

## ADVANTAGES OF ENGLISH SPELLING

Geoffrey Sampson  
University of Lancaster (England)

It is a commonplace among both native speakers of English and learners of English as a foreign language that English orthography is bad. There is a «received view» of the situation which is accepted at least tacitly by a very large proportion of those who use the English language, and which if set out explicitly would run as follows. When English first became a written language, it was spelled as it was pronounced –that is, there was something close to a one-to-one correspondence between phonemes and graphemes. (An orthography of which this is true is commonly called «phonemic»). Subsequently the spoken English language has greatly changed in pronunciation, but the orthography has changed much less; so that the relationships between phonemes and graphemes now are very complex and full of arbitrary quirks. This is an unfortunate development from all points of view; although reform at this stage may well be impractical, were it possible with one sweep of a magic wand to replace current English orthography with a phonemic system much would be gained for future generations and nothing lost by doing so.

Spelling reform was in fact a very live issue in Britain towards the end of the nineteenth century; as late as 1937 the well-known English linguist J.R. Firth wrote that «English spelling is... so preposterously unsystematic that one sort of reform is undoubtedly necessary» (Firth 1937: 48). More recently the spelling reform movement seems to have run somewhat out of steam, daunted perhaps by the prospect of educating a generation to adopt a new orthography in a society in which literacy-training is universal, by the ever-increasing quantity of published material that would be rendered semi-obsolete by a reformed script, or by the increasing fractionation of the English-speaking world into independent political units. (That is not to

suggest that the reform movement is dead; far from it. In the 1970s the gradualist approach advocated by Lindgren (1969) with his «Spelling Reform I» made considerable headway in Australia, where for instance the Ministry of Health was for a period officially so spelled).

Of the various components of the «received view» set out above, even the factual ones can be called into question.

In the first place the idea of a steady movement away from a one-to-one phoneme-grapheme correspondence «when English first became a written language» is somewhat simplistic, in view of the degree of discontinuity between earlier and later spelling conventions that was one result of the Norman Conquest, and the consequent influence of French orthographic norms on users of written English. The fact that the consonant-cluster /kw/ in a (native Germanic) word like *quick* is spelled with a special digraph *qu-* rather than with the more straightforward *cw-*, for instance, has nothing to do with changes in the spoken English language (which in this respect has probably altered very little) and everything to do with French spelling; before the Conquest, *quick* was written *cwic*. (A good brief survey of this aspect of the history of English orthography is in Francis 1967: 199ff.) But this issue is perhaps of minor importance; critics of English orthography are less interested in the reasons why it fails to display a simple phoneme-grapheme correspondence than in the brute fact that it does not do so.

A more serious objection to the «received view», if it can be sustained, emerged as a by-product of the branch of theoretical linguistics called «generative phonology» which developed during the 1960s and 1970s (the standard reference is N. Chomsky & Halle 1968; for a critical analysis see Sampson 1980: chap. 8). The essence of generative phonology is the idea that speakers store vocabulary in their minds not in the form of a phonemic representation but in an «underlying phonological representation» which may be only very indirectly related to actual pronunciation. Where a given «morpheme», or root, has «allomorphs», i.e. differing pronunciations according to the morphology of the word in which it occurs — as, for instance, the root *metr-* has the form /mitə/ as an independent word, /metr/ in the adjectives *metric*, *metrical*, and /mɛtr/ e.g. in *geometry*, or as *sign* has the form /saɪn/ in isolation but /sɪgn/ in *signature* — it is held that speakers use rules to derive the alternative allomorphs whenever possible from single «underlying pronunciations», so that they have to burden their memory with alternative pronunciations for given morphemes only in the case of wholly irregular alternations such as *go/went*. In the case of English the «underlying pronunciations» often turn out to be quite different from any of the allomorphs which are actually pronounced, and even sometimes include sounds which do not occur at all in spoken English: for instance Chomsky & Halle argue that the morpheme

*right* must have the underlying pronunciation /rɪxt/, with a velar fricative /x/ as in e.g. Spanish *México*, since the rules which they establish on the basis of other English words predict that, without an /x/, the complex word *righteous* would be pronounced to rhyme with *vicious*.

