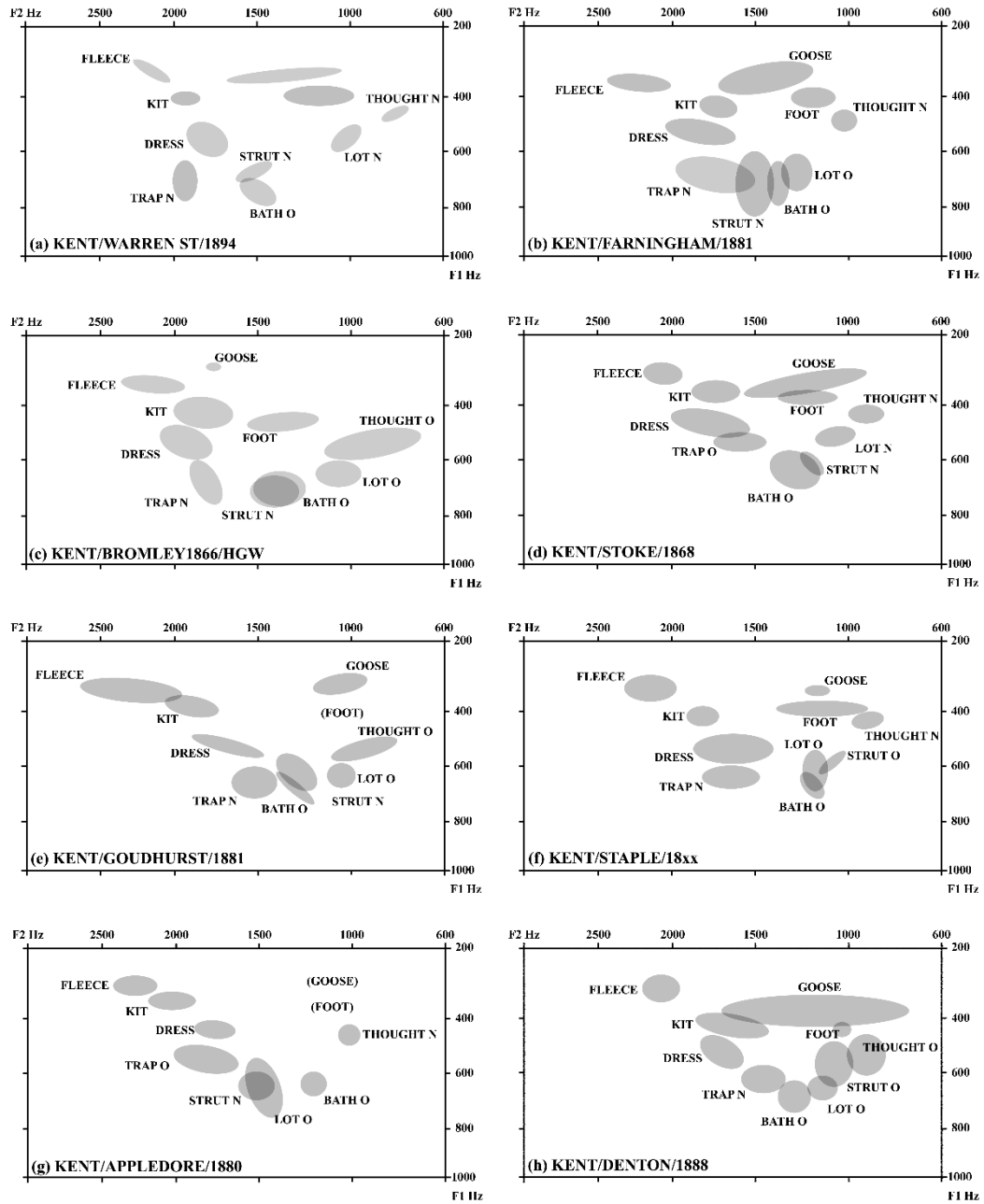


Figure 9. F1/F2 diagrams for peripheral monophthongs by the eight Kentish informants, ordered by the number of acquired new sound changes (Table 4), showing new (N) and old (O) pronunciations.

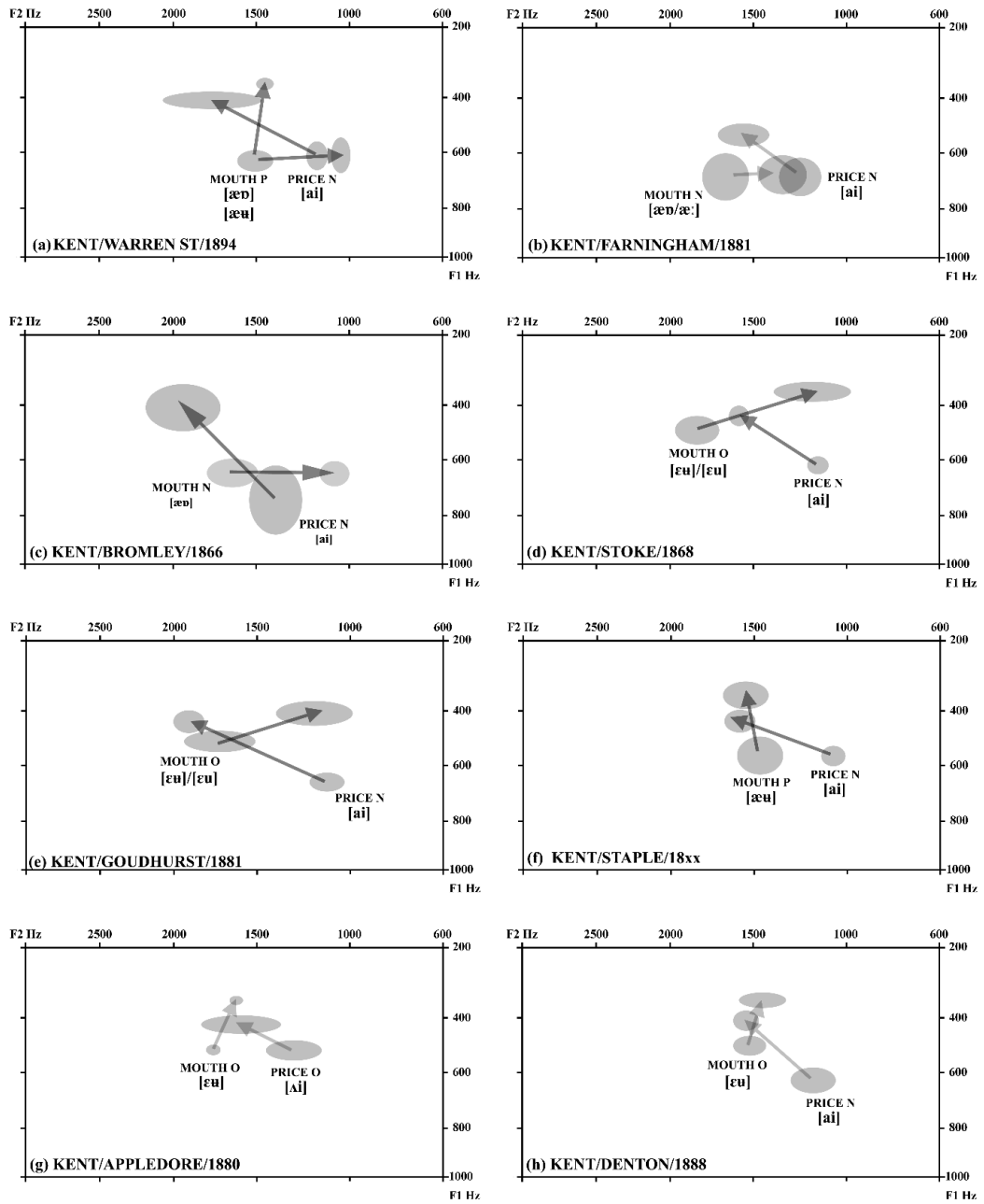


Figure 10. F1/F2 diagrams for the MOUTH and PRICE diphthongs with informants ordered from most new changes to fewest (Table 4), showing new (N), partially new (P) and old (O) pronunciations.

