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Table of Contents

1. Authors' index of papers presented at the 3rd International Conference on Reading and Spelling.
2. [Obituary: Victor Perry Paulsen](#).
3. Implementing Spelling Reform:
[Spelling Reform as a Redistribution of Power](#), by Abraham P. Citron, Ph.D.
4. Experiment and Research in Spelling Reform: An Experimental Study of Attitudes:
[Towards English Spelling Reform](#), by Robert G. Baker, Ph. D.
5. [The Effects of Spelling Change on the Adult Reader](#), by John R. Beech, Ph.D.
6. [The Costly Extravagance of an Educational System Based upon Confusing Spelling](#),
by Harvie Barnard.
7. [An Alphabet for Easier French-English Bilingualism](#), by Arnold Rupert.

[Spelling Progress Bulletin Spring 1983 p1 in the printed version]

1. Authors' index of papers presented at the 3rd International Conference on Reading & Spelling, Jul.-Aug, 1981

- Baker, Robert, *An experimental investigation of attitudes to English spelling reform*, Spring, 1983, pp.6-11.
- Barnard, Harvie, *The inevitability of change, the happy alternative*, Winter, 1982, pp.17-19, 1.
- Beech, John, *An experimental comparison between adults learning to read text in two proposed spelling systems*. Spr. 83, pp11-18.
- Brooks, Colin. *Computer transliteration of shorthand for the post-lingually deaf*. Fall, 1982, pp.15-20.
- Brown, Neville. *Semantic aspects of spelling reform*. Winter, 1982, pp. 2-3.
- Campbell, Stuart. *Principles of Esperanto spelling*, Fall, 1982, pp. 4-5.
- Citron, Abraham. *Spelling reform as a redistribution of Power*, Spring, 1983, pp. 2-6.
- Dodd, Barbara, P. Robinson, R. Beresford. *Spelling errors of 11 phonologically disordered children*, Spring, 1982, pp.19-20.
- Downing, John. *Spelling reform – let's be practical*, Fall, 1982, pp.20.
- Frith, Uta. *Cognitive processes in spelling & their relevance to spelling reform*, Spring, 1982, pp.6-9.

- Gassner, Walter. *How to reconcile conflicting principles for reformed English spelling*. Winter, 1982, pp.4-6.
- Jolly, C.H.J. *Commercial and marketing perspectives in orthografic reform*. Winter, 1982, pp.14-15.
- Mosterin, Jesus. *Spelling reform in international perspective*, Fall, 1982, pp.12-14.
- Niedzielski, Henry. *Experiments in teaching English in Francofone Africa*. Fall, 1982, pp.5-7.
- O'Halloran, George. *Spelling: what road to reform?* Winter, 1982, pp.15-17.
- Perin, Dolores. *Spelling difficulties in school leavers and adults*, Fall, 1982, pp.2-4.
- Seymour, P.H.K. *Psychological processes in spelling recognition and production*, Spring, 1982, pp.9-10.
- Smith, Barbara. *Spelling errors made by 8-11 year old pupils*, Spring, 1982, pp.10-12.
- Snowling, Maggie. *The spelling of nasal clusters by dyslexic and normal children*, Spring, 1982, pp.13-18.
- Urdaneta, Iraset. *The history of Spanish orthography; Implications for a theory of spelling reform*. Fall, 1982, pp.8-12.
- Vassilyev, V.A. *An account of the 'English Maximally Simplified Writing.'* Winter, 1982, pp.7-10.
- Yule, Valerie. *A research developed reform for English spelling*. Winter, 1982, pp.10-13.

2. Obituary

Former KSFO radio engineer, Victor Perry Paulsen, aged 73, died Oct. 4th following 2 weeks of hospitalization for extensive kidney and liver problems.

Vic worked for KSFO between 1955 and 1976 and was a true pioneer whose experience spanned many facets of broadcasting.

In the 1920's he became an ardent radio experimenter and constructed a number of spark transmitters and developed an interest in the design & manufacture of vacuum tubes. S.F. T-V pioneer, Philo Farnsworth was among his frends.

After studying at the U. of Ca., Berkeley, Vic went to sea as a merchant marine wireless operator, served as a consultant to Dollar Steamship Co. in equipping its ships and finally serving as a disc jockey and air personality on San Francisco radio station KJBS.

When World War II broke out, Vic returned to the merchant marine making many trips in Liberty ships thru the North Atlantic. When hostilities ceased, Vic returned to KJBS where he and Frank Cope became popular as the nations first "disc jockies." Between KJBS and coming to KSFO, Vic served as the master-of-ceremonies on several Bay Area T-V programs.

Paulsen was also interested in spelling reform, belonged to the S.S.S. and had developed a system of reformed English spelling which he called TORSKRIPT.

3. Implementing Spelling Reform

"Spelling reform or a redistribution of power; by Abraham F. Citron, Ph.D., Director of Better Education thru Simplified Spelling, Bloomfield Hills, MI. Presented at the Third International Conference on Reading and Spelling, Edinburgh, July, 1981.

Abstract

Spelling reformers have assumed the movement for reform was an academic discussion, a question of psycholinguistics, a pedagogic decision in curriculum, or an educator's debate.

Members of the reading establishment have done and are doing all in their power to encourage this view.

As long as reformers, under this impression, discuss, debate, conduct experiments, expend energy looking for "that perfect system," and attempt to convince educators, literati, intelligentsia, professors, pundits, that our system should be reformed, practically no progress will be made. In our society, control of language by groups contributes directly to their power. Also, individual skills in language, spoken and especially written, lead to income, influence and power. The movement for the simplification of our spelling should be seen as essentially a struggle for the wider distribution of power.

The movement for spelling reform is actually a section of the general democratic movement of the Western World, during which, ever since the translation of the Bible into the vernacular, power, educational and economic, has been more widely distributed in the population.

This paper (a) places spelling reform in the background of the development of writing, (b) points out some of the irrational supports of the present antiquated system, (c) given the nature of the struggle, outlines a strategy of practical reform. It identifies those institutions whose interests might direct them into the movement for spelling reform: (1) business and industry, (2) newspaper publishing, (3) Department of Defense, (4) science, (5) organized labor.

Corpus

The inconsistencies and absurdities of our spelling are notorious and need not be documented here. We are interested in how such a cultural lag can continue to exist in our society.

Irrational support of an Irrational System in the Schools

Our spelling is an antiquated, wasteful, and inefficient, so out of place in a practical, technological, market-oriented society which needs to save energy and time, that there must be deeply-set, irrational forces holding such a system in place. It is the identification of these forces and some of the forces making for reform which is the subject of this paper.

First, consider what a marvelous subject spelling is to a school bureaucracy and to an educational establishment. Here is the chief jewel in the diadem of automatic, grind, drill, and memorize subjects.

Spelling organizes itself; it may be pounded, drilled, marshalled, and memorized. It organizes itself into a neat progression from little words to bigger words, and from letters, sounded as spoken to silent letters or letters sounded differently. Spelling may be taught by persons lacking in innovation or creativity; indeed, a case can be made that teachers who threaten tots out of their wits may turn

out better spelling grades (perhaps not better spellers) than more subtle teachers, aware of inconsistencies and difficulties. To budget-beleaguered bureaucracies, these are splendid advantages. Further, spelling, as usually taught, has no grey areas; words are either "right" or "wrong". Spelling can be simple to grade, progress or lack of it easy to measure. To an extent, words may be analyzed by type. The workbooks do this, aiding professional feelings of the teachers.

Best of all, to the minds of many, spelling demands effort, care, memory, perseverance. Spelling is a ruthless identifier, revealing to the teacher who's who and what's what in a class and providing a basis for an academic hierarchy. This is a source of security to many teachers and to the system. How splendid a jewel for the school – to push this drill and memory system on children while parents and public applaud. In presenting this subject, administrators and teachers find themselves draped in the mantles of guardians of a priceless cultural heritage.

Spelling has been and remains a large part of the curriculum of elementary schools. Thus, spelling is to many elementary teachers, (by no means not to all) a basic element in their professional way of life. Threaten traditional spelling and you threaten their professional identification. Many teachers enjoy the quirks of our spelling; they relish the role of the all-knowing. Aware of the curves, most teachers feel some of the power of their profession in leading children through the labyrinth of traditional spelling. ("Of worse some fail; that's life.")

There are many exceptions; some of the leadership in spelling reform is furnished by teachers, but in general, teachers feel that simplified spelling will greatly reduce their professional role in what they perceive as a key subject. It does not reduce their defensiveness to talk of the superiority of simplified spelling from the point of view of students and from the point of view of functionality. This only increases their foreboding.

It may also be noted that early retirement is a desired budget item which can be stimulated by the adoption, nationally, of a program of spelling reform. Seeing this on the horizon, a number of additional teachers may make the decision to retire. Some teachers feel as did a graduate student of mine who made no bones about it. Said he, "I've worked hard to learn one system and I'll be damned if I'll learn another."

Another group is anchored to traditional spelling by professional pride. Department heads, administrators, curriculum specialists, professors of education, find themselves in a difficult position in regard to simplified spelling. How can they approve it without admitting at the same time that, up to that point, they have been somewhat blind and misguided all their professional lives? This is a difficult admission to make. It is much more comforting to oppose simplified spelling on every possible ground, and to claim that one was right, is right, will always be right, at least on this subject.

A third source of powerful irrational forces holding out spelling system in place is the economic basis of the school systems. They exist on taxes hard to come by in times of falling enrollment and economic retrenchment. Budget dollars are scrutinized as never before.

The school systems have invested heavily in materials and curricula designed for traditional spelling, including the training the teachers have received. The school, possess a vast supply of dictionaries, work-books, texts, flash cards, teachers' guide, projector materials, and so on, all designed to aid in teaching the present system. If simplified spelling were adopted, even on a gradual, step-by-step basis, this equipment would have to be scrapped. Some, or later every book, pamphlet, and piece of printed material in the school system would have to be replaced. If one speaks of the wastes of the present system and the great sums to be saved in the future, administrators and taxpayers are unmoved, for they regard such savings as pie in the sky. They see

materials for which they paid good money going on the scrap heap. They see the high cost of replacement. They feel they must face costs of re-training teachers.

Fourth, among the irrational school-related forces holding our traditional spelling in place are the publishing houses which sell to the schools millions of dollars worth of materials designed to aid in teaching the traditional system. They see that sensible spelling will reduce the time and energy given to spelling by between 70 to 90%, with corresponding drop in the need for materials. Hence the publishing houses can be expected to oppose simplified spelling with every means at their command.

Irrational support continued: Spelling & class identity

We now turn to the more formidable of all the irrational supports of our traditional spelling system, the pride, prudery, and class identification of the public.

In understanding these motivations, we must mark the route by which our spelling has come down to us. Our spelling, essentially fashioned during the sixth thru eighteenth centuries, has been for most of its existence an expression of the needs and life styles of churchmen, nobility, and aristocracy. During the feudal thousand years of its beginnings and growth, hardly anyone dreamed that common folk should read and write. One's letters were an unmistakable sign that one was gentlesfolk.

Thorstein Veblen (1899) rightly pointed to English spelling as a classic example of conspicuous consumption, since it is so well suited to display that its users were members of the leisure class, so rich that they never worked, and with time to idle in conspicuous ways.

Our spelling has come down to us as a matter of grace and style in which ladies and gentlemen had the time and were happy to take the time to perform the niceties of gracious written forms.