The implication of this theory for orthography is that the phonemes to which graphemes may or may not correspond will be phonemes of the «underlying pronunciation» rather than the phonemes that are actually uttered. From Chomsky & Halle's point of view, the idea that a good orthography ought preferentially to represent surface rather than underlying phonemes is psychologically quite mistaken, since it prevents readers and writers making direct links between the vocabulary stored in their minds and the forms written on the page, forcing them instead to go through the quite irrelevant process of applying the phonological rules to work out what the spoken form of the morphemes *would* be if the text in question were a case of speech rather than writing. And, as already suggested in the case of *right*, where the *prima facie* irrational spelling *-gh-* turns out to match an «underlying phoneme» /x/, the pattern of «underlying pronunciations» uncovered by Chomsky & Halle turns out to be in quite close correspondence with the pattern of English orthography. Chomsky & Halle (1968: 49) go so far as to claim that English spelling «comes remarkably close to being an optimal orthographic system for English». Noam Chomsky's wife Carol has argued that the widespread belief that children find English orthography difficult to master is merely a consequence of teachers mistakenly encouraging children to relate spellings to the irrelevant surface pronunciations of words rather than to the «underlying pronunciations» stored in their minds (C. Chomsky 1970).

Commonly, people contrast English orthography with that of Spanish, for instance, as a case where phoneme-grapheme correspondence is close to perfect. However, from the point of view of generative phonology, the crucial difference between English and Spanish relates not to their orthographies (which are both quite good) but to the morphological properties of the respective spoken languages: unlike English, Spanish has relatively little allomorphy (morphemes tend to have only a single invariant pronunciation), hence there is little difference between underlying and surface pronunciations, and therefore spellings which accurately reflect underlying pronunciations (which is what matters) also (irrelevantly) tend to accurately reflect surface pronunciations. Indeed a generative phonologist would criticize Spanish orthography for the fact that, where allomorphy does occur, the spelling often follows surface rather than underlying pronunciations. Thus the alternation between unstressed /e/ and stressed /i/ in the root of forms such as *pedir, pedimos* v. *pido, pide* is quite regular in Spanish and therefore (according to generative

phonological theory) non-existent in the root as it is stored in a Spanish-speaker's mind, where it will always be /ped-/; accordingly the actual Spanish spelling would be viewed as unnecessarily cumbersome, and it would be preferable to write the first -and third- person forms as *pedo*, *pede*.

However, the validity of this defence of English orthography clearly depends wholly on the question whether generative phonology is correct as a theory about the psychological processing of language. Carol Chomsky's claim that traditional English spellings are relatively «natural» for English children seems particularly quixotic in view of an anecdote she quotes from her own experience of trying to apply her theories in teaching spelling: a «seventh-grade» (about 12 years old) pupil retorted, to Mrs. Chomsky's suggestion that she consider the word *signature* in deciding how to spell *sign*, «So what's one got to do with the other?» The relationship between *sign* and *signature* is one of the most elementary allomorphic relationships that would need to be accessible to an English-speaker if he were to be in a position to construct the kind of rules ascribed to him by generative phonologists. The fact is that research findings concerning the psychological validity of generative phonology have been consistently negative (see e.g. the contributions by Hsieh, Skousen, Steinberg & Krohn in Koerner 1975). I have argued elsewhere (Sampson 1975) that the theory of generative phonology rests on a fundamental methodological fallacy; that these scholars are merely using the clues provided by current allomorphy to partially reconstruct the past state of languages and gratuitously ascribing current psychological reality to the results. From that perspective it is no surprise that the so-called «underlying pronunciations» are close to the spellings, since they are in reality *old* pronunciations belonging to a period relatively close to that of the creation of the orthography. From the point of view of generative phonology it is an unexplained coincidence that orthographies commonly are close to phonemic when newly created but often become much less phonemic after several centuries of use (since there is no reason to expect languages to have relatively little allomorphic alternation at just the periods in their history when their users happen to become literate); from the traditional point of view, according to which written-language behaviour is more conservative than speech, this fact is quite predictable. By the 1980s it is likely that few linguists other, possibly, than its inventors still believe in the theory of generative phonology.

