

English Spelling Reform

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ABSTRACT *Knowledge is the wealth of nations, and language is the main social technology by which knowledge is communicated. An efficient orthography is therefore of great importance. English, as the principal international language of the early twenty-first century, has much to offer the world, but its spelling is archaic and dysfunctional. Technically, the reform of English spelling would not be difficult, but there are very major political obstacles in the way. The benefits of spelling reform would greatly exceed the costs, and a 'Big bang' approach to reform is required. The present article outlines a technical solution and the way in which reform could be implemented.*

Keywords: English; language; spelling; reform; social technology.

Information, Language, Technology, and Economics

There are numerous ways in which human beings can create, record, and convey information. These include through body language, music (or noise), pictorial and diagrammatic representations, machine language, and so on.

The most pervasive method of conveying information between individuals, however, is ordinary spoken language, in both its oral and written forms. Ordinary spoken language may be called 'the language of qualities' to indicate its different emphasis from mathematics, described as 'the language of quantities'.

Spoken language is not just a vehicle for the formulation, capture, and recording of information. It also guides and channels the above process through the use of its customary forms, namely its words, grammar, and syntax, and also to some extent its inner 'philosophy'. Language is a social technology, and one of the most fundamental and pervasive of all. It provides an effective means of comprehending the whole of information, technology, and economics, as well as virtually every other aspect of human existence.

The recording of spoken language in written form is a very important *additional* social technology, supplementary to spoken language itself. The defining aspects of this additional technology for the recording and conveying of information are the script and the spelling system used.

Information in all its forms is the key factor in economic productivity. The generation and utilisation of more and better information is therefore of fundamental importance to growth in income and welfare.

The discovery or invention over the last 150 years or so of electricity, telephone, motor cars and aeroplanes, computers, microprocessors, television, and the Internet has both required and led to a vast increase in the amount of information being generated and disseminated throughout the world. To achieve maximum benefit from these developments requires high efficiency in the use of language, including in its written form.

Human activity mediated through language includes the conceptualisation, design, production, and distribution of the new and higher quality products on which economic growth largely depends, and also improvements in working conditions, the creation of more interesting and satisfying jobs, more varied and enjoyable leisure activities, and so on. In particular, the services provided via the Internet are reducing the cost of research and invention drastically because of the huge array of information now available at the press of a button. And the effects are not confined to computer related industries.

The resulting increased knowledge everywhere of what is happening in the rest of the world will lead to increasing sophistication in local markets. Scientists and technologists will be able to converse easily with other scientists and technologists around the world, and 'critical masses' of expertise can then more readily develop. This will provide powerful synergies in innovation and production. Networks, which may grow slowly at first, will then grow faster as their effectiveness becomes evident. Technological insights will be enhanced, and as a result many technologies will be able to diffuse more rapidly. Management mechanisms will be improved, market awareness will improve, and knowledge of technological and market linkages will improve. And markets will continue to grow larger, thereby further increasing the incentive to introduce new technology.

There are, however, at least 6,000 distinct 'languages' at present in existence in the world, and 10 or so of these can legitimately be described as 'international' languages.

The scope exists for a small number of languages, or even a single language, to be a prime source of international communication throughout the world in the future, with all the economies and other benefits that would flow from that. In particular, both China and the countries of the Indian sub-continent, with 43% of the world's population between them, now see English as the main key to accessing western modern scientific and technological advances. These countries envisage the English language as a medium of communication as much with Japan, Korea, Indonesia, Thailand, the Philippines, Singapore, and other Asian countries as with the West. They also see scope for non-native speakers to be able to exploit their own uniqueness in their use of English.

Particularly in those countries whose governments have adopted an official policy of encouraging the use of English, there are questions about the relative rate of diffusion of knowledge of the language through the educational system and the rate of uptake of the actual use of the language in work situations. It may be expected that there will be some significant delays between the former and the latter. The foundation for the take-up of English in China on a massive scale has been laid, and further build-up of the infrastructure continues at a rapid pace. In some respects, English already is (and has been for some time) the most important language in India—even though far more people in India speak Hindi as their mother tongue.

Knowing English will facilitate access to management models developed and used in English-speaking countries, to some extent in competition with models from elsewhere. This will certainly have an effect on the efficiency with which factors of production are used. New ideas of all kinds will be seized on and used, and some organisations and paradigms may be turned upside down. Those countries that embrace the new international opportunities in this area most willingly will be the ones that will benefit the most. There will be great benefits to labour forces which, for the first time, will be coming in contact with English as a major world language. As well, the effects of greater familiarity with English may eventually be felt in the realm of art, literature, and entertainment as much as in simple cost reductions and quality improvements in the provision of goods and services.

Increasingly, communicative competence in English is now being seen as the decisive factor in hiring employees in the field of foreign trade business in many countries. And this competence depends on being able to pronounce the language reasonably correctly. That depends in large part on having a logical spelling system to work from.

English and the International Flow of Information

The English language is now the most used language in international communication.¹ English currently accounts for about 50% of the amount of new information recorded per annum throughout the world,² 40% of the total amount of information flows propagated electronically,³ and perhaps 15% of the total amount of information generated including face-to-face communication.⁴ English accounts for about 70% of the material on the Internet.

This current predominance of English is mainly a result of the importance of the USA in the world economy, the ongoing legacy of the use of English as an official or semi-official language in the Commonwealth countries, and the development of computer technology and the Internet in English-speaking countries.

This present position of English in world information flows has given the language a usefulness, and hence economic value, which seems likely to continue to grow for a long time to come. The position of English as a language of world communication is therefore very likely in future to become even more important than it is already.