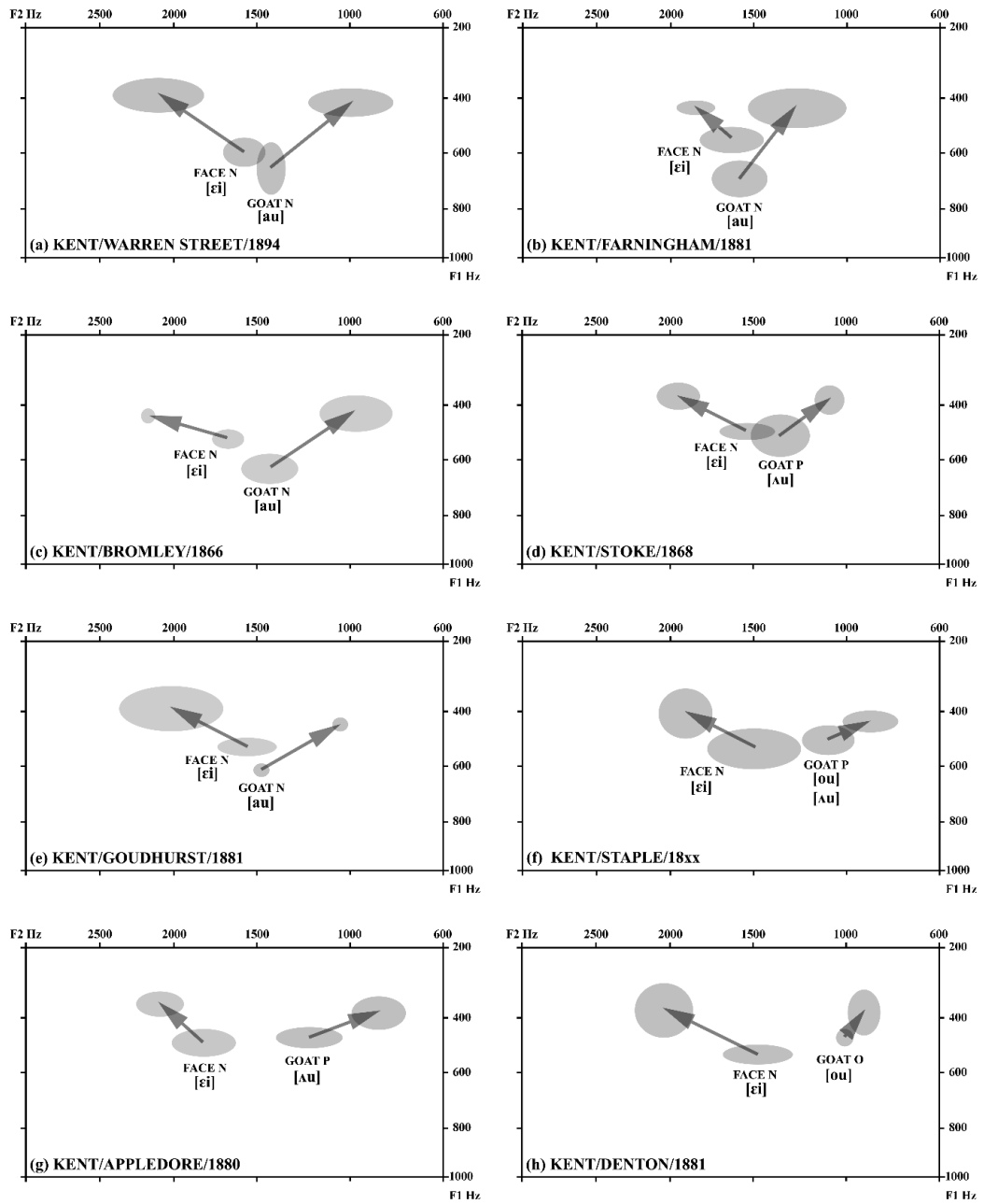


Figure 11. F1/F2 diagrams for the FACE and GOAT diphthongs with informants ordered from most new changes to fewest (Table 4), showing new (N), partially new (P) and old (O) pronunciations.

Table 5. The observed changes in formant frequencies associated with the vowel sound changes

VOWEL	OLD	NEW	Old formants (Hz)	New formants (Hz)
FACE	ai, eə	ɛi	No ref data	Start F1: 500~600 F2: 1400~1900
PRICE	ɪ Fig. 10(g)	ai	Start F1: 500~600	Start F1: 600~800
GOAT	ou Fig. 11(fh)	au	Start F1: 450~550 F2: 900~1000	Start F1: 600~800 F2: 1300~1600
STRUT	ʌ Fig. 9(fh)	a	F1: 500~650 F2: 1000~1200	F1: 600~800 F2: 1200~1500
TRAP	æ near DRESS Fig. 9(dg)	open æ	F1: 500~650	F1: 600~800
THOUGHT	ɔ: Fig. 9(ceh)	o:	F1: 500~600	F1: 400~500
MOUTH	ɛu~ɛʌ Fig. 10(degh)	æɒ	Start F1: 500~600 F2: 1600~2000 End F1: 300~450 F2 900~1600	Start F1: 600~800 F2: 1500~1700 End F1:600~800 F2: 1000~1300
LOT	ɑ Fig. 9(bcefg)	ɔ	F1: 600~800	F1: 500~600
BATH	ɑ: Fig. 9 (all)	ɑ:	F1: 600~800 F2: 1200~1800	[F1: 600-800Hz] [F2: 950-1100Hz]

the Sorbonne, professor of phonetics), taken from published teaching material (Jones 1929) and the final cardinal vowel recording (Jones 1956). Additionally, four 20th century Kentish recordings document the completed set of these sound changes. Two, who grew up in Gravesend and Sheerness, were the earliest Kentish informants who acquired the new BATH change. They are *Gravesend1905* (a metal worker, recorded by the BBC Millennium project in 1998, from the British Library Sound Archive) and William Penney (1909-1991, professor, mathematician and nuclear physicist, rector of Imperial College, life peer, recording from Imperial College 1971). William Penney's only concession to RP was possibly his HAPPY vowel, while his LOT, THOUGHT, MOUTH and GOAT were not modified towards RP; Schlesinger (1965:491) mistakenly referred to his "*broad Australian accent*"; Horne (2008:888) recalls Prime Minister MacMillan's perfect imitation of William Penney's "*Cockney*" accent. In addition, the Kentish accent is traced into later decades by *Meopham1928* (near *Farningham1881*, Figure 1, a dentist, recorded in 1998 by the BBC Millennium project, British Library Sound Archive) and *Dungeness1949* (near *Appledore1880*, Figure 1, a fisherman and lifeboat coxswain, recorded in 2005 by the BBC Voices Project).

