

[Later designated Journal 4]

Journal of the Simplified Spelling Society, 1987/1

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The Society

Founded in 1908, the Simplified Spelling Society has included among its officers: Daniel Jones, Horace King, Gilbert Murray, William Temple, H.G.Wells, A.C.Gimson. Its stated aim is to "bring about a reform of the spelling of English in the interests of ease of learning and economy of writing".

The Society's present officers are:
President: Professor John Downing
Chairman: Chris Jolly
Secretary: Laurence Fennelly

Treasurer: Alun Bye
Public Relations Officer: Mona Cross
Enquiries to the Secretary

Subscriptions (£5 p.a.) to the Membership Secretary and Editor (see below).

The Journal

The *Journal of the Simplified Spelling Society* appears 3 times a year. Editor & Membership Secretary: Chris Upward, Material for the 1987 No.2 issue should reach the editor by 31 March 1987.

[SSS Journal 1987/1. Later designated Journal 4. p2 in the printed version]

[Chris Upward: see [Journals](#), [Newsletters](#), [Pamflet](#), [Leaflets](#), [Media](#), [Book and Papers](#).]

1. Editorial Chris Upward

FROM NEWSLETTER TO JOURNAL

It has been increasingly pointed out that our previous *title Newsletter* was inappropriate for a publication which is so much more than just a vehicle for the internal business of the Society. The title *Journal* on the other hand more truly reflects the substantial and serious nature of many articles contributed by experts outside the Society. With the advent of 1987 we therefore present the first issue of the Society's *Journal*. Format and content will however not differ significantly from recent numbers of its predecessor.

One change on the cover, though: the seasonal dating used on the *Newsletter* has yielded to plain numerical dating, thanks to comments from other continents that Spring Summer Autumn are not equally meaningful the world over. By sacrificing such expressions of northern hemisphere parochialism we underline our role as a world forum for the discussion of English spelling. But readers who feel they have missed out on the Autumn 1986 *Newsletter* can be reassured: its publication date would in fact have been that of this *Journal*.

THIS ISSUE

Recent issues have marked a trend away from that concept of reform which dominated the Society for as long as *New Spelling* was its bible, namely that a mechanical transcription of the citation forms of words is all that is required. We now feature David Brazil's paper on the vowel-fluctuations that occur in speech: its message reinforces what John Wells had to say about accents (Summer 1986) and further calls into question the realism of any attempt to reform English spelling by liking speech as the sole, or perhaps even the main, criterion. (The recent TV series *The Story of English* in effect made the same point with its vivid picture of the rich variety of English round the world.)

Our task is to improve written English as a medium of communication rather than to record the spoken word as such. Thus Edward Smith's article explores the morphophonem(at)ic dimension of words, that is, the need to identify their recurring structural patterns and give these a standard spelling. And the editor's analysis of heterographs (or homophones, as they are more often called) implicitly highlights the visual individuality of so much English vocabulary, a feature which, for all its associated problems, it would be rash to jettison at one fell swoop.

In Helen Bisgard's contribution we are glad to present the first response to our call for reviews. Two recent works that might usefully be combed for orthographical nuggets are Loreto Todd & Ian Hancock *International English Usage* and Peter Trudgill *Dialects in Contact*. Any takers?

STANLEY GIBBS

Members will be sorry to learn of Stanley Gibbs' decision at the age of 70 to retire from the committee. He is perhaps the Society's longest-serving active member, having been on the committee almost continuously since 1968. After years of factory life as a toolroom miller, he trained for teaching in the early 1960's, with subsequent specialization in teaching the handicapped and remedial reading in particular. The Society owes him an enormous debt of gratitude, especially recently for all his hard work as Secretary and for his commitment to the concept of spelling-reform by stages. He was a driving force behind the campaign for the 5 SR rules, and he set an example by using them as 'house-style' in his work as Secretary. We wish him and his family all the best.

NEW COMMITTEE MEMBERS NEEDED

Stanley's departure means more work for fewer hands. Laurie Fennelly becomes Secretary and Alun Bye treasurer, while the editor will combine membership matters (subscriptions, etc.) with the *Journal*. Another recent retirement was Bill Reed; the committee wishes to honour him in recognition of his sterling work as Secretary in the 1960's and for helping the Society through subsequent difficult times. The net result of these departures is that the committee is increasingly in need of an infusion of new blood. New faces, and in due course an input of fresh ideas, would be very welcome at meetings. We are a friendly bunch, and we would be delighted to hear from any reader wanting to become more involved. A basic prerequisite is the ability to attend about half-a-dozen meetings a year on Saturdays in Central London. The Society can meet the travel expenses of committee members.

LORD MAYBRAY-KING

Sadly we have to report the death of one of the Society's Vice-Presidents, Lord Maybray-King, on 3 September 1986 at the age of 85. As Dr Horace King he was a Southampton Labour MP from 1950-70, and speaker of the House of Commons from 1965. As such he was one of the major public figures with whom the Society was associated in decades gone by (see title page of *Journal*). Stop-press: we have just learned of the death too of Dr Reg Deans; see letter from Richard Lung in *Correspondence*.

NEXT ISSUE

Items planned for the [next Journal](#) include Professor Downing on the transfer of skills between language functions, a matter of great practical importance for the transitional period of any reform, and a reprinted article by Valerie Yule on the international context of English spelling reform.

2. Correspondence

Harvie Barnard, USA.

... In general American Alternative spelling folloz the WES system, forming the 'long' sound rule for vowels by employing the <e> directly folloing th' vowel; otherwise th' vowel is 'short'. The dabled consonant still signals the 'short vowel, altho not a necessary indicator. The fienal or terminal <e> to signal a 'long' vowel is not used unless needed to avoid an undesired homograf, az in th' word *use*, where th' t.o. mode haz merit.

It is my beleef that in approaching the problems of literacy we shuud consider th' need to begin with primary teaching, and encurij thot processez by offering th' chield a chois between what corresponds best with pronunciaeshun and th' speling which duz not.

As well as emfasizing communication, I beleev we shuud giv much mor attenshun in our skools to encurijing thinking, thot processez being based upon what to th' child, az wel az to th' teacher, seems most lojical and least confuzing. Perhaps this kind of speling miet be described az 'Shakespearian' sins he uzed speling az a conveniens rather than az a law of orthography.

Regarding Cut Spelling (CS), it seems to me that to introduce it to beginners wuud cauz confusion, tho for fully literat adults ther iz no serius difficulty, except that strict rules wuud cauz even mor problems of "correctness" than with t.o.

If CS wer introdust az an *alternativ* for adult use, I can see that ther ar aul th' edvantjes claemd, altho I'd be afraed to attempt presenting it to litl chldren.

... Harry Lindgren's SR1 proposal iz probably one of th' most rational introducshuns for chanj I hav seen on our present horizon, and it is a shaem that the Aussies faeled to go ahed with what appeerd to be a reely guud start.

At present the brietest liet ov our orthografic view is th' work and study of Mark O'Connor, ov Townsville, Australia, who publisht *Words on Paper, An Introduction to Alphabetic Theory*, a year or so ago, and is now in the process of getting an expanded version publisht....He lectures at James Cook University.

Robert Craig, England.

... Peter Trudgill's book *International English* does contain descriptions of various vowel systems of 'standard' pronunciations of English worldwide. The lesson for spelling reformers is to see how very different these standards ar. The problem is how to reconcile these standard fonemes in diafonemes which will serv a worldwide language. Clearly the end result must represent a hypothetical speech with a much reduced vowel system. Schwa is a major problem here. For many Britons schwa is the vowel in *bird*, for most Americans it is the vowel in *bud*, and for New Zealanders and South Africans it is the vowel in *bid*.

Much of the book is taken up with descriptions of grammar and style which ar not relevant for spelling reform. It is helpful in that it indicates trends in pronunciation, e.g. English is increasingly rhotic, in North America ther is quite a trend tu vowels merging.

... The Krio-English, English-Krio dictionary which apeared a few years ago might be relevant for reform. (Krio is an English-based Creole spoken in West Africa wher it has a certain status as a semiofficial language.)

... The task at the moment is to increase the area of vowel diafonemes so that each can encompass the wide range of fonemes found in the various varieties of English.

Madhukar N. Gogate, India.

... *The Newsletter* makes interesting reading, and nicely printed. I am glad to note that you found Roman Lipi Parishad's efforts worth recording in your issue. We shall consider suggestions such as writing *tebl, injekshn*. (Instead of *tebal, injekshan* for *table, injection*. - Ed.)

Bill Herbert, Australia.

Spelling reformers should keep in touch so that none produce schemes unacceptable to the others if possible.

It is important to decide on a standard pronunciation, something very like BBC speech, rather than American pronunciation, which varies too much from one part of the US to another. For a first reform, there would be few words of BBC pronunciation that would differ from that of N-E USA (except for the dreadful word "nooz").

We feel very strongly that the first scheme must be *instantly acceptable* to the general public (even tho at the same time we might foreshadow further reforms). In our view 3 reforms are acceptable for putting to the public:-

(1) Phoneticizing <ugh> words. There is nothing remotely as bad as the <ugh> words with 9 different pronunciations.) 29 words affected.

(2) The most striking SR1 words: *sez, sed, eny, meny, hed, trend, ded*. 7 words.

(3) Highly unphonetic words: *tung, yot, kue, forren, wun, wuns, peepl, wimmen*. 8 words.

We feel that Cut Spelling, tho ingenious and acceptable at a later stage, would be too great a shock to the public as the first step. The most striking improvements from CS are in (3) - highly unphonetic words.

Looking at (1) in more detail, we pronounce *thorough* more like *thuru* than CS *thoro*. *Plow* is already used in the agricultural world of USA, Canada, Australia and New Zealand, and is analogous to *how*. Hence we prefer *bow* for *bough* and *drowt* for *drought*. The sounds <au> and <ou> are nearly the same. Half of us think that <au> should be used to replace <augh>, hence *caut, taut, dauter, slauter, fraut*; while <or> should replace <ough>, hence *fort, ort, rort, bort, brort, nort, sort and thort*. The other half of us prefer to use <or> throughout, and not <au>.

A year ago we considered that reforming the <-igh> words was too difficult for a first stage. We liked *hy, sy* for *high, sigh*; but *site, rite, lite* are commonly used commercially and would be less of a visual shock.

We strongly feel that the above 44 words are the most that should be put to newspaper editors and advertisers as the first step in spelling reform. A further list could be foreshadowed, including the rest of the SR1 words and words from CS such as <f> for <ph>, drop *final <e>* (hav), abolish "<i> before <e> except after <c>".

The big risk with reform is that it may make editors antagonistic in the first few seconds of sighting the reforms.

... Below is a draft letter to newspaper editors. Newspapers are potentially the greatest engines of reform, but it is necessary to have consensus of the majority - a single newspaper or chain cannot succeed (e.g. the failed attempt of the *Chicago Tribune*).

Dear Editor - English is increasingly becoming the universal language, aided by its expressiveness and its simple grammar. It has only one serious defect: the unphonetic spelling of many simple words like rough, through, tongue, yacht.

There are two groups of people to whom unphonetic spelling is a serious obstacle. The first is slow learners, some of whom remain illiterate or nearly so. The second is foreigners using English as a second language, as is common in Europe and in business circles in Asia. These people can speak English but cannot read or write it, due mainly to its unphonetic spelling.

We believe that a first reform should tackle the most unphonetic simple words, about 40 words.

More than half of these contain the silent letters <ugh>. These words now have nine different pronunciations: enough, though, through, thorough, plough, cough, ought, draught, hiccough. Some newspapers, on their own initiative, have phoneticised hiccough to hiccup.

Other words urgently needing reformed spelling are:- says and similar words pronounced as a short <e>; highly unphonetic spelling like tongue, yacht, queue, foreign, one, once, people, women. We would appreciate your opinion.

Richard Lung, England.

I have just heard of the death of Dr Reg Deans from a fall earlier this year. He would have been almost 94 years of age. Reg was one of the most active of spelling reformers. He introduced hundreds of people thru'out the world to his *Britic* (<c> = <sh>) system of one sound one letter, solely by making more rational use of the existing set of English letters. In the *Society's Newsletter* I once compared his system with that of Dr Mont Follick. His book *Universal Language and Simplified Spelling* is the definitive presentation of his reformer's vision.

Reg was not very communicative about himself, as he was about *Britic*. He expected people to take his reform on its merits and not because of who he was. It was over a year of correspondence before I found out he was a doctor of physics and engineering. He came to see me on his holidays, and brought one of Bernard Shaw's famous postcards, dated 1950, the last year of Shaw's life. Reg had visited Bernard or GBS, as he was called. Shaw, with the kind of courtesy for which he was exceptional, had sent the card after, in acknowledgment of the visit. Having had the privilege of meeting Reg, I can tell you that he was also a courteous and refined man to talk to. And he told me a few things of interest, I hope, to other spelling reformers.

Reg met all the great names, including Shaw, Mont Follick and Sir James Pitman. As far back as before the First World War, language was a preoccupation, when he taught English to Chinese students. During the interwar years he lived at Filey, near Scarborough, and often revisited this area. In the Second World War he worked on aircraft design at Farnborough. He retired after the war, and caravaned around Europe, meeting many people to convert to his ideas on spelling reform. But owing to his great age, most of his contemporaries died before him. Still he kept getting the message across. Once, an intelligent 12-year-old girl found one of Reg's *Britic* leaflets and wrote to him in the reformed spelling. She remarked her classmates thought she was 'bonkers' and that she was working up courage to approach her English teacher on the subject. When the House of Lords debated spelling reform, some of their Lordships received Reg's scheme favorably and one said of *Britic* that it was the kind of reform he would like to see.

Had Reg been less modest and reserved about his distinguished career, his crusade for reason in English literacy might have been more listened to. But his example taught me this: we are all familiar with fame that lacks greatness, but how often do we appreciate greatness that lacks fame?

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[Edward Rondthaler: see [Bulletins](#), [Anthology](#), [Journals](#), [Newsletters](#), [Personal View 8](#)]

3. Continuing Debate: Edward Rondthaler on *American Alternative Spelling*

Dr Rondthaler has generously sent a copy of his new Dictionary of AMERICAN SPELLING, a work of real substance whose appearance ranks as an orthographical event comparable to (though as a dictionary also different from) [New Spelling](#) (1948), Axel Wijk's Regularized English (1959), and Harry Lindgren's Spelling Reform: a New Approach (1969). Dr Rondthaler here responds to comments on the dictionary's advance prospectus carried in the [Summer 1986](#) Simplified Spelling Society Newsletter, Item 4.

When a theatregoer walks into a cinema showing 3-dimensional movies he sees nothing but clutter on the big screen. It is only when he wears the special polarized eyeglasses provided by the house that the meaningless clutter comes into focus as a clear 3-dimensional picture.

The SSS summer issue gives what it calls a "superficial first impression" of American spelling. It does not, however, give its readers the 'glasses' — the rules and notation key — to verify the impressions for themselves. With proper glasses the readers might find that spellings called "ambiguous", "confusion not resolved", "inconsistencies retained from NS" come into focus. For example, the spelling <poem> is not ambiguous when matched to the American rule "In a vowel string the syllable always ends after the first two vowels if they form a digraph". **No exceptions.**

What the critique forecasts as a foursome of vowels in its (incorrectly) assumed spelling <coeeeval> is, in American, spelled <co-eeval> in line with the rule "A hyphen may replace the final <e> of a stressed long vowel prefix (re-enter, di-urnal, co-author)."

American has made significant progress in resolving the <i, y> confusion of NS by (1) distinguishing clearly between <y> as a vowel and <y> as a consonant, and by (2) retaining the t.o. *unstressed* pairs <ia, io, iu> (*editorial, champion, auditorium*). This progress is summarily dismissed in the *Newsletter* in spite of the fact that the change overcomes a troublesome awkwardness of NS and increases visual compatibility with t.o.

The Newsletter critique goes on to say "Certain distinctions are kept that other orthographies have thought better to abandon, such as *caarn but half, and yot but baut.*" One need only consult the pronunciations given in any contemporary American dictionary and even in the British-oriented *Oxford American Dictionary* to find firm support for these spellings.

None of the foregoing should be taken to mean that American would not benefit from more fine tuning. One area, for example, that needs further consideration concerns syllabic consonants. The *Newsletter* asks why, in American, a vowel precedes the <1> in *speshal* but not in *puzl*. The answer (which may or may not ultimately prove viable) concerns suffixes. <zl> is satisfactory for *puzl, puzzling, puzbnent and puzier*. <shl> could be used for the 2-syllable *speshl* and 3-syllable *speshlty* but we desperately need the <a> in 5-syllable *speshyality* — unless we find enough Americans clamouring to follow the pronunciation of Foreign Secretary Geoffrey Howe.

American has sometimes been cited as not being significantly different from NS. That is correct. This cannot, however, be attributed to any neglect of homework. Respect for NS has come as a result of a 20,000-hour journey into the hinterland looking for greener pastures, but returning full circle — chastened and wiser — to rediscover that, by and large, the principles underlying NS do indeed chart the least hazardous course between point A and point Z. This conviction has been put to the test by a gruelling passage through the gauntlet of 45,000 words. One emerges from this gauntlet with a deep respect for the insight, scholarly integrity, and perseverance of Walter Ripman and his associates.

The real task of American as it focusses chiefly on the alarming spread of illiteracy in the US is (1) to adapt most of the NS basics to 'General American' — the pronunciation used by the greatest number; (2) to develop the idea of a respected alternative spelling on par with t.o. — a spelling related more closely to the sounds of speech and therefore more easily learned than t.o.; (3) to make the notation practical as a replacement for the pronunciation codes in US dictionaries; and (4) to circumvent opposition by shifting most of the burden of change and translation to computers.

The scholars' edition of the new 45,000-word 320-page American Spelling dictionary is now available at cost (£9 postpaid) from the publisher The American Language Academy, or from Edward Rondthaler, It is issued not as a *fait accompli* but as a call for carefully thought-out comments, and will be followed by a second edition benefitting therefrom.

4. The Transcription of Pronunciation in Dictionaries and its Implications for Spelling

David Brazil

Dr Brazil is a phonetician in the English Department of the University of Birmingham, where he has evolved a new system for describing the intonation system of English. Some of its insights are incorporated in the forthcoming Cobuild English Language Dictionary. We here publish, with his permission an edited version of his address to the Society on 21.6.1986.

1 THE BACKGROUND

1.1 Learners' needs

Intonation is an important part of pronunciation, but what has it to do with spelling? In approaching this question, I should first explain I am involved with the lexicography and dictionary activities at Birmingham University, mostly sponsored and stimulated by Collins Publishers. We are working on an advanced learner's dictionary of English, for which I have been asked particularly to provide the phonetics entries. I am proceeding on the principle that any advanced learner who goes to a dictionary, whether to find out the meaning of a word or its spelling, is equally likely to want to find out how to pronounce it.