The Problem of English Spelling

Is English properly equipped for such a task? In many ways, yes, but in one very important way, no. While English has the largest vocabulary of any language, a vast and sophisticated literature, extensive borrowing of words from many other languages, a relatively simple grammar, a clear pronunciation, and an efficient script, its spelling system is archaic and dysfunctional.

The problems introduced by Norman scribes in applying Norman French spelling methods to the language of the Anglo-Saxons still remain, and the essentially misguided activities of etymologists in the sixteenth century and later in attempting to spell words according to their supposed root origins have led to a seriously inefficient orthography. No thorough-going reform of the spelling system has occurred in the last 1,000 years, and the accumulated weight of existing practice resisting change is now enormous.

This means that the natives of English-speaking countries face difficulties far beyond what should be necessary in learning to read and write their own mother tongue. As many as 60,000,000 people in English-speaking countries at present have major difficulties in reading and writing, and 30,000,000 or so of these are likely to suffer severe handicaps throughout their lives in both reading and writing as a result of English spelling.⁵ If nothing is done, a similar proportion of the population will continue to be severely handicapped in every future generation. A well designed and comprehensive reform of the spelling system, on the other hand, if it could be designed and implemented, would eliminate those handicaps for a large proportion of these unfortunates into the indefinite future.

As pointed out by the (UK) Simplified Spelling Society,⁶ 'Literacy is ... far harder to acquire in English than in most languages, teachers and students struggle with it at every level, and many learners never master it properly ... Non-native speakers face the further hazard of mispronouncing ...'. Educational standards are of concern, huge amounts of material, time, and money are wasted, and the human and social cost is very high.

A four-year study done for the US Education Department⁷ revealed that nearly half of that nation's then 190 million adult citizens were not proficient enough in English to write a letter about a billing error or to calculate the length of a bus trip from a published schedule. The Department tested more than 20,000 Americans, in a representative sampling of those above the age of 15, with questions involving practical matters that people face every day, like gleaning information from a newspaper, reading a bus schedule, making out a bank deposit slip, and understanding instructions for prospective jurors.

Like previous studies, the report said that nearly 10% of Americans say they have difficulty reading and writing, the usual gauge of illiteracy. The purpose of the study was to assess reading skills needed for the workplace and for civic activities like voting or jury service.

Reginald Deans, in *Universal Language and Simplified Spelling*,⁸ remarked that

It is a very serious matter for children who fail to develop reading ability. A quick, accurate reader possesses a key which opens to him the vast stretches of knowledge whilst the poor reader reads so slowly that he has not time to read much and reads so inaccurately that he is not much better off than when he began.

It was further pointed out that many otherwise intelligent children acquire a feeling of inferiority and disappointment as a result of their early attempts to read, and before long have learnt to expect a trap that will advertise their inferiority in every word. And that once this process begins they associate reading with unpleasantness and naturally seek to avoid it.

An article in *Time Magazine* in March 2001⁹ entitled 'Blame it on the written word', reporting on the work of an international team of researchers, noted the very large contribution made to the incidence of dyslexia in English-speaking countries by English spelling:

In the past couple of decades, scientists have learned a great deal about the neurological causes of dyslexia. But what they hadn't yet explained was why its incidence varies so from country to country—and what the difference means. ... Italian, French, and British researchers (have now) proposed an answer.

The variability, they wrote in *Science*, depends greatly on the complexity of the writing system

It was reported that, while English has 1,120 different ways of spelling its 40 phonemes, i.e. the sounds required to pronounce all its words, by contrast Italy needs only 33 combinations of letters to sound its 25 phonemes. The reported rate of dyslexia in Italy today is barely half that in the US, where about 15% of the population, i.e. about 42,000,000 people, is affected to varying degrees.

Native speakers of other languages have even greater difficulty learning to speak English, because they have less familiarity with the sounds of the language. These people therefore have unnecessary difficulty in accessing the information flows worldwide expressed in English. A well designed and comprehensive reform of the spelling system would mean that hundreds or even thousands of millions of people from non-English-speaking backgrounds could in future learn to speak it more effectively as well as read and write it.

If standard English is to meet its full potential as an international language in the twenty-first century and beyond, it can be argued that the English speaking community should cease imposing the burdens of an inefficient spelling system both on their own citizens who wish to achieve literacy and on non-English speakers who wish to speak the language intelligibly. Having a broadly standard pronunciation of 'standard' English based on a logical and consistent system of spelling would be particularly helpful worldwide in the teaching of English as a second or foreign language.

Such a reform would also enhance the mutual communication of all communities which make use of phonographic writing employing the same encoding system. The Latin alphabet is at least as efficient for general use as any other script at present in use. It is superior, for example to the main Indian scripts, which are difficult to 'modularise' for use with keyboards, printing, computers, and dictionaries, and greatly superior to any pictographic script, such as Chinese, which involves very large learning burdens. The continued use of the Latin script in the recording of English is justified.

Can the Problem be Fixed?

There are, of course, in a sense, many different 'Englishes'. For example, there are regional differences of both vocabulary and accent, both as between countries and within countries, differences between social classes, professions, occupations, activities, and industries, differences according to the degree of formality required, and so on. The present article is concerned with 'standard English'—which is the most geographically widespread, developed, and prestigious form of the language. It is the language of government, the law, business, administration, science and technology, academia, religion, the media, and national and international trade and communication. It has been described as 'the language used by the powerful'.¹⁰ It is a central reference point for the other versions of English. Pronunciation of standard English does not vary anything like as much as the dialects, patois, and creoles of English, and with greater international communication such differences as there are are probably diminishing over time.

Realistically, for a scheme for the reform of English spelling to have any hope of adoption, it must be able to portray the consistent and logical spelling of all the sounds in the English language in a concise and easily memorable way on a single card or sheet of paper. Fortunately, with NS this can readily be done.