A theory about English orthography which is more restrained (and accordingly, perhaps, more persuasive) in its claims than that of generative phonology, but which resembles the latter in suggesting that the graphemes of English orthography are used in a more systematic way than appears superficially to be the case, is the theory of K.H. Albrow (1972). Albrow

describes English orthography in terms of the «polysystemic» linguistics of J.R. Firth (for a discussion of the notion «polysystemic» see Sampson 1980: 215-18). That is, Albrow argues that English orthography involves not *one* single code of phoneme-grapheme correspondences, but a *set* of different codes, each of which is relatively regular in itself, and the choice between which is also to a certain extent regular and predictable rather than arbitrary. Thus for Albrow the superficially chaotic appearance of English orthography is partly a consequence of running together mentally the various systems of which it is composed rather than keeping them separate.

In Albrow's theory, the aspects of language which graphemes are used to represent are not confined to phonemes but include other properties. Consider, for instance, the spellings *axe*, *egg*. Both of these are moderately irregular:

*a...e* standardly represents /eɪr/ rather than /æ/, and *xe* is an almost unique representation of /ks/; *gg* is common word-internally for /g/ but in final position after a checked vowel such as /e/ that consonant is normally written with a single *g* (as in *beg*, *leg*), and in fact if we exclude proper names and dialect words *egg* is the only English word that ends with double *g* in writing. However, Albrow points out that English orthography marks a distinction between «lexical» words such as nouns and verbs, and «grammatical» words such as conjunctions and pronouns: the latter are often spelled with one or two letters (*I*, *he*, *if*, *as*, etc.) but the former always have at least three letters. Thus the *e* of *axe* and the second *g* of *egg*, though redundant from the phonemic point of view, can be seen as «spelling» the fact that these are lexical rather than grammatical words — which may be a useful piece of information for a fluent reader aiming to take in the general structure of a piece of prose at a brief glance. Likewise the stressless phoneme /ɪ/ is spelled *i* in a lexical morpheme but *e* in a grammatical morpheme: thus we can see at once that the *-ed* of *wanted* is an inflexion while the *-id* of *solid* is part of the root, though both represent the same phoneme-sequence /ɪd/.

As far as it goes Albrow's analysis seems very enlightening. Even after the various «systems» have been disentangled from one another, however, there still remains a great deal of pure quirky irregularity in English spelling. Albrow makes no secret of this:

The division into more than one system does not do away entirely with the correspondence of more than one symbol to a sound... The point is rather that this phenomenon is reduced to more manageable proportions. ... Plurality of correspondence [i.e. the correspondence of more than one sound to a symbol] ... is, however, considerably reduced by the setting up of more than one system...

Furthermore, even if a «polysystemic» approach were to eliminate irregularity in phoneme-grapheme correspondences completely within each separate system, one might well argue that the fact that several different systems exist within English as opposed e.g. to Spanish orthography is in itself enough to entail the undesirable consequences that are commonly taken to flow from a purely irregular orthography. The fact of «regularity within irregularity» may well not greatly help, say, the English schoolchild learning to spell (if it is his interests which one thinks of as being damaged by an irrational orthography), because it may be that the appropriate assignment of words to systems will be almost or fully as difficult for him to master as the superficially-arbitrary spellings themselves, considered apart from the question of polysystematicity. In particular, in order to decide whether a word belongs to Albrow's System 1 or System 2, which between them are by far the most important of his family of systems, the most useful data are (i) whether the word belongs to the native Germanic stock or is of foreign origin, and (ii) whether or not the vowel (s) of the root are realized differently in different morphological environments. Of these questions, (ii) will often be difficult, and (i) impossible, for the average adult (let alone a child) to answer; and yet even correct answers to both questions do not suffice to determine unerringly the membership of a word in System 1 or System 2.

So much as a survey of the views of certain earlier writers. In developing my own view of the matter in the remainder of this article I shall --unlike the generative phonologists or Albrow -- grant the general validity of the *factual* aspect of the «received view» of English orthography outlined at the beginning. It does seem to me broadly correct to say that English spelling was once relatively phonemic and is today very much less so. What I wish to take issue with is the *evaluative* aspect of the received view. The case seems to me far from proven that it is on balance a bad thing for the English-speaking world that it uses the kind of non-phonemic orthography that it now does. Indeed, I shall argue that there are reasons why a non-phonemic orthography may be positively advantageous in the modern world -- reasons which did not apply to the same extent at the period when English-speakers first became literate, so that it is in a sense a lucky chance that the influence of foreign languages such as French, together with sound-changes internal to English, have between them greatly reduced the extent to which English orthography is phonemic. To my mind the «received view» embodies an error of a type that is very common in political thought: it gives full weight to the obvious interests of certain participants in social life, while wholly ignoring the rather less obvious countervailing interests of certain other participants.