1.2 New findings on intonation

Most dictionaries make an attempt, after the headword, to provide something that looks like, and sometimes is, international phonetic script (though it is sometimes something quite different). In approaching my task, I have had to re-examine the question of representing pronunciation graphically, particularly in the light of what I have discovered about the organization of intonation and the effect that this has on things like stress. So what I want to discuss is primarily how people sound, and I hope this will then shed light on how those sounds might be represented in an orthodox spelling system.

1.3 Phonographic complications

Spelling reformers have long said the ideal orthography should have a one-to-one relationship between sound and symbol. To some extent I shall be suggesting that the sound part of this equation is even less straightforward than people have so far recognized. So in a sense, instead of offering easy solutions to spelling reform, I am as it were muddying the stream. But it is surely nevertheless true that any sensible reform will have to be based on a real scientific appreciation of what the sound-system is like. Otherwise it is doomed to failure from the start.

2 DICTIONARY REPRESENTATION

2.1 Pronunciation look-up procedure

This extract from the Cobuild advanced learner's dictionary illustrates the sound symbols by using key words.

ɑ	<i>heart</i>	/hɑ:t/	æ	<i>act</i>	/ækt/
i:	<i>see</i>	/si:/	ɪ	<i>build</i>	/bɪld/
ɛ	<i>bet</i>	/bet/	u	<i>good</i>	/gud/
ə	<i>the</i>	/ðə/			

We here see that the symbol /ɑ/ stands for the vowel in *heart*, and the full representation of *heart* is /hɑ:t/; the symbol /æ/ stands for the vowel in *act*, which then appears as /ækt/, and so on. Clearly the dictionary has to give the whole symbol/sound-inventory, but these examples suffice for our purpose. The assumption on which the system is based is that learners who come across a word whose pronunciation they don't know first look the word up in the dictionary, see what the pronunciation symbols are, then trace those symbols back to their occurrence in the key words, and by a process of substitution finally derive the pronunciation of the word in question. So with the word <disrespectful>, the transcription /disrɪspɛktfʊl/ shows the first vowel as the /ɪ/ in *build*, the second vowel, <e>, similarly as the /ɪ/ in *build*, the third as the /ɛ/ in *bet*, and the final vowel as the /ʊ/ in *good*. If foreign learners use a dictionary, that is usually the only procedure open to them. The dictionary seems to assume that advanced learners have already mastered the sound-system of English, that they can already produce those sounds, and that all they are doing is making an appropriate selection from what they already know.

2.2 Does this meet learners' needs?

Now I am not sure that this is clear to those who write and talk about dictionaries. One can say those symbols obviously resemble the symbols in the International Phonetic Alphabet, so they could well be standing for these phonemes, if not for phonetic entities. Thus they show there is a difference between /i:/, /ɪ/. one standing for a vowel that is further forward and produced slightly higher in the mouth than the other, and those who don't happen to have that contrast in their own language must be taught the difference and how physically to produce those two sounds, so that they don't say *ship for sheep* or vice versa. It seems to me that making discriminations like that is no part of a dictionary's job, that a dictionary cannot in principle tell people how to pronounce sounds unless they already know how to do it. If people are confusing /i:/, /ɪ/, certainly they need to be corrected in class, perhaps with reference to phonetics, but that is quite different from what happens when the learner looks up the word in a dictionary. For one thing, I simply do not believe that most people who use dictionaries, even advanced learners and native speakers, are sufficiently sophisticated to be able to know all about such distinctions. It is a very much more rough and ready substitution that is involved. The dictionary does not have the task of teaching people to pronounce the language. It assumes they can already pronounce the language in the words they know, and simply need to do the same sort of thing in new words that they can't pronounce.

2.3 Variations in speech

But already in *disrespectful* the position is less straightforward than it looks, since we see the above transcription lacks the /t/ that is present in the spelling <disrespectful>, and there might be disagreement as to whether the <t> is pronounced or not. There is also uncertainty about the second vowel, the first <e> in that word: the transcription gave it as /ɪ/, but if speaking fluently, I might well pronounce it as a schwa, /ə/. Then the last vowel in *disrespectful* is here transcribed as /ʊ/, but if I'm speaking rapidly, I may make this also into a schwa, with the same pronunciation as in *raffle*. In fact, in normal speech the native speaker will accept both values of the vowel equally.

2.4 Which sound in the dictionary?

What are the implications of this? In the above three cases the dictionary transcription is faced with wide variation in usage. Why should we say that a given vowel is /ɪ/ rather than /ə/? On what basis are we saying, such and such is the correct form? Foreign language users are well accustomed to the Daniel Jones-Gimson tradition, in which someone has told them what is the correct value for the vowels. But there is a fairly big discrepancy between what they are told and what actually occurs. That is the first problem for me, because I want a dictionary to be useful to learners not only when they are producing, but when they are listening. If they have been taught the pronunciation as transcribed, and they at once hear a different pronunciation, there is a worrying discrepancy if they are that sensitive. The chances are they are not that sensitive, but globally,

given that this kind of problem is going to arise with perhaps 50% of words in the dictionary, it is a worrying phenomenon.

2.5 Which accent?

In the Dictionary you have got to define the kind of English you are representing. A dictionary of British English would not for instance represent the <r> in *heart* in the pronunciation. But we have to take account of a rather wider spectrum of usage than what is normally described as RP.

3 LESSONS FOR SPELLING REFORM

3.1 Spelling by sound or vice versa?

Furthermore, some people may say they pronounce the second vowel in *disrespectful* with something of the sound /ɪ:/, on account of the letter <e> used in the spelling. In that case we are suggesting a full range between /ɪ:/, ɪ, ə/ for that vowel-letter. But if you say that a good speller pronounces the word more closely according to the spelling, you are determining the pronunciation from the spelling. So where does that leave the proposition that we should base spelling on pronunciation? Our perception of a word influences our pronunciation. But you can't on the one hand say spelling should follow pronunciation, and on the other that pronunciation follows spelling — it's a circular argument.

3.2 Consistency the aim of spelling

In terms of spelling reform, one must conclude from this that any reform should make the spelling system itself consistent without reference to phonetic representation. This turns out to be a complicated task, quite different from what most spelling-reformers in the past have attempted, since they considered that the great defect of English spelling was the breakdown of the sound-symbol link. In essence, the sound system has an existence and a consistency of its own which permits all sorts of variations within certain limits, and to start by assuming that it is predictable, regular, consistent, and that all reformers have to do is to relate symbols to it, is not going to work.

4 STRESS

4.1 Dictionary indication of stress

The key to the kind of variation I have been discussing is stress. In /dɪsrɪspɛktfʊl/ a dictionary will give primary stress to /spɛkt/ and secondary stress to /dɪs/, thus /'dɪsrɪspɛktfʊl/ and it is taken for granted that the foreign learner, and indeed the native speaker, can interpret those symbols. I'm not sure whether he can or not: I'm not sure whether you don't need to know how to pronounce the word before you know what the symbols mean. But that's another issue.

4.2 Variable stress

But now let us consider what happens if you say *disrespectful behaviour*. The distribution of primary and secondary stress, as indicated in /'dɪsrɪspɛktfʊl bɪ 'hɛɪv jə/, may now be spread over the larger chunk of speech. In *disrespectful behaviour* the /spɛkt/, far from having primary stress, has at most tertiary stress. Something rather interesting happens too if you say *his behaviour was disrespectful*, /hɪz bɪ 'hɛɪv jə wəz dɪsrɪ'spɛktfʊl/: the /dɪs/ loses its secondary stress. And it turns out that this is something whose significance has been largely overlooked in phonetic writing. Yet it is tremendously important. I believe that something very similar may happen in all languages.

4.3 Stress communicatively significant

What I am going to suggest is that the primary and secondary stresses are communicatively significant in themselves, and not merely a function of having chosen particular word. They affect

what we are saying, and are a very important part of the communicative significance of spoken language. Consider the transcriptions

/dɪsrɪspɛkful/

/dɪsrɪspɛkful bɪhɛlvjə/

/hɪz bɪhɛlvjə wəz dɪsrɪspɛkʊl/

/vɛrɪ dɪsrɪspɛkful ɪn'di:d/.

Here I've used a larger character for vowels which occur in syllables which receive primary or secondary stress.

5 TONE UNITS

5.1 Psychological pre-assembly

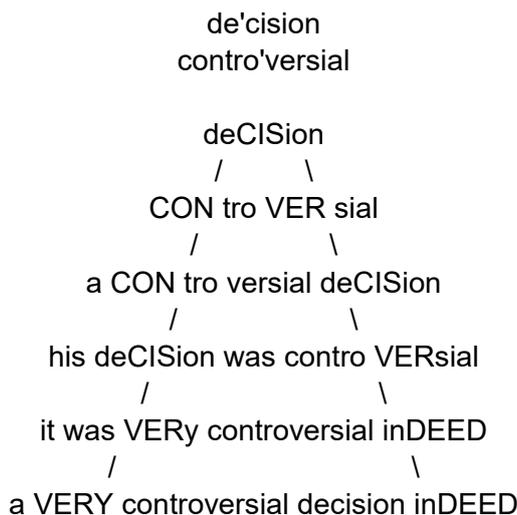
I could even go so far as to give as a single chunk

/ɪt wəz vɛrɪ dɪsrɪspɛkful bɪ:hɛlvjə ɪn'di:d/.

In fact the only limit on length here is the amount speakers can pre-programme, that is, how much they can set up in their neuro-linguistic circuitry before they speak. It is an interesting fact that I can't say *very disrespectful indeed* unless I have conceived the whole phrase in my mind when I start speaking. This sort of minimal unit of pre-assembly may be psychologically important. With people who don't know the language very well and who are assembling an utterance piecemeal, one word at a time, if they say *it was very — oh, what's the word I need? — disrespectful indeed*, you don't get this kind of stress-patterning. Even with native speakers, if they have some sort of cognitive block, or are being very careful, thinking on their feet, deciding what to say, the intonation will reflect their moment by moment formulation as they go along.

5.2 Words and tone units

So the learner, using the dictionary, looks up first *very*, then *disrespectful*, then *indeed*, and pronounces each word with its individual sound value, which is probably not what was wanted at all. This is the significance of the triangle below:



There exists in spoken English a clearly recognizable unit which is not a word, but rather a tone unit, as represented by the utterances on the lines in the triangle. The significance of the pronunciation of a word as it is given in a dictionary is that that is how you will say the word if you happen to want to say it as a single tone unit. One of the problems, I am convinced, that spelling reform has got to come to grips with in some way or another, is that spelling is always focussed upon the word as a unit. Speech doesn't do this. I'm not sure that the word has much significance

in the examination of speech at all, and it may well be that we ought to be talking about tone-units as a minimum unit, and say that the word is the bit that is left when you have reduced the tone-unit to its smallest proportion.

5.3 Prominences

If you listen to a person speaking, and concentrate not on the meaning but on the intonation and stress-distribution, you find that what is said falls apart into chunks, characterized by either secondary followed by primary stress, or, in the minimal case, just primary stress. I call them neither primary nor secondary stress, but rather 'Prominences', to distinguish them from stress. The transcript of a recording of a radio discussion made some time ago will show what I mean. A group of lawyers were talking about the operation of the social security system, and one of them said:

*Well, I think **on the whole** ... these officials ... do **a remarkably good job**. We have to **remember** ... that they are **required** ... by **administrative practice** ... to take these **decisions** ... on paper ... and **very often** ... when they **get** these decisions **wrong** ... it's **because** ... they **haven't** had an opportunity ... of **talking** ... **face to face** ... **with the claimant** ... and **really finding** ... the **facts**.*

5.4 'Expression'

It so happens that, perhaps because the speaker is a lawyer, perhaps because he is trying to make what he's saying sound important, he leaves a long gap between tone-units; but you can hear the tone-units even if there are no such gaps. If spoken without gaps, the statement doesn't differ significantly from the original rather slow and ponderous version. But without the prominences, we get a monotonous delivery that sounds like a speech synthesiser rather than real human speech. Likewise at school we used to have to learn poems by heart and recite them just to prove that we knew them, and the teacher would criticize us for not speaking them with 'expression'. By 'expression' was meant treating the poem as though it were English communication.

6 THE FUNCTION OF INTONATION

6.1 Prominences carry meaning

This division into tone-units and decisions about which syllables to make prominent within the tone-units cannot be predicted simply from the grammar or the vocabulary or any other formal aspect of the language. It is a quite separate decision made by the speaker, carrying quite separate language information. It is something that written language does not convey, but it is assumed we can deduce it. The punctuation can give a hint of it, but doesn't do so at all consistently. Take this example: yesterday I was asked whether I was free today, and I said, *No, I'm going to a meeting in London*. This statement is divided into two tone-units, one being *I'm going to a **meeting*** (like *disrespectful behaviour*), and the other, with only one prominence, *in **London***. I could alternatively have said, *I'm going to a meeting in London*, but that would have implied a different meaning, appearing to answer the question, *where are you going?*, and it presumes one knows that the person is going to a meeting. But my actual reply, broken into two tone-units, gives both items of information, both the purpose and the destination of the journey.

6.2 Breath-groups not primary

Traditionally this kind of structure of utterances has often been described in terms of breath-groups, but I reject that entirely. If it was just a matter of breath-groups, it would simply be a question of physiological need not under the control of the speaker: you would just speak until you ran out of breath, and the utterance would not be structured in a voluntarily meaningful way. But this structure by tone-units is voluntarily meaningful.

6.3 Interactive context

This division of speech into tone-units is just as important as its organization into grammatical units, but separate from it. The way I organize my speech into tone-units depends on my apprehension of the here-and-now state of communication between myself and the hearer. I am constantly changing what I do to mesh with the set of expectations my hearer is likely to have. This is why it is nonsense to suggest there is a correct intonation for a particular sentence. That is never so, because the intonation depends not on anything in the sentence, but on the speaker's awareness of the interactive context. Everything that is said is uttered against a unique special background of understanding, and it is that which is being reflected in the intonation.

6.4 Little problem for foreigners

That is a real problem for dictionary makers. Interestingly however the provisional findings of research suggest that foreign learners are not likely to choose a wrong pattern of intonation for a sentence, even though people often have the impression that what constitutes a foreign accent has something to do with the intonation. But in fact there are all kinds of things that the man in the street calls intonation that are not part of this system of meaningful oppositions — there are perhaps characteristically French tunes superimposed on intonation, just as in the British Isles there are characteristically Birmingham tunes, Welsh tunes, Cockney tunes, and so on, which have to be considered separately from the manipulation of the system.

6.5 Incorrect/correct intonation

It requires some concentration to produce random intonation, and if I do it successfully, you find it difficult to follow because there is an obvious mismatch between what I am trying to say and the assumptions I ought to make about what the audience wants to hear. But that doesn't mean there is a single correct intonation: everything depends on what the speaker presumes the listener already knows.

6.6 Non-communicative intonation

This has implications for language-teaching. One of the difficulties with teaching a foreign language is that initially you have to use artificial samples of that language without any real context. That is why recently there have been efforts to introduce communicative language teaching, which has a real context and seeks to convey real information. It may be that some speakers of English do tend not to interact with their listeners, but just produce sentences without these communicative stress-patterns. Thus one often hears such a lack of communicative intonation in public announcements, as on the railways, or from a tourist-guide, because the speaker is not interacting but merely reciting what has been learnt. It happens not infrequently, I'm sorry to say, in academic lectures, especially where lecturers are not native speakers of English. Then the lecturer can internalize a piece of his lecture as ritual, from his notes, not relating to the audience but just to the lecture, with consequent long runs of non-communicative intonation.

7 DICTIONARY NOTATION

7.1 Nature of the problem

This has serious implications for dictionary-makers, because the presentation of any word is dependent upon the here-and-now situation in which that word is used. So how can we arrive at a definitive pronunciation for any word? What do we mean when we say *disrespectful* has first secondary stress and then primary stress? All we mean is, that is how we say the word if we say it in isolation. But as most people want to use the word in a context, the dictionary must admit a range of possibilities.

7.2 Indicating varying stress pattern

The dictionary entry

d I s r I s p ɛ k t f ə l

indicates that if *disrespectful* is used in a context where it needs a prominence at all, the prominence will occur on either the first or the third vowel, which are printed large. But which of the two takes the prominence depends on whether it is at the beginning or the end of the tone-unit. In fact the varying stress pattern we find in the context *disrespectful behaviour* and in the context *his behaviour is disrespectful* turns out to be a fully generalizable fact about all two-prominence words in the language.

7.3 Protected vowels

The transcription tells us not only that the two vowels printed large are available as prominences if real speech demands it, but also that the first vowel is going to be /I/, and the problem of variation that we had with the vowel in <resp> or <ful> does not arise: the first vowel going to remain /I/ whether or not it is prominent. Likewise the vowel in <spect> is going to remain /ɛ/, regardless. The advantage of this notation is that it enables me not only to indicate where the prominences will be if there are prominences, but also to make a distinction between what I call protected vowels and unprotected ones. It turns out to be a very general rule that those vowels that are used in the prominent syllables of the citation form retain their value within fairly strict limits. (There are a few exceptions — no statements like this could probably be made absolutely.)

7.4 Unprotected vowels

But the other vowels are unprotected, and there is the possibility of variation, occurring within the usage of an individual person. It depends not on dialect, but on such things as whether you speak carefully or quickly, where the vowel comes in the tone-unit, what its phonetic environment is, and so on. So my notation for the dictionary gives the information

d I s r I s p ɛ k t f ə l

 / \ / \
 I ↔ ə U ↔ ə

which tells us that the second vowel in *disrespectful* can be realized as /I/, or as /ə/, or as anything nondescript in between. When uttered in fluent speech, it is hard to tell what the precise sound-value is — it can be anywhere on the continuum between the two. It may even be a longer continuum than that: it has for instance been suggested that the vowel might be an /ɛ/, so there is a very wide range of possibilities. There is a similar range of possibilities in the final vowel: it may be /U/, or /ə/, or even nothing at all, in which case we put a little superscript zero in, <->⁰

7.5 Which variant first?

The first of the two symbols in these notations is the Jones-Gimson type of vowel, and can be relied on to be acceptable — it is my sop to the conservative tradition, and says: this is what's normally taught. The second is quite likely to be the more common. In *regulate*, for instance, the /' / realization of the second vowel as in

/r ɛ g j u l ɛ t /,

is the one given in most dictionaries, and that is the more formal. But I believe the dictionary that gives only that realization is giving a very up-market version, and that these traditional dictionary descriptions describe a language that few of us ever use — we are few of us that consistent. The unprotected vowel can be conditioned by what comes after, or by intonation. There may well be rules to be discovered, but nobody wants them in a dictionary. What I'm doing is presenting something that is useable by ordinary people. The principles we articulate may be sophisticated, but their application has got to be as transparent as possible.