We may observe in retrospect the obeisance pair: by the new middle classes to the upper classes as the new people emerged into positions of some power and influence during the mercantile and industrial revolutions. Members of the new middle classes were deeply concerned that they be accepted as ladies and gentlemen-they and especially their children. To this end, they aped the manners dress, attitudes, speech, style of residence, recreation, written forms, of upper classes. They struggled mightily to cast off every sound and sign in speech and writing that indicated they were not to the manner born. They knew that they could not possibly be taken for ladies and gentlemen unless they spoke and wrote like ladies and gentlemen.

These aspiring, and insecure folk, as they achieved positions in business, industry, publishing, government, civil service, schools, in the professions, assumed written forms, not only modeling upper class forms, but assumed attitudes of championship and guardianship of the forms they deemed would mark them as worthy. Desiring to be the purist of the pure, they became extra sensitive and extra demanding of the propriety of written forms.

This sense of the close connection between gentility and proper form in speech and in writing is very much with us today. We may not have knights, nobles or knaves, but we have our classes and class distinctions; we retain a sharp sense of class identity. We depend more than we like to admit on our language habits to judge ourselves and others. We have critical ears and sharp eyes for the give-away error. We often bolster our security by being somewhat contemptuous of another's language style. We depend on our ability to use language, more than we are aware, for a sense of who and what we are.

Thus, the great dread is among us, the dread that should our language habits fail, our masks will be torn away and we will be exposed as not gentle people at all, but as common clods, as ignorant nobodies, as miserable imposters, with only a thin sheen of polish over a crude, unlettered core.

This is why ridicule is the first and most basic weapon against sensible spelling forms; this is why ridicule bubbles up so quickly among middle classes when they encounter examples of simplified spelling. They laugh at these forms as a means of defense, to prove absolutely to themselves and to others that they have the instincts of gentlefolk. To those of real breeding, the natural reaction to something as efficient and as practical as phonemic spelling is laughter. To those springing not so far back from common folk, sensible spelling must be seen as ludicrous, for to take it seriously is to demonstrate instantly that one lacks breeding, manners, poise, taste, sensitivity, tradition, and gentility.

Thus, asking speakers of English, especially those who feel they belong to the middle classes, to spell sensibly is to ask them to abandon a basic support of their sense of worth. It is to ask them to risk slipping into the category of the unwashed masses. No one, whatever his or her class identity, wishes to be thought ignorant and crude.

Further, many people feel that they have expended much effort to learn the forms and to achieve the rewards of lettered persons in our society. They are not eager that the price of admission to their status be lowered or that the status be cheapened. If others want the rewards, they feel, let them earn them.

The above are only some of the emotional foundations connected to our sense of identity, which hold archaic and inefficient spelling forms in place in our society. For we not only maintain these absurd forms, we hug them to our hearts.

If teachers, in general, will oppose simplified spelling; if administrators will oppose it; if, altho some will support it, the vast majority of professors of education, of English, of linguistics, of literature, will oppose it; if the inteligenzia, the literati, the columnists, the pundits, the publishers, and many well known authors will oppose it; if members of government, spurred on by many voters, will oppose it; if we can expect strong and deeply emotional opposition from the public, where will there be any support, and how can spelling reform possibly succeed?

Institutional Sources of Change

Despite sources of opposition above noted, there is good reason to believe that simplified spelling is an idea whose time has come.

The most powerful current force that can be directed to support simplified spelling is the demand of the economy for better readers and writers. Our increasingly complex society and the direction of the development of our economy require citizens who can read and write at higher levels than in previous generations. School failure and functional illiteracy are becoming too widespread for the economy to bear. Low educational achievement condemns a population to a stagnant economy. A nation containing masses of poor readers and writers will be a nation of losers in the world struggle. The greatest potential force moving toward simplified spelling is the iron demand of our economy for better readers and writers. We cannot continue to load the prisons and the welfare roles with functional illiterates. We must have people who can earn enough to buy our products. Assembly line jobs are drying up; service jobs require higher levels of communication skills.

At least five institutional structures, two of immense power and prestige, could serve to transfer this economic demand into the movement for spelling reform. These institutions have both the ideological base and the interests to move in this direction.

The first of these structures is the business-industrial complex which seeks always to maximize profits. An important element in this process is indeed the reduction of costs. Leaders of business presently desire that written forms of their companies be thoroughly respectable, and, as has been said, take their models for this from the ruling classes of yesteryear. Presently, they take these forms for granted.

These leaders, however, have strong feelings for practicality and efficiency. They do not permit the inefficiency in other parts of their operations which they overlook in the written communications of their companies. Currently there are excellent prospects to awaken them to this waste not only in extra costs in all written materials, internal and external, but also to the billions in taxes paid to educational systems which squander huge amounts in forcing inefficient spelling on students.

Business leaders and industrialists will be interested in the information that each time someone in their enterprise writes or types "are" rather than "ar" , 33% of the effort is wasted; each time "through" is written rather than "thru", 43% of the effort is wasted; each time "have" is used rather than "hav" 25% of the time and effort is wasted; each time "though" is written rather than "tho", 50% of the time and effort and space is wasted. Business people will be quite interested to learn that the same content can be delivered at a considerable saving of time and money. Further, business people should be given the information that children learn more quickly to spell, to write, to read when more rational spelling systems are used, and with such systems there are much lower failure rates.

The business world is not aware that our atrocious spelling system is seriously impeding the progress of English as an international language.

A large portion of the energies and efforts of spelling reform groups should be directed at business and industry. Here are the big consumers of written communications in our society, and here are the most powerful agencies in our society, agencies which have a great stake in efficiency and in cutting costs.

Spelling reformers have not attempted at any time to reveal to business leaders the facts about the written forms they use. They need to know that the idols they have been following in written forms are false. They need to know that the so-called etymology of our spelling is often false; that the "s" never belonged in "island", the "gh" never belonged in "delight", the "i" never belonged in "friend", the "h" never belonged in "ghost", the "ph" never belonged in "phone" or "phrase" or "graph", and so on for hundreds of errors which simplified spelling would correct.

Businesses pay taxes which support schools. Business leaders should be shown the tremendous waste in trying to teach the present spelling system. Savings of 70 to 80% in the spelling curriculum could be realized while at the same time academic achievement would increase.

At the present time it is probable that business leaders can be convinced that if they act in concert and proceed gradually, support will gather for the new forms because they will be found to work better than the old. For example, many teachers will join in advocating the dropping of final e's where they are unnecessary and misdirective, which is the case in words such as "are", "have", "give", "live", "there", "where", "twelve", "objective", "directive", etc. (The final, silent "e" is supposed to signal that the preceding vowel is long, but in the above cases the vowel is short, hence the final "e" is misdirective.) There are other simple, common sense changes that could minimize objections and maximize support.

If business and industry would begin to use some of the simplest of the new forms, perhaps at first only in internal communications, and if business organizations would suggest to boards of education that they have some responsibility in this matter, the schools will listen. The schools are ever conscious that they are preparing students for jobs and careers in business and industry.

It is probable that if schools begin teaching some of the simplest of the new forms, a number of influential *newspapers* would follow the lead of business and industry on the one hand and the schools on the other. *Newspapers* have a direct stake in enlarging the public in this country which can read *at the level* needed to become newspaper readers.

For the next step, some of the new forms might be: dropping the final, misdirected e's, which have been mentioned above; changing "ph" which is sounded as "f" to "f" (fone, graf, fonic, fosfate, etc.); using "e" for the short "e" sound (hed, sed, ded, helth, welth, eny, meny, etc.); change "gh" sounded as "f" to "f", drop the silent vowels in these words (ruf, tuf, enuf, etc.)

Four principles should guide these beginnings: (1) use the simplest changes which drop letters; (2) numbers of large institutions along with the schools should use them in concert; (3) changes should be introduced gradually, one group at a time; (4) institutions using new forms should be prepared to hold them long enough so that their practicality and workability can be demonstrated. As soon as their "newness" wears off, many will begin to ask why they ever used the old, clumsy, misleading forms in the first place. Newspaper usage is crucial to spelling reform.

Some persons will object, especially at the outset, but the practicality and simplicity of the new forms, together with the power and prestige of business and industrial organizations, plus the beginning participation of the schools will probably prevail. Do you ever hear any objections to "thru", used on freeway signs?

Gradually a coordinated program could take form. In the United States the fifty state boards of education could set up, with business encouragement, a national commission which would orchestrate the change process over the twenty or thirty year change period. These changes will cost industry nothing in retraining since the number of respellings introduced in any one year will be so small and so simple as to be easily learned by personnel in day-to-day usage.

The third institution, also of considerable power, which is a potential ally in the movement toward spelling reform, is the Department of Defense. This is the case because the armed services have been experiencing increasing difficulty in obtaining recruits who can handle written communications at levels required by complex equipment and operations.

If Armed Services Committees in the House and Senate, plus key officers of the administration, including the President, plus top officers of these services, are shown what simplified spelling could do to reduce illiteracy and functional illiteracy, these leaders might well throw their support to the movement for spelling reform. Further, the armed services, thru the defense industries, are closely allied with business and industry, and are likely to follow the lead of business and industry in this matter. Simplified spelling can be seen as a valuable contributing element to the military strength and to the defense posture of all English-speaking lands.

A fourth institution, one which carries great prestige, and which features attitudes and interests which could direct it toward spelling reform, is science.

Science is committed to rationality and to clear communication and description. Scientists value our number system because it is simple, clear, unambiguous – a valuable tool of logic, measurement and mathematical thought.

Many scientists will understand if the irrationality of the present spelling system and the irrationality of the forces supporting it are shown to them. Science thrives on access of the greatest number to education and to learning, to learning about science itself, among other challenges.

Spelling reform movements have never taken their story directly to scientists, to their leaders, their publications, their conferences. If this is done, it is probable that many scientists will see the confluence of the interests of science with those of simplified and rationalized spelling.

Simplified Spelling as Access to Power

Spelling reform has been seen by reformers in far too limited a role. It has been seen as an academic argument, as a debate in curriculum, as a discussion in linguistics, as a matter of pedagogy. Members of the reading establishment have done all in their power to encourage this view. As long as spelling reform is seen in this narrow perspective, little progress will be made.

Further, no progress whatever will be made through argument, debate, discussion, experiment or demonstration before audiences and groups traditionally addressed by spelling reform movements (delineated above).

If the development of a written language is observed over its long history, this development can be perceived to follow a persistent trend; it develops from usage by a chosen few, an inner core of the privileged, to more and more common usage, to usage by more and more groups and classes. Second, the history of written communication shows that those who use it have more power than those who do not.

It is probable that priestly groups were the first to use writing. "Hieroglyphics" were holy writings, or more literally, "the markings of the Priests." Only the chosen could use this writing; indeed, it was so complex involving so many characters, that only the few could master its use (Hanna, Hodges & Hanna, 1971).

Over the centuries the need for writing spread from the priestly class to ruling classes, to the military, to trading classes. Eventually the characters shifted, little by little, from the depiction of ideas (ideographic writing) to the representation of spoken sounds (alphabetic writing). Finally a fully alphabetic writing was achieved. This represented, from a democratic and humanistic point of view, immense progress, because, in picture writing, thousands of characters had to be mastered in order to read, whereas in alphabetic writing only a few dozen characters needed to be mastered. This marked a tremendous step, a revolution in the democratization or popularization of writing.

But the new alphabetic systems were still the property only of strictly limited groups, upper and ruling classes. It was not until the Reformation brought to the West the duty and right of every person to read the word of God in the Bible that the need was felt to teach everyone to read and to write. It was this urge to equip each person to know the word of God directly which gave rise to the common school.