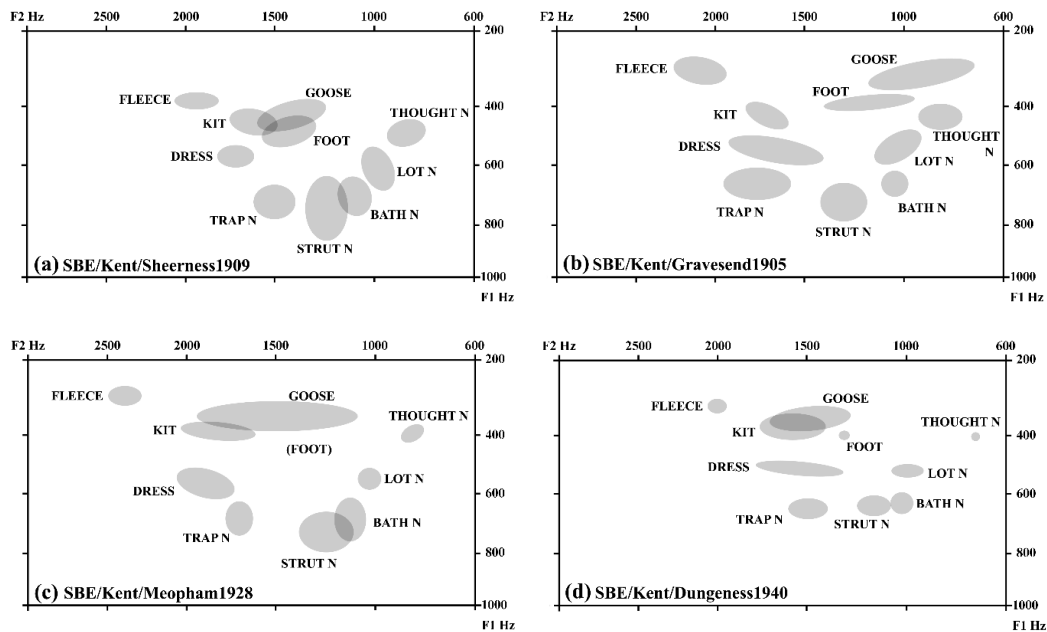


Figure 12. F1/F2 diagrams for peripheral monophthongs by 20th century Kentish speakers for comparison with Figure 9; *Sheerness 1909* (William Penney) and *Gravesend 1905* (a,b), from the first decade in industrial estuary towns, are the earliest recordings of new BATH in Kent; (c) demonstrates that new BATH had spread to rural NW Kent (Meopham near Farningham, Figure 1) by 1928; (d) demonstrates that new BATH had spread to East Kent (Dungeness near Appledore) by 1949.

3.3. Vowel sampling and spectral analysis

Only fully stressed exemplars of vowels were analysed, taken from focally accented syllables, in order to exclude variation due to vowel reduction. Formants were measured at the moment where the vowel was least affected by adjacent consonants, to minimize variation caused by coarticulation effects, determined by observing the CV and VC formant transitions on spectrograms. A five minute recording of continuous speech typically yields about five focally accented instances of the most frequent vowel phonemes, but just a few or even none of the least frequent. The original downloaded MP3 sound files were saved in the WAV format to make them readable by *Praat* (Boersma & Weeningk 2014). The original lossy MP3 compression had already degraded them so that analysis by LPC formant tracking in *Praat* yielded inconsistent results. Formants were consequently identified and measured on FFT slices from narrow band spectrograms (Figure 2). Vowel formants are presented in conventional F1/F2 diagrams. Ellipses were drawn to enclose the cluster of plots tightly for each vowel (for example Figure 9), showing vowel zones in order to reveal the extent of formant variation (explained by referring to Figure 3). Frequencies are compressed to the Mel scale (Stevens et al. 1937, Fant 1968). Other psychophysical scales are also found in the literature: logarithmic (yielding linear octaves and semitones), and the Bark transformation (based on auditory critical bands).

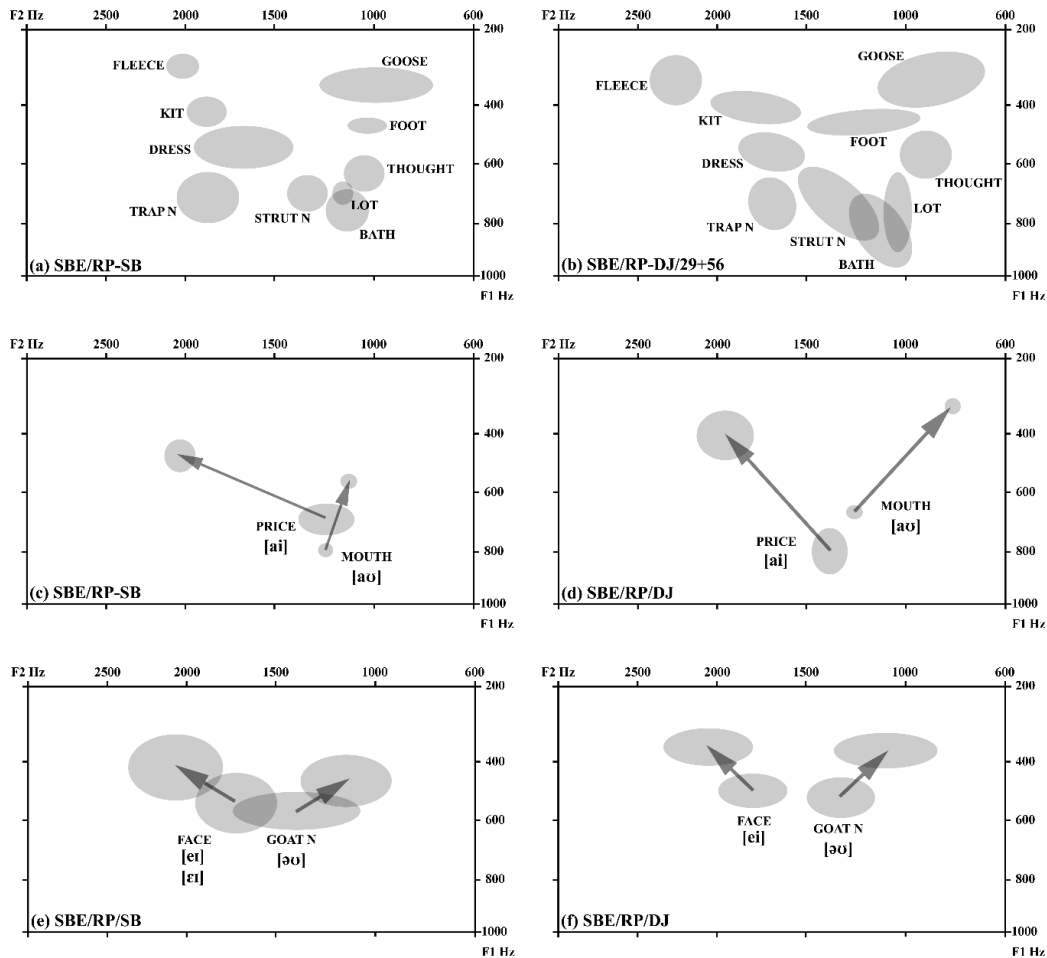


Figure 13. F1/F2 diagrams for vowels by two RP SBE speakers: Stanley Baldwin, politician, 1867-1947 (left) and Daniel Jones, professor, 1881-1967 (right). (a,b) peripheral monophthongs. (c,d) PRICE and MOUTH diphthongs. (e, f) FACE and GOAT diphthongs. Both speakers exhibit the new *open* TRAP, [a]-like STRUT, and [əʊ]-like GOAT, contrary to Jones' description. LOT, THOUGHT, MOUTH and GOAT all distinguish RP SBE from Home Counties SBE (including Kent).