A Reformed Spelling System

A sound, practical, and acceptable system of standard English spelling must be logical and easy to understand and apply, including for any new words yet to be coined. At the same time, there is advantage in retaining many existing elements in current English spelling, and relating these where possible to the logical elements of related languages, particularly the teutonic languages which are the rootstock of English.

Consider the following examples of existing English spelling.

‘The Mau-Mau veteran defended the laager with zest.’
 ‘The men from Taipei ne’er bet on a boxer.’
 ‘The bishops in Hawaii-west administer a rich district.’
 ‘Poor Jon drops the hot moulded object on the boiler.’
 ‘Yes, the muu-muu’d fit!—the convivial American in Niugini puts it on.’
 ‘The foe(h)n, a hot wind—not in Caen.’

These sentences, referred to here collectively as ‘Spelrait’ (NS), would be spelt the *same way* under both the existing and the proposed new spelling systems, and include all the sounds in the English language. The reform would then consist essentially of spelling all words in standard English in accordance with those models. It would be a straightforward matter to familiarise the general public with the standardised spellings through memorable illustrations of each of the model sentences.

NS retains as much familiarity with existing spelling as is possible while at the same time being completely logical in the use of the traditional symbols of the Latin script. Some examples to show the necessary consistent use of symbols are given in Table 1.

It is not necessary for homophones to be spelt separately, because the meaning of words can virtually always be given by context, or, in the very rare cases where this is not possible, by some simple addition or clarification.

Under the new system, the question of somewhat different pronunciations between the American, British, Canadian, Australian, New Zealand, South Asian, South African, West African, East African, Caribbean, and other versions of English could be effectively addressed. The two principal standards are usually referred to as British Received Pronunciation (Commonwealth Standard) and General American.

Table 1. Reformed and consistent use of symbols

It’s fan to ran in the san, sed Mather	a	The tiim didn’t fiil thaet the diil was riil	ii
Paart ov the laard’z in a jaar, sed Faather	aa	Dot woz fond ov hoer cotij pot	o ^a
Ai wudn’t bai aet a prais thaet woz hai	ai	The poor yang Boor then coold aet the door	oo
Hau nau braun cau, faund on a maund	au	The boiz wil toil aet boiling thi oil	oi
The faet blaec caet saet on the maet	ae	Nou, the moutorbout woun’t gou slou	ou
Cent then sent hiz pet tu a vet	e	Shoerli loernt not tu boern thi oern	oe
Deer tu sheer a heerstail with fleer	ee	Cud yang Bush bi lucing foor a bul?	u
The rein in Spein foolz meinli in the plein	ei	The ruul foor fuud iz cuul with a spuun	uu
The bilder dipd hiz lid tu Mili	i	Ciupid in futiur wil biutifai the viu	iu

Note: ^aPronunciation in General American is closely similar to, or the same as ‘aa’.

While practices vary also to some extent within countries, in British and Antipodean English, for example, words using 'r', such as 'car', frequently do not sound the 'r', whereas in North American English, except in eastern New England and some southern coastal areas, they generally do. In American English the a and o sounds for some speakers converge, so that 'dog' and 'father' have the same vowel sounds. Also, the vowel sounds in particular syllables may be clearly pronounced in one region but not in another, e.g. 'missile' pronounced as 'missal'. And there are other types of variation. The differences in pronunciation are, however, small enough that they can be the subject of a compromise spelling in a standard system. An alternative would be to have separate orthographies for Commonwealth Standard and General American pronunciations. Even in the latter case the differences between the two systems would be minimal, amounting to only about one letter in 50.

Political Obstacles in the Way of Reform

In contrast to the technical aspects, the comprehensive reform of English spelling in a *political* sense would be a very difficult issue, because there are two interlocking problems, namely the large amount of spelling change required because of the extreme disarray of current English spelling and the coordination problems resulting from the very widespread use of English worldwide. Most other languages have had to face only one of these problems. For example, some languages have required fundamental reform but there were no international coordination problems, and others have required international coordination for any reforms but required reforms were minor.

As noted by Eagle,¹¹ 'Unfortunately there are very strong and powerful opponents to any spelling reform of any kind. It seems ... rather discreditable that many of them are to be found amongst our leading scholastic educators and the academic authorities on our language'. The suspicion is that because such people have mastered a dysfunctional spelling system several decades ago, and have long got used to it, they believe that it will not hurt other people to do the same. However, this is being inherently callous of other people's mental welfare.

In terms of government control over the official orthography, there are the vital areas of curriculum planning for public schools, testing, text-book selection, and the administration of grants for educational research. Then there are the so-called 'reading experts' who are found in educational faculties in higher centres of learning that do research in teaching methods and furnish advice and instructions for teaching reading and writing. This research is being funded by book publishers, governments, universities, charitable foundations, and the like. As pointed out by one commentator,¹²

The centres of power behind the ('dictatorship of traditional orthography') that we are fighting against form a big mess of overlapping vicious circles and feed-back loops, and so fighting this multi-tentacled monster is going to be very difficult since each part of it is supported by all the other parts.

Many citizens in English-speaking countries would probably resist being asked to abandon something old and comfortable in favour of something new, and might not be prepared to place much value on the medium- and longer-term benefits of

the change to themselves and/or the community. In any process of actual reform, this would be perhaps the biggest obstacle to overcome.

Joel Mokyr¹³ has pointed out that when a radically new technological idea is first proposed, a normal reaction is that it will not work because 'otherwise we would have thought of it ourselves'. He notes that there is often a great deal of uncertainty about unintended consequences, whether they be social or environmental in nature. Throughout history technological process has run into an even more powerful foe, namely, the purposeful self-interested resistance to new technology. The net result is that changes in technology, the mainspring of economic progress, have actually been rare relative to what human creativity is capable of, and even in free market economies technological creativity has proved politically vulnerable.