It is important to note, in the long development and spread of the use of written forms, the close correlation between the possession of writing and the wielding of economic, political, and social power. Classes that have power usually have writing, and classes that have writing usually have power. Individuals who write with any skill are rewarded above others who do not.

Spelling reform should thus be seen as a part of the general democratic movement of the Western World, in which, ever since the translation of the Bible into the vernacular, power, educational and economic, has been more widely distributed in the population.

Moving with the religious reformation in Europe were the mercantile and later the industrial revolutions, serving further to break feudal institutions and redistribute power. A fundamental way in which this was accomplished was the spread of reading and writing thru the instrumentality of the common school. A "basic education," for both religious and secular reasons, became the ability to write, to read, and to do simple sums. In this development, there remained a basic holdover from feudal times, in English speaking lands; this holdover is the spelling system.

Our society today runs on four elements and only four: these are raw materials, energy, money or the market, and finally, on words, thru which the other three are organized. Thru our society, each day, there moves a veritable blizzard of paper, and each sheet is covered with words. We are, as much as the market society, and probably more, the word society, the written word society. Power flows to those who select and cause to be printed those words. The pen manufactures and pays for the sword. The rewards of the society flow to the word-masters. Patterns of words control the decisions of the society. The originators of these patterns of words are crucial operators in the day-today productivity of the society. The word-wizards are rewarded; to them flows influence, prestige, power.

Every written word, depending on the document and the context of the document, contains and conveys an element of power. When a given mind gains facility with a group of written words, that mind grows in power.

Thus, spelling reform must be seen as Promethian, in transmitting writing and reading to larger groups of Man. The widening of access to written language thru simplified spelling should be seen as a portion of the continuing struggle bringing to the common man more dignity and power. Spelling reform is far beyond a debate about academics or curriculum, far beyond tinkering with the spelling of words; it is an integral part of the long, ongoing struggle for the redistribution of power.

The Fifth Institution

If this point of view about the repressive nature of antiquated spelling forms, and the relation of complex spelling forms to academic progress is made clear to today's leaders of organized labor, it is probable that large sections of the labor movement in English-speaking lands will advocate spelling reform.

What priority will be given and what energy is expended will vary from union to union. But once labor sees traditional spelling, not as neutral and innocent as a fact of life, but as an instrument to keep the children of working people "in their place," a giant may awaken, and a powerful ally may join the ranks of spelling reform.

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Thorstein Veblen. *Theory of the Leisure Class*. Macmillan Co., 1899; reprinted, Mentor Books, 1953, New York, p. 257.

Epilog: How spelling reform will come to the United States Spelling reform will *not* come because phonemic spelling is more sensible, or more rational, or more functional than traditional spelling; it will not come because it will be a blessing for children, and for all those of the English-speaking world.

It will come because it is cheaper; cheaper to teach and cheaper to use. Economy is the driving force of industry, manufacturing and all institutions that spend money for services. Labor saving devices are money saving devices.

Consider the answer to these questions:

- a) What is the dominant institution of American life?
- b) What institution is the largest producer and the largest consumer of written materials in this country?
- c) What institution is driven mainly by considerations of practicality and profit?

The answer to these questions is business and industry (B&I). Since this institution is so dominant, especially over education, we can say that if B&I take up simplified spelling, the rest of the country will probably follow; and if the new spelling is not taken up by B&I, it will probably fail everywhere else.

This means that the key question for spelling reformers is: How can we show B&I that S.S. (simplified spelling) will save them millions of dollars?

The first question business always asks is: How will this change either make or save money? The second question is: What will it cost to make the change? The third is: What are the public relations implications of such a change?

We can thus see that if business is to take up SS, *the costs of the change* must be minimized, as must the public resistance and shock in the change period.

If reform is to be led by B&I in this country, it will come thru:

- 1) simple forms, easily adopted.
- 2) step-by-step, over a period of years, so personnel and public can easily assimilate the changes.
- 3) along lines already popularized by advertising and public usage [that (way), *lite* (beer), *duz* (soap), *luv* (trucks and diapers), *tho* (already used by men), R (Toys R Us).],
- 4) over a change period of 20 to 30 years.

We must show business that it requires 50% less time to write and teach *tho* rather than *though*, *thru* than *through*. This less teaching time will allow the schools to shift time and budget to writing, reading, arithmetic, science, where additional time is badly needed. We must show B&I how SS will raise confidence, increase academic performance, help cut delinquency rates, help reduce unemployment and welfare costs, help to increase career success.

We want business to realize that the rationalization of our spelling will greatly stimulate the use of English internationally – the better for American business.

Spelling reform will advance on two legs, one of which is *usage*. B&I must be convinced to begin to use a few simple forms. The second leg is *testing* the new system on children. These tests will show that children will learn the new system more swiftly and easily than T.O. Thus, *usage* advances *testing*, and *testing* advances *usage*.

Our slogan: "Simplified spelling is good for business."

4. Experiment and Research in Spelling Reform

"An experimental study of attitudes towards English spelling reform,"

by Dr. Robert G. Baker,

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Abstract.

Results are discussed of a number of experiments investigating subjective attitudes toward traditional English spelling. The basic paradigm of the experiments was presented at the International Conference of the S.S.S. in Northampton in 1979. Literate adult native speakers of English were presented with lists of English words and asked to re-spell them in more rational ways. These "reformed" spellings provide information on those linguistic aspects of orthography which people consider to be important. A selection of such results was presented at Northampton.

There is one critical problem in this research. The instruction to re-spell words is deliberately vague and different reformers may have fundamentally different views on what is meant by a more rational spelling. In order to explore this point further, the naive spelling reformers took part in structured interviews based on the changes they had made in the spelling reform task. Reformers were asked to explain, describe, compare and contrast all the reforms they had made.

A statistical analysis of the interview material allows us to make inferences about these reformers' general attitudes towards spelling reform. The technique provides useful insights into popular opinions about English orthography.

Corpus.

Introduction – the spelling reform task,

This paper continues and elaborates on the analysis and discussion presented in an earlier paper published in SPB (Baker, 1980). Both this and the earlier paper focus on the attitudes of naive spellers (i.e. non-specialists with no reforming axe to grind) to the conventions of traditional English spelling. The principle technique used in the investigations is the "spelling reform task" in which lists of English words are presented to naive "spelling reformers" with the instruction that they should first rate the words according to the "rationality" of their spelling, and then provide alternative "more rational" spellings for low-rated words.

The earlier paper presented some results from one such experiment. 23 undergraduates from Stirling Univ. took part in the experiment. The spelling reform task was carried out on a list of 111 English words specifically selected to represent the range of "non-phonemic" [\[1\]](#) spelling conventions in English. The undergraduates' reforms were scored according to whether or not they preserved or destroyed the conventions in question. (See Table 1) It is clear that some conventions, e.g. preservation of plural "s" in "dogs," are more highly valued than others, e.g. preservation of graphemic final "-e" in "give."

This type of experiment may have various implications for the Simplified Spelling Soc. The responses of naive reformers may indicate "areas of least resistance" in popular attitudes towards English spelling. If gradual step-by-step reform is to be advocated (e.g. Lindgren, 1979), then a properly conducted social survey along the lines of the "spelling reform task" may provide guidance as to the order in which reforms could be made. The work of Kenneth Ives (1979) appears to be already pointing in this direction. In addition, the occasional use of such surveys throughout a period of actual spelling reform should serve as a useful barometer of change. It seems likely that

the popular acceptance of any form of change in the current spelling system could radically alter the biases shown in Table 1.

Table 1

Average rationality ratings and proportions of occasions when higher order regularities are preserved in spelling reform task

<i>Rule Level</i>	<i>Average Rationality Rating</i>	<i>% occasions rule is preserved</i>
<i>Graphemic</i>		
give <i>not</i> giv	3.71	42.6
freeze <i>not</i> freez	4.28	67.8
<i>Phonotactic</i>		
fetch <i>not</i> fech	4.18	66.7
wash <i>not</i> wosh	4.01	52.2
<i>Morphemic</i>		
walked <i>not</i> walkt	3.22	60.9
dogs <i>not</i> dogz	4.71	87.9
<i>Syntactic</i>		
goose <i>not</i> goos	3.78	29.3
add <i>not</i> ad	3.53	52.2
<i>Semantic</i>		
seem and seam differentiated	3.80	57.2
sp. g retained in sign and signal	3.53	46.1

Another approach to gradual spelling reform could be through the introduction of lists of reformed vocabulary items rather than through the modification of conventions. The data from the spelling reform task show quite a lot of agreement between people on certain specific words. For example, "bomb" was re-spelt as "bom" by 100% of the students, "peach" was respelt as "peeche" by 96% of the students. Whichever approach is taken, the collection of social survey data could provide valuable propaganda for the proponents of reform.

Individual approaches to the spelling reform task.

The data collected from the spelling reform task raise many questions. In spite of a degree of consensus over the reform of many words, there was still a great deal of individual variation; at least as much as there is between expert reformers. Some people were willing to reform many more words than others and some introduced interesting innovations to cope with certain items. For example, the use of alphabetic letter names to represent phoneme sequences (e.g. "c" for "sea"), the use of hyphens at morpheme boundaries (e.g. "gradyoo-al") or elsewhere (e.g. "ta-ee" for "tie"). It was therefore decided to attempt to find out more about how people were operating in the spelling reform task. The instruction to produce "more rational" spellings had been deliberately vague, in anticipation of the fact that people would differ in their conceptions of orthographic rationality. In order to gain a deeper understanding of individual approaches to the task, each of the 23 undergraduates were given a structured interview. Each person was asked first of all to try to explain or comment on each of the reforms he or she had made. These comments and explanations were then converted into five point rating scales. In a second session, each person was asked to rate each one of his/her reforms according to each of his/her rating scales. Thus if a person had produced the explanation "I'm spelling this the way I pronounce it" for a particular reform, he or she would be asked to decide to what extent this explanation was true of every reform he/ she had made. If it was definitely true of a particular reform, a rating of 5 would be given. If it was definitely untrue, a rating of 1 would be given.

Which people reform for which reasons?

A total of 47 different rating scales was elicited. The maximum any one individual produced was 12 and the minimum was 3. All the scales are presented in Appendix A since spelling reformers may wish to take cognizance of them all.

The most frequently produced explanations and comments were:

1. I'm removing unnecessary letters (17 people).
2. Some British people may pronounce this word differently from the way I've reformed it (15 people).
3. I don't like my reform (14 people).
4. I've spelt this the way I pronounce it (12 people).

It is worth noting that two of these comments reflect an uneasiness about the task. The other two demonstrate a fairly straightforward "phonemic" approach to the task.

In order to find out what sort of people produce which explanations, the 23 undergraduates were classified according to 4 separate objective measures. These are shown in Table 2. The mnemonic labels refer to aspects of reforming performance. The label Conservative is straightforward. Some people reformed far fewer words than others. The maximum number of reforms was 100 out of a possible 111 and the minimum was 17.

Table 2-*Performance of Undergraduate students.*

<i>Subject</i>	<i>*Conservatives</i>	<i>Levellers</i>	<i>Linguists</i>	<i>Phoneticians</i>
Removing silent letters	3.0	2.8	2.8	2.4
Substituting for ambig. let.	3.0	3.3	3.0	2.5
Word better left unchangd	3.2	2.2	3.2	2.2
Reform is offensive	3.0	4.0	2.0	4.0
Aiming for economy of sym.	2.7	2.5	2.7	3.5

*Conservatives = few reforms, Levellers = reforms in direction of more frequent sound-spelling, Linguists = reforms to preserve linguistic rules, Phoneticians = consistent one sound=one symb.