4. Results

4.1. The date and progression of each sound change

The results for the ten sound changes are summarised in Table 3. Larger numbers of **O** indicate larger remaining areas of earlier pronunciations, so that the corresponding **N** reflect more recent sound changes. Smaller numbers of **O** indicate the smaller remaining areas of earlier pronunciations. Thus **O** reflects how far a sound change had progressed across the county during 1865-1895. Table 4 summarises the results for each informant, ordered from most to fewest **N**. The four informants with the smallest numbers of remaining old pronunciations (fewest **O**, altogether 9, left half of Table 4) are all in the northern or north western half of the county, significantly close to the industrial Thameside towns. The four

informants with the largest numbers of persistent old pronunciations (most **O**, altogether 22, right half of Table 4) are all in the south or east, farthest from the industrial Thameside towns. The new pronunciations appear to have started near the Thames or the estuary and were spreading towards the southeast, earlier sound changes having progressed further across the county.

A rough estimate can be obtained of the proportion still acquiring the old pronunciations during the period 1865-1895. The bottom row in Table 4 suggests percentages of the rural Kentish population still acquiring the old pronunciations, from 15% for old PRICE, through 50% for old MOUTH to 100% for old BATH.

Figures 4 to 8 show maps recording the geographical distributions of the various pronunciations in Kent for each of the ten vowel changes. The maps follow the order in Table 3, from the presumed earliest sound change FACE to the most recent BATH, also illustrating how new pronunciations (**N**) tend to have started towards the northwest, while the old pronunciations (**O**) tend to have persisted towards the east and southeast. They underline the loss of earlier dialect along the estuary coast observed by Ellis, and the propagation route reported so distastefully by Parish & Shaw. This timing and route from the NW to the SE suggests a simple model (§5.1) for how the sound changes spread across Kent.

4.2 Vowel formant frequencies

Figure 9 records the F1/F2 diagrams for peripheral monophthongs with informants ordered from most to fewest acquired changes (Table 4). The first example (Figure 9a, *WarrenStreet1894*) had an almost complete set of new monophthongs with just BATH not yet changed. In contrast, the last example (Figure 9h, *Denton1888*) had only acquired one of the new monophthongs. The F1/F2 diagrams for MOUTH, PRICE, FACE and GOAT diphthongs are recorded in Figures 10 and 11. The sound changes affect the beginnings of all four diphthongs, for example GOAT from [o] to [a]. For MOUTH, the end is also changed, from [ʊ] to [ɒ]. The frequency of F1 stays above 600Hz throughout the new MOUTH showing it is *open* throughout.

Table 5 summarizes the critical changes in formant frequencies that are associated with the vowel changes.

4.3. Comparison with RP and early 20th century Kentish speech

Figure 12 records F1/F2 diagrams for the four examples of 20th century Kentish speech, and Figure 13 for the two RP speakers. *Gravesend1905* and William Penney (figure 12a,b) are the earliest found so far in Kent with new BATH, suggesting this sound change had commenced by 1900, or perhaps 1890 at the earliest. *Meopham1928* demonstrates that the new BATH had spread inland a generation later. *Dungeness1949* demonstrates how new BATH had reached East Kent after one more generation. The Dungeness recording is a discussion of language and accents, the family claiming they have no accent today but the previous generation did. That parent generation was presumably born around the 1920s and no doubt sounded like the same generation in Ashford reported by Torgersen & Kerswill (2004).

Both RP speakers had [ɑ:] for BATH (expected since that change had occurred before 1800 in RP). Also expected are PRICE, FACE and MOUTH (although Stanley

Baldwin's FACE extends to [ɛi], reported for RP a century later by Gimson). Unexpectedly, both have shifted *open* TRAP and shifted STRUT (both reported for early 20th century RP by Fabricius, but never by Jones himself), and [əʊ]-like GOAT (reported by Gimson but never by Jones).

5. Discussion and conclusions

5.1. The chronology of the sound changes

Little is known about how these sound changes progressed in the Thameside towns, other than Ellis's remarks concerning rhoticity and the general loss of earlier dialect along the estuary coast by the 1850s. Figure 7a records that *Stoke1868* was partially rhotic, indicating that neighbouring rural areas had taken the first step by the 1850s. Figure 7a records that East Kent was still rhotic in the 1880s. Finally, *Dungeness1949* (Figure 12d) and his family were non-rhotic. This means that the first half of the county had rapidly become non-rhotic in just one generation (1850-1880), while it took up to three more generations for the second half (1880-1950). The distributions of each sound change (Table 3 and Figures 4-8) suggest they started at intervals, the earliest being FACE, acquired by all eight informants in 1865-1895 (Figure 4a), followed by PRICE and GOAT (1 old pronunciation each out of 8, Figures 4b and 5a). The most recent was LOT (2 N out of 8, Figure 8a). The old bright [a:]-like BATH timbre was still acquired by all the informants (Figure 8b) and was not darkened to [ɑ:] until a decade or so later (*Gravesend1905* and William Penney in Figure 12ab). The diffusion of these sound changes across Kent can be modelled by taking the loss of rhoticity as a guide (50% of the county after one generation or 25-30 years, 100% after four generations or about 100 years):

1. FACE was complete by 1865-1895, so possibly originated before 1800, perhaps around 1780, and may have spread to 50% soon after 1800.
2. PRICE and GOAT were almost complete in 1865-1895, so originated around 1800. Estimated spreading to 50% by 1820-1830.
3. STRUT and TRAP were 75% complete by 1865-1895, so originated around 1810-1820, estimated spreading to 50% by 1830-1840, predicted 100% early 20th century (old unshifted TRAP reported still in Ashford in the 1920s).
4. THOUGHT was 60% complete by 1865-1895, so originated around 1830-40, estimated spreading to 50% by around 1860, predicted 100% by 1940, *Dungeness1949* had the new shifted THOUGHT).
5. MOUTH and loss of rhoticity were 40-50% complete in 1865-1895, originated around 1850, 100% by 1950 (*Dungeness1949*).
6. LOT was 25% complete in 1865-1895, so originated around 1860, estimated spreading to 50% by about 1890-1900, predicted 100% by 1960 (actual *Dungeness1949*).
7. BATH was 0% complete in 1865-1895, but was found in Gravesend and Sheerness in 1905-1909, and presumably originated no earlier than 1890, and estimated spreading to 50% by 1920 (found for *Meopham1928*), and predicted 100% around 1990. However, found for *Dungeness1949* and assumed to be complete then.