Overcoming the built-in resistance is the key to technological progress.

If no hare-brained idea had ever been tried, we would still be living in the stone age. The idea that 'If it ain't broke, don't fix it' is one of those half-truths that reflect the ambiguity of the problem. There are cases in which something is not broke, yet by fixing it we can make it better

Because the extent of the change required for English and the number of individuals and countries affected is so large, the scale of the reform would be virtually unprecedented in history. However, other languages have managed reform on a relative scale almost as large. There was a major reform of Russian over 100 years ago, and French, Spanish, and German have all undergone recent reforms, albeit relatively minor. Several countries are currently in the process of converting from the Cyrillic alphabet to the Roman alphabet, and Turkey converted from the Arabic alphabet to the Roman alphabet after the First World War.

There was a major joint reform of Dutch and Flemish after the Second World War, which changed the spelling of almost every word, involved close international collaboration, and was carried through very successfully in spite of initial opposition. Changes such as the Dutch/Flemish reform, however, do not come about quickly, but require a 'wave of social agreement', based on a long process of education, publicity, and persuasion. It would be the same with English.

Table 2 show arguments frequently advanced against English spelling reform, and the responses to those arguments.

Would Reform be Worthwhile?

Because the worldwide investment, both physical and mental, in the present inefficient spelling system is so enormous, it may be thought that any thoroughgoing reform of the system must be impossibly difficult and expensive, and should not be seriously contemplated. However, preliminary evaluation of the cost and benefits suggests that this is not the case. While there would initially be large costs involved in the change-over to a reformed spelling system, the benefits to both English-speaking countries and the international community would appear to be an order of magnitude greater, and these benefits would continue into the indefinite future.

Reform of English spelling would not force the use of English on those who would prefer not to use it. It would, rather, remove barriers to the use of English by those who do wish to use it. In economic terms, reform would represent not a forced increase in the demand curve for the use of the language, but rather, a fall in the supply curve (i.e. a fall in costs), leading to increased demand.

Table 2. Arguments against spelling reform

Argument against spelling reform ^a	Response
English spelling is fairly regular, so it is not necessary to worry about the words that are spelt irregularly.	If approximately 20% of English words are not spelt according to any kind of regular pattern, a significant spelling problem of a kind not solvable by reference to a rule is likely to crop up in almost every sentence. This is enough to destroy the self-confidence of poor spellers.
The present spelling reflects the romance of English history.	Like medieval tortures and dark satanic mills. The reasons for sticking to the traditional but inefficient way are illogical, and the result is damaging.
Spelling should show the derivation of words.	Since present spellings do not show the derivation in so many cases, or are misleading in the way they do, the assumption that words should show their derivation is not an argument against reform, but rather an argument in its favor.
Word families must be kept together, otherwise related words will often look different.	This is only of significance to a handful of scholars with a particular strong interest in the history of the language.
Many words in the present spelling are internationally recognisable.	Indeed. But so will these words be internationally recognisable under the reformed spelling system.
There is no point in reform, because the way in which we speak is constantly changing.	The way people speak English is indeed changing, but compared with the total stock of existing words and practices the process of change is very slow. Once the spelling of the language was comprehensively reformed to bring it back into line with actual pronunciation, it would only require very small changes to keep it regular.
An alphabet cannot be based on sounds, because English has too many accents.	Given that there are many different accents, the obvious and logical thing to do is to cater for the large majority of people by basing the reformed spelling of words on their pronunciation by that majority.
The new spelling would make all existing books useless.	Not so. At the introduction of the reform, previously published books would be more or less equally intelligible to readers as newly published books. As time went on, the more useful of earlier books would be reprinted in the new spelling.
Spelling reform would tamper with the language of Shakespeare.	Spelling reform is not about change to language. It is about change to spelling. The language itself would not change. In any case present-day English is no longer the language of Shakespeare; a great many words have been added, some have been dropped, some meanings have changed, and many words are now pronounced differently. Also, some spellings have changed; for example, Shakespeare spelt his name in various ways, but never as 'Shakespeare'.
Reform would end the joy of puns.	Changing the spelling of puns will have no effect on puns whatsoever.
Reform would end the joy of crossword puzzles.	Crossword puzzles would continue. They would just look slightly different than before.
Failure in reading and writing is not due to illogical spelling but to lack of ability.	To a very large extent, this is not true. Perception of phonetic spelling, and of phonemes, can be learnt, if spelling rules are logical and consistent.
Previous attempts to teach a simplified method of spelling (ITA) in schools failed.	This is not correct, except in the sense that they were not part of a comprehensive reform.
Teaching is only one small part of spelling, since spelling is picked up and consolidated in reading.	Teaching is the first hurdle that has to be got over, and under the present spelling system many children will fail to clear it.
A reformed system will help learners, but it will make it harder for adult readers.	This would be true only for some people, and only in the transitional, stage.

Note. ^aSee Harry Lindgren, *Spelling Reform: A New Approach*, Alpha, Sydney, 1969, p. 12.

If further detailed work should confirm the above conclusions, the lesson must be that the authorities in English-speaking countries should take the question of spelling reform seriously. The benefits might even turn out to be of the same order as comprehensive reform of international trade arrangements or the establishment of effective arrangements for control of global warming.

The economist's perfect competition concept implies ready and efficient transfer of knowledge. However, 'Given serious language divides, costs of providing information goods and services to members of language groups will be positive and substantial while exclusion costs for those groups may be zero'.¹⁴

With respect to the 'literacy divide', there is an inequality involved in the fact that a large number of people are not at present able to read or write effectively even in their own mother tongue—with particular reference to English. Language skills have important effects in the labour market, and earnings and language fluency are determined jointly. An inefficient spelling system in any language slows down or may even halt the process of acquiring literacy in that language.