Each person was placed in one of 4 status groups (A-D) within the Conservative classification depending on the number of words reformed. Thus Group A Conservatives produced relatively fewer reforms than Group B Conservatives, and so on.

The same procedure was used with the other three classifications. The Leveller classification refers to a measure of spelling reform "regularity." A frequency list of English sound to spelling correspondences (Hanna et al, 1966) was used to establish whether any particular reform represented a more frequent sound/ spelling correspondence than its original spelling. Thus the "ee" spelling in "peech" represents a more frequent sound/spelling than the original "ea". In this instance the spelling "peech" would be assigned a regularity score of 3. If on the other hand a word such as "greed" had been reformed to "gread", a regularity score of 1 would have been given. Correspondences of equal frequency would be assigned a score of 2. The scores were summed and averaged for each reformer to produce an index of the extent to which each reformer made changes in the direction of more frequent sound/symbol correspondences. Group A Levellers had higher average regularity scores than Group B Levellers, and so on.

Group A Linguists were those people whose reforms preserved or enhanced non-phonemic spelling conventions (as in Table 1) more often than Group B Linguists' reforms.

The classification Phonetician is essentially a measure of phoneme/grapheme consistency. A set of ambiguous sound/spelling correspondences was selected from the original word list, such as /k/=c or k, /s/ = s or c, /tsh/ = ch or tch. "Good" phoneticians were those people who consistently and unambiguously selected one or another of the alternatives throughout their reforms.

Comparing these groupings with the explanations and comments produced by the reformers, we find that some explanations are exclusive to certain types of people. Thus a Group A Conservative was the only person who produced the rather prescriptive and reactionary comment "This reform would be unnecessary if people spoke more clearly." Examples of reforms which were highly rated on this scale are "Ingländ" and "wimin."

On the other hand, a Group A Phonetician was the only person who made the comment, "It is difficult to represent some of the sounds in this word without introducing new letters," showing a high degree of phonetic awareness. An example of such a word is "revision," where the comment presumably refers to the phoneme /ʒ/ which has no unambiguous representation in English spelling.

A Group A Linguist is the only person to make the comment "I have made this word more difficult to identify." This comment applies particularly to words where the reform produces a homograph, e.g. "maid" reformed to "made," "sign" reformed to "sine", "air" reformed to "ayr." This comment therefore demonstrates an awareness of semantic orthographic conventions, and perhaps a reluctance to break them down (the type of analysis discussed below confirms that this is the case).

However, many of the explanations are shared to a certain extent by people in all the subgroups. Table 2 illustrates some of the relative biases which people in any particular classification produce the comment or explanation in question. The scores in the table are calculated by assigning a rating to each person who gives the explanation, depending on which status group he/she belongs to within each classification. So, for example, a Group A Conservative producing any particular explanation will contribute a rating of 4 to the Conservative column; a Group D Conservative producing the same explanation contributes a rating of 1. These ratings are added up and divided by the total number of people producing the explanation. This gives an average bias with which particular explanations are produced by particular types of people. So, if all the people who produce a particular explanation are Group A Conservatives, it will receive a Conservative bias score of 4; if they are all Group D Conservatives, it will receive a score of 1. If any explanation was produced by *all* subjects, a bias score of 2.57 would result.

The explanations given in Table 2 are merely illustrative of this type of analysis. It should also be borne in mind that all the explanations discussed were given spontaneously. If we take "removing silent letters" in Table 2, we see that it is a fairly Conservative-biased explanation. Those people who only make a few reforms are particularly concerned about "silent letters." Phoneticians, on the other hand, remove silent letters as a matter of course. It is a *sine qua non* of operating "phonetically" and so there is no need to mention it in their explanations. Phoneticians are relatively more likely to talk in general terms about "Economy of symbols."

"Substituting ambiguous letters" is a particularly common explanation amongst Levellers, and once again a *sine qua non* for Phoneticians.

The production of the comment "Better left unchanged" is equally biased towards Conservatives and Linguists (disguised Conservatives?).

As for "Aesthetics," Conservatives and Linguists are probably less likely in the first place to produce reforms which they deem to be aesthetically offensive. However, only one person (in each group), (Grade A Leveller and Phonetician, Grade R Conservative and Grade C Linguist) actually

produced this comment (See Appendix A). This type of analysis generally suffers as a result of the limited number of explanations shared by the subjects.

What do the comments and explanations mean?

A more powerful way of examining people's explanations of their own reforming behaviour is to plot the relationships between each individual's different explanations and comments. This can be done by taking each person's *matrix* of ratings (reformed words by explanations) and putting it through a principal components analysis on a computer. Principal components analysis is a statistical tool for describing the structure of matrices (see Slater, 1976-7).

A few examples will be given to illustrate the technique. In an ideal world, a perfect spelling reformer would produce perfect spelling reforms. He/she would be completely consistent in producing reforms which were phonetically sound, aesthetically satisfying, economic on symbols, and so on. In such a case, the computer would be unable to carry out a principal components analysis. In practice most people are less than perfect.

<p>Figure 1. Grade A Conservative</p> <p>Better uncha</p> <p>left nged</p> <p>Reform obscures word origins</p> <p>Rationality of original</p> <p>Having difficulty old habits</p>		<p>Figure 2. Grade A Leveller</p>	<p>Don't like this change</p> <p>Rationality of original</p>
<p>Aiming for economy of symbols</p>	<p>Improving order of letters</p>	<p>Spelt as sounds</p> <p>Easier to learn to read</p> <p>Change aesthetically offensive</p>	<p>Removing superfluous letters is aesthetically sive</p>
<p>Making more regular</p>	<p>Making less confusing for learners</p>	<p>Substituting for ambiguous letters</p>	<p>Easier to learn to spell</p> <p>Aiming for economy of symbols</p>
<p>Figure 3 Grade A Linguist</p> <p>My reform could be pronounced wrong</p> <p>Don't like this change</p> <p>Spelt as I pronounce</p> <p>Some people may pronounce this differently from my reform</p> <p>Rationality of original</p>		<p>Figure 4 Phonetician</p> <p>Making easier for foreigners to learn</p> <p>Reform looks better than original</p>	<p>Spelt as it sounds</p>

Removing superfluous letters	Non -phonological considerations apply in original		Rationality of original
	Substituting for ambiguous letters I think I had problems with this word as a child	Spelt as I pronounce Difficult to represent some sounds My reform could be pronounced wrong	Some people may pronounce this differently from my reform Don't like this change

Figure 1 shows an example. This figure represents the explanations and comments of a Grade A Conservative, making only 17 changes in the original word list. The way in which the labels for the comments and explanations are spread out in a 2-dimensional space represents their relationships to one another. For example, "Obscuring a word's origins" is quite strongly associated with "better left unchanged." Precisely what this person means by "obscuring a word's origins" can be ascertained by looking back at the way in which this comment is applied to the reforms themselves. It is applied in particular when a derivational relationship between words in the list has been broken down, e.g. kwest = kweschun; fakt = factual.

High "rationality ratings" of the original word are associated with "having difficulty breaking old habits" in the reform. It can be concluded that this is a fairly enlightened Conservative who is aware of the major role played by habit in the acceptance of traditional spelling. Words such as "bom", "gon," and "goos" are highly rated on these scales.

"Making words more regular" is directly opposed to "better left unchanged", so it is clear that this person sees regularization as the principal aim of reform. On the other axis, "economy of symbols" is opposed to "improving the order of letters." The opposition applies particularly to the reforms "ogger" (ogre) and "aker" (acre) where in the first instance at least, the subject has to increase the number of letters in order to avoid a possible pronunciation. In both words the conventional full syllable representation of the final phoneme(s) as "er" may also be construed as a diseconomy. A parallel motive is found in the Nue Spelling's treatment of syllabic "l" in "peepl".

Figure 2 shows a Grade A Leveller. Interestingly "aesthetic offensiveness" is negatively correlated [\[2\]](#) with "not liking a change," so this person is not much concerned about offending peoples' aesthetic sensibilities.

There are two particularly interesting comments here. A clear distinction is made between reforms that are "easier to read" and those that are "easier to spell". At the same time, "easy to read" is strongly positively correlated with "spelling words as they sound", and "easy to spell" is strongly positively correlated with "economy of symbols". For example, "revishon" is rated as "easier to spell" and "economical", but not "easier to read" or "spelt as it sounds". The reform "appeer" is rated in the converse fashion – not "easier to spell" or "economical" but "spelt as it sounds" and

"easier to read." The failure to acknowledge the distinction between readability and spellability has been one of the fundamental criticisms of the initial teaching alphabet (Haas, 1970).

Figure 3 shows a Grade A Linguist. This person is aware of childhood problems being caused by ambiguous spellings, referring mainly to words containing "x" and "q". He is obviously very concerned about the effects of his reforms on other people's pronunciation. This applies, for example, to "aw" (awe) and "cokett" (coquette). "Aw" may be particularly relevant here because this person is a Scottish dialect speaker and may be aware of the Anglo-Scottish discrepancy in the vowel phoneme system, centering on the /ɔ:/ =/ɔ/ distinction (see Lass, 1974). "cokett" preserves some version of a Chomskyan stress placement rule (Chomsky and Halle, 1968), by preserving the final double consonants. However, it is more realistic to suggest that his concern is not with the native speaker's phonological awareness of this rule system, but rather with a general indeterminacy about the pronunciation of recent borrowings from foreign languages.

Original words with superfluous letters are rated quite highly on "rationality". This applies mainly to words with final "-e", which, according to his original ratings, he is not too happy about dropping, especially where they have a syntactic function and/or may influence pronunciation. e.g. "hors" (horse).

In the centre of Figure 3 we have the typical "linguist's" statement "non-phonological considerations apply in the original" (not actually phrased this way in the interview see notes to Appendix A). This statement applies particularly to the original spellings "burlesque," "coquette," "bomb," "horse."

Figure 4 shows a Grade A Phonetician. Here we see that words that have "sounds that are difficult to represent" cause problems; for example "worl" (wall). Here we have another example of the troublesome /ɔ:/ phoneme, though in this case the reformer is a Northern Englishman living in Scotland, not a Scot.

Encouragingly "spelling words as they sound" not only helps foreigners but also improves the appearance of the words. Examples here are "lej," "hav," pleez," "swet," (sweat).

On the other hand, this person is fully conscious that some people's pronunciation may differ from his own, e.g. "wick" and "paw" = "poor" = "pour", and this may be one good reason for rating the original spelling of these words quite highly.

Conclusions.

The analysis of these data is still continuing, but it is possible to draw some conclusions. Firstly, it is clear that the business of reforming English spelling is extremely complex. Many principles are involved and some of these are frequently in conflict. In practice, even relatively naive people will have a great deal to say about spelling reform. Even if some of their attitudes about spelling reform reflect their naivety rather than their sophistication, expert spelling reformers would be wise to take them into consideration. An analysis of the attitudes of a more representative sample of the general population should be undertaken.

Secondly, many of the problems highlighted by the analyses above are also found in the spelling reform proposals of the experts. A few examples will be given to illustrate this point.

For example, some expert reformers show a strong bias towards improving readability rather than spellability. Pitman's i.t.a. treatment of the schwa vowel in "legal, rebel, civil, symbol" is a good example. He prefers to retain the full vowels in these words, as in the derived forms "legality, rebellious, civility, and symbolic." This is unlikely to cause problems for the reader, at least as long as he/she knows the words; but the speller must make use of knowledge of the derivational relationships in order to spell the words correctly.