7.6 Practicalities of publishing

What I needed in my dictionary was some way of indicating all that information fairly economically, and I discussed various methods with the publishers. It is impractical to put the notation underneath each word, as I did in §7.4 to illustrate the system, because it creates problems for the printers, so I suggested putting it in brackets afterwards. But that was too complicated and would put off the user, who needs to have it very clear. One must remember that language teachers are not always receptive to change in such matters. There is a long-standing and widespread belief that Daniel Jones said nearly the last word, or if he didn't, then Gimson did, and anything that looks different will deter people from buying the book. In the end I put a superscript numeral against vowels that vary in this way, as

d l s r ɪ¹ s p ɛ k t⁰ f ə⁴ l

The superscript ⁰ after the /t/ indicates that it may or may not be present when the word is spoken. In the key to the transcriptions I explained what range of vowels the numeral stands for, thus

ɪ¹ = ɪ<->ə and ə⁴ = ʊ<->ə

I have found that by using 10 superscripts, with 6 vowels (mainly /ə/ and /ɪ/, in 20 combinations, I have been able to cover most of the common patterns. In more cases than not, the variation is so small it is not worth putting in. I found it necessary to allow for nine variants of schwa. I stopped there partly for the reason that I didn't want more than one digit as a superscript, and partly because you come to a point of diminishing returns: there may be only half a dozen cases where number 10 is needed, and it's better not to clutter up a dictionary too much.

7.7 The example *regulation*

We see from the phonetic representation

r ɛ g j u | ɛ | j ə n
/\ /\
ʊ<->ə ə<->⁰

that the first and third vowels, the /ɛ ɛ/, of *regulation* are protected, while the second vowel varies between /u/ and schwa. For the final syllable I have said that the vowel can be anything between schwa and nothing, when the <n> becomes syllabic.

7.8 Unphonetic spelling criteria

But consider a word like *relentless*, represented here as

r ɪ l ɛ n t l ɪ s

if you're trying to make the spelling more phonetic, You could change the <e> to <i> in the last syllable. However another consideration is the meaning of the word *less*: you may want to preserve the appearance of the word *less* at the end of that word, in which case you are applying another criterion besides the phonetic one. When one is considering how to make the spelling more consistent, there are other kinds of consistency beside pure phonetic consistency that one may want to take into account. And in the case of *relentless* we may say that to maintain the link with the word *less*, we want to spell the final syllable as <-less> rather than with an <i>, thereby also maintaining consistency with *lent* of the second syllable.

7.9 Conflicting criteria

But before introducing non-phonetic criteria, we should reflect that English spelling is today so much in need of reform just because in the past a variety of criteria — fidelity to the source language from which a word has been borrowed is another such criterion — have been applied, and they often conflict. Historically, change of pronunciation has been another factor.

8 SOME THEORETICAL REFLECTIONS

8.1 Children learn tone-units first

There is a lot of research yet to be done here, but I am myself convinced that young children are operating the tone-unit aspect of language long before they pick up any actual segments of the language. This really is not surprising because I'm claiming that what happens here arises from the interactive situation, the awareness that people have of each other, and surely one of the strongest motivations of a young child that is beginning to speak must be the awareness of the growing relationship with the mother or another person. These things arise not from language as such, but from the normal interaction between people. Most research so far has examined what the child means in terms of grammatical units, but I think it would be much better if researchers asked, what does the child mean in terms of tone-units. But that is very speculative.

8.2 Chomsky-Halle thesis

The Chomsky-Halle thesis says that the distribution of stress can be determined from syntax: you start off with the deep structures and transformations and so forth, and eventually arrive at a given stress-treatment for an utterance. I reject that because I don't think stress is predictable in this way. Stress relates not to the formal organization of an utterance, but from the function it is performing. I would claim that my analysis here provides an alternative explanation for all those cases where the Chomskyan nuclear stress rule works and it explains all those cases where it doesn't work.

9 POINTS RAISED IN DISCUSSION

9.1 Zero vowel-representation in CS

The notation of a zero variant, as in ə <->^o for the final syllable of *regulation*, has affinities with the Cut Spelling representation of post-accentual schwa before <l, m, n, r>, which are spelt as syllabic in such forms as *chapl, atm, fashn, propr*, giving zero orthographic value to whatever vowel may occur before the final consonant.

9.2 Spelling unprotected vowels

A consideration that the Society has attached some importance to is limiting the amount of change. One practice adopted by the original *New Spelling* was to keep the letter <i> where it now occurs in an unprotected situation, as in *vestige*, but to regularize vowels in this position with <e> where other letters are now used, so that *hostage becomes hostej*. It has even been suggested that <e> should be used for all schwas, but there are two objections to this, one being the sheer number of instances, and the other being that all the schwas occur in unprotected syllables and at least 50% of them are subject to variation.

9.3 Spelling by citation form

Another approach to schwa the Society has tried is to base spelling on the citation form of words, their pronunciation when spoken in isolation, and using whatever vowel-letter is suggested by the citation form if the vowel-sound is then other than schwa. One is to some extent driven to make an exception of schwa if one is not prepared to introduce new letters into the alphabet, for the simple reason that no unambiguous letter is available to represent schwa. It is very often possible to substitute a sort of non-neutralized, non-reduced form for an unprotected vowel without making it sound un-English. What you cannot do is alter the protected vowels. So if I say *photography*, I can represent it as /fəʊtəgrəfi:/, and it is still recognizable English. This may be an adequate basis for spelling, but it is not the pronunciation that a dictionary could recommend any foreigner to learn. There are nevertheless speakers who tend to avoid relaxed neutralized forms — I once met a lady who said: /aɪ kʌm frəm hæreʊgəɪt nraɪself bʌt ov co:rs aɪ hæv nəʊ æksɛnt/; what she said was truer than she realized, since she was speaking nobody's English. But this raises the question, should the reformed spelling reflect such pronunciation? If it did, the reason would be not so much to reflect that particular accent as not to depart too far from the visually familiar forms of present

spelling. Above all what the Society wants is a single consistent, easily learnable system which must cover a multitude of pronunciations. The 1948 6th edition of *New Spelling* by Daniel Jones gave up the attempt to alter the unstressed short vowels, giving the derivative *pedantic* for instance as a reason for not altering the <a> in *pedant*, another example of mixing criteria.

9.4 Has pronunciation changed?

When *New Spelling* suggested forms like *kotej*, *hostej* for *cottage*, *hostage*, one wonders whether these words were perhaps pronounced like that 40 years ago. One factor was that in those days there was a widespread feeling that if people pronounced a vowel as schwa, they were speaking badly, and spelling reformers then had to allow for that attitude. Indeed even today many first year undergraduates, when taught the phonetic alphabet, will stoutly deny they use schwa in that way, and that if you say *evening* there is no realization of the second vowel. They will say that is careless speech — but none of us really knows how we speak.

9.5 The <s> inflection

In the case of the <s> inflection, as in the plural morpheme and present tense of verbs, I would argue that the voicing or devoicing was purely conditioned by the voicing of the previous consonant, and therefore need not be reflected in the spelling. The Society has actually opted for <z>, partly because in the vast majority of cases the sound is in fact voiced, and partly because it often needs to be distinguished from the unvoiced /s/, as in the pair *hens:hence*.

9.6 Morphophonemic <-bl>

One of the more disconcerting features of Cut Spelling that has been discussed on the Society's Working Party is the <-able, -ible> morpheme, as in *eatable*, *edible*, whose suffixes have the same pronunciation, somewhere in the region of schwa. The unpredictable spelling of this suffix causes users great difficulty, and the Working Party has been considering whether they could both be reduced to morphophonemic <-bl>, with no preceding vowel-letter at all.

9.7 Omit all unprotected vowels?

While morphophonemic <-bl> appears to be satisfactory, it might be interesting to pursue the possibility further. Taking this procedure to its logical extreme, one might find that vast numbers of vowel-sounds which are fully predictable from their context need not be spelt at all. Mightn't the logical outcome of this be to spell only the protected vowels, and omit all the unprotected ones?

9.8 Visual prominence

In fact the Society was at pains to preserve those in the most visually prominent positions, especially those occurring before the primary stress in words. On the other hand unprotected vowels that may be pronounced schwa are systematically dropped in Cut Spelling before final liquids and nasals when these can be represented by syllabic <l, m, n, r>. Examples with <r> cover a wide range of t.o. spellings, as in *burglr*, *teachr*, *amatr*, *Cheshr*, *doctr*, *vigr*, *centr*, *murm*, *injr*, *martr*.

9.9 Final <-nt>

Similarly in Cut Spelling the <-ant, -ent> endings are, merged as <-nt>, so that *combatant* becomes *combatnt*, on the grounds that the precise pronunciation of the vowel is unimportant, indeed it is variable, and so it doesn't need to be indicated in the spelling. The question is asked whether the grouping of consonants within such strings would be ambiguous, but the regularity of the <-nt> ending should ensure that that reader faces no uncertainty. For the writer the, regularization of this error-prone morpheme would be of great benefit.

10. FOR FURTHER READING

Brazil, D C, *The Communicative Value of Intonation in English*, E. L. R. University of Birmingham, 1985

5. A New Orthography on Morphophonematic Principles

Edward Smith

Edward Smith first became interested in spelling reform when at the age of five he wondered why *three* was not spelt the same as *free*. He was secretary of the Simplified Spelling Society from 1971 to 1972, and chairman from 1972 to 1976, as well as a transport planner for Great London Council.

FOREWORD

The work in this paper is based on these premises:

1. The traditional English orthography is an unnecessary and unacceptable obstacle for children learning to read, write, and speak English.
2. A new orthography should treat the many accents of Standard English as variants of a single language, as far as possible accounting for phonetic variation by differences of phonetic realization rather than differences of underlying representation.
3. The new orthography should be linguistically as simple as possible to ensure ease of learning. This simplicity cannot be achieved by chopping and changing the traditional orthography. Truly simple spelling must build on a rigorous and comprehensive analysis of the sound patterns of the language.

1 THE ANALYSIS

1.1 Phoneme fundamentals

1.11 A speaker of Hindi learning English might wonder at the use of <t> for 2 different sounds in <stop> and <top>. To an Englishman, however, the difference between these sounds is not significant because it is decided by the phonetic context and is never the only phonetic difference between words. A set of sounds with complementary distribution is a "phoneme", and is enclosed between /slasciz/. A notation that groups sounds into phonemes is "phonematic". The various sounds belonging to a phoneme are "allophones".

Note: The word "phonemic" is more common than "phonematic", but is bad Greek.

1.12 The <i> in <medium> has two pronunciations. No native speaker of English attaches importance to the "free variation" between these pronunciations: good reason to suspect that the 2 sounds of <i> in <medium> are allophones of one phoneme. This theory will be sustained if no pair of words, or "minimal pair", can be found that are different words, in some accents consistently distinguished phonetically by only these two sounds.

1.13 The <a> of <par> is for many Americans phonetically similar to the <o> of <pod>, while many Scots and Irish would identify it with the <a> of <pad>. However, in the word <parity>, where the first element of meaning or "morpheme" is clearly the same as <par>, the vowel is in every accent phonetically more similar to the <a> of <pad>. Therefore it is preferable to analyse the <a> of <par> as an allophone of /a/. A phonematic analysis designed to minimize the disturbance to morphemes is "morphophonematic". The morphophonematic spelling of a word is its "underlying representation".

Note 1: The American will instinctively read his own pronunciation into <par> because any other allophone of /a/ would give a sound sequence not possible in his speech.

Note 2: Traditional orthography is sporadically morphophonematic, but compare <deign> and <disdain>, <aline> and <align>, <affray> and <afraid>.

Note 3: See also Harris (1951), Appendix to 7.4.

1.14 The depth of a morphophonematic analysis must be appropriate for the purpose. For example, it would be possible for <brother> and the stem of <fraternal> to have the same

underlying representation, but the rules for the phonetic realization would be too complicated for a practical orthography.,

1.2 Internal open juncture

1.21 Allophones otherwise found only at the beginning or end of words will appear at certain morpheme boundaries within words. This feature is known as "internal open juncture" and can be shown by the location of stress marks /'/, /-/) or the sign /+/. The phonetic importance of internal open juncture depends on the difference between allophones, which varies among accents. A phonetic difference between /row+d/<rowed> and /rowd/<rode> is obvious to a Scot but unknown to a Londoner. A sequence of allophones with neither pause nor open juncture is "close juncture".

Examples:

/nait-reit/	night rate	/naitreit/	nitrate
/sing+r/	singer	/fingr/	finger
/howm-sted/	homestead	/*hamsted/	Hampstead
/kitn+isc/	kittenish	/katnip/	catnip
/kodl+ing/	coddling	/kodling/	codling
/mustr+ing/	mustering	/string/	string
/tar+i/	tarry (adj)	/tari/	tarry (verb)
/fur+ir/	furrier (adj)	/furir/	furrier (noun)
/howli+r/	holier	/feilir/	failure
/howh+ist/	holiest	/liist/	least
/law+ful/	lawful	/*cawfant/	Chalfont
/kandi+d/	candied	/kandid/	candid

1.22 In the Midlands, North Wales, South Lancashire, and New York City [ŋ] is always followed by /k/ or /g/ and this sound is an allophone of /n/. The contrast other accents show in /sing+r/<singer> and /fingr/<Finger> is the result of internal open juncture.

Note 1: The rime <singer: finger> in the Midlands accent is explained not by an absence of internal open juncture in <singer> but rather by the absence of an allophonic differentiation of /ing/ that would be necessary for an underlying internal open juncture to be phonetically evident.

Note 2: There are phonologic reasons for preferring to treat [ŋ] in the non-Midlands pronunciation of <ring> as the realization of a cluster analogous to /mb, nd/ rather than a simple sound analogous to /m, n/. Like /mb, nd/, and unlike /m, n/, [ŋ] never occurs initially and is never syllabic, /wiiknd/ <weakened> being shorthand for /wiikn+d/.

1.3 Syllables

1.31 Speech sounds may be classified according to whether they are "syllabic" or "non-syllabic". Syllabic sounds are articulatorily longer, and auditorily more prominent than non-syllabic sounds. In the word /top/, /o/ is syllabic, while /t/ and /p/ are non-syllabic. In /pinian/ <pinion> /i/ is once syllabic and once non-syllabic. A "consonant" may be defined as a phoneme with only non-syllabic allophones, a "semiconsonant" as a phoneme with both non-syllabic and syllabic allophones, and a "vowel" as a phoneme with only syllabic allophones. From our previous examples it happens that /t/ and /p/ are always non-syllabic and therefore consonants. The phoneme /o/ is always syllabic and a vowel. The phoneme /i/ has both syllabic and non-syllabic allophones, and is a semi-consonant. The phonetic context of a sound may be defined as "presyllabic" if the sound is followed with close juncture by a syllabic sound. An "open syllabic" may be defined as a syllabic followed by either open juncture or a presyllabic sequence of non-syllables that can also occur at the beginning of a word. Examples are /a/ in /spa, plastr/. A "closed syllabic" is any syllabic that is not open.

1.32 The phoneme /r/ followed with either close or open juncture by a non-syllabic or by a pause, as in /mustr/ <muster>, is for Scots phonetically similar to /r/ in other positions, as in /ring, merit,

fur+i/ <ring, merit, furry>. The [e]or [i] that the Scot inserts before [r] in /mustr/ is not phonematically significant in a transcription that distinguishes the internal open juncture in /mustr+ing/<mustering> and the close juncture in /string/. In some other accents the phonetic differences among the allophones of /r/ can be considerable, but there is no difficulty in assigning these allophones to the same phoneme.

1.33 The phonetic difference between the endings of /feilir/ <failure> and /howli+r/ <holier> reflects open juncture in /howli+r/. Chomsky and Halle (1968) give <ingenious: genial> as an example of "near contrasts", but any contrast of syllabic and non-syllabic /i/ in those words is peculiar to their accent and not a regular feature of the language. Moreover, any attempt to assign syllabic and non-syllabic /i/ to separate phonemes would be embarrassed by free variation in <medium> and countless other words. Similarly, <w> in <wit> and <u> in <put> do not contrast, vary freely in /kaziw/ <casual>, and should be assigned to a single semiconsonant phoneme, /w/.

Note: Non-syllabic /i/ does contrast with the /ii/ <ee> of /biit/ <beet>. Compare /iowk/ <yoke> and /iioliθ/ <eolith>.

1.34 In any combination of semiconsonants it is regularly predictable which semiconsonant will be syllabic. For /ir/ the /i/ is syllabic unless the combination is weakly stressed and posttonic. Thus in the Scottish pronunciation of /gird/ or /sirk'umfarens/ <circumference> the /i/ is syllabic, while in /feilir/ <failure> the /r/ is syllabic. Similarly, weakly-stressed posttonic /r/ is syllabic after /w/, as in /forwrd/ <forward>, but compare /fowr-wurd/ <foreword>, in which secondary stress preserves the /u/.

1.4 "Long vowels" and cluster analysis

1.41 Fundamental to the analysis of a language is the question whether diphthongs should be treated as unit phonemes or as clusters of other phonemes. In English the morphematic relationship in <vain: vanity, divine: divinity> suggests that the "long vowels" in <vain, divine> are unit phonemes differing in one feature from the corresponding "short vowels" in <vanity, divinity>. However, in all other respects, including distribution, the diphthongs are clusters with /i, w/, perfectly analogous to clusters with /m, n, l, r/. Examples follow of such a cluster analysis:-

/iiild/	yield	/viw/	view
/biit/	beet	/saw, kawm/	saw, calm
/vein/		/grow/	
/tait/	tight	/nuw/	now
/toil/		/wwlf, bwwt/	wolf, boot
/wit/		/wwwm/	womb

1.42 For the analysis of <beet> to be valid one must assume that <Yiddish> is a foreign word. The contrast in /liist/ <least> and the ending of /howli+ist/ <holiest> is the result of internal open juncture. <Inappropriate> must be analysed as /ina'prowpriet/, with the rule for some accents that weakly-stressed /iat/ is phonetically [i+it], not [jæt]. Note that /ww/ includes 2 allophones, the <oo> of <boot> and the <wo> of <wolf>. The first allophone always follows close juncture or precedes /z/ or open juncture. The second allophone appears otherwise.

1.5 Syllabics followed by <r>

We noted in § 1.13 that the value of /a/ in /par/ is in many accents materially affected by a following /r/. This potential phonetic influence by a following /r/ applies to all syllabics. Economy, practicality, and elegance require that a phonematic analysis group a sound that occurs only before /r/ in the same phoneme or phoneme cluster as a sound that never occurs before /r/. The simplest procedure is reference to accents which morphophonematic evidence shows to be unaffected by the combinative development, in this case Scottish and some Irish accents. Examples follow of each phoneme and phoneme cluster that appears syllabically before /r/, with an example of the same phoneme or phoneme cluster not followed by /r/.