Compared to the model predictions, diffusion appears to have become more rapid in the 20th century and new factors were, for example, two world wars, more daily commuting to London from all over the county, the advent of radio and television, increasing use of motor cars (nowhere is isolated now). An important circumstance was the loss of the conservative status of Ashford.

5.2. The Great Vowel Shift

The changes to PRICE, MOUTH, GOAT and FACE are one more step in the GVS in Kent. It was not recognised as a distinct process in the diachronic phonology of English until relatively late (Luick 1896, Jespersen 1909). So Ellis simply listed pronunciations without relating them to this phonological context. The standard solutions were reviewed by Chomsky & Halle (1968, Chapt. 6) and Wolfe (1973), looking again at the evidence of orthoepists and grammarians like Hart, Wallis, Cooper and Batchelor, confirming Jespersen's solution. Regiolects do not necessarily progress in phase with each other, and other communities are still waiting at the previous step where Kent was in the 19th century. Labov (1963) describes surviving examples of [ɛi] and [əu] for PRICE and MOUTH on Marthas Vineyard. Stockwell (2002) suggests examples of dialects that still have [ɹi] and [ɹu] in Virginia and Canada.

The prominence given to the standard solution for MOUTH leading to [au] means a second route is overlooked leading to [ɛu], reported by Ellis for Kent and still found in four of the seven SED Kent recordings. However, Sundby (1953), following orthoepist Cooper (1687), distinguished two sociolects: *standardized polite educated*, and *provincial*. Cooper grew up and lived in Hertfordshire, headmaster of the local grammar school. With several regional features in his own speech, he recognized [ɛu] as a provincialism, alongside standard [ɹu]. This means that the GVS has proceeded by different routes for MOUTH. It has shifted from [ɛu] to [æp] in Kent, and from [ɹu] to [au] in RP and its antecedents. Sundby cited the East Anglian accent of Norfolk and Suffolk having the [ɛu] version, confirmed by listening to the SED and BBC recordings from Norfolk at the British Library Sound Archive. This is also reported by J. C. Wells (1982, vol. 2, §4.3.3). It is very likely that this route via [ɛu] is common to the entire Southern British English region, including the south west (see J. C. Wells 1982 again, vol. 2 §4.3.7), as well as parts of northern England (J. C. Wells 1982, vol. 2 §4.4.5). Britain (2008) completes this inventory by reviewing the distribution of [ɛu] and [æu]-like MOUTH in dialects of English worldwide. This would leave RP as the sole exponent and caretaker of the *polite educated* pharyngeal route to [au], while the rest of us will have inherited the *provincial* palatal route via [ɛu].

The standard GVS solution for FACE is a:>æ:>e:, while the new Kentish pronunciation was [ɛi]. Jones (1932:§387 and all editions to the 1960s) emphasized that [ɛi] for FACE was dialectal (citing London and the eastern counties). Gimson, however, (1962 §7.22) recognized [ɛi] within RP FACE variation, explaining that the regional variant was [æi]. RP FACE had evidently expanded towards Home Counties SBE [ɛi] during the 20th century (and Figure 13e shows it was already happening in the 19th century). On the other hand, the earlier Kentish pronunciations reported by Ellis are puzzling, he heard both [ai] and [eə]. The second variant is close enough to the standard solution to belong there. But where did

[ai] come from, or go to? The form [ai] still occurs in London today, so was this an echo of 15th century [a:], giving a *provincial* GVS solution a:>ai> ei?

The standard GVS solution for GOAT is ɔ:>o:>ou leading to current RP [əʊ] (first reported by Gimson in 1962 following the [ou] described by Jones in 1932:§394, while both RP examples in Figure 13 already had [əʊ]). However, the new Kentish GOAT was [au]. Presumably, RP GOAT cannot be changed to [au] in the future without first moving MOUTH away from current [au].

5.3. Shifting TRAP away from DRESS

Towards the end of the 19th century in Kent, TRAP was being shifted away from its earlier *closer* timbre near DRESS, to an *open* timbre. The distribution of the Kentish TRAP pronunciations is shown in Figure 6a, and the formant frequencies of old unshifted *closer* TRAP can be seen in Figure 9dg, and new shifted *open* TRAP in Figure 9abcefh. The same change is reported for RP for the early decades of the 20th century (Fabricius 2007). However, the two RP examples (Figure 13) had acquired this sound change already in the 1860s and 1880s.

Figure 9dg demonstrates the consequence of having the earlier TRAP close to DRESS: the F1 frequencies of DRESS and KIT are bunched together between 350 and 500Hz. The remaining informants in Figure 9 show TRAP shifted away from DRESS with F1 higher than 600Hz, and the F1 frequencies of DRESS and KIT are now spread out between 400 and 600Hz. Since the earlier TRAP timbre led to diminished F1 contrasts among TRAP, DRESS and KIT, what was it doing there so close to DRESS anyway? It was related to the BATH-TRAP split that has characterized Southern British English since the 17th century at least (Wales 2006: 103). Wyld (1936: 196-205) suggests a century or two earlier for the popular change, with fronting of TRAP after the split. Recall also that Matthews quoted numerous spelling confusions among TRAP, DRESS and KIT words from the 16th century onwards in London, indicating that TRAP was already close to DRESS in London speech that early. Following Wyld, the original pre-split timbre was [a] for both TRAP and BATH, and TRAP landed near DRESS after the split, maximizing the new TRAP versus BATH timbre contrast. Subsequent shifting of TRAP away from DRESS then relieved the diminished spectral contrasts that had arisen from the compressed F1 frequencies of TRAP, DRESS and KIT.

Londoners had TRAP close to DRESS for some three hundred years. How long did the Kentish accent have it there? A clue is provided by the emigration of Puritan communities from the Weald to Massachusetts, including Martha's Vineyard, during the early 17th century (Labov 1963, Groce 1985 Chapt. 3). They took the FOOT-STRUT split with them, and half the provincial GVS, but not the BATH-TRAP split. This would date the BATH-TRAP split spreading through Kent to the latter part of the 17th century at the earliest, giving the local population two hundred years before shifting TRAP away from DRESS.

Torgersen & Kerswill (2004) recorded elderly and adolescent subjects in Ashford (born around the 1920s and 1980s) to test Labov's conclusions regarding chain shifts. Among their elderly informants, both male and female, are examples who still had the old unshifted TRAP near DRESS. This Ashford data indicates that this old pronunciation persisted in East Kent into the 1920s, and is the reason for

seeing Ashford as a conservative buttress slowing down the diffusion of sound changes through Kent. Despite the urban and industrial character of Ashford, this conservative effect was quite remarkable, like Accrington and Rawtenstall in Lancashire which still retained rhoticity at the end of the 20th century (Barras 2010).