Among expert reformers, we also find "Linguists," preserving certain grammatical conventions in spelling (but which and why?), "Phoneticians," aiming for one symbol/ one sound consistency, and "Levellers," biasing their reforms towards the most frequent representations in traditional orthography (type frequency or token frequency?).

On a related issue, some reformers (e.g. Beech, 1980) recommend preserving "irrational" spellings in a few very frequent words in the interests of minimal disruption of traditional spelling. It might also be argued that reform will get off the ground more quickly if one homes in on precisely the same frequent irrational spellings from the start.

There are many problems in the details of reform. Some reformers are more worried than others about homophones. One reformer (Gassner, 1978-79) suggests doubling consonants in one of each pair of homophones in order to avoid homography. How would the *speller* fare with this convention?

Many reformers allow certain grammatical conventions to hold in spelling, but do not make it clear how far one should go. Wijk (1959), for example, permits us to preserve the unitary spellings of the third person singular present tense morpheme in "begs" (begs) but not in "is" (iz).

Variations in pronunciation cause many difficulties. Pitman recommends that we should all distinguish between "law" and "lore" for the benefit of those speakers who pronounce them differently. But should we expect consistently "correct" spellings from those people who make no distinction in pronunciation? Many reformers state that Southern British speech should be the standard on which base spelling reform. Is there room for ethnocentric and parochial attitudes in a radical cause? Others recommend that in certain instances "expert" pronunciation should be relied upon. For example, "iodine" with an /i:/ vowel in the second syllable when pronounced by chemists, is apparently pronounced with an /aɪ/ vowel by many (Australian) laymen (Lindgren, 1969). To what extent should minority pronunciations be given precedence? This issue becomes more vexed when we consider spelling reform in an international context, where the majority of people use English as a second or third language.

There are many other basic issues on which the experts disagree. An urgent task for the Simplified Spelling Society should be for members to examine their own attitudes to these basic issues. If possible, the Society should agree, preferably in consultation with the general public, on an order of priorities for the principles of spelling reform. Indeed it may be a salutary exercise for members to subject their own attitudes to the kind of analysis presented above.

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Notes: Some of the comments and explanations have been rephrased for the sake of brevity. For example, the explanation "There are non-phonemic justifications for the original spelling" (No. 3) was in fact originally given in forms such as "There are good reasons for spelling the original word this way although it doesn't represent the sound accurately."

In cases where two or more comments seem remarkably close to one another in content (e.g. Nos. 2 and 7), the justification for representing them separately is that both were produced and used separately and distinctly by a single individual.

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[1] Footnote: Following the analysis of Albrow (1972), Venezky (1970) and Chomsky and Halle (1968), the representational principles of English spelling can be seen as polysystemic, morphographemic or systemic phonemic, carrying grammatical and semantic information in parallel with phonological information.

[2] A correlation matrix forms part of the computer output of the principal components analysis.

Appendix A

Lists of comments and explanations. concerning spelling reform behaviour

Comment Number of people (out of 23) producing comment

1. The original word could be pronounced wrong	4
2. I'm not sure how I pronounce the original word	1
3. There are non-phonemic justifications for the original spelling	5
4. This reform would be unnecessary if people spoke more clearly	1
5. I had difficulty with this word as a child	1
6. This spelling should definitely be changed	1
7. It isn't clear how this word should be pronounced	1
8. I am aiming for economy of symbols in my reform	6
9. My reform indicates the word's emphasis better	3
10. My reform makes the word easier to pronounce	6
11. My reform makes the word easier to learn to read	2
12. My reform makes the word easier to learn to spell	2
13. My reform makes the word more difficult to identify	2
14. My reform gets rid of unnecessary letters	17
15. My reform gets rid of unpronounced letters	5
16. My reform gets rid of ambiguous letters	7
17. My reform gets rid of confusing letters	4
18. My reform improves the order of letters	4
19. My reform produces a more straightforward rule	2
20. I have spelt this word the way it sounds	8
21. I have spelt this word the way I pronounce it	12
22. My reform is phonetically accurate	4
23. My reform shows a more direct relationship between spelling and sound	3
24. My reform is more straightforward than the original	3
25. I am trying to avoid producing a homograph	1
26. I am trying to maintain relationships between related words	1
27. There are non-phonemic considerations in my reform	5
28. My reform is better than the original	2
29. I'm not sure if my reform is an improvement	1
30. I'm not sure if my reform is the best possible	2
31. I can't think how to improve my reform further	4
32. This word would be better left unchanged	5
33. I'm not sure why I made this change	4
34. I don't like my reform	14
35. My reform obscures the word's origins	1
36. My reform looks odd	4
37. My reform is cumbersome	1
38. My reform is aesthetically offensive	1
39. My reform could be pronounced wrong	6
40. My reform has altered the pronunciation	1
41. My reform is too complex for children to learn	1
42. I am exchanging one irrationality for another	1
43. I could have been more consistent in my reform	1
44. Some British people may pronounce this word differently from the way I've spelt it	15
45. It is difficult to represent some of the sounds in word without introducing new letters	1
46. I am finding it hard to break old spelling habits	3
47. My reform looks better than the original	2

5. "The Effects of Spelling Change on the Adult Reader," by John R. Beech, Ph.D., New Univ. of Ulster, Coleraine, Co. Londonderry, Northern Ireland.

Abstract

A change in the English spelling system could be a substantial aid for children learning to read. But little is known about what the likely effects of such a change would have on adult readers. It was found that text written in World English Spelling, a phonetically based system, impaired reading rates of adults, but Regular Spelling, a system uniformly applying the most frequent of existing spelling rules, only impaired reading in the initial stages of the experiment. After reading about 6,000 words of text, the impairment in reading rates in Regular Spelling had disappeared. By contrast, the reading rates of the WES group were still substantially impaired. By the end of the experiment, spelling in both systems had not been completely mastered by the subjects, but this was probably due to the teaching of the spelling of the orthographies being treated as secondary within the experiment.

This paper shows that spelling reform proposals can be tested out, and demonstrates the vital fact that literate adults can learn to read a consistent reformed spelling in hours, not years.

Corpus

The present system of English spelling produces difficulties when learning to read. One solution to this problem would be to reduce or eliminate the irregularities within the English spelling system. However, although this would undoubtedly make learning to read an easier process, the problem would be that the rest of the population, who are accustomed to reading in traditional spelling, would have problems with trying to learn a new system of spelling. This present paper is concerned with finding out how well two groups of adults each learn a different regular spelling system. The capabilities of the adult learning a new scheme is a problem that has not been approached seriously, and so far, very little experimental work has been undertaken on this subject.

Let us first briefly examine other attempted solutions to help children overcome the irregularities of traditional orthography (t.o.). All these solutions have been designed to help children to learn to read and to spell in t.o. One solution has been to use signalling codes to specify the phoneme that a letter represents. For instance, Gattegno (1962) suggested the use of color coding whilst Fry (1967) proposed the use of diacritics. Another solution has been to propose simplified and regularised alphabets that usually disregard most letters of the Roman alphabet and create a new alphabet that is entirely phonetic. Examples of such schemes are Paulsen's Torskript (Paulsen, 1971) and Malone's UNIFON (Ratz, 1966). The third category of solution has been the creation of a traditional alphabet that retains as much similarity as possible to t.o. The best known example of such a system is the initial teaching alphabet (i.t.a.) devised by Sir James Pitman (1961) and researched initially by John Downing. All these main solutions involve the child in learning a new reading scheme, or medium, at the outset and then transferring at the appropriate time to t.o. In the case of the i.t.a. scheme, the research work appears to be encouraging. For Example, Warburton and Southgate (1969) reviewed all the 17 published researches up to 1969 on the i.t.a. scheme and made favorable conclusions. Although few of the experiments had been well controlled and none was sophisticated in statistical analyses, all the results showed that children learning in i.t.a., "learned to read earlier, more easily and at a faster rate than similar children using t.o." But after three years of schooling the level of reading was the same for both the i.t.a. and t.o. children. Warburton and Southgate also concluded that the evidence is equivocal whether or not there is a problem in transferring from i.t.a. to t.o.

The experimental studies on the i.t.a. scheme are interesting because they clearly show the impediments of the present t.o. For instance, Downing (1967) found that after 2 1/3 years, twice as many i.t.a. children as t.o. children had completed the reading scheme; in other words, 52% of the i.t.a. sample had completed the scheme, compared with 25% of the t.o. sample. Thus, it may be concluded that t.o. is retarding children's progress in spelling.

It would be premature to conclude that the various spelling mediums used for the teaching of reading are of little use because eventually children taught in a new spelling system are not better readers after about three years than those who are taught in t.o. from the beginning. However, it is tempting to conclude that this eventual equalization of the two groups which has been found so far, is entirely due to the children taught in the new medium being retarded by their having to transfer to t.o. Eventually the children taught in t.o. from the beginning catch up. This leads us to the proposal that a change to make the t.o. system more regular would mean that this retarding element would be removed. Children would learn to read more quickly and easily and the incidence of permanent reading problems would reduce. But of course, such a change would not be easy, otherwise t.o. would have been changed long ago. One major problem would be the unwillingness of adults to change over to a new system due to inertia and a reluctance to relinquish traditional spelling. But leaving this problem aside, what would be the rate of progress of adults learning a new spelling scheme in terms of their spelling and reading ability in the new scheme? The present study is aimed at studying this and other questions.

The two spelling schemes chosen for this study were Regular Spelling (RS), devised by Beech (1980), and World English Spelling (WES). The RS system was devised with three criteria in mind. The first criterion was that the system of regularization should enable children to learn to read more easily. Second, adults should find it easy to read, so there would have to be a close resemblance with t.o. Third, it should be easy to spell in the new system, thus the number of spelling rules should be reasonably small. The problem is to devise a system that is able to balance between this triumvirate of criteria. For example, the Regularized English system of Axel Wijk (1959) satisfies the second criterion (that adults should find it easy to read) quite well, equally as well in fact as the RS system, but it fails on the third criterion (that it should be easy to spell) because of the very considerable number of spelling rules that have to be memorized. Approaching the other extreme are systems like i.t.a. which satisfy the third criterion because they have reasonably few spelling rules, but do not appear to satisfy the second criterion, because the text appears to be radically different from t.o. to the adult reader familiar with t.o. In order to satisfy this balance, the RS system was devised using several guidelines which have been outlined elsewhere (see Beech, 1980). Briefly, these include the following: first, where several symbols or combinations of symbols represent the same sound, the rule most frequently used is adopted, bearing in mind the position of the sound in the word. For example, in t.o. the spelling *ou* most frequently represents the *ou* sound in the middle of the word (as in *loud*), but *ow* represents the same sound at the end of the word (e.g. *cow*). Second, subtle distinctions in sounds already ignored in t.o. are also ignored in RS. For example, 'is' and 'result' remain unchanged, instead of being spelled with *z* in place of *s*. Third, in cases where the frequency of a sound in a word position is low, an easier to learn spelling combination is substituted. For example, *u-e* is used to represent the long u sound (e.g. *tune*), but this sound is most frequently represented by *ew* at the end of the word. In the case of RS, all words ending in this sound end in *-u*. Furthermore in this particular case, suppose I had decided to end all such words in *-ew*, this would have resulted in strange spelling constructions such as *continew* (instead of *contin* which is the RS spelling). An example of some text in RS is given in the appendix. I have since made some slight amendments to the RS system, basically bringing it closer to t.o., and these are described in the method section. Tests on the RS system revealed that

approximately 70% of the text remained unchanged, whereas the number of spelling rules was reasonably small, but not so small as those in systems such as WES.