/gird/		/wind/	
/herd/		/bend/	
/hard/		/hand/	
/sort/		/bond/	
/hurt/		/hunt/	
/biir/	beer	/biin/	bean
/reir/	rare	/rein/	
/fair/	fire	/faint/	fine
/koir/	coir	/koin/	coin
/kiwr/	cure	/kiwt/	cute
/drawr/	drawer	/drawn/	
/powrt/	port	/grown/	
/tuwr/	tower	/tuwn/	town
/mwrr/	moor	/mwwn/	moon

1.6 Syllables weakly stressed

1.61 The <a> in <England> is not the same sound as the <a> in <film-land>. However, the first <a> is only found with weak stress, while the second <a> always has strong stress. Hence these 2 sounds have complementary distribution and can be assigned to the same phoneme:- /*'ingland, film-land/. Indeed in a morphophonemic analysis it is desirable that the <a> in <principal> should be a member of the same phoneme as the <a> in <principality>:- /prinsipal: prinsi'paliti/. Similarly weakly stressed /e, o, u/ underlie what is phonetically a central syllabic in /aksident, kiwrios/ <curious>, /industri/. Compare /aksi'dental, /kiwri'oziti, in'dustrial/. For the purposes of an orthography it is not proposed that an underlying syllabic should be written if its phonetic realization is zero: - /kuri:j, fa'milir/ rather than /kureij, fa'miliar/ that would be suggested by /ku'reijos, famili'ariti/. All occurrences of the weakly-stressed central syllabic that have no strongly-stressed parallel can by convention be assigned to the /a/ phoneme: /ajenda, ta'riin/ <agenda, tureen>.

1.62 Under weak stress open syllabic allophones of /i/ overlap with /e/. This overlapping or "archiphoneme" can be represented by /i/ except where morphophonemic patterns show underlying /e/.— /i'nuf, i'levn/, but /repe'tisian/ (not /repi'tisian/), /re'petitiv/ (not /ri'petitiv).

1.63 Similarly /o/ and /ow/ do not contrast when weakly-stressed open syllabics. This archiphoneme can be represented by /o/.— /sparo, o'bei, boro+d/.

2 THE PRONUNCIATION

2.1 Orthographic variety impractical

English is commonly read 3 or 4 times as fast as it is spoken. Variety that gives colour to the spoken language would be impractical in an orthography suited for today's needs. It would not do for the Londoner to write [drawrimbawd] for <drawingboard> or the American to write [dwwdii] for <duty>. An orthography that follows the historic distribution of phonemes allows each speaker to read his own pronunciation into /drawing-bowrd/ or /diwti/. These words have each a single underlying representation. The phonetic realization in any accent can be predicted by the rules for that accent.

2.2 Traditional pronunciation preferable

A few words have variants that can not be predicted by phonetic rules and require more than one underlying representation. The traditional pronunciation — that which preserves the rimes, metre, alliteration, and puns of English literature — may be the most acceptable basis for an orthography.

Examples:

But she was up to sleek her *clothes*,
And would be sweet as any *rose*.

—Thomas Churchyard "Old Time Service", 1575

Wave Munich! all thy banners wave,
And *charge* with all thy *chivalry*!
—Thomas Campbell "Hohenlinden"

3 CONSONANTS AND SEMICONSONANTS

3.1 Consonant miscellany

3.11 Some speakers pronounce [p] following the /m/ in the consonant clusters of /emti, pumkin, camfr, wormθ, semstris, re'demsian/ <empty, pumpkin, campfor, warmth, seamstress, redemption>. This [p] is redundant in a phonemic transcription that distinguishes the close juncture in /*hamsted/ <Hampstead> and the open juncture in /howm-sted/ <homestead>.

3.12 Except following a pause, /t/ and /d/ followed weakly stressed and without a pause by any syllabic except /n/, regardless of juncture, are not contrasted in the speech of many Americans. Tho they pronounce /pating/ <patting> and /pading /<padding> alike, these Americans do contrast /pats/ and /padz/<pads>. Therefore an orthography that does not distinguish /pating/ and /pading/ would be no simpler for Americans, while it would be much less satisfactory for other speakers of English.

3.13 Most accents contrast /nc/ in /benc/ <bench> and /nsi/ before a weakly-stressed syllabic in /rezi'densial/ <residential>.

3.14 Variation between /θ/ and /ð/ is heard in <brothel, beneath, booth, forthwith, therewith, though, smithy, herewith, logarithm(ic), rhythm(ic), wreath, with, withe, withdraw, withstand, withhold, within, withal, without>. The normal developments, recommended for the orthography, are:

/broðil, bi'niið, bwwð, fowrθ'wiθ, ðeir'wiθ, ðow, smiði, hiir'wiθ, loga(')riθ)m(ik), riθm(ik), riið, wiθ, wiθ, wiθ'draw, wiθ'stand, wiθ'howld, wið'in, wið'awl, wið'uwł/.

3.15 In a few words pronunciation varies between historic /z/ and irregular [s]. For an orthography /z/ is recommended in /pro'fiwz, blwuz, benizn, baizan, di'fiwz, di'zern, keizmant, kon'saiz, kum'parizn, griizi, garizn, spuuz, sakrifaiuz, sa'faiz, venzn, veiz, huzi, huzif, liiz, liizing, izoleit, o'biiz, o'beziti, orizn/ <profuse, blouse, benison, bison, diffuse (adj), discern, casement, concise, greasy, garrison, spouse, sacrifice, suffice, venison, vase, hussy, housewife, lease "glean", leasing "lie", isolate, obese, obesity, orison>, and always in the endings of /verbowz, ver'boziti/ <verbose, verbosity> and — after a vowel, /w/, or /i/ — in the endings of /i'liwziv, i'liwzori/ <illusive, illusory>.

3.2 [z] and [j]: origins

3.21 The distribution of the sound [z] is very different from that of /v. ð, z/, suggesting that [z] is not an independent phoneme. The parallel between /feil: feilir/ and [klowz: klowzr] points to /zi/ as the phoneme sequence underlying phonetic [z] in [klowzr]. This analysis is supported by the absence in many accents of phonetic [zi] before weakly-stressed syllabics, and when [zi] does appear in this context it is always in free variation with [z].

3.22 The sound [z] in [dzudz] <judge> cannot, however, be analysed as /z/ because phonetic [zi] does appear before stressed syllabics and finally:— /pre'ziwm, deizi/ <presume, daisy>. But these instances of [z] are part of the phonetic cluster [dz], which has a distribution similar to /b, d, g/ and will be defined as a unit phoneme /j/.

3.23 Most Scots and some northern English contrast /vejɹ/ <verger> and /verdir/ <verdure>, with non-syllabic [di] in the latter. Those accents with phonetic [dz] in <verdure> have phonetic [di] before a weakly-stressed syllabic only in free variation with [dz]. It will be assumed, therefore, that the underlying representation is always /di/, not /j/, when the Scottish pronunciation is [di]. In practice the traditional orthography is a trustworthy guide, underlying /j/ always corresponding to <j, g, dg,> except in the word <soldier>, which is always /sowjɹ, sojɹ, sowljɹ/.

3.24 The distribution and analysis of [j] is closely parallel to [3]. The word [prejɹ] is analysed as

/presir/, [tʃ] in [tʃip] <chip> is defined as a unit phoneme /c/. Those accents which contrast /verjr verdir/ do not rime /tiicr: fiitir/ <teacher: feature>, pronouncing non-syllabic [tʃ] in <feature>, while in other accents an underlying /ti/ is a second source of phonetic [tʃ]. Some Irish have [tʃ] from /ti/ before syllabics with primary stress, as in <Tuesday, tulip>.

3.25 There remain many instances of [ʃ] that do not follow [t] and do not precede a weakly-stressed syllabic. Consider however that while there is no case of initial /zb, zd, zg/, initial /sp, st, sk/ are quite normal, and the common appearance of [ʃ] in positions where native words have no corresponding [z] suggests the realization of /s/ plus a voiceless non-fricative consonant (fricatives such as /f, θ/ only sporadically following /s/). The only voiceless non-fricative consonant not otherwise attested after /s/ is /c/. Therefore <fish, ship, English> will be analysed as /fisc, scip, inglisc/.

3.26 By analogy <beige, zho> can be analysed as /beizj, zjow/. A voiced fricative consonant followed with close juncture by a consonant is not normal, but then <beige, zho> are phonologically exceptional words in English.

3.27 Americans, New Zealanders, and a few English have phonologic /zi/ (phonetic [z]) rather than the normal /si/ (phonetic [ʃ] in <version, excursion, Persia>, and most other Latin words with presyllabic <rsi>, but not in <controversial>, nor in <inertia> and other words with <rti>.

Note: Formerly these pronunciations with [z] were a feature of Scottish English (Walker, 1791).

3.3 /h/

3.31 Palatal and velar fricatives, the <ch> in Scottish <briht, loch>, can be assigned to the /h/ phoneme: /briht, loh/.

3.32 Presyllabic /hw/ and /w/, as in /hwet/ <whet> and /wet/, are contrasted by Scots, Irish, most Americans, and some northern English and New Zealanders.

Note: <Whelk> is /welk/ for "snail" but /hwelk/ for "pustule".

3.33 Every non-Germanic <h> was at first silent in words borrowed from French. Several words from other sources also have spurious <h> in the traditional spelling.

The historic pronunciation of many such words is still common, particularly in Ireland and the southeastern United States.

Examples:

/postiwmos/	posthumous	/omij/	homage
/eg'zeil/	exhale	/onist/	honest
/eg'zort/	exhort	/onr/	honour
/*elin/	Helen	/umbl/	humble
/erb/	herb	/umbl'pai/	humble-pie
/ermit/	hermit	(but /humbl-bii/)	
/eritij/	heritage	/umblz/	humbles
/eir/	heir	/uwr/	hour
/owboi/	hautboy	/iwmid/	humid
/o'tel/	hotel	/iwmr/	humour
/oslr/	hostler	/eic/	"H" (the letter)

3.4 /r/

Underlying /r/ is in all contexts phonetically significant in the accents of Scotland, Ireland, most of America, part of Wales, and southwest England and parts of the north. A few words have <r> in the traditional spelling but not the traditional pronunciation:

/*cesi/	Chertsey	/*Mawlburo/	Marlborough
/*keis'awtn/	Carshalton	/*wwstr/	Worcester
/gawmles/	gormless	/(*)wwsted/	Worstead, worsted
/fowksl/	forecastle	/welsc rabit/	Welsh rarebit

/*sisitr/	Cirencester	/awnt ai/	aren't I
/misis/	Mrs	/u/	er
/mawm/	marm		

4 STRONGLY-STRESSED SYLLABICS

4.1 /ir, er, ur/

The contrast of strongly-stressed or pretonic /i, e, u/ before non-presyllabic /r/, as in /gird, serf, surf/ is preserved by most Irish and Scots and a few northern English. But as with the rest of the language the traditional spelling is a poor guide to the traditional pronunciation. A Dubliner pronounces <first birth> as /furst berθ/ and indeed Shakespeare rimed <first> with <accurst> and <birth> with <earth>.

Note 1: In some Irish speech, like 18th-century English speech (Walker, 1791), every non-presyllabic /ir/ coalesces with /er/.

Note 2: Some Scots substitute spelling pronunciations.

Examples:

/ber / <birth>, /burd, burc, *burn/ <Byrne, Byron>, /twurl, durt, durk, durj, kirk, kun'ferm, kurb/ <curb, kerb>, /gird, girdl, girldr, gerθ, gerl, cirp, flurt, ferk, ferkin, ferm/ (adjective), /fur/ <fir, fur>, /furθ, *furθ, furst, furm (noun), /furmament, vertiw, verj, verjin, θurti, θurtiin, θurd, θurst(i), spurt, stur, skirt, skermise, skwurt, scurt, smerk, smurc, sirkit, sur, surneim, surloin, swurl, hwurl, hur/ <her>, /mir/<myrrh>, /merθ, murtl, murk/ (but in Scotland /mirk/ when a dog's name), /irk/.

4.2 /aw/

4.21 In most accents /aw/ before /f, v, m/ and, in some accents, before /n/ followed by a consonant has different allophones from that in other positions. But there is no difficulty in grouping as one phoneme cluster the syllabics of /saw, hawnt, hawf, sawv, kawm/ <saw, haunt, half, salve, calm>. Because the allophones of /aw/ are most commonly described phonetically as "pure vowels" it may be wondered why they are here analysed as the phonetic realization of a heterogeneous cluster. A phonologic cluster /aw/ is the underlying representation from which the various allophones can be most economically derived. Speakers of General American derive [kaf, haf] from /kawf, hawf/ with complete regularity. Moreover, in the southeastern United States the value of <aw> in <saw> is phonetically a diphthong ending in [w].

Note: Some New Englanders rime /grawnt: hawnt/ <grant: haunt>, with the syllabic of /kawm/ <calm> in both words. Londoners, however, contrast the syllabics of these words, the result of either a spelling pronunciation or accent mixing. In most other accents the syllabics of these two words contrast for a different reason, discussed in §4.23.

4.22 The contrast of /a/ and /aw/ before /f, v, m/, as in /laf: hawf, hav: hawv, kam: kawm/ <laugh: half, have: halve, cam: calm>, is familiar to most northern English and some New Englanders. This contrast is preserved before /v, in/ by Australians, New Zealanders, and most English and New Englanders.

Examples:

/kawf/	calf	/sawv/	salve "ointment"
/*cawfant/	Chalfont	/pawm/	palm
/kawv/	calve	/*mawmzberi/	Malmesbury
/*kawvr/	Calver	/awmand/	almond

4.23 <Dance, command, grant, sample>, and many similar words have each two pronunciations arising from variation in Old French. From Parisian Old French come /dans, ka'mand, grant, sampl/, the forms traditionally favoured by poets (who often rime <command> with <hand> and <land>) and today by far the most wide-spread pronunciation. From Norman Old French come /dawns, ka'mawnd, gawnt, sawmpl/, which are largely limited to southern England, New England, and New Zealand.

4.3 /ɑ/

There is no "Italian" <a> phoneme common to most varieties of English. This sound is very common in London English, but everywhere it is either lengthening of /a/ before open juncture, or before /f, θ, s, r/ — except /sc/ — regularly if a closed syllabic and exceptionally if an open syllabic, or the special development of /aw/ before /f, v, m/, or before /n/ followed by a consonant, or a recent borrowing or new formation. In a description of London English it is better to list exceptional forms than to postulate a phonematic contrast of such limited distribution. When occurring in exceptional phonetic contexts in recent borrowings and new formations [ɑ] is identified with /ar/ or /a+/ — despite no morpheme boundary — by some English, with /a/ by some Scots, and with /o/ by most Americans. These words that may have [ɑ] always have an alternative pronunciation with /a/, /ei/, or /aw/. Thus <khaki, tomato, Chicago> may be /kaki, ta'meito, *sci'kawgo/, as indeed they commonly are in American speech. <Prague, drama, vase, Marham, armada> are traditionally /*preig, drama, veiz, *maram, ar'meida/.

4.4 Syllabic miscellany

4.41 In the 17th century Standard English /wa/ became /wo/ except before /k, g, nk, ng, w, i/ and — sporadically — labial consonants.

Note: Non-presyllabic <a>, as in <wall, walk>, became /awl/ in the 14th or 15th century and was not affected by the above development. Then /wawl/ became /wawk/ in the 16th century. (Dobson, 1968)

Examples:

/wosc/	wash	/woz/	was	/swomp/	swamp
/wor/	war	/waft/		/word/	ward
/worant/	warrant				
<i>but</i>					
/wapnteik/		/swank/		/waks/	
/twang/		/wag/		/wawl/	
/wain/	wine	/swam/			

4.42 The contrast of /o/ and /ow/ before non-presyllabic /r/, as in /hors: howrs/ <horse: hoarse>, is preserved in Scotland and Ireland and parts of England and America.

4.43 Both /o/ and /u/ are heard, /o/ being older, in /nongr, mongril, a'mong, won/ <one>, /wons, non/ <none>, /nothing/.

4.44 The traditional orthography often represents /u/ by <o>, particularly next to <m, n, v, w>. In Middle English this practice was partly French scribal tradition and partly to improve the legibility of medieval script. The ambiguous spelling is responsible for variation between /u/ or /w/ and unhistoric /o/ in many words.

Note: In words Old French inherited from Vulgar Latin <o> before /m, n/ always represents /u/. (Pope, 1952) Thus the Scotch and American pronunciation of <constable> with /o/ cannot be historic and must be a spelling pronunciation or a case of prefix substitution.

Examples,

/*bwlingbrwwk/	Bolingbroke	/suvrin/	sovereign
/dunki/	donkey	/huvr/	hover
/(a')kumplis/	(ac)complice	/*lumbrd/	Lombard
/kumbat/	combat	/*rumfrd/	Romford
/kundit/	conduit	/*rumni/	Romney
/kunstabl/	constable	/wunt/	wont
/jusl/	jostle	/akumplisc/	accomplish

4.45 Non-initial /ww/ is often realized as [w] by southern English and a few Americans before /m/, by Americans before /f/, and by both before /k/. But <ww> is recommended for the spelling of /rwwm, hwwf, bwwk/ <room, hoof, book>, and all other words in which pronunciation varies between /ww/ and /w/.

Note: Most Scots and northern Irish do not contrast non-initial /ww/ and /w/, pronouncing /fwwl/ <fool> and /fwl/ <full> alike.

4.46 Pronunciation varies between /wwr/ and /owr/ (or /iwr/ and /iowr/) in many words spelt <our, oor, (ur, eur)>, and in <More, sure, whore, (your)>. The pronunciation /wwr (iwr)/ is still common in all these words except /dowr, kowrt, flowr, fowr(E), fowrtiin(o), sowrs/.

Note: <Tourney, tournament, courteous, courtesy, courtesan, journey> do not belong here and are traditionally /turni, turnamant, kurtios, kurtsi, kurti'zan, jurni/.

Examples,

/piwr/	pure	/gwwrd/	gourd
/pwwr/	poor, pour	/scwwr/	sure
/bwwrn/	boorn(e)	/mwwrn/	mourn
/*bwwrnmuθ/	Bournemouth	/hwwr/	whore
/twwr/	tour	/iwr/	your
/kwwrs/	course	/*iwrop/	Europe

4.47 Except in the combinative development of /tiw, diw, siw, ziw/ (§3.2), /iw/ is in all positions preserved as a diphthong by the Welsh, some New Englanders, and a few English. They contrast, for example, /iw/ and /ww/ in /ciw: scww, θriw: θrww/ <chew: shoe, threw: through>.

4.5 More miscellany

4.51 Many Americans identify /i/ with /ii/, /e/ with /ei/, and /o/ with /aw/ when /g, nk, ng/ or presyllabic /r/ follows. Thus they rime /big: liig, eg: veig, moral: awral/.