The shifted *open* TRAP is sometimes transcribed as cardinal 4 [a] in the literature. However, Jones (1932 and all subsequent editions) always exemplified cardinal 4 as “*Parisian a in la*”. Shifted SBE *open* TRAP and Parisian French [a] are definitely not the same vowel timbre. Shifted *open* TRAP has higher F2 than cardinal 4 and is therefore anomalously *more front* than *cardinal front* (Wood forthcoming). I prefer to see an *open front* [æ]-like zone with high F1 (above 600Hz) and high F2 (above 1600Hz) for average male speakers (Figure 3) while cardinal 4 is really *open central* with its F2 in the mid-range (like Parisian [a]).

The *open* TRAP timbre is articulated with a low pharyngeal constriction (Figure 3). Three timbres are generally recognized for unrounded low pharyngeal vowels, from darkest to brightest: (i) [ɑ] with the narrowest constriction and lowest F2 (around 1000 or 1100 Hz), (ii) [a] with an intermediate constriction and mid-range F2 (around 1250-1400Hz), and (iii) [æ] with the widest constriction and highest F2 (>1600Hz). The earlier TRAP location close to DRESS is at the very edge of this zone for [æ], presumably with the low pharyngeal constriction maximally wide. To get even closer to [ɛ], a palatal constriction is necessary, which actually happened in some forms of East End Cockney with [ɛ]-like TRAP according to the evidence provided by Sivertsen and by Matthews.

5.4. Shifting THOUGHT and LOT

The new articulation for THOUGHT, from [ɔ:] to [o:] simply meant increasing the lip rounding while keeping the same upper pharyngeal constriction (Figure 3). Shifting [ɑ] to [ɔ] for LOT was more complicated with an upper pharyngeal constriction for [ɔ] and slight lip rounding, while the previous generation had had a low pharyngeal constriction for [ɑ] and no lip rounding.

A similar shift from [ɔ:] to [o:] for THOUGHT was reported for RP many decades later. Gimson (1962, §7.16) reported that RP /ɔ:/ was approaching cardinal [o:] in what he called *advanced RP*. Harrington *et al.* (2000) appeared to confirm this in their spectrographic analysis of Queen Elizabeth’s Christmas speeches. Hawkins & Midgley (2005) looked for evidence of various sound changes in four age groups of RP speakers, and found differences for DRESS, TRAP, GOOSE and FOOT, but no difference for THOUGHT and LOT. Wikström (2013) looked for changes in specifically THOUGHT and LOT, recording a group of young adults and including published data sets. He found that the younger speakers had *closer* LOT approaching cardinal 6 [ɔ], but that THOUGHT was not changing (although he observed that THOUGHT was closer to cardinal 7 [o] than cardinal 6 [ɔ], as though Gimson’s observation might be correct). However, both of these studies include examples of *near-RP*, an accent that, however similar to RP, still falls short by a detectable and measurable amount (or, as Trudgill put it in 2002, Chapt. 16, “*a miss is as good as a mile*”). Hawkins & Midgley verified their own informants as RP, Wikström apparently did not. In any case, both Hawkins & Midgley and

Wikström inherited *near-RP* speakers in other studies and datasets they utilized or cited for comparison. The unfortunate consequence would be the case where informants classed as *near-RP* were in fact speakers with Kentish (or Home Counties or London) accents, who would have their own native regional (non-RP) [o:] and [ɔ]-like THOUGHT and LOT. This would obviously bias the result when such *near-RP* data is lumped together with RP data. It seems then that there is still no conclusive evidence that RP THOUGHT is being shifted to [o:], nor any for a more recent and subsequent change for RP LOT from [ɒ] to [ɔ]. For the time being, THOUGHT and LOT still seem to be the remaining differences among the monophthongs between RP and regional Home Counties SBE.

5.5. Home Counties SBE and RP SBE

Ellis identified three regiolects in the home counties in the mid-19th century, but, by the 20th century, the local speech of these areas was being levelled to one common accent. Listening to random examples of home counties speech (from the SED and BBC at the British Library Sound Archive) confirms the similarity of the current accent throughout this area. It would require careful work on several counties to determine any actual timing differences. Although the postulated origin for this changed accent was contact with migrating Londoners, the result was not an exact copy of London speech. Some aspects (like new steps in the GVS, TRAP shifted away from DRESS, and loss of rhoticity) were more widespread changes in SBE or even in British English. This type of regional dialect levelling, of three accents into one through contact, is recognised by Kerswill as the result of a combination of geographical diffusion (from a populous economic centre), reduction in number of variant pronunciations, and extra-linguistic factors (identity, attitude and ideology, determining how new features are to be adopted).

A surprising find is the levelling of RP by sound change – and yet expected, since the evidence has been there waiting to be noticed. Each change in RP has brought it closer to Home Counties SBE and London SBE. An early example concerns loss of rhoticity in RP; Mugglestone found the prescriptive debate for and against rhoticity in RP continued to around 1850, so the last fully rhotic RP speakers could still be heard in the early 19th century, long after London became non-rhotic. Ellis and Sweet must have heard them, but possibly not Jones. This chapter has seen RP shifting TRAP away from DRESS (Figure 13ab) while it was also happening in Kent. A recently reported change is the brightening of GOOSE, while the SED Kentish informants were already acquiring brighter GOOSE vowels with high F2 in the 19th century. RP is now so close to regional Home Counties SBE that some studies of RP include Home Counties speakers as *near-RP*, not bothering to single them out, which gives a false impression that RP is moving even closer to Home Counties SBE. The only differences among the monophthongs are now down to LOT and THOUGHT, while differences among the diphthongs still include FACE, GOAT and MOUTH. Rosewarne (1984) expected RP to disappear shortly, yet it has always stayed a few steps away from similar regional accents. A discrete difference, but that is what shibboleths are made of.

5.6. Home Counties SBE and Estuary English

Kent and Essex, “*along the banks of the Thames and its estuary*”, was pointed out by Rosewarne (1984, 1994, 2009) as the homeland of his coinage *Estuary*

English (EE). Unfortunately, he provided only vague anecdotal clues that left EE a very controversial matter, an impression it was a very recent development, “a newly observed variety of British pronunciation” that is “popular among the young”. However, Rosewarne’s articles prompted disbelief and debate such as Coggle (1993), Crystal (1995), Kerswill (2010a), Lewis (1985), Maidment (1994), Parsons (1998), Przedlacka (2001), Trudgill (2002, 2008), and the debate has stimulated new research, for example Altendorf (2003), Kerswill & Williams (2000, 2002, 2005), Przedlacka (1999), Torgersen & Kerswill (2004).

Later, Rosewarne (1994) added “*the eastward movement of popular London speakers*” with its “*origins in Victorian times*”. This is precisely the contact situation described in detail above and illustrated in its 20th century form in Figure 12, eventually diffusing to levelled Home Counties SBE. This means that this accent in its present form has existed since around 1900 (like William Penney’s, Figure 12a), and partially since around 1865 (like H. G. Wells’, Figure 9c). What was new one hundred years ago, or thirty years ago, was that so many who spoke Home Counties SBE (like H. G. Wells and William Penney) were being heard as public voices and were reaching high office. In Rosewarne’s (1984) own words:

“It is to be heard on the front and back benches of the House of Commons and is used by some members of the Lords, whether life or hereditary peers. It is well established in the City, business circles, the Civil Service, local government, the media, advertising as well as the medical and teaching professions in the south-east.”