The WES system was chosen for comparison mainly because it has been strongly advocated by the Simplified Spelling Society to replace t.o. In addition, WES is similar to the i.t.a. spelling system, so that it may be assumed that children would find it very easy to learn to read in this medium. Thus WES is an almost completely phonetic system, but unlike i.t.a. it uses only the Roman alphabet. An example of text in WES is as follows: ". . . or eni naeshon soe konseevd and soe dedikaeted, kan long enduer". As mentioned previously, although it satisfies the criterion that it can be read easily by children and that it is (presumably) easy to spell for children and adults, it may well be difficult for adults who are used to t.o. to learn to read. The extent of this difficulty is investigated in the experiment.

The method used in this experiment was to teach one group of adults the RS system and the other group the WES system. Both groups were given successive passages to read in one of these orthographies. The passages were long extracts, in sequence, from one book. After each extract there was a comprehension test of that section and a spelling test of the new orthography. Subjects also timed themselves for reading each extract in order that reading speeds could be calculated later by the experimenter. The advantage of this method was that subjects could read the kind of materials they would normally read and become well acquainted with the orthography. Furthermore, the comprehension tests and the context of the story in the book ensured that they were reading for meaning and were not concentrating too hard on the new spelling. Thus, the change in orthography, although an impediment to reading in the initial stages, may well be processed automatically with experience. A cautionary note should be made at this point that university students were used in the experiment so that performances must not be considered as representative of the whole adult population. However, students are probably representative of anyone who reads a substantial amount of material on a regular basis, and thus are representative of that sector of the population most likely to be affected by a change in the present orthography.

Method

subjects

The subjects were university students participating in a second year practical class; their ages ranged from 19 to 43 years. The subjects were divided into two groups which were balanced as far as possible according to sex and to their average grades in examination at the end of their first year at university. There were 7 males and 6 females within each group.

Materials.

The two spelling systems. The RS system which has been described in detail by Beech (1980), has been amended in a minor way by its deviser. Although not previously named as the RS system, this name has been given to the system as it now stands in its amended form. The amendments are as follows:

1. *The k sound.* Previously, the *k* sound was always represented by 'c'. Now it is represented by 'c' except at the end of the word where 'k' is used, although the grapheme 'c' continues to represent the *k* sound when the *k* sound is preceded by a short vowel sound. Here are some examples of spelling in RS: *milk, crank, seek, take, took, senic, nec.*

2. *The long e sound.* In the new version of RS this is represented by 'ee' (e.g. *sleep*), except when the spelling in t.o. is 'ea' (e.g. *meat*). In the case in which the grapheme 'e' in a word spelt in RS has more than one letter between itself and the end of the word, the *e* sound is spelt just as 'e' (e.g. *feld*

for 'field', *equal*). However, when the word ends in *ch*, *st* or *th*, then 'ee' or 'ea' is still used (e.g. *teach*, *east*, *teeth*). When the word ends in the *ee* sound, it is spelt as '-e' when preceded by only one consonant or *sh*, e.g. *be*, *ce* (key), *he* and *she*. In all other cases, the ending is 'ee' (e.g. *glee*, *tree*).

3. *The s and z sounds*. In the original version of RS, these sounds were spelled with an 's' except for the z sound at the beginning of a word (e.g. *zip*). In the amended version, when the word ends in '-ess' in t.o. this spelling is retained (e.g. *stress*). The following '-ce' spellings are used at the end of the word for the s sound:

-ance (e.g. *dance*) -ace (e.g. *pace*) -eece (e.g. *fleece*)
-ence (e.g. *hence*) -ice (e.g. *dice*) -eace (e.g. *peace*)
-ince (e.g. *mince*) -oce (e.g. *doce* for 'dose')
-once (e.g. *sconce*) -uce (e.g. *puce*)
-unce (e.g. *dunce*) -ooce (e.g. *jooce* for 'juice')

If the word ends in a z sound, s is used and not the '-ce' ending (e.g. *dose* ('doze'), *muse*, *wise*). The z sound continues to be spelt with a 'z' at the beginning of the word.

4. *-sion and -tion endings*. The *shun* and *chun* sound endings are still spelled '-tion' but the *zhun* sound ending is now spelled *-sion* (e.g. *fusion*, *division*).

5. *-ower ending*. This is now spelled 'our' (e.g. *pour* for 'power') instead of 'ouer' which was the previous version of RS.

6. *al- beginnings*. This is now spelled as in t.o., for instance, *also*, *altogether*, *altho*. The WES system is the same as that described in Dewey (1971).

The booklets.

Two booklets were prepared, one for each group, explaining how to spell in their respective orthographies. The WES system was described by giving the name of each sound followed by examples. This was followed by explanatory notes on the following: The use of the dot to separate successive letters which otherwise might be read as a combination, the distinctions between *aa* and *ar*, between *thh* and *th*, between *au* and *or*, between *au* and *oo*, and between *er* and *ur*. After each explanation of the system there was a self-spelling test of 32 questions with the answers upside down for the subject to check himself. The RS system was described in a similar manner to Beech (1980) except that more examples were given after each rule. As in the case of the WES explanatory booklet, there was a self-test of 37 aspects of the RS system. The answers were provided upside down below the test so that the learners could check their answers. The booklet explaining the RS system was approximately three times as long in space.

A total of eight additional booklets was prepared for each group. Each booklet contained a passage of text of approximately 1400 words taken from Vera Brittain's 'Testament of Youth.' Two of these booklets had the passages written in t.o. and the other six were in RS. Those written in t.o. were reasonably self-contained extracts taken from later parts of the novel and unlikely to influence the subject's grasp of the meaning of the other six parts. The six extracts to the new orthography were identical in content for both groups and were taken in sequence from the earlier part of the book. Some parts of the text were edited so that there could be a reasonably self-contained story within each extract. Each passage began with the instruction to start the timer, and similarly at the end of the passage there was the instruction to stop the timer and to write down the time taken to read the passage. Table 1 shows the number of words remaining unchanged in the passages when converted into the new systems.

Table 1

Percentage of words in passages remaining unchanged

<i>Spelling system</i>	<i>The trial passages</i>						
	1	2	3	4	5	6	m
RS	69.0	68.6	66.1	71.0	77.0	69.7	70.2
WES	31.8	30.7	33.4	31.3	33.6	34.9	32.6

Table 2

Typing speeds in words/minute

<i>Spelling system</i>	<i>The trial passages</i>						
	1	2	3	4	5	6	m
RS	41.9	37.5	36.8	34.0	40.4	39.5	38.2
WES	32.3	36.5	36.0	34.0	32.5	37.5	34.8

*Two passages in t.o.**

t.o. 37.2 37.3

*The two passages in t.o. were different in content from the passages constituting the six trial passages.

On the next page was a comprehension test consisting of 12 statements, each of which had to be marked as either 'true' or 'false.' For instance, "My father was very fond of music TRUE/FALSE" or "I wrote five novels before I was eleven years of age TRUE/FALSE": All instructions and questions were in the new orthography except for the booklets with passages in t.o. The comprehension test was followed by a spelling test only for the booklets in the new orthography. Each spelling test consisted of 32 questions for the WES group and 37 questions for the RS group. In this test a word was given in t.o. followed by a blank in which the subject had to write the word as it would be written in the new spelling system. Each question was designed to test one aspect of the new orthography. For instance, for the WES group, one question in each booklet always tested the use of the dot rule. Thus, each aspect of the orthography was tested on six successive occasions in the six spelling tests at the end of each in the new orthography. Of course, the tests of each rule involved not only instances where a rule would be applied, but also instances where a rule would *not* be applied.

The typing of these passages afforded the opportunity for a miniature experiment. The typist (J.B.) timed herself while typing the passages, copying from neat handwritten versions of the passages. The timer was stopped whenever a mistake occurred and restarted after the mistake had been corrected. All the RS passages were typed in sequence from Trial 1 to Trial 6, and similarly, the WES passages were typed in sequence. Table 2 illustrates the typing rate across trials. It should be remembered that the words in the passages are exactly the same when comparing, say, the RS passage for Trial 1 with the WES passage for the same trial. It can be seen that there was no systematic improvement in typing speed, but the typing rate was faster in all trials for the passages spelled in RS except for Trial 4, in which the typing speed was the same. The typing speed in RS was approximately the same as in t.o. Thus, it would seem that the motor patterns established by an experienced typist are not impaired when typing RS. This is probably because of the predominant use of spelling combinations in RS which are of high frequency. By contrast, WES has new patterns of spelling combinations which require the learning of new motor patterns by the typist.

Procedure

At the beginning of the experiment the subjects were told that they were to imagine that the country had suddenly changed over to a new system of spelling. They were then given a brief summary of what the experiment involved so that they would know what to expect at each stage. Booklets were handed out with a passage in t.o. followed by a comprehension test. The subjects were each given a timer and practised using it. They were told beforehand how the comprehension test would be marked, that is, +1 if correct, -1 if not correct and 0 if not attempted. (Thus the marking scheme corrected for chance). They were instructed to read the passage at their normal reading rate. After this task was completed by all subjects, they were split into two groups. The author took the RS group for the remainder of their session and his wife (J.B.) and a postgraduate student (R.M.) took the WES group for the rest of their session.

Each group was then given a spelling test in t.o. of all the words subsequently to be tested in the spelling tests in the new orthographies. The subjects were not told that they would later encounter these words in the spelling tests. Then they were given the explanatory booklet about the new spelling scheme. When they were satisfied that they knew the system reasonably well, on the basis of self-spelling test, they started on the test booklets in the new orthography. The first booklet in the new orthography constituted the first trial and each subsequent trial was undergone using a new booklet containing a new passage with tests. They had to keep the explanatory booklets at the front with the experimenter while undergoing each trial. At the end of each trial they brought their booklet to the experimenter and the spelling test part of the booklet was marked in front of them. They were encouraged to consult the explanatory booklet to clarify points, if necessary, before continuing with the next trial. After the sixth trial, subjects were given the final booklet which was a passage in traditional orthography followed by a comprehension test. Finally, they were given a questionnaire about the scheme. The whole session was quite long, but subjects were encouraged to take breaks. Most finished after about 3 or 4 hours and the maximum time was about 5 hours, for both groups. In some cases, subjects took the booklet for the sixth trial and subsequent material home with them to complete that evening.

Questionnaire on the new orthography

In the first section of the questionnaire at the end of the experiment, subjects were required to rate the ease of learning to spell in and then the ease of learning to read the new orthography in relation to t.o. All the ratings in this questionnaire were made by ticking a line representing the rating scale. The analysis involved dividing each line into a ten-point scale with zero representing one extreme and ten representing the other. Thus a mark made exactly half-way along the scale would be scored as 5. In these first two ratings, zero represented "much more difficult than traditional spelling" and 10 represented "much easier than traditional spelling". Subjects were also asked the following: "Given that if WES/RS were adopted in the U.K., children could learn to read and spell more quickly and easily, saving at least a year and greatly reducing the drudgery of the school, do you think personally that we should change over to this new spelling system? (yes, no or undecided)". Obviously, this question is not framed in an unbiased manner, but up to this point in the experiment no reason for changing over to a new spelling system had been put forward, so these reasons were incorporated into the question. The case against spelling reform would have been apparent to the subject who had at first hand encountered the difficulty of learning a new spelling system. Subjects were then asked if they were already used to reading and writing in the new system. In the final part of the first section, the subjects were invited to make comments about the system.

In the second section of the questionnaire, all the aspects of the rules in the new orthography which had previously been tested by the spelling tests, were individually rated for spelling difficulty and

then for reading difficulty with "very easy" on one pole (scoring zero) and "very hard" on the other (scoring ten).