With respect to the 'technology divide', it can be argued that the Internet has not so far catered as well as it might have for the bulk of the world's population. This is partly because of the expensive nature of much of the technology, but also because of a related requirement, in effect, imposed on many non-English speakers that they learn English in order to participate in the effective use of the Internet. At the present stage of development the technology divide is still formidable, but emerging wireless technologies may enable the poor nations to overcome this problem, and the cost of information transmission has already been reduced substantially.¹⁵

With respect to the 'language divide', the existence of different national languages obviously causes communication difficulties. Economic incentives, exposure to a particular language, and efficiency in the process of acquiring the language will all be important factors in determining what happens in the future.¹⁶

The three communication 'divides' above could all be bridged to a very significant extent by the reform of the English spelling system.

Lessening both the language divide and the technology divide would greatly assist the citizens of poorer countries as well as others in taking full advantage of the new opportunities for business, trade, and communication which are opening up in the new world of the Internet, satellite communication, etc., and which have the potential to be the main factors driving future world economic development for the next period in human history.

The 'Big Bang' Approach to Reform

As pointed out by the (UK) Simplified Spelling Society,¹⁷ 'English has never faced the practicalities of spelling reform, and many basic questions need exploring. Who could introduce reform, how, and what would the effect be?'

In the case of other languages, spelling is often well ordered, and many have institutions responsible for setting rules and cover a single country or just a few countries. The spelling of English, by contrast, is systematically disordered, there is no machinery for planning, and those who might be in a position to initiate reform in general do not understand that there is a problem.

While English spelling has not been entirely static over recent centuries, the process of change has been extremely slow, especially when compared with almost all other major European languages, and the spelling of English is now practically unique in being so far away from a consistent phonetic basis.

Debate continues in linguistic circles about whether spelling reform would most realistically come from further very gradual reform or from a major comprehensive all-at-once reform. The idea of reforming English spelling gradually in small steps seems, however, to be impractical. There would, under such a reform regime, be an on-going state of transition from one seriously defective version of English spelling to another, with hardly anybody clear about where the spelling system was currently supposed to be. With, say, six, eight or ten separate distinct and timed steps involved in gradual reform, there would eventually be six, eight or ten different versions of English in print. This would be a formula for continuous confusion. There would be no public support for the process, and it would soon peter out.

A previous example of this approach, initiated by Noah Webster¹⁸ in the US about 200 years ago, eventually ran out of further momentum after producing less than 1% of the change in the spelling system that (arguably) was required, and in the process causing a number of troublesome (and, arguably, rather pointless) discrepancies between American and British spellings.

It appears that the only way in which English spelling reform could realistically now be achieved would be if it was seen as a major project on a scale which could excite the public imagination and interest governments and leaders in the mass media.

In the light of the above, it would, in introducing the reformed spelling system, be necessary to take the following steps.

The Four Stages of the Reform Process

The four stages to the reform process would consist of:

- analysis of the nature of the problem and the benefits and costs (broadly defined) of reform, possible solutions, and the overall desirability of reform;
- persuasion of governments and other influential groups to take reform seriously, and undertake necessary action;
- negotiation and agreement between the main interested parties; and
- implementation of the agreed reform program.

The second and most difficult stage in reform would be convincing the general populations in English-speaking countries about the existence of the problem and the desirability of fixing it.

For the issue of spelling reform to be taken seriously by the peoples and governments of English-speaking countries, there would be a need for clear evidence of the technical feasibility of developing a suitable reformed spelling system, clear evidence of the technical feasibility of implementing the reform in a practical sense, and clear evidence that the benefits would exceed the costs, both broadly defined, by a sufficiently wide margin to be worth pursuing the issue.

The third and fourth stages of reform, namely moving to solve the problem through domestic and international coordination and implementation, would in a sense be less difficult, but carrying out effective and convincing analyses of the benefits and costs and having a realistic plan worked out for these stages would be necessary ingredients for success also in the first and second stages. A plan for the third and fourth stages, at least, is not difficult to develop in outline, and is briefly sketched below. A very substantial, well designed, and well coordinated educational and publicity campaign would be an essential ingredient of Stage 2.

There would be a need for strong political support, based on a proper understanding by the population at large of the issues, the identification by private interests (including the mass media and publishing industry generally) of the economic benefits, and consideration of wider political benefits. And there would be a need for extensive discussions over a period of some years between all interested governments and other relevant institutions. The inter-governmental discussions would be designed to lead to inter-governmental agreements, initially in principle, and then action plans. As for other far-reaching international reforms, e.g. policy in relation to greenhouse gas emissions, it might be desirable for some assistance to be provided to less developed countries to enlist their willing cooperation.

Both the traditional 'benefit-cost' and 'political economy' aspects are of critical importance. The two issues interact strongly. For example, the psychological costs arising from a desire on the part of citizens to avoid what they see as unnecessary and troublesome change could be very greatly reduced by well resourced and effective government educational and publicity campaigns and programs for implementation. This would then contribute to the solution of the political problem, by breaking down resistance to the idea of reform. The same would be true also of the costs of reform perceived by industry vested interests.

Stage 1—Analysis of the Issues

Key beneficiaries of a comprehensive and effective reform of English spelling would be those individuals who are predisposed to have reading and writing difficulties, and are therefore seriously disadvantaged by the present spelling system.

Over time, and into the future, young people coming into the work force who would have been disadvantaged under the previous system will no longer suffer, at least to the same extent, from those disadvantages. These people will also achieve greater enjoyment of their leisure time, because of their ability in future to access and understand what the world has to offer through the vast amount of information and entertainment contained in printed material. Net benefits to people who were already adults at the time of the reform would be less, but would be likely to still be large after some time had passed.