Psychological research has recently established fairly clearly that the

processes of reading and spelling are much less closely linked than used to be supposed. The key reference here is Bryant & Bradley (1980). These writers showed with respect to English-speaking children that not only can individual children frequently read correctly words that they are incapable of spelling (in itself no great surprise) but also they can frequently spell correctly words which they cannot read (which is more unexpected). Furthermore, patterns among the various words concerned suggest strongly that, at least in the early years of literacy-acquisition, children use different strategies for the tasks of reading and spelling: they tend to spell using the «phonic» or «Phoenician» method but to read using the «look-and-say» or «Chinese» method. (The terms «phonic» and «look-and-say» are current in the jargon of British literacy teaching; «Chinese» or «Phoenician» are borrowed from Baron & Strawson (1976). That is, children spell words by analysing them into a sequence of phonemes and writing down graphemes to correspond to the respective phonemes; but they read by identifying a written word as a *Gestalt*, a single distinctive visual pattern which in psychological terms is linked to the memory of an item of vocabulary directly rather than by way of the phonemes of which the vocabulary-item is composed.

Bryant & Bradley suggest that this dissociation may be a feature only of the early stages of learning to read and write, and that as they get older children develop an ability to switch between both strategies as necessary during both reading and writing. (The Chinese strategy is necessary in writing an irregularly-spelled word such as *wrought*, for which phonemic analysis provides little help; the Phoenician strategy is necessary in reading an artificial nonsense-word, or a word that is new to the reader such as an unfamiliar surname.) However, Frith (1980), in an examination of differences between good and poor spellers and readers, concludes that individuals differ in the extent to which they acquire this flexibility. Her findings might be interpreted as suggesting that «Phoenician», phoneme-by-phoneme processing is the normal strategy for spelling and «Chinese», *Gestalt* processing the normal strategy for reading, with good readers or spellers being people who have succeeded in cultivating an ability to «cross over» and use the «abnormal» strategy for the respective process when it is useful to do so. Snowling (1980, 1981) reports investigations tending to show that dyslexics lack the ability to process words specifically by the Phoenician strategy whereas the Chinese strategy may function relatively normally for them; this, if true, could be seen as relevant to the issue of dissociation between reading and spelling strategies in that it refutes the assumption, commonly made by users of alphabetic scripts, that the «Phoenician» strategy is psychologically simpler than the «Chinese» strategy from all points of view. (However, Seymour &

Porpodas 1980, and Nelson 1980, cast doubt on the idea that dyslexia represents a deficit specific to one of the two strategies.) Ellis (forthcoming:§ix) surveys other evidence bearing on the idea that reading and spelling processes are typically different in kind.

Certainly a commonsense consideration of the difference in speed as between reading and writing makes it seem very plausible that different strategies are used in the two processes. Typical writing speeds are 20-40 words per minute by hand, or 50-80 w.p.m. on a typewriter, whereas we read at 200-400 w.p.m. or more. In writing we might have time to consider the spelling of words on a phoneme-by-phoneme basis, and yet it could well be the case that the average amount of time available for processing a word in reading simply was not great enough to permit each grapheme to be attended to separately.

In an admittedly speculative paper, Frith (1981) went so far as to suggest that readers and writers have directly opposed interests with respect to orthography. For the writer, Frith suggested, that system is best which is most «Phoenician»; for the reader, the best orthography is one which lends itself most readily to the «Chinese» processing strategy. A «Phoenician» system is good for the writer for the obvious reason that it enables him to encode his memory of the pronunciation of words into written form by means of very simple rules. From the reader's point of view, lack of simple phoneme-grapheme correspondences is not desirable *per se*, but what is desirable is a high degree of redundancy, of individuality in the written shape of words, since this reduces the proportion of a word that has to be inspected in order to identify it unambiguously. The graphemes of Chinese writing itself, which scarcely depends on pronunciation at all and simply assigns a separate visual unit to each morpheme, feel extremely distinctive to those who can read them; to pass from reading Chinese to reading an alphabetic script produces something like the impression of loss of visual distinctiveness that a Westerner might feel on passing from reading alphabetic writing to reading a script composed of the dots and dashes of Morse code.