During the early part of the 20th century, anyone looking for a career in the professions was expected to adopt RP. For example, Mathews (1938:vii) describes how he struggled to suppress his East End Cockney (he later became Professor of English in California where this did not matter so much):

“Cockney, we had been taught by teachers and society, was vulgar, something to discard in favour of Standard Speech, and all of us who had professional ambitions took the warning very seriously.”

There were exceptions to this pressure to adopt RP, including the medical and teaching professions (in Rosewarne’s cited list). The student teachers interviewed by Ellis in the 1870s were speaking their local Kentish accent and no doubt continued to do so throughout their careers. At school in the 1940s and 1950s, my teachers spoke a spectrum of British dialects, but no RP. The medical profession is represented by dentist *Meopham1928*. Scientists (like H. G. Wells, William Penney and *Meopham1928*) have always defied pressure to adapt their regional accents to RP. Gradually, since 1945, professions such as the law, and institutions like the BBC and the armed forces, have stopped expecting adopted RP. The post-1945 education reforms produced many more graduates, who mostly retained their regional accents. As Lewis (1985) and Trudgill (2002) have also suggested, EE has been there for a long time and is Home Counties SBE.

The linguistic situation in the estuary towns in the 19th century was not quite what Kerswill & Williams described for the new towns of the 1950s and 1960s such as Milton Keynes, where “*different accents confronted each other on virtually virgin territory, resulting in the rapid creation of a new accent*”. In 19th century Kent there

was a steady stream of London migrants, bringing one accent model to the established local population, while migrants from elsewhere brought an ever-changing mosaic of other regional accents. The new Kentish accent apparently took more than 100 years to emerge, and diffuse everywhere. By 1901 and 1911, the national censuses reveal that the street I later grew up in was populated by about 50% from local and other Kent, and 50% from all over the British Isles. In the 1930s, I heard all these accents every day – Irish, Scottish, northern, Welsh, midlands and London. But as toddlers, we acquired the local EE accent that had evolved gradually throughout the entire 19th century.

References

- Altendorf, Ulrike. 2003. *Estuary English: Levelling at the Interface of RP and South-Eastern British English*. Tübingen, Gunter Narr Verlag.
- Barras, William. 2010. *The Sociophonology of Rhoticity and r-Sandhi in East Lancashire English*, PhD thesis, University of Edinburgh.
- BBC Archive. 1931a. Russia in the melting pot, broadcast by H. G. Wells. http://www.bbc.co.uk/archive/hg_wells/12401.shtml (accessed in January 2015).
- BBC Archive. 1931b. *An Appeal for the National Government*, political broadcast by Stanley Baldwin. <http://www.bbc.co.uk/archive/> (accessed 2013)
- Bell, Alexander M. 1867. *Visible Speech*. London, Methuen.
- Boersma, Paul & David Weeninck. 2014. Praat: Doing phonetics by computer (version 5), <http://www.fon.hum.uva.nl/praat/>, accessed 2014-2015.
- Britain, David. 1997. Contact, focusing and phonological rule complexity: the koineisation of Fenland English. In C. Boberg, M. Meyerhoff and S. Strassel (Eds.), *A Selection of Papers from NWAVE 25, University of Pennsylvania Working Papers in Linguistics* 4:141-170.
- Britain, David. 2008. On the wrong track? A non-standard history of non-standard /au/ in English. *Essex Research Reports in Linguistics* 57:33-77.
- Britain, David. 2009. One foot in the grave? Dialect death, dialect contact and dialect birth in England. *International Journal of the Sociology of Language* 196-197:121-155.
- British Library Sound Archive. Recordings of English accents, and BBC Millennium and Voices projects. <http://sounds.bl.uk/Accents-and-dialects>, accessed October 2014.
- Chiba, Tsutomu & Masato Kajiyama. 1941. *The vowel, its Nature and Structure*. Tokyo, Tokyo-Kaiseikan. Reprinted 1958, Tokyo, Phonetic Society of Japan.
- Chomsky, Noam & Morris Halle. 1968. *The Sound Pattern of English*. New York: Harper & Row.
- Coggle, Paul. 1993. *Do you speak Estuary?*. London, Bloomsbury Publishing.
- Collins, Beverley & Inger Mees. 1999. *The Real Professor Higgins*. Berlin, Mouton De Gruyter.
- Cooper, Christopher. 1687. *The English Teacher*. London. See Sundby (1953).
- Crystal, David. 1995. Estuary English. In *The Cambridge Encyclopedia of the English Language*, Cambridge, CUP, p. 327.
- Ellis, Alexander. 1889. *On Early English Pronunciation*. Teubner, Vol. 5.
- Essner, C. 1947. Recherches sur la structure des voyelles orales. *Archives Néerlandaises de Phonétique Expérimentale* 20:40-77.

- Fabricius, Anne H. 2000. *T-Glottaling between Stigma and Prestige: a Sociolinguistic Study of Modern RP*. PhD thesis, Copenhagen Business School.
- Fabricius, Anne H. 2002. RP as sociolinguistic object. *Nordic Journal of English Studies* 1, 355-372.
- Fabricius, Anne H. 2007. Variation and change in the TRAP and STRUT vowels of RP: a real time comparison of five acoustic data sets. *Journal of the International Phonetic Association* 37:293-320.
- Fant, C. Gunnar M. 1960. *The Acoustic Theory of Speech Production*. The Hague, Mouton.
- Fant, C. Gunnar M. 1968. Analysis and synthesis of speech processes. In B. Malmberg (Ed.), *Manual of Phonetics*, Amsterdam, 173-177.
- Gimson, A. 1962. *An Introduction to the Pronunciation of English*. London: Arnold.
- Greenlee, M. & J. Ohala. 1980. Phonetically motivated parallels between child phonology and historical sound change. *Language Sciences* 2:283-308.
- Groce, Nora. 1985. *Everyone here Spoke Sign Language - Hereditary Deafness on Martha's Vineyard*. Harvard University Press.
- Harrington, Jonathan, S. Palethorpe, & C. Watson. 2000. Monophthongal vowel changes in Received Pronunciation. *Journal of the International Phonetic Association* 30:63-78.
- Hawkins, Sarah & J. Midgley. 2005. Formant frequencies of RP monophthongs in four age groups of speakers. *Journal of the International Phonetic Association* 35:183-199.
- Horne, Alistair. 2008. *MacMillan – the Official Biography*. London, MacMillan.
- Imperial College. 1971. Video: A student interviewing the Rector Lord Penney. <http://www.imperial.ac.uk/imedia/content/view/94/lord-penney-interview/>, accessed 2015.
- IPA. 1999. *Handbook of the International Phonetic Association*. Cambridge, CUP.
- Jespersen, Otto. 1909. *A Modern English Grammar*, Part 1. Heidelberg, Winter.
- Jones, Daniel, 1918. *An Outline of English Phonetics*. Marburg, Teubner.
- Jones, Daniel. 1929. *A voyage*, recorded by Daniel Jones and A. Lloyd James. Linguaphone English Disc EC18E. British Library Sound Archive, <http://sounds.bl.uk/Accents-and-dialects/Early-spoken-word-recordings/024M-1CS0011553XX-0200V0> (accessed 2014).
- Jones, Daniel, 1932. *An Outline of English Phonetics*. Cambridge, Heffer (3rd edition).
- Jones, Daniel. 1956. *Cardinal Vowels*. Linguaphone ENG 252/253, ENG 254/255.
- Jones, Daniel, 1967. *An Outline of English Phonetics*. Cambridge, Heffer (9th edition reprinted).
- Joos, Martin. 1948. *Acoustic Phonetics*. Language Monograph 23, supplement to *Language* 24.
- Kerswill, Paul. 2003a. Dialect levelling and geographical diffusion in British English. In D. Britain & J. Cheshire (eds), *Social Dialectology: In Honour of Peter Trudgill*. Amsterdam, Benjamins, 223-243.
- Kerswill, Paul. 2003b. Koineization and accommodation. In J. K. Chambers, Peter Trudgill and Natalie Schilling-Estes (eds.), *Handbook of Language Variation and Change*, Oxford, Blackwell, 669-702.