Benefits of reform would include large reductions in educational costs currently being incurred. For example, schools would waste much less time, effort, and money in future in having to teach spelling to children according to the confusing current system. On some estimates, up to 2,000 hours of education time per child would be saved, which could in future be put to much better use.

There would also be large gains in industry productivity through the higher levels of literacy of employees.

For economies less than fully employed there would be some stimulatory effects in the printing and publishing, IT, and education industries from the reform process, which would be likely to represent a net gain to the community in terms of jobs and incomes. The introduction of the reform would be certain to lead to a boom in the reprinting of books in significant current demand. Publishers would be able to plan ahead for the new developments, and it could be expected that the reprinting boom would go on for quite a number of years. There would initially be more electronic information produced as a result of the reform. Any respelling required would be largely done by computer, and the design of the new spelling system would guarantee that this was a straightforward matter.

By contrast to the benefits, the costs of the proposed reform of English spelling would be mainly concentrated into a single decade or so. These costs relate to the costs of converting *some* existing material in the old spelling to the new, and educating adults in the new spelling system. As the new spelling would be entirely phonetic, based clearly on existing English word examples, and readily explainable, teachable, and marketable to the general public, these costs should be quite manageable.

Costs of introducing and operating the new system could be minimised through effective planning, which would have the objective of avoiding any unnecessary confusion. The benefits of reform would continue for a very long time indeed, in fact, into the indefinite future.

If 20,000,000 or so people in the US should be so seriously disadvantaged in their work activities through the difficulties of current English spelling as to suffer each, on average, ongoing losses of income per person of \$US10,000 per annum, that would represent a total economic loss of \$US200 billion per annum. And the losses concerned continue year after year. Given that average income per head in the US in 2003 was \$37,800, these figures are conservative.

The corresponding figure for the UK would be of the order of \$US32 billion per annum, and the corresponding figure for Australia of the order of \$US10 billion per annum.

According to a report in *The New York Times* of 9 September 1993, businesses in the US estimated that they were then losing between \$US25 billion and \$US30 billion a year nationwide in lost productivity, errors, and accidents attributable to poor literacy.¹⁹ In 2005 dollars that is between \$US33 billion and \$US40 billion a year.

Against the above benefits of reform would need to be ranged the costs of reform, which even in the early years would be very much less in the US than \$US200 billion per annum, and would within a few years trail away to a low figure. Similar ratios would appear to also apply in the UK and Australia.

Total revenue for the information services sector in the US in 2003 covering production of books, newspapers and magazines was about \$118 billion per annum.²⁰ Consumer expenditure on books was about \$38 billion, i.e. 0.3% of gross national product. Even if the total cost of books, including public information campaigns, was initially increased as a result of the reform by 20%—which would appear to be a gross over-estimate—the extra cost, at \$7.6 billion per annum, would be small compared with the ultimate benefits. Significant psychological costs arising from initial dislike of change could be greatly reduced by effective educational and publicity campaigns as indicated above. The level of the benefits which would arise after a few years would be of the order of the \$200 billion plus per annum referred to above *plus* the benefits to the individuals affected in their leisure activities *plus* all the net benefits to the rest of the population.

For reprinted books, the costs would be greatly reduced, particularly if these books already existed in electronic form, by the use of computer conversion programs. Reprinting of books would, in general, only be necessary when this reprinting would have been due to occur anyway.

Existing holdings of English-language material in the old spelling would not be superseded. They would still be English. Past records would not have to be reworked, merely in some cases supplemented. The same would apply to websites and other databases.

Over time, increasing numbers, already running into hundreds of millions, of people from non-English-speaking backgrounds wishing to learn the language would be able to speak it more effectively.

As remarked by Albert Eagle in *Literary Phonetic English*:²¹ 'The world at present is needing a world wide international language as it has never done before. The English language is adapted to this purpose and fulfils all these requirements excellently (except one) as probably no language has done before ...'. And as commented by R. E. Zachrisson in *Anglic, An International Language*,²² 'It cannot be denied that (the establishment of such an international) language would be highly profitable to the whole human race. What tends to separate nations more than anything else is the ignorance of each other, which fosters suspicion, fear, hatred, and war'.

The above process of dispelling ignorance about other countries would be facilitated if English could abandon its present status of being, as described by Frank Laubach:²³ 'After Chinese and Arabic ... the next most difficult (major, world) language from a phonetic point of view'. A comprehensive reform of English spelling could take English, in one step, from being the worst spelt of all European languages to possibly the best.

The costs of the reform would include any costs imposed on third world countries. Against these costs there would be significant benefits to third world countries as a result of the greater access of their population to communication in English in the future.

Stage 2—Persuasion, Education, and Publicity Campaigns

For the need for spelling reform to be accepted by the general population in English-speaking countries, large amounts of time, effort, and funding would need to be spent on educational and publicity campaigns explaining and promoting the need for the reform. This would need to be a coordinated effort including a wide range of elements ranging all the way from academic analyses and scholarly presentations through hard-hitting newspaper articles to effective and persistent advertising campaigns. The subject matter of the campaigns would include the range of topics described in this article.

The advertising campaigns would be required to utilise the full range of media, including network TV, cable TV, radio, banner ads on the Internet, newspapers, direct mailing, magazines, telephone and other directories, and billboards and other signs. Use should be made also of headlines, slogans, testimonials, sponsorship, animated cartoons, displays, and novelties.

For comparison purposes, approximately \$600 billion is currently being spent per annum around the world on all forms of advertising. A 30 second commercial on a US network might cost \$1 million, and with 50 million viewers this would cost 2 cents per person. Ads would be presented in groups.