4.52 Some Americans also raise /a/ before presyllabic /r/ to coalesce with /e/ and /ei/, pronouncing /meri: meiri: mari/ <merry: Mary: marry> alike.

4.53 The identification of /o/ with /aw/ before /f, θ, s/ regularly if a closed syllabic and sporadically if an open syllabic is now largely limited to Cockney and most Irish and American speech. Whatever the pronunciation, the vowel in /soft, moθ, lost/ is served well by the traditional spelling.

4.54 Many Scots, Northern Irish, and certain Americans (western Pennsylvania and increasingly elsewhere) never contrast /o: aw/, pronouncing /kot/ <cot> and /kawt/ <caught> alike.

4.55 Many northern English do not contrast /w: u/, pronouncing /kwd/ <could> and /kud/ <cut> alike.

4.6 Syllables in endings

4.61 The suffix <ari, ary> is /eiri in /lai'breirian, sekre'teerial, sente'neirian/ <librarian, secretarial, centenarian>. Generally when final, as in <library, secretary, centenary>, the pronunciation varies with accent but in a morphophonemic analysis the underlying representation will be /eiri/ — /laibreiri, sekreteiri, senteneiri/.

4.62 Secondary stress, preserved in some accents, shows the underlying representation of the endings <ery, bury> to be /eri, beri/, as in /semeteri, *scrowzberi/ <cemetery, Shrewsbury>.

4.63 Shakespeare rimed <oratory: story> (Rape of Lucrece), and the endings <ory, mony, ative> are still /owri, mowni, eitiv/ in American speech when the preceding syllabic is weakly stressed.

Examples:

/dormitowri/	dormitory	/oratowri/	oratory
/testimowni	testimony	/seremowni/	ceremony
/matrimowni/	matrimony	/lejisleitiv/	legislative

5 WEAKLY-STRESSED SYLLABLES

5.1 /m, n, ɪ, r/

Some accents contrast syllabic and non-syllabic /n, l/, but not /m, r/. Note that the traditional orthography is no guide to the distribution of syllabic /n,

Examples:

/kitn:mitin/	kitten:mitten	/batn:patn/	batten:patten
/hevn:levin/	heaven:leaven	/metl:petal/	metal:petal
/θimbl:simbol/	thimble:symbol	/devl:levil/	devil:level
/prizm/	prism	/bwwzm/	bosom
/sentr/	centre	/betr/	better

5.2 [ə] from [ɪ]

For many Irish, Americans, and Australians the central syllabic is often the phonetic realization of weakly-stressed

/i/ followed with close juncture by a non-syllabic.

Examples: /teribl, sertin, sudin, markit, kurij, kurtin, kwscin, minit, letis, biznis, busiz, bwsciz, linin/

5.3 The traditional pronunciation of posttonic <ile> in Latin and Romance words is still preferred by most Americans. This ending under secondary or weak stress is always /il/ except in /krokodail, jentail, siinail, iidail/ <crocodile, gentile, senile, aedile>, assuming that /ail/ has primary stress in /rekun'sail, eg'zail/ <reconcile, exile>.

6 STRESS, COMPOUNDS

6.1 Stress levels

It is necessary to distinguish 2 levels of strong stress primary and secondary — as in the end syllables of /e'vent, sam-pan/. It is proposed that /' be the sign of primary stress, and /- the sign of secondary. The sign precedes the stress. In practice it is not necessary to show primary stress if it occurs on the first syllable and not again in the word. Secondary stress need not be shown when on the first syllable. The sign /+ signifies internal open juncture and is generally only necessary when weak stress follows.

Examples: /silw'et, film-land, ko'ordineit, ko-ordi'neisian, 'hawf'hartid, sing+r/

6.2 The traditional orthography is quite arbitrary in the selection of words written as compounds. It is proposed that all combinations with a reduced time interval between elements be written as compounds. Thus <long island> will be /long ailand/, but <Long Island> will be /*long'ailand/.

7 THE SYMBOLS

7.1 Uppercase mediaeval

7.11 The distinction of uppercase and lowercase arose in the Middle Ages when scribes reserved the capitals for the beginning of important words. This practice is continued more because of tradition than utility. It is a needless extra burden for children and for typists and should be dropped.

7.12 In experiments testing reading speed, M A Tinker (1965) found that text set in all-capitals is read about 14 per cent slower than the same text in Roman lowercase. Italics were read about 5 per cent slower than Roman lowercase, while no difference was found between the reading speed of boldface and ordinary lowercase. The conclusion for orthography reform is that lowercase — ordinary and boldface — should alone be used. As a substitute for italics, the typographer has a choice of boldface, letterspacing, ordinary lowercase in a bigger size, angle brackets, and underlining.

7.2 <th>

The traditional orthography uses <th> for 8 different values in <this, thing, thyme, hothouse, eighth, clothes>, and the traditional pronunciation of <Rotherhithe>, which are better spelt: /ðis (ddis), θing (thing), taim, hot-huws, eitθ, (eitth), klowz, *redrif/.

Note 1: The letters <θ, ð>, from Greek and Old English, are used with these values in the International Phonetic Alphabet. The digraph <dd> is familiar in Welsh names such as <Rhondda>.

Note 2: Formerly <Rotherhithe> was often spelt <Redriff(e)>. These spellings are now standard in the names of 2 roads in London.)

7.3 <wh, quh>

The Old English spelling <hw> accurately describes the pronunciation of many today. <Wh> arose in Middle English by graphic analogy with <th, sh, ch>. <Wh> and Scottish <quh> were never intelligent spellings and should be dropped.

Examples:

/hwain/ whine /hwet/ whet /hwiil/ wheel

/hweil/ whale /*bal'hwidr/ Balquhiddir

but

/*ka'hwn/ Colquhoun

7.4 Punctuation

English punctuation is a much later development than the traditional spelling and is in most respects entirely satisfactory. However, the following new conventions are proposed.

- The sign <*> will be optional before proper names: /*lundan, *jon/.
- The sign <=> will be used at the end of a line to *continue a word on the next.
- The punctuation mark that ends a sentence will also begin it.
- The sign <?> should begin and end only sentences ending with a rising tone. For example, the question /?wil iw hav tii or kofi?! (ending with a rising tone) does not assume the listener will have either, and is different in meaning from the question /.wil iw have tii or kofi./ (ending with a falling tone), which assumes the listener will have one or the other.
- Contractions need no special symbol, though they often show internal open juncture: /ai+I/ <l'11>, /ðei+r/ <they're>, /kwdnt/<couldn't>.
- The sign <+> can also indicate letters omitted in standard abbreviations: /m+/ <Mr.>, /k+/ <Co.>.
- Latin abbreviations and initials might be replaced by English words and phrases: /neimii/ <viz.>, /ðat iz/ <i.e.>, /for eg'zaml/ <e.g.>

7.5 Word signs

It is not desirable that the orthographic representation of <the> and <to> should vary with pronunciation, and for brevity as well — the word signs /ð, t/ are proposed.

8 PHONEME NAMES

Consonants

p	pawm	b	burc	t	tww	d	dei	m	man	n	niid	l	leik	r	rowd
k	kandl	g	gift	c	θ	j	jib	w	wwlf	i	iiir				
f	fisc	v	viksn	θ	cin		eð	<i>Vowels</i>							
s	sun	z	zebra	h	θorn			e	elk	a	apl	o	orinj	u	unkl
					heil										

Semiconsonants

9 REFERENCES

- Chomsky, Noam, and Morris Halle, 1968, *"The Sound Pattern of English"*, Harper & Row, New York.
- Dobson, Eric John, 1968, *"English Pronunciation 1500–1700"*, 2nd ed., Oxford University Press.
- Harris, Zellig S., 1951, *"Structural Linguistics"*, University of Chicago Press.
- Pope, Mildred Katharine, 1952, *"From Latin to Modern French with Especial Consideration of Anglo-Norman"*, 2nd ed., Manchester University Press.
- Tinker, Miles Albert 1965, *"Bases for Effective Reading"*, University of Minnesota Press, Minneapolis, and Oxford University Press.
- Walker, John, 1791, "A Critical Pronouncing Dictionary", London.

10 SPECIMENS

1 .3 waiz men ov *gowtm
went t sii in a bowl:
and if ð bowl had bin strongr,
mai song had bin longr.

2 .orinjiz and lemanz,
sei ð belz ov *sint'klemants.

.iw ow mii 5 farðingz,
sei ð belz ov *sint'martinz.

.hwen wil iw pei mii,
sei ð belz ov *owld'beili.

.hwen ai grow ric,
sci ð belz ov *scowrdic.

.hwen wil ðat bij,
sci ð belz ov *stepni.

.aim scwwr ai downt now,
sez ð greit bel at *bow.

.hiir kumz a kandl t lait iw t bed,
hiir kumz a copr t cop of iwr hed.

3 ."ð taim haz kum", ð wawlras sed,
"t tawk ov meni ðingz:
ov scwwz — and scips — and siiling-waks —
ov kabijiz — and kingz —
and hwai ð sii iz boiling hot —
and hweðr pigz hav wingz".
— *liwis karal

4 ."a fo'netik speling wwd dww muc t stedi ð inglisc langwij in ðis tem'pestiwos steij in its historic
spowkn az it nuw iz bai hundridz ov milianz awl owvr ð wurld."
—*arθr loyd jeimz

6. The Mont Follick Library

Chris Upward

Professor N. E. Collinge of the Department of General Linguistics, The University, Manchester M13 9PL, has kindly supplied an updated list of holdings on orthography in the above library, along with the following information.

The Mont Follick Library is housed within the Department of General Linguistics, Faculty of Arts, University of Manchester. It contains materials on all aspects of linguistics intended for the use of registered researchers (staff and graduates) in the University. One section is devoted to orthography and is particularly rich in works on spelling problems and reform; it has been augmented by deposit of materials by the Simplified Spelling Society and others. This section may be consulted by serious students of the subject, by prior arrangement with the Mont Follick Professor or with the staff Librarian of the Department.

The library was founded in 1963 as a resource centre for staff and postgraduate students in the Department of General Linguistics, a department which had then taken on the responsibility for including in its work the furtherance of the understanding of the written aspect of language. The Mont Follick fund provided then, and has continued to provide, for the upkeep of this library and an effort has been made in recent years to maintain a separately stored and catalogued body of material on orthography and spelling reform.

The list of holdings is subdivided as follows:

I Orthography section:

- (a) books and monographs
- (b) papers and bulletins
- (c) microfiche material

II Simplified Spelling Society collection:

- (a) books and manuals
- (b) SSS pamphlet series
- (c) miscellaneous publications
- (d) miscellaneous deposits.

7. Heterographs in English

Christopher Upward

It is often assumed that in a rational orthography all homophones would be spelt alike. However this view is also challenged, both because homographs might be confused, and because the public is expected to be hostile to the resulting mergers. This article attempts to establish just how far-reaching the phenomenon of heterographs is in English.

1 THE NATURE OF THE PROBLEM

1.1 Homo- & heterographs, heterophones

The vocabulary of English contains many sets of more or less distinct words with more or less the same form. One cannot say exactly how many exist, but by the most conservative count there are well over a thousand, while the broadest definition might embrace many thousands. The phenomenon is complex because words overlap in several ways, as described by the terms: homophone (same sound), homonym, homograph, heterograph (different spelling), heterophone; their usage however is often inconsistent and therefore ambiguous. There are three kinds of overlap between words: firstly, sets such as the verb, noun and *adjective tender (to tender one's resignation, a locomotive tender, tender feelings)* in which spelling and pronunciation both coincide; secondly, sets like *pair: pare: pear*, which are pronounced the same despite different spellings; thirdly, a dog's *lead* and the metal *lead*, which are pronounced differently despite their identical spelling. In this article the terms are used follows:

pair, pare, pear	= Heterographs	= Homophones
tender x 3	= Homonyms	= Homophones , Homographs
lead x 2	= Heterophones	= Homographs

1.2 One grapheme for one sound?

Although homonyms like *tender* are inherently ambiguous, they are not generally considered a spelling problem as the grammatical and semantic context usually makes the meaning plain. On the other hand heterophones and heterographs are felt to epitomize the defects of t.o., conflicting as they do with the basic alphabetic principle of one-to-one correspondence between sound and spelling.]But while English has rather few heterophones, and most could readily be given distinctive spellings (e.g. *lead: led*), there are so many heterographs that to give all words in a set the same spelling would add massively to the ambiguity of written English.

1.3 Conflicting needs of readers, writers

Here the needs of writers and skilled readers may conflict. For writers it is convenient to derive spelling from pronunciation (which native speakers at least can usually recall at will), but it is inconvenient for them to have to recall and distinguish different spellings for homophones according to meaning or grammatical function. For the skilled reader, on the other hand, who does not derive the pronunciation from the letters but recognizes the global appearance or gestalt of words, it may be useful if meaning, rather than the pronunciation, is immediately apparent.

1.4 How much danger of ambiguity?

It is often said that since we rarely confuse homonyms in speech, the danger of confusing them in writing must be equally small. However there are differences in how speech and writing are perceived which cast doubt on this assumption. For while the hearer registers tone of voice, gesture, facial expression and other audible and visible signals which clarify the message, the reader lacks these aids. Furthermore, speech is more likely to provide a context, which in writing

may be largely absent, as on signboards and in headlines. Misunderstanding may be unlikely if only one word in a text is ambiguous, but when two or more are, the risk is greater. In a recent headline, *CHECK ON RACE FOR TEACHERS*, the meaning is obscured by two ambiguous words, *check* and *race*; but if the headline had read *delay on race for teachers* or *check on racism for teachers*, the meaning would have been clear. Significantly multiplying the ambiguous written forms in English by merging the spelling of all heterographs (including such crucial sets as *one: won, to: too: two, for: fore: four*) would increase the chance of misunderstanding substantially, indeed exponentially. An extreme instance of the confusion that might occur is Addison's objection to the proliferation of that: *That that I say is this: "that that that that gentleman has advanced, is not that, that he should have proved... [1]* (not that writers would find it easy to make a choice of spellings for different uses of *that*). We should perhaps cautiously conclude that the similar difficulty writers now experience in distinguishing *their: there* may be an argument for merging those heterographs that are particularly prone to confusion, but that does not mean that an across-the-board merger of every set of heterographs would not seriously reduce the transparency of written language as a whole.

1.5 Other languages

Other European languages have more consistent orthographies than English, and it is natural to ask if they therefore confuse homonyms. Typically however they distinguish parts of speech and grammatical functions by means of inflections; thus while in English *a march: to march* are perhaps homonyms (or even the 'same' word), French *la marche: marcher*, German *der Marsch: marschieren*, Spanish *marcha: marchar* are quite distinct both in speech and writing. Ambiguity is further reduced in writing, in French by a fairly regular system of often silent inflections and in German by capitalizing nouns. However the few spelling distinctions based on grammar in t.o. are found decidedly unhelpful: such pairs as *practice: practise, dependent: dependent* are notorious spelling traps. This does not however mean that a system of such distinctions, regularly applied across the language, might not usefully minimize the ambiguity of homophones; Chris Jolly is now exploring this idea. Also relevant are perhaps Chinese and Japanese [2], in which homophones abound, indeed it has been stated that these prevent the conversion of those languages to the roman alphabet, since readers would then be unable to distinguish the many homonyms. Homophones may be far fewer in English, but we cannot pretend the potential for such confusion does not exist.

2 WHICH WORDS ARE HETEROGRAPHS?

2.1 Homonyms

Drawing partly on F R Palmer's [3] analysis, we note several kinds of homonym. The noun *flight*, for instance, has different, though related, meanings; *fire* may function as noun, verb or adjective, though derivation and meaning are, crudely speaking, the same; while *tender* represents three unrelated words. In none of these cases is it thought desirable to introduce spelling distinctions.

2.2 Heterographs

The above categories of homonym are paralleled among heterographs. A few, like *practice: practise*, as we saw, make unhelpful grammatical distinctions and by analogy with *fire* could well become homonyms. A few, like *flour: flower*, have a common derivation and meanings which are perhaps as closely related as the meanings of *flight*; yet their written forms have become firmly differentiated. Merging their spellings again might be initially confusing if either word were to take the form of the other, a consideration which applies with greater force to the many quite unrelated heterographs like *pair: pare: pear*. On the one hand, the analogy of *tender* shows that separate words with the same spelling need not, by themselves, confuse; but on the other hand, if all three words adopted one of the existing forms, readers might at least initially be disoriented (e.g. *pair this pair of pairs*); a new form like *per* for all three might lessen the risk of such confusion.

2.3 Word-boundaries

Another source of uncertainty is the variety of ways in which words may join together in English, sometimes giving homophones which do not exist if the base words are taken in isolation. Thus, are *car-key* and *khaki* homophones, and if so, should they be spelt the same? However, whatever curiosity-value such specimens have, their implications for spelling reform are probably slight, since existing word-boundaries clearly distinguish most such pairs, and (with the exception of Harry Lindgren's Phonetic B [4]) reformers are not proposing a systematic revision in this area. (But see §2.5 for the problem of apostrophes as word-boundary markers.) Nevertheless, in compiling the list of heterographs, some doubtful cases had to be considered — whether for example *mistle* (which occurs only in the fixed expressions *mistle thrush*, *mistletoe*) should be listed as a heterograph of *missal:US missile*, or *wych* in *wych-elm* as a heterograph of *which: witch*.

2.4 Morpheme boundaries

(For some observations in §2.4, 2.5 I am indebted to Dr Adam Brown at Aston University.) Morpheme boundaries may also make us hesitate before deciding two words are heterographs. Thus there are sets ending in <r> in which one word is a base-word and the other a base plus suffix <r> (e.g. *lair: layer*, *sear: seer*, *hire: higher*, *coir: coyer*). In fact so productive is this suffix that more doubtful cases may readily be invented: *cure: queuer*, *pair: payer*. Similar pairs occur with other inflections: with past-tense <-d> *mowed: mode*, *based: baste*; with the <s> inflection *laps: lapse*, *ads: adze*; and <-ing> produces uncertainty after /l/, as with *pedalling: peddling* (does *pedalling* contain an extra syllable represented by the <a>, or are the two words heterographs, like *pedal: peddle*?). Even the <-ble> suffix permits an invented heterograph in *cannable: cannibal*. Whether or not such pairs would merge in a spelling reform depends partly on what morphophonemes are used for suffixes, and partly on the phonemic analysis of the forms concerned; thus if past tenses were formed with <d>, but the t.o. <s> inflections were respelt <z>, there would be no merger of *based: baste* or *laps: lapse*.

2.5 Heterographs with apostrophe in t.o.

If we are concerned with heterographs because of the problems they cause users, we cannot ignore the apostrophe, whose correct use in t.o. requires quite subtle analysis. Apostrophes often confuse patterns of word- or morpheme-boundary, and heterographs can make this confusion worse confounded.