For an orthography to be non-phonemic does not in itself entail high redundancy. For instance, if Spanish orthography were «reformed» by replacing each occurrence of *pl* with *pr* and *vice versa* (so that the spoken word *placer* would be written «*pracer*», and the spoken word *prensa* would be written «*plensa*»), the result would be a less phonemic script (one would now have to remember a special rule about which *rs* were pronounced /l/ rather than /r/ and which *ls* were pronounced /r/ rather than /l/), but there would be no gain in redundancy: since /pl/ and /pr/ have similar distributions in the phonological pattern of Spanish, the sorts of letter-sequences that can occur as potential Spanish words would be much the same after as before this «reform». But, although

non-phonemicness of an orthography does not necessarily entail redundancy, high redundancy *does* entail non-phonemicness. If the visual shapes of words are to be as distinctive as possible, a wide variety of letter-combinations must be possible in writing that correspond to no distinctions in speech. «Irrational» English spellings such as *debt*, *bright*, *wren*, etc. etc., whatever their disadvantages, clearly do have the advantage of constituting relatively distinctive visual patterns.

(Notice that the concept of orthographic redundancy is separate from the idea, often discussed by spelling reformers, that it may be desirable to provide distinct spellings for homophones -- so that e.g. the *ee/ea* distinction in *meet* v. *meat* may be justifiable although non-phonemic. None of the three irrationally-spelled words listed as the end of the last paragraph are homophones.)

If, as Frith suggests, orthography opposes the interests of the writer to those of the reader, common sense and research alike also suggest that orthography opposes the interests of the learner to those of the mature user (mature in the sense that he has ceased to be a learner and has mastered the system). Much of the impetus for English spelling reform has stemmed from the perception that a «Chinese» orthography is more difficult to learn than a «Phoenician» one. The emotional appeal of spelling reform derives largely from our sympathy with lovable infants who are forced to waste dreary hours at the schoolroom desk being sternly admonished for their «ignorance» in writing e.g. MITE for *might* or LUV for *love*, when if only our orthography were phonemic those hours could be spent in the acquisition of knowledge of a more worthwhile and interesting kind, or outdoors in the fresh air. It is true that this assumption about relative ease of learning has been, for many of those who express it, only an assumption which was perhaps made over-glibly; it is dangerous to draw inferences from the relative length of time devoted to literacy-training in Chinese schools as opposed to those of nations using phonemic orthographies, because of the many interfering factors that differ as between the respective societies. However, Warburton & Southgate's scholarly investigation (1969) of the performance of British children taught to read via the (phonemic) «Initial Teaching Alphabet» as compared with children beginning on traditional English orthography does seem to show that learning is more efficient with a phonemic orthography, even if the difference is perhaps less spectacular than enthusiastic spelling reformers would have one believe. On the other hand, among mature users of an orthography even the most prolific writers are undoubtedly readers first and writers a distant second; everyone spends more of his time reading than writing, and, since reading is so much faster, the bulk of material read must be enormously greater than the bulk of written output. Therefore, if Frith is correct in her suggestion that «Chinese» orthographies are desirable from the reader's

point of view, the mature user of an orthography benefits from a Chinese system while the learner manages better with a Phoenician system.

In a situation such as this, which involves opposing interests each of which would be extremely difficult to quantify even in theory, let alone in practice, it seems inconceivable that one might be able to deduce from first principles where the ideal balance between the interests would lie. The situation is one of those described as typical of the social as opposed to physical domain by the sociologist Friedrich Hayek (e.g. 1955), in which we can see in outline what the relevant countervailing considerations are which jointly determine a best solution, but cannot go on to specify what that best solution will be -- so that the solution produced by blind social evolution is likely in practice to be superior to any solution imposed by a human planner.