- Kerswill, Paul. 2010a. Standard English, RP, and the standard-nonstandard relationship. In David Britain (ed.), *Language in the British Isles*. Cambridge, CUP, 35-51.
- Kerswill, Paul. 2010b. Contact and new varieties. In Raymond Hickey (ed.), *The Handbook of Language Contact*, Oxford, Wiley Blackwell, 230-251.
- Kerswill, Paul, Jenny Cheshire, Susan Fox & Eivind Torgersen. 2013. English as a contact language: the role of children and adolescents. In Daniel Schreier & Marianne Hundt (eds), *English as a Contact Language*, Cambridge, CUP, 258-282.
- Kerswill, Paul & Ann Williams. 2000. Creating a new town koine: children and language change in Milton Keynes. *Language in Society* 29:65-115.
- Kerswill, Paul & Ann Williams. 2002. Dialect recognition and speech community focusing in new and old towns: The effects of dialect levelling, demography and social networks. In Daniel Long and Dennis Preston (Eds.), *A Handbook of Perceptual Dialectology*, Amsterdam, Benjamins, 178-207.
- Kerswill, Paul & Ann Williams. 2005. New towns and koineisation: linguistic and social correlates. *Linguistics* 43:1023-1048.
- Labov, William. 1963. The social motivation of sound change, *Word* 19: 273-309.
- Labov, William. 1989. The child as linguistic historian. *Language Variation and Change* 1: 85-97.
- Lewis, J. Windsor (ed.). 1972. *A Concise Pronouncing Dictionary of British and American English*. London: OUP.
- Lewis, J. Windsor. 1985. British non-dialectal accents. *Zeitschrift für Anglistik und Amerikanistik* 33:244-257.
- Luick, Karl. 1896. *Untersuchungen zur Englischen Lautgeschichte*. Strassburg, Trubner.
- Maidment, John. 1994. *Estuary English, Hybrid or Hype?* Lincoln University, Christchurch, New Zealand.
- Masters, John W. 1820. *Dick and Sal at Canterbury Fair*. Canterbury. Reproduced by Parish & Shaw (1888).
- Matthews, William. 1938. *Cockney Past and Present*. London, Routledge (1972 reprint).
- Mugglestone, Lynda. 2003. *Talking Proper*. Oxford, OUP.
- Orwell, George. 1939. *Coming up for Air*. Gollancz.
- Orton, Harold & Eugen Dieth. 1962. *Survey of English Dialects: Introduction*. Leeds, Arnold.
- Parish, William & William Shaw. 1888. *A Dictionary of the Kentish Dialect*. Lewes, Farncombe.
- Parsons, Gudrun. 1998. *From "RP" to "Estuary English": The Concept 'Received' and the Debate about British Pronunciation Standards*. MA Thesis, Hamburg University.
- Przedlacka, Joanna. 1999. *Estuary English? A Sociophonetic Study of Teenage Speech in the Home Counties*. Frankfurt, Lang.
- Przedlacka, Joanna. 2001. Estuary English and RP, some recent findings. *Studia Anglica Posnaniensa* 36:35-50.
- Rosewarne, David. 1984. Estuary English. *Times Educational Supplement* (19 October).

- Rosewarne, David. 1994. Estuary English, tomorrow's RP. *English Today* 10:3-8.
- Rosewarne, David. 2009. How Estuary English won the world over. *Times Educational Supplement* (13 November).
- Rydland, Kurt. 1972. Structural phonology and the Survey of English Dialects. *Zeitschrift für Dialektologie und Linguistik* 39:309-326.
- Schlesinger, Arthur. 1965. *A Thousand Days*. Houghton-Mifflin, 2002 reprint.
- Sivertsen, Eva. 1960. *Cockney Phonology*. Oslo, University of Oslo.
- Stevens, Kenneth N. & A. S. House. 1955. Development of a quantitative description of vowel articulation. *Journal of the Acoustical Society of America* 27:484-495.
- Stevens, Stanley, J. Volkman, & E. B. Newman. 1937. A scale for the measurement of the psychological magnitude pitch, *Journal of the Acoustical Society of America* 8:185-190.
- Stockwell, Robert. 2002. How much shifting actually occurred in the historical English vowel shift? In Donka Minkova and Robert Stockwell (eds), *Studies in the History of the English Language: a Millennial Perspective*, Berlin, Mouton de Gruyter, 267-281.
- Sundby, Bertil. 1953. *Christopher Cooper's English Teacher (1687)*. Lund Studies in English XXII. Lund, Gleerup.
- Sweet, Henry. 1892. *Primer of Phonetics*. Oxford, Clarendon.
- Torgersen, Eivind, & Paul Kerswill. 2004. Internal and external motivation in phonetic change: dialect levelling: outcomes for an English vowel shift. *Journal of Sociolinguistics* 8:23-53.
- Trudgill, Peter. 2002. *Sociolinguistic Variation and Change*. Edinburgh University Press.
- Trudgill, Peter. 2008. The historical sociolinguistics of elite accent change; on why RP is not disappearing. *Studia Anglica Posnaniensia* 44:3-12.
- Wales, Katie. 2006. *Northern English*. Cambridge, CUP.
- Wells, John C. 1982. *Accents of English*. Cambridge, CUP.
- Wikström, Jussi. 2013. An acoustic study of the RP English LOT and THOUGHT vowels. *Journal of the International Phonetic Association* 43:37-47.
- Wolfe, Patricia M. 1973. *Linguistic Change and the Great Vowel Shift in English*. University of California Press.
- Wood, Sidney A. J. 1979. A radiographic analysis of constriction locations for vowels. *Journal of Phonetics* 7:25-43.
- Wood, Sidney A. J. 1997. A cinefluorographic study of articulator gestures: Examples from Greenlandic. *Speech Communication* 22:207-225.
- Wood, Sidney A. J. 2006. The articulation of uvular consonants: Swedish. *Proceedings of Fonetik 2006. Working Papers* 52, 145-148, Department of Linguistics, University of Lund.
- Wood, Sidney A. J. Forthcoming. Cardinal 4 is open central and not open front. Unpublished ms.
- Wyld, Henry C. 1936. *A History of Modern Colloquial English*. Oxford, Blackwell.

Sound examples from the recordings used for this article are available at <https://swphonetics.com/articulation/accents/sbe/kent-examples/>