The third section asked the subjects if they had previously read Vera Brittain's book and if so, when. A television series of the book had been shown about a year earlier, but there was a considerable difference between the television version and the much more detailed accounts within the book. Subjects were asked if they had seen this series. Finally, they were asked: "If you have read the book or seen the television program, did it help you in this experiment? If so, please expand."

Results and discussion

The reading rates of individual subjects were computed and then converted to percentages of their individual reading rates of traditional orthography. These latter rates were computed from the mean rates of the passages in t.o. read before and after the main block of trials. Because subjects occasionally forgot to time themselves after a passage, some data were missing within each 2-dimensional matrix (subjects by trials) of data for reading rates. Each missing cell was replaced by the mean of the column and the row of data to which that particular cell belonged. This amounted to 2.6% and 6.4% missing data in the RS and WES groups respectively.

The reading rates, expressed as percentages of normal reading rates are illustrated in Figure 1. It can be seen that the RS group was reading much faster than the WES group and this was confirmed by analysis of variance. A 2 x 6 analysis of variance with the first factor, groups, between subjects and the second factor, trials, within subjects, produced a main effect between the RS and WES groups, $F(1,24) = 14.0; p < .01$, but the trials factor only approached significance, $F(5,120) = 2.16; .05 < p < .10$. The interaction was not significant. The lack of significant main effect for trials was undoubtedly due to the inclusion of the sixth trial. When this trial was excluded in a regression analysis, there was a significant difference in the slopes of the reading rate functions of the RS and WES groups, $F(1,126) = 4.05; p < .05$. There was also a significant difference in intercepts, $F(1,127) = 18.3; p < .001$, confirming the only significant main effect found in the analysis of variance. The slope of the function of the RS group demonstrated a 16.7% improvement in performance on each trial, whereas in the case of the WES group the improvement was only 2.5%. Thus, the RS group improved in their rate of reading text spelled in Regular Spelling until they reached rates equivalent to their normal rate of reading in traditional spelling. By contrast, the WES group improved only slowly and never approached normal reading speeds.

The performance of subjects on the comprehension tests taken after each trial is illustrated in Figure 2. This figure shows that performance at all times for both groups was equal to or above that on traditional orthography. A 2 x 6 analysis of variance on groups and trials, respectively, produced a significant main effect only on trials, $F(5,120) = 3.5; p < .01$. Generally, reading rates and comprehension levels should be examined in conjunction with one another, as there could be a reciprocal relationship between the two. An improvement in reading rate can be at the expense of comprehension. However, the present results demonstrate that the significantly better performance of the RS group on reading speed compared with the WES group was not due to any loss in performance on the comprehension test. There are fluctuations in the level of comprehension and one might conclude that the improvement in reading speed was due to a deterioration in comprehension performance. But the deterioration in comprehension is a step function with performance on the first three trials about the same and then there is a fall in the last three trials. The improvement in reading speed performance does not demonstrate the same characteristic for either the RS or the WES group.

In the spelling tests, only the spelling combination pertaining to each rule being investigated for each word was scored. The performance of both groups on the spelling tests was broadly similar at approximately 65% correct and 57% correct for the RS and WES groups, respectively. In this case, strict comparisons may not be made between the two systems because the materials used were different as they were designed to test the particular rule of each test. We may conclude, however, that neither group had attained complete mastery of its respective system. One way analyses of variance revealed significant main effects across trials, $F(5,60) = 8.11; p < .001$, and $F(5,60) = 3.85; p < .01$ for the RS and WES groups respectively, but the improvement across trials was not particularly systematic.

Figure 1

Reading rates in the learned WES groups as function of trials

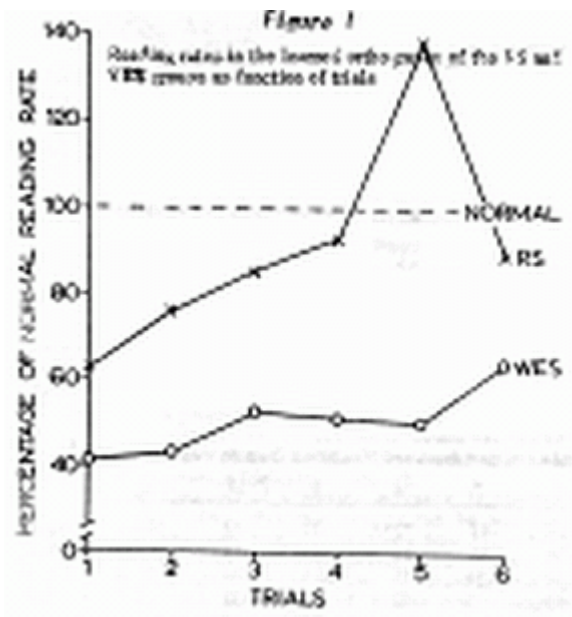
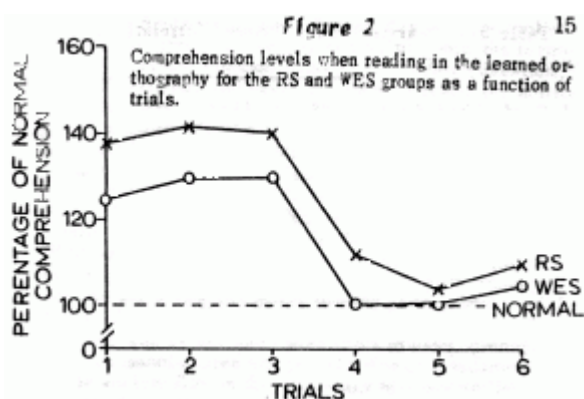


Figure 2

Comprehension levels when reading in the learned orthography for the RS and WES groups as a function of trials.



Apart from measures of reading speed, comprehension score and spelling scores in the new and traditional spelling schemes, other measures were collected from subjects via the questionnaires. All these measures were inter-correlated and the resulting matrices are shown in Table 3 for the RS group, and Table 4 for the WES group. As there were 13 subjects in each group, this produced 13 means for the purposes of computing each measure in each table. The tables are also useful in

demonstrating the means of each measure. For example, it will be noted that reading speeds in t.o. were similar in both groups, but that the comprehension level in the WES group for the t.o. texts was approximately 30% better. However, this was allowed for in the previous analyses of performance on the spelling schemes, as these performance levels were expressed as percentages of performance on the subjects' respective t.o. spelling tests. The 4th and 5th measures in each table were derived by taking the mean of all the individual ratings of each spelling rule for each subject. Measures 6 and 7 in each table refer to the one rating each subject gave about his entire spelling scheme at the beginning of the questionnaire on the ease of spelling and reading, respectively. Only one correlation was common to both groups and this was between the rating of individual rules for spelling ease and reading ease, but this may have just been because each rule had the two rating scales next to each other and the first rating would influence the second.

A more interesting result in Table 3 was a correlation of .70 between the subjects' spelling score in RS and their score in t.o. This correlation demonstrates that if one has a firm grasp of the main rules of spelling in t.o., one will be good at spelling in RS. By contrast, in the case of the WES group, the correlation was -.08, showing that a knowledge of the spelling structure in t.o. was of no help in learning WES. Another reason for this result could be that if subjects were in doubt about spelling a word, they spelt it in t.o., and as more words in RS are similar to t.o., they were more likely to be correct.

The third and final significant correlation in Table 3 was between reading speed in t.o. and the comprehension score in t.o., $r = .67$. If the subjects were faster at reading the text, they were also better at understanding it, so there was no speed trade-off with comprehension. In the WES group, there was no similar association between these measures, $r = -.08$.

There was a correlation which was almost common to both groups in that in the WES group, the correlation was .72 and in the RS group between the same two measures, it was .54 (tabulated value .55 at the 5% level). This correlation was between reading speed in one spelling scheme and that in traditional spelling. This is not an unexpected result; it demonstrates that the reading habits in traditional orthography continue over to reading in other spelling schemes. Perhaps one would have expected a stronger association with the RS group as the text is more similar to t.o.

Table 3-- Pearson Product Moment Correlations, with Decimals Omitted, between Measures from Subjects in the RS group

	<i>Measures for RS</i>	2	3	4	5	6	7	8	9	10	m	s.d.
1.	Reading speed	-25	15	-28	00	-34	02	54	16	27	154.6	44.9
2.	Comprehension score		13	30	26	17	29	-03	04	-26	57.6	16.2
3.	Spelling score			-39	-38	-01	23	-11	00	70**	64.4	6.9
4.	Mean of ratings of individual spelling rules for spelling ease				70**	-02	-46	-17	11	-20	3.8	0.9
5.	Mean of ratings of individual spelling rules for reading ease					14	-22	26	32	-34	2.5	1.3
6.	Rating of spelling ease of entire system						30	-21	-13	-2.7	2.2	2.0
7.	Rating of reading ease of entire system							04	-05	-16	5.0	2.8
	<i>Measures for t.o.</i>											
8.	Reading speed in t.o.								67*	-20	189.2	44.2
9.	Comprehension score in t.o.									-13	52.9	18.4
10.	Spelling score in t.o.										94.9	3.3

* $p < .05$ ** $p < .01$ df=11

Table 4 – Pearson Product Moment Correlations, with Decimals omitted, between Measures from Subjects in the WES group

<i>Measures for WES</i>	2	3	4	5	6	7	8	9	10	m	s.d
1. Reading speed	-12	14	14	14	-16	-31	72**	-27	29	103.4	31.9
2. Comprehension score	-51	-29	-17	08	56*	11	69**	14	71.9	8.4	
3. Spelling score		-06	-35	30	-18	-18	-24	-04	57.2	8.6	
4. Mean of ratings of individual spelling rules for spelling ease			60*	-39	-45	-02	07	-32	2.7	1.2	
5. Mean of ratings of individual spelling rules for reading ease				-26	-20	18	-12	-09	2.8	1.5	
6. Rating of spelling ease of entire system					39	-19	08	04	2.1	1.9	
7. Rating of reading ease of entire system						06	47	-36	5.7	2.6	
<i>Measures for t.o.</i>											
8. Reading speed in t.o.								-08	07	217.4	79.7
9. Comprehension score in t.o.									-35	67.9	18.3
10. Spelling score in t.o.										95.6	2.2

* $p < .05$ ** $p < .01$ df=11

There were two remaining correlations in the WES group, shown in Table 4, that were not found in the RS group. First, there was a significant correlation between the comprehension scores in WES and those in t.o., $r = .69$, but not for the RS group, $r = .04$. Second, there was a significant correlation between the comprehension scores in WES and the one rating that subjects gave to the entire system for reading ease, $r = .56$, but in the case of the RS group, the correlation was only $.29$.

The individual spelling tests and ratings of each spelling rule were collapsed across subjects for each group. These measures, along with the percentages of words in the tests of each spelling rule remaining the same as in t.o., were intercorrelated and are shown in Tables 5 and 6 for the RS and WES groups respectively. In both groups, the first three measures were all significantly correlated with each other. Thus the subjects were able to judge the difficulty of the spelling rules according to their own earlier performance on the spelling tests. The fourth measure produced only one significant correlation and this low correlation was only in the RS group. The same correlation in the WES group just failed to reach significance (tabulated value, $r = .32$ at the 5 % level). This shows that there is a slight tendency for subjects to spell a word as it would be spelled in t.o., hence if a rule tends to indicate a spelling in the same way as in t.o. (the tables reveal that this is 57% of the time in RS and 30% of the time in WES), there is a tendency for it to be spelled correctly.