2.5.1 Omission + word-boundary

A common use of apostrophes is exemplified by the pair *its: it's*, which (perhaps particularly because of the high frequency of both words [5] and because users may feel its requires an apostrophe as a possessive) are often confused. The apostrophe in *it's* marks omission both of the <i> in *is* and of the word-boundary. So is *it's* one word or two? The widespread confusion of *it's: its* perhaps shows that this apostrophe is as unnecessary a grammatical distinction as that between *practice: practise*. Among heterographs of this type, *they're: their: there* are open to similar confusion (they too occur very frequently); but we also note the following: *he'd: heed*, *he'll: heel*, *I'd: eyed*, *I'll: aisle: isle*, *we'd: weed*, *we'll: weal: wheel*, *we're: weir*, *we've: weave*, *who'd: hood* (Scots), *who's: whose*, *you'll: yule*. All these contractions arise from the junction of a pronoun and a verb such as *are*, *is*, *will*, *would*. We may here also mention the archaic contraction of *it* as 't, which gave rise to the heterographs 'twill: twill.

2.5.2 Negative contractions

At first sight similar, but additionally confusing for subtly different reasons, are forms like *isn't*. Here the apostrophe indicates omission of <o> in *not*, but the word-boundary lies elsewhere — if anywhere. In *isn't*, *couldn't*, *hadn't*, *aren't* the word-boundary precedes the <n>, but in *can't*, *shan't*, *don't* it has been disguised by other omissions (not indicated by apostrophe) and/or by changed

pronunciation, while *won't* changes both spelling and pronunciation of the full form. The false analogy of the *it's* type, in which omission and word-boundary coincide, no doubt partly explains common misspellings like *would'nt*. Possible heterographs arising here are *aren't*: *aunt* (non-rhotic speech only), *can't*: *cant* (US etc), *won't*: *wont*.

2.5.3 Apostrophe with <s>

Apostrophes are frequently associated with <s>, sometimes functioning as morpheme-boundary markers and sometimes not. Many writers fail to distinguish plural <s>, singular possessive <'s> and plural possessive <'s>, though words whose base ends in <s> (*Moses'*) or which have an irregular plural (*children's*) may show other variations. In addition, we have already noted in §2.5.1 that the verb *is* can contract to 's, marking not possession but a word-boundary, and producing the heterographs *theirs*: *there's*, *who's*: *whose*, *wise*: *why's*... If every such <s> form counts as a heterograph, the number is almost unlimited, because every noun taking such endings then spawns a set. Such sets are excluded from the list, but <s> forms that are homophonous with other words (e.g. *raise*: *rays*) are included. The past-tense morpheme <d> may also take an apostrophe, as in *ski'd*, *fee'd*; of these, *ski'd*: *skid* are not heterographs because not homophonous, but *fee'd*:*feed* are.

2.6 Variation in pronunciation

Accent differences mean that many sets are heterographs for some speakers but not for others. The rhotic:non-rhotic divide (between those who always pronounce <r> and those who do so only before a vowel) is a major source of such discrepancies, and is discussed in §2.7. Other cases abound, but are mostly confined to smaller speech-communities (see John Wells [6]). However, within an individual's speech too pronunciation often varies according to context (see David Brazil [7]), and a number of heterographs listed in §4 (e.g. *precede*:*proceed*) are only so in some contexts. We have included sets like *shore*: *sure* and those with initial <w, wh> (*wail*: *whale*), although some speakers distinguish them. In general we have tried only to include sets that are homophonous in General American or RP. Variation in pronunciation means that while merging a set of heterographs may often be sensible, sometimes it may actually distort potentially phonographic t.o. spellings. If therefore criteria are sought for limiting mergers, one might rule out spelling changes which produce forms that are less phonographic than t.o. for any group of speakers.

2.7 Heterographs with and without <r>

For non-rhotic speakers some 54 sets constitute heterographs which for rhotic speakers are not so. These sets (listed here) are excluded from the main list because there is wide agreement that <r> should be kept in any reformed orthography where it occurs in t.o. (though may be simplified). However if sets contain more than two heterographs, those constituting a set for both rhotic and non-rhotic speakers are also given as such in the main list.

2.7.1 Closed syllables

alms:arms	caw -s d ing.-core -s d ing:corps	pawn:porn
aren't:aunt	colonel:kernel -s	rabbit:rarebit -s
auk:orc -s	farther:father	sauce:source
balmy:barmy -ier	fort:fought	sawed:soared:sword
bawd-s:board -s:bored	ion:iron -s	sort:sought
calve:carve -s d ing	larva:lava:laver	stalk:stork -s
caught:court	laud:lord -s d ing	talk:torque
calk/caulk.-cork -s d ing	pause.-pores	taut:,taught:tort
cause:caws:cores	pause:paws:pores:pours	

2.7.2 Full vowel in open syllable

awe:oar:or:ore	gnaw:nor	raw:roar
ayah:ire	haw -s:hoar:whore -s	paw -s d ing:(poor:?)pore -s.-pour -s d ing
baa:bar -s d	law:lore	saw -s d ing:soar -s d ing: sore -s
fa(h).far	ma:mar -s	yaw (-s):yore:(your -s)
flaw.:floor -s d	maw:(moor:?):more	

2.7.3 Final shwa with and without /r/

airier:area	manna:manner -s.,manor -s	rota:rotor -s
beater:beta	mina/mynal/mynah:miner/minor -s	skewer:skua -s
eater:eta	panda:pander -s	tuba:tuber -s
gutta:gutter	parka:parker	tuna:tuner -s
larva:larva:laver		

Special case: formally: formerly

3 THE MAIN LIST OF HETEROGRAPHS

3.1 Sources

The list was compiled from sources given here in approximately descending order of importance. The most comprehensive was Hagan [8], substantially augmented by Terrell & Meadows [9]. *The Oxford Dictionary for Writers and Editors* [10] supplied a dozen or so more sets, a similar number was collected by the author, and a handful came from Chevenix Trench [11], with isolated sets from *New Spelling* [12], or suggested by Dr Adam Brown.

3.2 The list inherently incomplete

Any such list must be incomplete, because the phenomenon itself firmly resists unambiguous definition. Pronunciation, inflection, spelling, all allow words to appear in a multitude of guises, sometimes aping each other, sometimes proclaiming their uniqueness, appearing sometimes as blood-relations, even as identical twins, sometimes as impostors, sometimes as so familiar that we rarely look twice at them in daily use, sometimes as out-and-out freaks whose very existence we scarcely credit. Our list aims to present words that the average well-educated native speaker will probably know of, and which, though usually spelt differently, are felt to have roughly the same pronunciation in their citation form or continuous speech.

3.3 Categories excluded from the list

In addition to the categories already discussed, the following were normally excluded: proper nouns (e.g. *Brest: breast, Philip: fillip*) — though not nationalities (*Finn: fin*) —, colloquialisms and expletives (*pa: pah*), archaisms (*wight: white*), dialect or local words (*hoo: who*), highly specialized or technical terms (*lac: lack*), and foreign words (*firm: fern*). Inevitably the author constantly had to exercise his discretion, and readers may feel some words listed should be excluded, or vice versa.

3.4 Alternative spellings in t.o.

A little-remarked feature of t.o. is the large number of words with more than one spelling. Generally alternative forms have not been regarded as heterographs, but the distinction between different spellings and different words is not always clear. The following variations were usually ignored: divergent American/British spellings; diachronic changes like *phantasy: fantasy*; widely accepted alternatives, like the <-ise, -ize> endings) or *gaol: jail*; uncertain spelling of shwa (*briar: brier, imposter: impostor*); loan-words taken from languages not using the roman alphabet (*lychee: litchi*); and alternatives reflecting different degrees of anglicization (*crape: crepe*). However sometimes

different meanings have come to be associated (often erratically) with different forms. Sets whose meanings are generally distinct today (*curb: kerb, flour: flower, lightening: lightning, metal: mettle*) were included but elsewhere the distinction may be subtle (*enquiry: inquiry*), or very recent or unfamiliar to many users; these cases have usually not been treated as heterographs (computer *program: theatre programme*; the faculty of *judgement: legal judgment*; a person who adapts as an *adapter* but a device for adapting as an *adaptor*). More complex because asymmetrically overlapping are the spellings/meanings of the following: *swat: swot* (we *swat* or *swot* a fly, but a student *swots*); *calk/caulk* (to seal a boat) and *calk* (a spiked undershoe, or to trace, the latter meaning cognate with the differently pronounced *calque*); and *gibe/jibe* as a sneer, but the *gybe/jibe* of a sailing ship. Even harder to classify are *stanch* and the adjective *staunch*; as such they seem distinct, but the alternative form *to staunch* is a homonym of the adjective *staunch*. While we have excluded *judgment: judgement* from the list as essentially variants of the 'same' word, and *stanch: staunch* as either quite distinct or else as homonyms, we have *included swat:swot, calk: caulk* and *gibe: jibe*.

3.5 Multiple entries

Some sets bear the number 2 or 3, indicating they are listed 2 or 3 times because their spelling differs in 2 or 3 particulars. Thus *cede: seed* 2 differ in the spelling of both the vowel and the first consonants while *cedar: seeder* 3 also differ in the second vowel, and are listed 3 times.

3.6 Inflections

The entry *beach: beech -s* shows that both words can take the inflection <-s>, so the inflected forms make a further set. With verbs three extra sets can arise by inflection, as with *gamble: gambol -s d ing*; or only two inflected forms arise, as with *brake: break -s ing*. Alternatively, a set with more than two members may produce heterographs with the inflected forms of only some words in the set, as with *air -s, ere, eer, heir -s*. Discretion had to be exercised as to which words are thought capable of inflection, and since English uses words innovatively as various parts of speech, the fact that a set may be shown without inflections does not mean none could ever arise.

3.7 Arrangement of entries

The list has two parts, §4.1 showing variations in vowels and §4.2 in consonants. The heterographs in each set are arranged alphabetically, the first word determining the position of the set in the list; thus the set *cede: seed* is listed under <c> and not under <s>. The phonemic analysis reflects the author's RP bias, and is designed to give a rough idea of relative frequencies of the phonemes occurring in heterographs, and not a precise phonemic breakdown. For typographical reasons it was necessary to compress more than one phoneme into some columns of §4.1, thus *boy: buoy* are listed with *bawd*, also merged are the vowels in *lass:grass, bet:bear, bite:byre, bit:beer, cow:cower, brew:brewer*. §4.2 on the other hand groups consonant phonemes by the least ambiguous alphabetic spelling, *franc: frank* being listed under <k>. Sets differing in both vowel and consonant appear in §4.1 and §4.2.

NOTES & REFERENCES

- [1] Quoted in Barbara Strang *A History of English* Methuen 1970, p. 142.
- [2] See Geoffrey Sampson *Writing Systems* Hutchinson 1985, Ch. 8 & 9.
- [3]. F.R Palmer *Semantics* C.U.P [2] 1981 pp. 100–108.
- [4] Harry Lindgren *Spelling Reform: a New Approach* Alpha Books: Sydney, 1969, Appendix 3 & 4.
- [5] The *LOB* corpus lists *its* as the 70th most frequently occurring word in English, and *it's* as 196th.
- [6] John Wells 'English Accents and their Implications for Spelling Reform' in Simplified Spelling Society. Newsletter [Summer 1986](#), Item 3.

- [7] David Brazil 'The Transcription of Pronunciation in Dictionaries and its Implications for Spelling' in *Journal of the Simplified Spelling Society* 1987 No.1 pp. 5–10.
- [8] Stella F. Hagan *Which is Which?* A manual of homophones Macmillan, 1982.
- [9] C.D.Terrell & B.Meadows 'A List of English Homophones' in *The Quarterly Journal of Experimental Psychology* (1985) pp. 627–631.
- [10] *The Oxford Dictionary for Writers and Editors* Clarendon Press: Oxford, 1981 (1984)
- [11] Richard Chevenix Trench '*Changes in the Spelling of English Words*' in *English Past and Present* London: John W.Parker & Son, 1856.
- [12] Walter Ripman & William Archer *New Spelling* London: Pitman, [6]1948.

(*Journal of the Simplified Spelling Society* 4 1987/1 pp22–25 in the printed version)

4 LIST OF HETEROGRAPHS

4.1 Vowels differently spelt

(In the printed journal, these were presented alphabetically by category with 14 overlapping columns across the page and a whole line for each item. They are presented alphabetically here and by category on another page. A very few items are in two categories.)

ads:adz(US)/e
 affect:(effect?)
 ail:ale -s
 air -s:ere:e'er:heir -s
 airy:(eyrie?)
 aisle:isle - s

all:awl
 allude:(elude?) -s d ing
 allusion:(illusion?) -s
 (allusive:?)elusive:illusive
 aloud:allowed
 altar:alter -s

ant:aunt -s US
 aught:ought
 aural:oral
 aureole:oriole -s
 ay:aye -s:eye -s:l

bad:(bade?)
 (bade?):bayed
 bail:bale -s d ing
 baize:bays 2
 bald:balled:bawled
 balk:baulk:baulk -s
 ball:bawl -s d ing
 banded:bandied
 bare:bear -s d ing
 baron:barren 2
 base:bass -s 2
 based:baste 2
 (baton?):batten -s 2
 bay:bey -s
 bazaar:(bizarre?) 2
 be:bee(:B)
 beach:beech -s

bean:been
 beat:beet -s
 beau:bow -s
 beer:bier -s
 beetle:betel 2
 (beret?):berry:bury -s 3
 berth:birth -s
 bight:bite:byte -s
 billed:build 2
 blew:blue
 boar:(boor?):bore -s
 board:bored
 boarder:border -s
 bode:bowed
 bogey:bogy
 bold:bowled
 bolder:boulder

bole:bowl -s
 born:borne:bourn
 bough:bow -s
 boy:buoy -s
 braid:brayed
 braise:brays:braze
 brake:break -s ing
 breach:breech -s
 bread:bred
 brewed:brood
 brews:braise 2
 bridal:bridle
 broach:brooch -s
 bruit:brute -s
 buy -s:by:bye -s
 buyer:byre -s

cachou:cashew -s 2
 caddie:caddy
 calendar:calender -s
 call:caul -s 2
 callous:callus
 carat:caret:carrot -s 2
 cast:caste -s
 caster:castor

chews:choose
 chilli:chilly
 choir:quire -s 2
 choler:collar 2
 chough:chuff -s 2
 choux:shoe -s d ing:shoo -s d ing 2
 chute:shoot -s 2

complement:compliment -s d ing
 coo:coup -s
 core:corps
 council:counsel -s lor 2
 cousin:cozen -s3
 coward:cowered
 creak:creek -s

cause:caws
cede:seed -s d ing 2
cedar.seeder -s 3
ceiling:sealing -s 2
cellar:seller -s 2
censer:censor:sensor -s 2
cereal:serial -s 2
chased:chaste 2
cheap:cheep

cite:sight:site -s d ing 2
clause:claws
clew:clue
climb:clime -s
coal:cole -s
coarse:corse -s :course -s
coarser:courser
coat:cote -s
coir-coyer 2

crewed:crude
crewel:cruel
crews:cruise -s:cruse -s
cubical:cubicle
cue -s d ing:queue -s d ing(:Q)
2
curb:kerb -s 2
currant:current -s
cygnet:signet -s 2
cymbal:symbol -s 2

daisies:dazes 2
Dane:deign -s 2
days:daze 2
dean:dene -s
dear:deer
demean:demesne
dependant:dependent
descent:dissent 2
dew:due -s

die:dye -s d ying yeing
dier -s:dire:dyer -s
dine:dyne -s
discreet:discrete
doe:doh:dough
doer:dour
does:doz
does:doughs:doze 2

dollar:dolour -s 2
done:dun
dost:dust
douse/dowse:dowse -s d ing
draft:draught -s 2
drier:dryer
droop:drupe -s
dual:duel

earn:urn -s
eerie:(eyrie?)
elicit:illicit 2

enquire:inquire -s d ing y
ensure:insure -s d ing
ewe:yew:you(:U) 2

ewer. US your -s
ewes:use:yews:youse 2
eyelet:islet -s

fain:feign
faint:feint -s d ing
fair:fare -s
fate:fete -s d
faun:fawn -s
fays:faze -s d ing:phase -s d ing 3
feat:feet
feed:fee'd
felloe:fellow -s
fiancé:fiancée

file:phial -s
filter:philtre -s 2
find:fined
fir:fur
firs:furs:furze
fisher:fissure -s 2
flair:flare
flea:flee -s
flew:flu:flue
floe:flow -s

flour:flower -s d ing
foaled:fold
for:fore:four
forego:forgo -ne ing
forth:fourth
foul:fowl -s
frays:phrase 2
frees:freeze:frieze 2
friar:frier/fryer -s

Gael:gale -s
gage:gauge -s d ing
gait:gate -s
gall:Gaul 2
gamble:gambol -s d ing
gays:gaze 2
geezer:geyser -s 2
gelid:jellied 3

genes:jean 2
gibe/jibe:gybe/jibe -s d ing 2
gild:guild -s
gilt:guilt
gneiss:nice 3
gnu -s:knew:new -s:nu 2
gorilla:guer/r/illa -s
grayed US/greyed:grade

grate:great -s r
grays US/greys:graze 2
greave:grieve -s
groan:grown
groin:groyne -s
guide:guyed
guise:guys

hail:hale -r
hall:haul -s 2
hair -share -s:Herr 2
handsome-hansom 2
hangar:hanger -s
hart:heart -s

hear:here
heard:herd
heroin:heroine
hew:hue -s
hi:hie -s:high -s
hide:hied

hoar:whore -s 2
hoard:horde:whored 2
hoarse:horse
hoses:hose
hold:holed
hour;our -s

hay:heigh:hey
heal:heel -s d ing

indict:indite -s d ing
immanent:(imminent?)
idle:idol -s

(L:ell)
laager:lager -s
lain:lane
lair:layer -s?)
lays:laze 2
lea:lee
leach:leech -s
lead:led
leader:lieder

maid:made
mail:male -s
main:mane -s
maize:maze
mall:rnaul -s 2
manakin/manikin/mannikin:manne
quin -s 3
mangel:mangle -s
manner-manor -s 2
mantel:mantle -s
mare:mayor -s
marten:martin -s
mead:meed

naval:navel

(O:oh:owe)
oar -s:or:ore-s

paean:peon -s 2
pail:pale -s
pain:pane -s
pair:pare:pear:pére(:payer?)-s
palate:palette:pallet -s 3
pause:paws
pea:pee(:P) -s
peace:piece
peak:peek:pique -s d ing 2
peal:peel -s d ing
pearl:purl -s

(R:are)
rabbit:rarebit -s 2
radical:radicle -s

higher:hire:hiya
him:hymn 2

(J:jay)

leaf:lief
leak:leek -s
leant:lent
leaver:RP lever -s
lessen:lesson -s
liar:lyre -s
licker:liquor 2
lieu:loo

mealie:mealy
mean:mien
meat -s:meet -s:mete
medal:rneddle -s 2
meddler:medlar -s 2
metal:mettle 2
meter:metre -s
mew:mu -s
mews:muse
mind:mined
miner:minor -s
might:mite

nay:née:neigh -s,

ode:owed
one:won

pedal:peddle -s d ing 2
peer-pier -s
pendant:pendent
petrel:petrol -s
pi:pie
picks-pyx 2
(pidgin?):pigeon -s 2
pitied:pitted 2
place:plaise
plain:plane -s
pole:poll -s d ing 2

reek:wreak -s ing 2
revere:revers
review:revue

humerus:humorous x2

key:quay -s 2
knead -s d ing:knead:need -s d
ing 2
know:no:Noh 2
knows:noes:nose 3

lightening:lightning
links:lynx, 2
lo;low
load -s:lode -s:lowed
loan:lone
loot:lute -s
loos:lose
lumbar:lumber

missal -s:missel:mistle:US
missile -s 2
rnoan:mown
moat:mote -s
mode:mowed
rnood:mooed
(moor?):more
morn:mourn -s
morning:mourning
mucose/mucous:mucus
muscle:mussel -s 2
mustard:mustered

none:nun

(ordinance:ordnance?)