The advertising campaigns would need to include a combination of informational and transformational messages, and a comparison of 'products', and 'product characteristics', and make effective use of message repetition. Adequate research backing up the campaign would be needed in the areas of market research, motivational research, and media research. The illustrations of model sentences (see above) would be a key element in these campaigns.

The process of familiarisation with the new spelling would be greatly facilitated by the publication in future of English/other language conversion dictionaries using the new spelling to indicate the correct pronunciation of English words.

Stage 3—Negotiation and Agreement

Governments in English-speaking countries would, by common agreement, as from a given date, require all government publications and documents and all documents having legal significance, e.g. many business documents, issued after that date to be printed using the reformed spelling. All newspapers and magazines issued by the mass media would also be spelt in reformed spelling as from the same date. Although the change-over would occur on a given date, the preparation for the change-over would be spread over perhaps five years, with government encouragement and guidance.

Governments in other countries with significant English language media would also participate in the change-over on a similar basis. The United Nations and other international bodies would cooperate in relation to international publications.

The experience of other countries that have implemented major spelling reforms is that it can be done, if firmly desired, quite quickly. Turkey (see above) largely completed the transition process in a few months, even though not only the spelling system but also the script itself was changed. Villalta²⁴ reported that ‘On the basis of various precedents and opinions, it had been said that it would take about 20 years before this reform could be completely adopted. They talked about the capacity of the people to learn, the evolution that must take place, and other reasons ...’. In the event, the new alphabet was announced in May 1928, new school books were issued in October 1928, and in December 1928 every newspaper was published in the new alphabet. Literacy rates tripled within a few years.

While the reform of English spelling worldwide would be a task on a hundred times the scale, there would be some advantages in the case of English as well as disadvantages, e.g. a more literate population to begin with, and the widespread availability of computer technology.

Stage 4—Implementation

The change-over to the reformed spelling system, on a given date, of all newspapers and magazines would mean that more than 98% of the total volume of publicly printed material, i.e. not including office documents, would be brought under the reformed spelling system immediately.

This change-over would require a coordinated decision to be made and implemented by a relatively small number of influential decision-makers in the mass media. If there was a good level of cooperation from publishers of other material, very close to 100% of all newly printed material in the reformed spelling could also be achieved almost immediately. Given that many people read only newspapers and magazines, familiarisation and competence in the reformed spelling would proceed apace. On the domestic side, it would be a matter of coordinating the activities of education departments, legal authorities, media, and the publishing industry over a period of years.

More stringent standards would be required of some forms of information than others. In order of stringency these would probably be as given in Table 3.

Office documents would tend to conform quickly to the new standard, to avoid confusion. Private papers, letters, emails, and Internet conversations would no doubt continue for a while to be spelt according to the preferences of their authors, but there would be a gradual convergence to the new standards over time, through education and further familiarity. Films and broadcasting would be little

Table 3. Standards required for particular types of information

Type of information record	Type of sanction or encouragement
Legal, official, and major business documents	Mandated by law
Books, journals, dictionaries, gazeteers	Covered by industry and academic standards
Newspapers, television (text), magazines and mass market periodicals	Covered by agreements with industry, with appropriate encouragement from government
Internet	Allocated to the various other categories according to the nature of the information/record, as shown
All other	Conform to the new standards over time

affected, and telephone conversations not all. There would be some implications for production of software.

There would be a preparatory phase to the change-over, lasting perhaps as long as five years, during which all useful measures which could be put in place prior to the actual change-over date would be implemented. These measures would include the following.

Comprehensive general dictionaries would be developed based on the reformed spelling principles. Reformed spelling of all personal names used in English-speaking countries could be arranged, together with official Government support and encouragement for the adoption and use of those spellings by the population at large.

Legislation, or at least relatively recent legislation, other government documents, signs, maps, legal forms, and some contracts would be reprinted in reformed spelling. It would be necessary to plan in some detail the activities of government, the legal profession, etc., in preparing for the change-over. In re-spelling and reprinting of legislation, the opportunity may be taken to consolidate existing pieces of legislation, and the opportunity may be taken to update maps, etc. Special dictionaries would be prepared for legal, governments, technical documents and publications, and these could be run additional to the general respelling programs.

School-children would for some years prior to the change-over date be taught the reformed spelling system as well as the traditional system. Emphasis on the reformed system would increase as the change-over date approached, but both systems would need to continue to be taught also for some years after the change-over date to assist children in reading the stock of books spelt in the old way.

Extensive adult education classes, inter alia using the mass media, and emphasising the six key sentences, would be organised to familiarise adults with the reformed spelling system prior to the change-over, and there would be extensive educational material presented in the mass media. As the date for the change-over approached, surveys would be conducted to determine the extent to which the message was getting through to the general public, and educational programs would be intensified and fine-tuned as necessary.

Within 10 years or less it is likely that the great majority of people in English-speaking countries would have ready access to computers and conversion programs. Conversion programs would be able to respell the words, with everything else remaining unchanged. Conversion programs could automatically respell every name and technical term throughout a document as soon as the correct respelling had been identified once. The process would be similar to 'Spellcheck' programs now.

Reprinting of existing books would be greatly aided by the fact that the existing and reformed versions of spelling produce text of almost exactly the same length, which means that there would be no difficulties arising from the placement of pictures, graphs and diagrams in existing material. Words in the old spelling will still look sufficiently similar to be recognisable even many years after the change-over to anyone who would have the innate ability to read them.

There would be trial runs on various aspects. Publishers producing books in the lead-up to the change-over would readily be able to prepare electronic versions of text according to both systems, if necessary. A (say) five-year preparation period should be enough for affected industries to plan the disposition of their investments to avoid any losses that might otherwise be caused by the change-over to the new system.

International and National Coordination

Part of the objective of reform is to set standards that will operate internationally.