In this case, however, it seems that we *can* be specific about the direction in which the ideal solution will have been moving over the centuries since Western nations became literate. For consider, first, the fact (and from here on I shall assume that the somewhat speculative ideas discussed above are correct) that the reader's interests favour Chinese systems while the writer's interests favour Phoenician systems. It is clear that the invention of printing, and its increasing cheapness as technology has progressed, must have caused the average number of occasions on which a given text is read to grow enormously over the half-millennium since Gutenberg, while each text is still written only once. There are texts, such as ephemeral personal letters, which receive only one reading; but since the invention of the telephone the number of these per head of population may have decreased, and in any case nowadays they exist side by side with a mass of texts such as written road-signs, daily papers, advertising material, and the like, which may receive millions of readings each -- cases such as these scarcely existed two or three centuries ago. This implies that the balance of advantage has been tending to move towards the reader and away from the writer: extra trouble in writing a single text can now be massively repaid by increased efficiency of very many acts of reading that text. Thus the ideal orthography should now be more Chinese, less Phoenician than before.

Consider also the opposition of interests as between learner and mature user. Another set of social changes that have taken place since the Middle Ages are that life expectancy has increased (although what is relevant is the life expectancy of individuals at the age when they have mastered an orthography, and this has increased much less dramatically than life expectancy at birth), and that literacy-acquisition takes place younger (adults learning to read and write are now the exception where once they were the rule). This must tend to shift the balance of advantage away from learner and towards mature user: it is worth taking more trouble

nowadays to learn a system if the extra trouble is the cost of acquiring a system that is relatively efficient once mastered, since the period during which the average individual will enjoy mastery of a writing system is now longer than it used to be. Again, on the assumptions stated earlier these changes favour a more Chinese, less Phoenician system.

As already suggested, it would be rash to go on from this point to try to make a quantitative statement about just *how* far in the «Chinese» direction the orthography of a modern society ought ideally to have proceeded.

In the first place, I would certainly not suggest that we would be better off actually using a wholly morpheme-based writing system such as that of Chinese itself, no matter to what extent mature readers' interests may have come to outweigh the interests of writers and of learners, since a system using separate symbols for each morpheme rather than a small alphabet of letters has disadvantages in the modern world unrelated to the considerations already discussed. Printing and other mechanical word-processing (as opposed to handwriting) is relatively difficult and expensive; and such an orthography has inherent problems with respect to the recording of foreign words and names, which were of little consequence for the self-contained traditional Chinese civilization but would be very troublesome for a modern Western society.

Even setting aside that possibility, my argument gives us no right to assume that the ideal English orthography would have the degree of «Chineseness» possessed by our current system of alphabetic writing. The ideal system might be even *less* phonemic; or it might well be more phonemic. (At least a few of the quirks of English spelling seem to be wholly undesirable in that they decrease the regularity of phoneme-grapheme correspondences without adding any redundancy in visual shapes, like the hypothetical Spanish example proposed above; thus the use of *-gh* rather than *-ff* in *tough* has the virtue of increasing redundancy, but the *-o-* has no virtue at all -- *tugh* would be even more distinctive and phonemically less ambiguous.)

However, I would like to suggest that it may be no accident that English orthography (like that of some other Western languages, notably French) has been growing less and less phonemic over the last half-millennium. Rather than representing a dogged and anti-social conservatism on the part of the literate élite, this phenomenon may represent an exploitation of fortuitously-occurring changes in spoken language, together with alternative conventions that happened to be accessible, in order to adapt the orthographies to the changing balance of social forces.

It will not have escaped Spanish-speaking readers that I have by implication cast some doubt on the value of what the linguistically-minded

among them may perhaps be accustomed to consider one of the special glories of the Spanish language, its unusually phonemic orthography. It would be presumptuous as well as foolish of me to suggest that Spaniards ought to consider artificially complicating their spelling to make it more like that of English. But I do seriously suggest that, presumably because the spoken Spanish language has undergone relatively few conditioned sound-changes since the period when it was first written -- and possibly also because literate Spaniards in past centuries were less conservative than their English counterparts? -- adult Spanish readers of today may be placed in a position which causes them to make regular gifts of their time and energy to their children and to those of their compatriots who do a lot of writing. Being myself an author who is fond of children, I find this behaviour admirable.

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