(poor:?)pore:pour -s d ing
poses:posies
praise:prays:preys
pray:prey -d ing
(precede?):proceed -s d ing
ssion 2
pride:pried
prier:prior -s
pries:prise:prize, 2
principal:principle -s
profit:prophet -s 2
puisne:puny 2

role:roll -s 2
rondeau:rondo -s
rood:rude:rued

raid:rayed
rain:reign:rein -s d ing
raise -s d ing:rays:rased/raze -s d ing 2
ray:re/ray
read:reed -s
read:red
real:reel

sail:sale -s
sailer:sailor -s
sandhi:sandy 2
seraph:(serif)
savory:savoury
scene:seen 2
sea:see
seam:seem -s d
seaman:seamen:semen 2
sear -s:seer -s:sere
seas:sees:seise:seize 2
serf:surf -s
serge:surge -s d ing
sew -s d ing:so:soh:sow
sewn:sown
shake:sheik/h -s
shear:sheer

taxes:taxies:taxis
tail:tale -s
taper:tapir -s
tare:tear -s
taut:taught
tea:tee(:T) -s
team:teem -s d ing
tear:tier -s
tenner:tenor -s, 2

vale:veil -s
vain:vane -s:vein -s

wade:weighed
wail:whale -s d ing 2
wain:wane -s
waist:waste
wait:weight -s d ing
waive:wave -s d ing
war:wore
ware:wear -s:where 2
warn:worn

yore:RP your

rheum:room
rho:roe:row -s 2
rhyme:rime 2
rigger -s:rigor:rigour -s 2
right:rite:wright:write -s 2
road:rode:rowed
roes:rose:rows

shire:shyer
shore:(sure?)2
side:sighed
sighs:size 2
sign:sin/e
slay:sleigh -s
slight:sleight
sloe:slow -s
soar:sore -s
soared:sword
sold:soled
sole:soul -s
some:sum
son:sun
sough:sow -s
spade:spayed
(spoor?):spore

tern:turn -s
their:there (:they're)
threw:through
throe:throw -s
thyme:time 2
throne:thrown
Thai:tie -s
tide:tied
tided:tided

(verdure?):verger/virger 3
vial -s:vile:viol -s

wart:wort
watt:what:wot 3
way -s:wey:weigh -s 2
we:wee
weak:week
weal:wheel (we'll) 2
weald:wheeled:wield 2
weather:wether:whether 2
weaver:weever

yoke, yolk -s

roomer:rumour -s 2
root:RP route -s d ing
rough:ruff -s 2
rouse:rows
rout:US route -s d ing
roux:rue
rye:wry 2

staid:stayed
stair:stare(:stayer) -s
stake:steak -s
stationary:stationery
steal:steel -s d ing
stile:style -s
stoop:stoup -s
story:storey -s d
straight:strait -s
studded:studied
sty:stye -s
succour:sucker -s 2
suède:swayed 2
suite:sweet 2
summary:summery
(surplice?):surplus -s
swat/swot:swot -s d ing

tire:tyre -s d
to:too:two
toad:toed:towed
toe-tow -s d ing
ton:tonne:ton -s 2
tor:tore
tough-tuff 2
trait:tray -s
troop:troupe -s

villain-villein

weepie:weepy
were:whirr 3
w(h)iled:wild 2
whined:wined:wind 2
whirl:whorl -s
whirled:whorled:world 2
whoa:woe
RP wrath:wroth
wood:would

4 LIST OF HETEROGRAPHS

4.1 Vowels differently spelt

Sets of heterographs are listed in 14 numbered lists, according to which vowel is differently spelt. The phoneme-analysis is basically RP simplified by the merger of several phonemes into single columns, as represented by the following key words:

1. ale, 2. at/pass/art, 3. eel, 4. let/air, 5. eye/fire. 6. it.ear, 7. oat, 8. owl.our, 9. or/all/lot/oil, 10. rue, 11. put, 12. but, 13. fur, 14 shwa.

1. ale,

ail:ale -s	gait:gate -s	rain:reign:rein -s d ing
(bade?):bayed	gays:gaze 2	raise -s d ing:rays:rase/raze -s
bail:bale -s d ing	grayed US/greyed:grade	d ing 2
baize:bays 2	grate:great -s r	ray:re/ray
base:bass -s 2	grays US/greys:graze	sail:sale -s
based:baste 2	2hail:hale -r	shake:sheik/h -s
bay:bey -s	hay:heigh:hey	slay:sleigh -s
braid:brayed	(J:jay)	spade:spayed
braise:brays:braze	lain:lane	staid:stayed
brake:break -s ing	lair:layer -s?)	stake:steak -s
chased:chaste 2	lays:laze 2	straight:strait -s
daisies:dazes	maid:made	suède:swayed 2
Dane:deign -s	mail:male -s	tail:tale -s
days:daze 2	main:mane -s	trait:tray -s
fain:feign	maize:maze	vale:veil -s
faint:feint -s d ing	nay:née:neigh -s,	vain:vane -s:vein -s
fate:fete -s d	pail:pale -s	wade:weighed
fays:faze -s d ing:phase -s d ing 3	pain:pane -s	wail:whale -s d ing 2
fiancé:fiancée	place:plaice	wain:wane -s
frays:phrase 2	plain:plane -s	waist:waste
Gael:gale -s	praise:prays:preys	wait:weight -s d ing
gage:gauge -s d ing	pray:prey -d ing	waive:wave -s d ing
	raid:rayed	way -s:whey:weigh -s 2

2. at/pass/art,

ads:adz(US)/e	cast:caste -s	laager:lager -s
ant:aunt -s US	draft:draught -s 2	(R:are)
bad:(bade?)	hart:heart -s	rabbit:rarebit -s 2

3. eel,

be:bee(:B	geezer:geyser -s 2	(precede?):proceed -s d ing
beach:beech -s	genes:jean 2	ssion 2
bean:been	greave:grieve -sheal:heel -s	read:reed -s
beat:beet -s	d ing	real:reel
beetle:betel 2	key:quay -s 2	reek:wreak -s ing 2
breach:breech -s	knead -s d ing:knead:need -s	scene:seen 2
cede:seed -s d ing 2	d ing 2	sea:see
cedar.seeder -s 3	lea:lee	seam:seem -s d
ceiling:sealing -s 2	leach:leech -s	seaman:seamen:semen 2
cheap:cheep	leader:lieder	seas:sees:seise:seize 2

creak:creek -s
dean:dene -s
demean:demesne
discreet:discrete
eerie:(eyrie?)
feat:feet
feed:fee'd
flea:flee -s
frees:freeze:frieze 2

leaf:lief
leak:leek -s
leaver:RP lever -s
mead:meed
mean:mien
meat -s:meet -s:mete
paean:peon -s 2
pea:pee(:P) -s
peace:piece
peak:peek:pique -s d ing 2
peal:peel -s d ing

steal:steel -s d ing
suite:sweet 2
tea:tee(:T) -s
team:teem -s d ing
we:wee
weak:week
weal:wheel (we'l) 2
weald:wheeled:wield 2
weaver:weever

4. let/air,

air -s:ere:e'er:heir -s
airy:(eyrie?)
bare:bear -s d ing
(beret?:)berry:bury -s 3
bread:bred
fair:fare -s
flair:flare

hair -share -s:Herr 2
(L:ell)
lead:led
leant:lent
mare:mayor -s
pair:pare:pear:pére(:payer?)-s

read:red
stair:stare(:stayer) -s
tare:tear -s
their:there (:they're)
ware:wear -s:where 2
weather:wether:whether 2

5. eye/fire,

aisle:isle -s
ay:aye -s:eye -s:l
bight:bite:byte -s
buy -s:by:bye -s
buyer:byre -s
choir:quire -s 2
cite:sight:site -s d ing 2
climb:clime -s
die:dye -s d ying yeing
dier -s:dire:dyer -s
dine:dyne -s
drier:dryer
eyelet:islet -s
file:phial -s
find:fined
friar:frier/fryer -s

gibe/jibe:gybe/jibe -s d ing 2
gneiss:nice 3
guide:guyed
guise:guys
hi:hie -s:high -s
hide:hied
higher:hire:hiya
indict:indite -s d ing
liar:lyre -s
lightening:lightning
mind:mined
might:mite
pi-pie
pride:pried
pries:prise:prize, 2
rhyme:rime 2

right:rite:wright:write -s 2
rye:wry 2
shire:shyer
side:sighed
sighs:size 2
sign:sin/e
slight:sleight
stile:style -s
sty:stye -s
thyme:time 2
Thai:tie -s
tide:tied
tire:tyre -s d
vial -s:vile:viol -s
w(h)iled:wild 2
whined:wined:wind 2

6. it.ear,

banded:bandied
beer:bier -s
billed:build 2
bogey:bogy
caddie:caddy
cereal:serial -s 2
chilli:chilly
complement:compliment -s d ing
cygnet:signet -s 2
dear:deer
descent:dissent 2
elicit:illicit 2

ensure:insure -s d ing
gelid:jellied 3
gild:guild -s
gilt:guilt
hear:here
heroin:heroine
him:hymn 2
links:lynx, 2
marten:martin -s
mealie:mealy
missal -s:missel:mistle:US
missile -s 2

pitied:pitted 2
poses:posies
profit:prophet -s 2
puisne:puny 2
revere:revers
sandhi:sandy 2
sear -s:seer -s:sere
shear:sheer
story:storey -s d
studded:studied
taxes:taxies:taxis
tear:tier -s

enquire:inquire -s d ing y

peer:pier -s
picks-pyx 2

tided:tidied
weepie:weeepy

7. oat,

beau:bow -s
bode:bowed
bold:bowled
bolder:boulder
bole:bowl -s
broach:brooch -s
coal:cole -s
coat:cote -s
doe:doh:dough
does:doughs:doze 2
felloe:fellow -s
floe:flow -s
foaled:fold
groan:grown
hoes:hose

hold:holed
know:no:Noh 2
knows:noes:nose 3
lo;low
load -s:lode -s:lowed
loan:lone
moan:mown
moat:mote -s
mode:mowed
(O:oh:owe)
ode:owed
pole:poll -s d ing 2
rho:roe:row -s 2
road:rode:rowed

roes:rose:rows
role:roll -s 2
rondeau:rondo -s
sew -s d ing:so:soh:sow
sewn:sown
sloe:slow -s
sold:soled
sole:soul -s
throe:throw -s
throne:thrown
toad:toed:towed
toe-tow -s d ing
whoa:woe
yoke, yolk -s

8. owl.our,

aloud:allowed
bough:bow -s
douse/dowse:dowse -s d ing

flour:flower -s d ing
foul:fowl -s
hour;our -s

rouse:rows
rout:US route -s d ing
sough:sow -s

9. or/all/lot/oil,

all:awl
aught:ought
aural:oral
aureole:oriole -s
bald:balled:bawled
balk:baulk:baulk -s
ball:bawl -s d ing
boar:(boor?):bore -s
board:bored
boarder:border -s
born:borne:bourn
boy:buoy -s
call:caul -s 2
cause:caws
clause:claws
coarse:corse -s :course -s

coarser:courser
coir-coyer 2
core:corpsfaun:fawn -s
for:fore:four
forego:forgo -ne ing
forth:fourth
gall:Gaul 2
groin:groyne -s
hall:haul -s 2
hoar:whore -s 2
hoard:horde:whored 2
hoarse:horse
mall:maul -s 2
(moor?):more
morn:mourn -s
morning:mourning

oar -s:or:ore-s
pause:paws
(poor:?)pore:pour -s d ing
shore:(sure?)2
soar:sore -s
soared:sword
(spoor?):spore
swat/swot:swot -s d ing
taut:taught
tor:tore
war:wore
warn:worn
wart:wort
watt:what:wot 3
RP wrath:wroth
yore:RP your

10. rue,

blew:blue
brewed:brood
brews:braise 2
bruit:brute -s
cachou:cashew -s 2
chews:choose
choux:shoe -s d ing:shoo -s d ing
2

cue -s d ing:queue -s d
ing(:Q) 2
doer:dour
dew:due -s
droop:drupe -s
ewe:yew:you(:U) 2
ewer. US your -s
ewes:use:yews:youse 2

mew:mu -s
mews:rnuse
mood:mooed
puisne:puny 2
review:revue
rheum:room
rood:rude:rued
root:RP route -s d ing

chute:shoot -s 2
clew:clue
coo:coup -s
crewed:crude
crewel:cruel
crews:cruise -s:cruse -s

flew:flu:flue
gnu -s:knew:new -s:nu 2
hew:hue -s
lieu:loo
loot:lute -s
loos:lose

roux:rue
stoop:stoup -s
threw:through
to:too:two
troop:troupe -s
wood:would

11. put,
wood:would

12. but,
chough:chuff -s 2
cousin:cozen -s3
does:doz
done:dun

dost:dust
none:nun
one:won
rough:ruff -s 2

some:sum
son:sun
ton:tonne:ton -s 2
tough:tuff 2

13. fur,
berth:birth -s
curb:kerb -s 2
earn:urn -s
fir.fur
firs:furs:furze

heard:herd
pearl:purl -s
serf:surf -s
serge:surge -s d ing

tern:turn -s
were:whirr 3
whirl:whorl -s

14 shwa.
affect:(effect?)
allude:(elude?) -s d ing
allusion:(illusion?) -s
(allusive:?)elusive:illusive
altar:alter -s
baron:barren 2
(baton?):batten -s 2
bazaar:(bizarre?) 2
beetle:betel 2
bridal:bridle
calendar:calender -s
callous:callus
carat:caret:carrot -s 2
caster:castor
cedar.seeder -s 3
cellar:seller -s 2
censer:censor:sensor -s 2
cholera:collar 2
council:counsel -s lor 2
coward:cowered
cubical:cubicle
currant:current -s
cymbal:symbol -s 2
dependant:dependent
dollar:dolour -s 2
dual:duel

filter:philtre -s 2
fisher:fissure -s 2
gamble:gambol -s d ing
gorilla:guer/r/illa -s
handsome:hansom 2
hangar:hanger -s
humerus:humorous x2
immanent:(imminent?)
idle:idol -s
lessen:lesson -s
licker:liquor 2
lumbar:lumber
manakin/manikin/mannikin:m
annequin -s 3
mangel:mangle -s
manner-rnanor -s 2
mantel:mantle -s
medal:rneddle -s 2
meddler:medlar -s 2
metal:mettle 2
meter:rnetre -s
miner:minor -s
mucose/mucous:mucus
muscle:mussel -s 2
mustard:mustered
naval:navel

(ordinance:ordnance?)
paeon:peon -s 2
palate:palette:pallet -s 3
pedal:peddle -s d ing 2
pendant:pendent
petrel:petrol -s
(pidgin?):pigeon -s 2
prier:prior -s
principal:principle -s
radical:radicle -s
rigger -s:rigor:rigour -s 2
roomer:rumour -s 2
sailer:sailor -s
seraph:(serif)
savory:savoury
seaman:seamen:semen 2
stationary:stationery
succour:sucker -s 2
summary:summery
(surplice?):surplus -S
taper:tapir -s
tenner:tenor -s, 2
(verdure?):verger/virger 3
villain-villein
whirled:whorled:world 2

4 LIST OF HETEROGRAPHS

4.2 Consonants differently spelt

 rabbit:rarebit -s 2.

<ch> check:cheque:Czech 2, which:witch 2.

<d> medal:medal -s 2, meddler:medlar -s 2, pedal:peddle -s 2, sandhi:sandy 2.

<f> chough:chuff -s 2, draft:draught -s 2, filter:philtre -s 2, fays:faze -s d ing:phase -s d ing 3, flocks:phlox 2, frays:phrase 2, plaintiff:(plaintive?), profit:prophet -s 2, rough:ruff -s 2, tough:tuff 2.

<g> rigger -s:rigor:rigour -s 2.

<h> hoar:whore 2, hoard:horde:whored 2, hole:whole -s, holy:wholly 2, hooping:whooping.

<j> genes:jeans 2, gelid:jellied 3, gibe/jibe:gybe/jibe -s d ing 2, gin:djinn:jinn 2, (pidgin?:)pigeon -s 2, (verdure?):verger/virger 3.

<k> arc:ark -s, bark:barque -s, bloc:block -s, cask:casque -s, check:cheque:Czech -s 2, choir:quire -s 2, choler:collar 2, chord:cord -s, clack:claque -s, click:(clique?) -s, conker:conquer -s, cocks:cox, curb:kerb -s 2, colonel:kernel -s 2, cue:queue -s d ing 2, ducked:duct 2, ducks:dux, flecks:flex, flocks:phlox 2, franc:frank, key:quay -s 2, lacks:lax, lick:liquor 2, links:lynx 2, manakin/ manikin/ mannakin:mannequin -s 3, mark:marque -s, mask:masque -s, minks:minx, packed:pact 2, peak:peck:pique -s d ing 2, picked: Pict 2, picks:pyx 2, racket:racket/racquet -s, roc:rock -s, scull:skull -s, sic:sick, specks:specs, succour:sucker -s 2, tacked-tact 2, tacks:tax, tic:tick -s, tocsin:toxin, tracked:tract 2, wax:whacks 2.

<l> bell:belle -s, billed:build 2, call:caul -s 2, elicit:illicit 2, gall:Gaul -s 2, gelid:jellied 3. grill:grille -s, hall:haul -s 2, holy:wholly 2, lama:llama -s mall:maul -s 2, palate:palette: pallet -s 3, pole:poll -s d ing 2, role:roll -s 2, told:tolled, weld:welled.