Discussions between English-speaking countries would be designed to achieve agreement between countries on the type of new spelling system to be adopted.

The discussions would deal, amongst other things, with whether there should be a preferred standard spelling of the relatively small number of words where there are significant differences in pronunciation between British Received Pronunciation and General American pronunciation, and if so what it should be.

The necessary official discussions would be carried out much like any other international discussions, e.g. on international trade, or intellectual property, or greenhouse gas emissions and climate change. Linguistic experts, educationists, industry, and government officials would be involved as required.

International coordination of English spelling reform would engage mainly the US and the countries of the Commonwealth. The greater part of the international work would probably be done through Commonwealth Heads of Government meetings (CHOGM), but with the USA also involved. The necessary committees could be quickly established. There should be little trouble in coopting the necessary expertise in the various interested countries. The reform, once a decision was taken, would have a lead time of several years.

The Commonwealth Secretariat, based in London, has available to it a budget for the encouragement of economic development, infrastructure, and better practices in the member states. It also supports agencies that provide cooperation in such activities as broadcasting, cable and satellite communication, education, health care, and scientific research. Spelling reform is relevant to all these areas.

The Economic and Social Council of the United Nations (ECOSOC) has the task of assisting people around the world better their way of life. UNESCO, one of the UN's agencies, is concerned with educational, scientific, and cultural matters. The UN General Assembly also has a committee, the 'Third Committee', which studies social and cultural issues and makes recommendations to the Assembly. In view of the large number of countries which would be affected by English spelling reform, it is likely that the UN General Assembly would take a close interest in the the subject and instruct its relevant committees and agencies to make helpful contributions and cooperate with CHOGM and the US in developing and implementing the initiative.

Each English-speaking country has, of course, its own structure of government for developing, coordinating, and administering policy, including policies on

education, language, literacy, and international cooperation. The countries within the Commonwealth mostly utilise some variant or another of the Westminster system of government originating in the United Kingdom, and there are therefore strong similarities in the way in which spelling reform would be tackled in those countries. Although the system in the US is somewhat different, as a parliamentary democracy with a bicameral legislature and a clear division of powers, there are many similarities there as well.

Two country examples of how coordination would be carried out at the national level are the US and Australia.

Decisions on spelling reform in the US would be handled primarily at the federal level rather than the level of individual States. Federal legislation to coordinate the activities of the States would be necessary, probably with funding made conditional on compliance, as the States have responsibilities in such areas as education.

Federal Bills to support a move to English spelling reform in the US would need to go through all the negotiation stages that typically face any Bill in the US Congress. The Committee hearings for both Houses of Congress would be critical in gaining and consolidating Congressional support for the proposals. A compelling benefit–cost analysis of the effects of reform would be essential to the proposals' success, given the massive political obstacles of inertia, conservatism, indifference, and self-interest that would be placed in their way. A realistic and creative analysis of the ways in which political opposition could be overcome would also be helpful.

Bills would need the support of the US President to become law, given that he/she has the power to veto any Bill passed by both Houses of Congress of which he/she disapproves (subject to being overridden by a two-thirds majority in the Congress). Strong positive support from the President for the Bill would be needed in practice, together with effective efforts to elicit public support. It would be necessary for the President to exercise strong leadership during the implementation stages, through the enforcement of suitable regulations and direction in the preparation of the national budget. It might be necessary for Congress to approve the formation of a new federal agency to coordinate the whole effort.

In Australia, the work of the Commonwealth (Australian) Government and the six State and two Territory governments is coordinated via such mechanisms as the Council of Australian Governments (COAG). As in the US, spelling reform and associated issues could not be dealt with effectively by either the Commonwealth or the States on their own, given the constitutional restrictions.

Under the Australian Constitution, the Commonwealth (Australian) Government is responsible for international relations and international agreements, and the States largely run the educational system. The operation of the legal system is divided between the Commonwealth and the States, and control of the corporate sector is also shared. The above arrangement is, for the most part, a successful model for achieving cooperative outcomes on matters of common interest, as the Commonwealth is able to bring a perspective on the national interest and the States and Territories are able to bring depth of knowledge on implementation and administration. COAG would probably be a suitable mechanism for dealing with the issue of spelling reform.

The timetable for the change-over to the new spelling system would be dependent to a certain extent on the length of time required to obtain international agreement. Experience with other international negotiations indicates that this

could, in the worst case, take many years. In the case of spelling reform, a key factor would be a hoped-for ready acceptability of the particular technical solution proposed. Questions of assistance to poorer countries might also arise.

If these questions could be resolved quickly, which is quite possible, the timetable would then move on to domestic implementation. There seems to be no good reason why, with strong political will, the whole process could not be completed, after the completion of international negotiations, in five years. The actual length of the implementation period would depend on the amount of resources and effort that national governments were prepared to put into it. The international phase would already have contributed in an educational sense to this process.

Operators on the Internet could also play an important unofficial coordinating role in the reform process.

Conclusion

If anything is to be done in the area of English spelling reform, it will be necessary to get the issue firmly onto the public agenda as a serious issue. Parliamentary consideration of the issue in Britain in the early 1950s failed partly because there was no convincing alternative to the existing spelling system put forward for Parliament to consider. That at least should no longer be a problem.

If nothing more should come out of a new and thorough-going examination of the issue than greater assistance to the very large number of illiterate or semi-literate people in English-speaking countries, and/or a more effective way of helping school children in learning how to read and write under the existing spelling system, that would still be worthwhile.

But far-reaching actual reform would be likely to be of very much greater benefit, and this benefit would be available to the whole world into the indefinite future. The establishment/encouragement of an international language to promote universal communication might even perhaps come to be regarded as one of humankind's greatest social inventions.

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