<m> dam:damn -s d ing, him:hymn 2, jam:jamb -s, lam:lamb -s d ing, limb:limn -s d ing, plum:plumb, program:programme -s.

<n> band:banned, cannon:canon -s, Dane:deign -s 2, fin:Finn -s, finish:Finnish, gin:djinn/jinn 2, gneiss:nice 3, gnu -s:knew:new -s 2, handsome:hansom 2, in:inn -s, knave:nave -s, knead -s d ing:knead:need -s d ing 2, knight:night -s. knit:nit -s, knot:not, know -s no -s:nose 3, manakin/manikin/mannikin:mannequin -s 3, manner:manor -s 2, pend:penned, tenner-tenor -s 2, ton:tonne:tun -s 2.

<p> rapped:rapt:wrapped 3 step:steppe.

<r> bard:barred, baron:barren 2, (beret?:)berry:bury -s 3, carat:caret:carrot 2, chard:charred, hair -s :hair -s:Herr 2, par:parr, rack:wrack -s, rap:wrap -s ing, rapped:rapt:wrapped 3, reek:wreck -s d, reek:wreak -s d ing 2, rest:wrest -s d ing, retch:wretch -s, rho:roe:row 2, rhyme:rime 2, right:rite:wright:write -s 2, ring:wring -s er, rote:wrote, rung:wrung, rye:wry 2, ward:warred, were:whirr 3.

<s> base:bass -s 2, blessed:blest 2, bused/bussed:bust 2, canvas:canvass, cedar:seeder 3, cede:seed -s d ing 2, ceiling:sealing -s 2, cell:sell -s, cellar:seller -s 2, censer:censor:sensor -s 2, cent:scent:sent, cents:scents:sense, cereal:serial -s 2, cite:sight:site -s d ing 2, cops:copse, council:counsel -s 2, cygnet:signet -s 2, cymbal:symbol -s 2, descent:dissent 2, gneiss:nice 3, grocer:grosser, guessed:guest 2, laps:lapse, licence:license -s, missal -s:missel/mistle:US missile -s 2, missed:mist 2, muscle:mussel -s 2, mussed:must 2, paced-paste 2, passed:past 2, practice:practise -g. premise:premiss -s, psalter:salter -s, quarts:quartz, scene:seen 2, trussed:trust 2.

<sh> cache:cash, cachou:cashew -s 2, choux:shoe -s d ing:shoo -s d ing 2, chute:shoot -s 2, fisher:fissure -s 2, marshal:martial, (shore:sure? 2).

<t> based:baste 2, baton:batten -s 2, blessed:blest 2, bused/bussed:bust 2, but:butt -s, chased:chaste 2, ducked:duct 2, guessed:guest 2, leased:least, mat:matt, metal:mettle 2, missed:rnist 2, mussed:must 2, net:net/nett, paced:paste 2, packed:pact 2, palate:palette:pallet -s 3, passed:past 2, picked:Pict 2, pitied:pitted 2, rapped:rapt:wrapped 3, set:sett -s, tacked:tact 2, thyme:time 2, tracked:tract 2, trussed:trust, 2, wan:what:wot 3.

<w> suède:swayed 2, suite:sweet 2, watt:what:wot 3, way - s:whey:weigh -s 2, wail:whale -s d ing 2, ware:wear -s :where 2, wax:whacks 2, weal:wheel 2, weald:wheeled:wield 2, weather:wether:whether 2, wen:when, were:whirr 3, wet:whet -s d ing, which:witch 2, whig:wig -s, while:wile, w(h)iled:wild 2, whin:win, whine:wine -s ing, whined:wined:wind, whirled:whorled:world 2, whit:wit, whither:-wither, whoa:woe 2.

<y> ewe:yew:you 2, ewes:use:yews 2.

<z> baize:bays 2, boos:booze, brews:bruise 2, brows:browse, cousin:cozen -s 3, daisies:dazes 2, days:daze 2, desert:dessert -s, does:doughs:doze 2, fays:faze -s d ing:phase -s d ing 3, frees:freeze:frieze 2, gays:gaze 2, geezer:geyser -s 2, grays US/greys:graze 2, grisly:grizzly, knows:noes:nose 3, lays:laze 2, peas:pease, pleas:please, pries:prise -s d ing:prize -s d ing 2, pros:prose, raise -s d ing:rays:rased/raze -s d ing 2, seas:sees:seise:seize 2, sighs:size 2, teas:tease.

4.3 Some statistics

Counting bracketed doubtful cases but not derivatives, the list contains 590 separate sets of heterographs. 476 (68%) differ by vowel spelling, 232 (32%) by consonant, 110 by both, 25 in the spelling of more than one consonant and 8 in more than one vowel. Of the 590 sets, some 440 are monosyllabic, while only 20 have over 2 syllables. The 590 sets consist mainly of pairs, but 64 are triplets, 16 quadruplets and 1 set even contains 5 words (one or two admittedly of doubtful validity). The total number of heterographic words listed is 1,263. Such a total should surely give us pause in our reforming zeal.

[SSS Journal 1987/1. Later designated Journal 4. p26 in the printed version]

[John Martin: see [Bulletins](#), Helen Bisgard: see [Bulletins](#), [Anthology](#)]

8. John Henry Martin *Writing to Read* Review by Helen Bisgard

Writing to Read. A Parents' Guide to the New Early Learning Program for Young Children, by John Henry Martin and Ardy Friedberg. Warner Books, Inc., 666 Fifth Ave., New York NY 10103. (\$17.95) 1986. 205pp. (See also letter from Edward Rondthaler in the Simplified Spelling Society Newsletter [Summer 1986](#), Item 2.)

A recent morning spent with six-year olds who were working at computers was a novel experience for me. It was at a nearby school where a kindergarten class is combining the use of International Business Machine (IBM) computers with IBM Selectric typewriters, pencils, crayons, clay, sand, earphones plugged into tape recordings, letter cards, wooden block-letters, magnetic letters, and many other materials.

Writing to Read exemplifies the psychological and philosophical principles which educationists have found to be potent. If I were again in the active teaching profession I would consider it a privilege and joy to start beginners with this system. I am pleased with the prospect of having two great-grandsons attend a school where this method is employed.

The classroom is divided into six learning stations. Individuals work at each station for about 12 minutes and then move to another. The computer station is the first. The others are Writing-Typing, Work Journal, Listening Library, Multisensory materials, and Make Words.

In a series of thirty lessons requiring varying amounts of time, depending on the child involved, the computer introduces 42 phonemes represented by 30 symbols. The symbols are in alphabetical order at the top and bottom of the computer screen, and dance out to take their place as required in the current word being learned.

Cycle	Lesson	Lesson	Lesson	Phonemes	
1	cat	dog	fish	a c d f g i o t	9
2	pig	sun	bed	sh	6
3	rabbit	leg	thrē	b d n p s u	4
4	man	snāk	vās	l r th ē	4
5	jump	hard	wagon	k m v ā	3
6	yard	moon	kit	h j w	4
7	zipper	straw	smōk	y ī ar oo	4
8	turtl	chair	hous	z ō aw er	4
9	oil	hors	whēl	ou ur air ch	3
10	ūniform	book	butter	wh oi o	1
				ū	Total 30

The beginners' alphabet of 30 symbols is intended to be a very temporary and transient tool to gently lead children. The kindly encouragement of such a system avoids the confusion which arises when beginners are confronted at the outset with mastering the extreme abnormalities of English spelling.

Having expressed my commendation of the system when used for introducing the writing of English as it is spelled today, I must admit that the spelling reformer in me is disappointed. A few years ago, when I first heard Dr Martin's proposal to use reformed spelling in his system, I hoped it would persuade parents of the necessity for changing the present orthography. We have long wished that phonics used in hundreds of school primers might open the eyes of the public to the insurmountable difficulties of standard spelling, and encourage action to bring about a change. But little has happened, and it is doubtful that *Writing to Read* will be any more influential in bringing about a change than were other systems.

The Listening Library station provides recordings of classic stories which have been correlated with printed versions in traditional orthography (t.o.). Children are encouraged to pay attention to the way words are spelled in these books. At other stations, altho they are completely free to write using their own spelling, they soon try to write "the book way".

Dr Martin explains to parents that only a very short period is devoted to phonemic spellings. His intention is to allay the qualms of those who fear that their children will become poor spellers.

We who have watched the progress of Pitman's Initial Teaching Alphabet for twenty years expected that parents' antagonism toward new spellings would be removed as pupils evidenced great success in reading skills. When widespread change of attitude did not take place, some proponents of i.t.a. felt that the strange-looking symbols, rather than the simpler spellings, were the obstructions. No such negative factor deters acceptance of *Writing to Read*, for the spellings are familiar because of common use in dictionaries. But like Sir James Pitman who when introducing his alphabet declared that it was not intended as forerunner of spelling reform, so also John Henry Martin makes clear that he has only initial learning goals in mind.

Nevertheless, I cling to the hope that even the short exposure to the simpler spellings of *Writing to Read* may expand tolerance toward simpler forms just as the computer has today caused an unconscious acceptance in today's business circles of odd-looking abbreviations and acronyms such as: DOS, ASCII, REM, TRON, WEND.

Some day the SSS *New Spelling* may reach widespread use as a second and prestigious code for use as a parallel to the traditional. To achieve this position it should be a well-defined system and not a collection of patches and improvements tacked on to standard spelling. After some years, the "second" system, *New Spelling* would gradually achieve first place while the t.o. of today would be relegated to the position of "Old English". Perhaps *Writing to Read* will have a part in preparing the way.

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[David Stark: see [Journals](#), [Newsletters](#)]

9. Escaping from a Dialect Straitjacket 1

David Stark

This is the fourth in a series of articles of which the first three appeared in the Simplified Spelling Society Newsletter [Summer 1985](#), [Spring 1986](#), and [Summer 1986](#) issues.

The story so far: Phonics is useful when learning to read as it allows one to determine the pronunciation of the occasional unknown word in an effort to identify it and learn it with the minimum of help from others. The target however is quick visual recognition of all words met.

Phonics is useful in spelling as it affords an additional, easier way of remembering spellings than purely by memorizing the visual patterns of words. One has to remember the Standardized Spelling Pronunciation (SSP) for each word, which may or may not fully equate with the perceived pronunciation in one's own accent.

As it is impractical to fix a living accent for use as the pronunciation standard for spelling, the regularized spelling of each word must be used for this purpose. However, once one has determined an SSP from the spelling, this should approximate to a living pronunciation likely to be heard. The comparison of a word's SSP and its actual pronunciation helps reinforce the SSP in one's memory.

In the introduction to *New Spelling*, it is stated that "anyone who knows the pronunciation of a word should be able to spell it". It is not said how people throughout the English-speaking world would know this pronunciation, nor how practical it was for ordinary people without phonetic training to define every single phoneme in every word met. In the same way, many reformers seem to think it enough to describe their reform proposals on a single page, by matching a proposed set of graphemes with an assumed set of phonemes. The relationship of this to the lexicon is usually based on their own accent.

Just before World War 2, when New Spelling was being formulated, Received Pronunciation was the prestige accent in Britain, all others being regarded as inferior, at least in well-educated circles, with the possible exception of the cultured Scottish accent. So dominant was RP then that representatives of the Simpler Spelling Association in America concurred with slightly amended New Spelling proposals in 1956.

New Spelling did try to allow for accents other than RP, recognizing differences between rhotic and non-rhotic accents, and some different vowel-sounds in Scottish and other non-Southern English accents. However, the limited knowledge of dialects then did not allow a comprehensive study of accent problems and the development of an appropriate reform-policy. Since the status of RP has declined, and no dialect is, or looks likely to be, in common currency throughout the English speaking world, it would be wrong to base SSP too closely on one accent.

Some phoneme-grapheme relationships will be the same and uncontroversial for all major English accents. There will also be some phonemes which, although different in two separate accents, will translate directly to a single grapheme. For example, the vowel in the word *dress* is /e/ in RP and /ɛ/ in General American. It does not matter that the vowel quality differs in the two accents, one merely defines both as represented by the grapheme <e>.

However, there are other situations where there is no direct translation, as the following table illustrates.

	RP	Gen.Am.		RP	Gen.Am.
palm	/ɑː/	/ɑ/	cloth	/ɒ/	/ɔ/
lot	/ɒ/	/ɑ/	thought	/ɔː/	/ɔ/

In such cases, standard spelling will be unable to accommodate all accent variations. Assuming that alternative spellings of words are unacceptable, some people will have to learn SSPs which do not correspond with their own pronunciation standard. Alternatively, they will need to memorize spellings visually.

There are opportunities to reduce the number of phonemes represented by the orthography. We have only 5 vowel letters to represent some 13–19 vowel sounds, the number depending on the accent. If we could reduce the number of vowel phonemes represented by the orthography towards the bottom of this range, there would be less need to invent new vowel symbols to represent them, and those with fewer vowels in their accent would be better able to relate to the orthography.

Consonants too could be usefully simplified when represented in writing. For example, many English accents have both /w, hw/ phonemes, which relate fairly regularly to the graphemes <w, wh> in t.o. The latter phoneme has disappeared from RP, and RP-speakers consequently need to remember individual <wh> spellings independently of pronunciation. However, if <wh> merged with <w>, RP speakers could spell relevant words phonetically, accent adherents with both phonemes would write both as <w>, and existing literates caught in the transition period when revised spellings are being introduced could simply change <wh> to <w> without recourse to pronunciation.

This example in RP may be described as a phoneme convergence, where two phonemes become one. The single phoneme representation is more useful to more people in an alphabetic orthography. It also reduces the number of phonemes to be learned, or identified, by foreigners learning English, who may have fewer phonemes in their native orthography than there are in most English accents.

The opposite of phoneme convergence is a phoneme split, with one sound becoming two. If the single sound is still widespread among some common English accents, it would be better to combine the two possible phonemes for representation by one grapheme, for the same practical orthographic reasons as with phoneme convergence.

For example, the vowels in the words *lass* and *pass* are different in RP. The sound split from a previously single vowel did not occur in General American or in many other dialects, and even in RP the sound change was incomplete, with some words pronounced with short /æ/, as in *lass*, and others with lengthened /ɑː/ as in *pass*, and no phonemic rule to split them. Also in some accents where the split has occurred, it has taken place in different ways to RP. For example, many Australians use the shorter vowel whenever /n/ or /m/ follows. Other Australians, West Indians, New Zealanders and South Africans always use the longer vowel. Scottish and Northern Irish accents always use the shorter one. One may conclude it would be easier for all to use the one grapheme for both phonemes.

Whether associated with phoneme convergence or split, there are good practical reasons for reducing the number of phonemes represented in the standard orthography. These two factors are the result of accent development, but there is a third, only partly related to dialect, which I would like to consider under the same criteria. This is "context related phoneme convergence", where

pairs of phonemes become indistinguishable when associated with certain other phonemes, or where pairs of phonemes become interchangeable depending on whether they are stressed or not. Schwa may be judged to be in this category, but to do it justice would require a separate article. Instead, I shall use as my example the phoneme pairs /f, v/, and /s, z/.

Formerly /f, v/ were not distinguished in English orthography and sometimes now it is difficult to separate the two in everyday speech. Luckily this seldom causes confusion in the context of speech, but when we try to formalize them in spelling, we often find ourselves in difficulty. When we add an <s> to a word ending in <f>, does the sound change to /v/? Traditional orthography is not sure, as it spells the plural of *thief* as *thieves* but the plural of *chief* is *chiefs*.

Where <f> is retained, the plural marker is pronounced /s/, but if one puts sufficient stress on the end of the word *thieves* to fully realize the <v> sound, the plural marker is pronounced /z/. If the difference between such pairs of sounds depends on their environment or the amount of stress they receive, are they really opposing phonemes, or merely versions of single phonemes? If the distinction between such pairs is often difficult and leads to spelling confusion, perhaps we should consider fusing them into single graphemes in an orthography.

Traditional orthography once had a separate grapheme for the /s/ phoneme, but dropped it, probably because its function was less important than the visual confusion caused between the upright <s> grapheme and <f>. Today the <s> grapheme is the most common way of representing both the /s, z/ phonemes, so accommodating the two phonemes possible with the <-s> inflection, and allowing alternative stress options to coexist without spelling alternatives, as in adv'ertisement: advert'izement.

In any language, a phonetician will be able to show the existence of more phonemes in most accents than are represented exclusively in the standard orthography. This will partly depend on the definition of a phoneme, but such a person will usually be interested in more accuracy than we would need, or be able to practically accommodate, in everyday orthographic use.

However, if we pursue the approach of simplifying and reducing phonemes represented in a revised orthography to its ultimate conclusion, we may eventually halve (half?) the number of phonemes that many people recognize in normal speech. Apart from the major change which this would cause in traditional orthography, it would also throw up a large number of pairs of words which are spelled the same but which have different meanings, and which sound different to many people. The same problem would be encountered as we have with the translation of homophones from traditional orthography to a revised orthography. The one spelling would now embrace two or more words which were previously spelled differently, thus making reading less efficient for experienced readers.

In considering whether we can allow two phonemes to be represented by one grapheme, we need to identify pairs of words which rely solely on the difference afforded by these opposing phonemes. These are called "minimal pairs". If there is a large number of minimal pairs relying on such a distinction, and sufficient of these would cause semantic confusion if revised, we have probably passed the bounds of practicality, and may have to reject the merger.

For example, in considering whether to combine the /w, hw/ phonemes into one grapheme <w>, we can cite the minimal pairs *while: wile*, *Wales: whales*, *wailing: whaling*, etc. These are homophones to RP speakers, but the distinction between the pairs is useful in many other accents and to readers of traditional orthography, and we must try to quantify the consequent loss there would be in a revised orthography. The value of such a phoneme distinction in the lexicon is called its "functional load".

Since a major accent like RP can do without the /w, hw/ distinction, it seems that the functional load of these phonemes is small enough to allow the merger to be translated into a revised orthography. A design decision can be made, in effect lubricating the sluggish evolutionary process of t.o., which in modern times has practically halted. In the past, when the orthography was more subject to change, the evolutionary process decided that, despite having two graphemes available for /ð/ and /d/ one grapheme should be used for the two. There are few enough minimal pairs like *thigh: thy* to demonstrate a low enough functional load for this situation to have arisen.

Let me summarize. In order that a revised orthography is not trapped into a dialect straightjacket, we must look at ways of accommodating various features of different accents in the English speaking world. This would allow the alphabetic advantages of the orthography to be enjoyed by the greatest number of people. In searching for common denominators, one of these strategies is to allow pairs of potentially confusing phonemes to be allocated single graphemes, so simplifying the phonemes represented in a revised orthography. We will be guided and limited in this by consideration of the functional load of the phonemes involved, as illustrated by the relevant minimal pairs.

I am now able to investigate in more depth common differences between accents, and how to rationalize them in a revised orthography. This is my next task.