Table 5
Pearson Product Moment correlations, with Decimals Omitted, of the Individual Spelling Rules from Subjects in the RS group

	2	3	4	M	S.D.
1. Percentage correct on spelling test	-54**	-45**	33*	65.2	17.9
2. Ratings of ease of spelling each individual spelling rule		66**	06	3.6	1.4
3. Ratings of ease of reading each individual spelling rule			-29	2.5	0.9
4. Percentage of words in spelling test of each spelling rule remaining the same as in t.o.				56.7	36.2

* $p < .05$ ** $p < .01$ df=35

Table 6

Pearson Product Moment Correlations, with Decimals Omitted, of the Individual Spelling Rules from Subjects in the WES group

	2	3	4	M	S.D.
1. Percentage correct on spelling test	-68**	-58**	31	56.8	20.0
2. Ratings of ease of spelling each individual spelling rule		80**	-30	2.8	0.9
3. Ratings of ease of reading each individual spelling rule			-28	2.3	0.6
4. % of words in spelling test of each spelling rule remaining the same as in t.o.				30.1	33.8

* $p < .05$ ** $p < .01$ df=30

General opinion on the new orthographies

In section one of the questionnaire, subjects were asked various questions about their opinions on the new orthography that they had just learned. In the RS group, 8 of 13 subjects responded that they were used to reading in RS, however, all but one of the subjects indicated that they were not used to writing in the system. In the case of the WES group, 4 out of 13 indicated that they were used to reading and 1 out of 13 that he was used to writing in the scheme. When asked if a change-over to spelling in the new system should be made, in the RS group, 4 responded 'yes', 4 were 'undecided' and 5 indicated 'no'. Similarly, in the WES group, 3 responded 'yes', 6 were 'undecided' and 4 responded 'no'. So neither group was enthusiastic about spelling reform, as altogether only 27% were in favor of reform. Subjects were invited to comment on the scheme. In the RS group, only 4 subjects wrote comments. Two people made the point that changing the spelling system would make English easier for foreigners. The rest of the points were only made by one person for each point. The other favorable comment was that it would help those with spelling difficulties.

The unfavorable comments mainly concerned the need to know how words were correctly pronounced. One comment was that the system favored those in the South East of England because it was based on received pronunciation, and another comment was that it would develop a more uniform way of speaking. One subject wrote: "There should not be so many rules regarding regular spelling. This is tedious and is very like the rules which apply to the English language in general, especially with regard to the grammar part." In the WES group, twice as many subjects made comments. Five people commented on the problem that one has to know the correct pronunciation of a word when spelling in WES. Other unfavorable comments were that spelling was difficult (two subjects) and that reading was difficult (two subjects). One of these latter subjects wrote that it "Feels a bit like reading Chaucer" and the other wrote that as an adult, it was difficult to adjust to. Two people mentioned the problem of restocking books. There were two favorable comments, each made by a different person: It made English easier for foreigners to learn and it was useful for slow learners.

In the third section of the questionnaire, subjects were asked if they had read the book, 'Testament of Youth' or seen the television programs about it. In the RS group, two had seen the television programs and one of these had read the book about 11½ years ago; this subject wrote that she had been slightly helped by this. In the WES group, none of the subjects had seen the programs or read the book.

Conclusions

Intuitively, one would expect that reading in a spelling system which produces substantial disruption to traditional spelling would be more difficult. The experiment has certainly borne this out with the reading speeds in WES being substantially less than those in RS. What was not expected, however, was that by only the fourth trial, that is, after reading approximately 5,800 words in the new system, subjects in the RS group were reading at about the same rate as they did in traditional spelling. So even though approximately 30% of the words had been changed relative to t.o., with a relatively small amount of practice, subjects had adjusted to the new orthography. Comprehension levels did not suffer as a result of changing these orthographies.

A different picture emerges on the output side. When subjects are required to spell in the new orthographies, they spell incorrectly approximately 40% of the words in testing the various rules. However, the spelling tests were stringent, as they were deliberately testing the subjects' knowledge of certain rules. If they had been given a dictation test of connected discourse, the errors would probably reduce as the difficult rules do not occur very frequently. Furthermore, the emphasis of the experiment was mainly on subjects developing a skill in reading the new system rather than spelling in it. Still on the subject of output, a small experiment on one subject revealed that typing rates are not impaired when typing in RS, but they are impaired when typing in WES. It was suggested that as RS adopts the most frequent spelling rules for particular word positions, the well-learned motor patterns of the experienced typist are not impaired by the changes that the RS system makes.

What are the implications of this experiment for the proposal to permanently change t.o.? The first positive conclusion we can make is that a phonetic system such as WES is too drastic in its disruption to serve as a candidate for spelling reform, although it probably would be adequate as a teaching medium for children learning to read. As for RS, it did meet the criterion of being easy to read (and also to type). The problem was that proficiency in spelling was not good. It is interesting to note that the spelling rules in WES were rather less than in RS and yet the levels of performance in the two groups were approximately the same. It must be added that as the tests were different for each scheme, comparisons between absolute levels should not be made. Although spelling performance was not good in this experiment, the following points should be noted. First, the main emphasis in the experiment was on reading the passages to understand the content, as the subjects would normally. Consequently, subjects did not use much of their time for actually learning the spelling schemes. One subject made the same point in her comments on her questionnaire. Second, all the rules in RS were presented together. Performance may have been enhanced if the learning had been broken down into stages throughout the experimental session. Unfortunately, this would have been at cross-purposes with the main experimental design. In conclusion, considering that subjects only had one afternoon to learn the system, performance was excellent on reading but not on spelling. Further work is needed to find out how easy it is to learn to spell in RS in an experiment in which spelling is given precedence. Given that adults can cope with the RS system and that children would learn to read much more easily in the system, it would seem that there is a good case to be made for changing our present spelling system to one along the lines of RS.

Acknowledgements

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Appendix

Lincoln's Gettysburg Address in Regular Spelling

Forscor and seven years ago our fathers brort forth on this continent a nu nation, conseved in liberty, and dedicated to the proposition that all men ar created equal.

Now we ar engaged in a grate sivil wor, testing wether that nation, or eny nation so conseved and so dedicated, can long endure. We ar met on a grate batal-feld of that wor. We hav cum to dedicate a portion of that feld as a final resting place for those who heer gave there lives that that nation mite liv. It is altogether firing and proper that we shud doo this.

But in a larjer sence, we cannot dedicate – we cannot consicrate – we cannot halo – this ground. The brave men living and ded, who strugaled heer, hav consicrated it far abuv our poor pour to ad or ditract. The werld wil lital note, nor long rimember wot we say heer, but it can never forget wot thay did heer. It is for us, the living, rather, to be dedicated heer to the unfinished werk wich thay who fort heer hav thus far so nobaly advanced. It is rather for us to be dedicated to the grate task rimaning bifor us that from thees onored ded we take increaced divotion to that cors for wich thay gave the last ful mesure of divotion; that we heer hyly risolv that thees ded shal not hav died in vane; that this nation, under God, shal hav a nu berth of freedom; and that guvement of the pepal, by the pepal, for the pepal, shal not perish from the erth.

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6. The Costly Extravagance of an Educational System Based upon Confusing, Irrational Spelling, by Harvie Barnard*

* Not one of the papers presented at the 1981 SSS Conference. *Tacoma, WA.

Newspaper headline: "State Department of Education will be sued for \$180 millions because of failure to educate as required by the state constitution."!!!!

Surprised? Far-fetched? Impossible? Not at all! In fact, it has already happened on an individual basis. And now such a suit could be filed as a "Class Action" legal proceeding on behalf of the children in our communities.

According to the laws and constitutional guarantees of every state of the U.S.A., every child has an inherent right to an education, and the state is charged with the responsibility for providing that service.

And yet, every year, thousands, yes, even millions of children are being deprived of this right by a system which drops them out or excludes them as a consequence of a program which in effect says: Thou shalt not be permitted to apply logical reasoning to English spelling or the use of the alphabet. If you try using logical, fonetic spelling, you will be failed, held back, and thereby relegated to that down-graded segment of humanity castigated as "slow," retarded, or unreachable. And in accord with established practices authorized by Boards of Education and executed by submissive administrators of that system, those who fail to submit to the rules of that system, no matter how irrational or confusing, will be dropped out, excluded, or advised to depart from our state supported system of public education.

This is not only a very serious indictment, but a personal tragedy for the individual involved. It suggests the probity of a class action suit and the vulnerability of the State Board of Education and/or the local school board for damages estimated to be not less than \$180 millions every year! This sum is the amount of damage resulting from unwarranted expense to the people of the state in one school year for failure to teach approximately 100,000 pupils who will require at least one extra year of schooling because of failure to master minimum academic basic requirements in the basics: reading, writing, spelling, and probably math also, if they cannot read well enough to understand the problems.

Based on an estimated average cost of \$10.00 per day per pupil for a school year of 180 days, the cost per pupil becomes \$180.00 for the year. For every 100 thousand who fail or are held back, the \$180,000,000.00 due to lost time is an entirely realistic estimate of yearly loss to the taxpayers who finance the public school program whether it adequately serves its intended purpose or not.

This costly extravagance is so huge that it is unbelievable, which is the reason why these facts have been generally rejected or "swept under the rug." The truth is that we've endured the system for so long that, like our acceptance of inflation, we have accepted this condition as unavoidable for so long that it has become the mode rather than what it truly is—a disgrace to the whole problem of public education.

To properly comprehend the basic problem, it would help to consider the fundamental principles of the psychology as it applies to teaching, whether it be a child or an adult. In its broadest sense, teaching is essentially a process of programming the human brain—programming "input" into the "organic computer." Unless this process is managed very skillfully, this programming process may confuse the learner—especially the primary pupil—in many ways, probably too many to mention. Fortunately for the children, the computers of the human family are endowed with a built-in automatic cut-off switch which acts to save the individual from seriously harmful situations. When

survival is threatened, the computer sounds an alarm which triggers a defensive reaction which has been called an "instinctive" self-preservation response. In addition, if a situation develops which is perceived to be unpleasant, threatening, or confusing, the computer will simply "freeze" or cut off the offending input, whether it be from fear, anger, shock, confusion or frustration. This is the functioning of the "survival instinct" – perhaps the only true "inherited" human characteristic.

In education, as well as in all other psychological processes, this urgency for survival manifests itself thru the authority of the brain-the organic computer. From the very start of learning, which begins at birth, this computer exhibits a unique ability to perceive what is favorable to survival and what is not. This fortuitous ability is not only the basis for survival, but also serves to regulate the acceptance of learning, which is the basic element of "education", personal human development.

Upon entering the school system, the child may be prepared by the environmental circumstances of "preprogramming" to adjust to the system, or the child may reject. For those who enter from an unfavorable or a "deprived" environment, a period of conditioning or reprogramming – such as pre-school – may be essential to prepare the pupil, (to make ready the child's computer), to accept the discipline of the system. Whatever the condition or attitude of the pupil, the teacher receives them as they happen to be, and the programming begins, hopefully with an attitude of receptivity and pleasure.

The process of programming the essentials of communication is run according to a prescribed schedule, and when administered with the artistry of the skilled and experienced teacher, the input is usually accepted and learning begun with a minimum of rejection. Yet not all pupils are adequately prepared for the program. A percentage may prove to be unready, or may be turned off by what they perceive to be confusing or contradictory input. The pupil's survival mechanism may, in view of a perceived incongruity or frustrating information, turn off, or simply refuse acceptance.

Virtually everyone is well aware of the principle part of the strange and often confusing area of primary instruction. It is spelling, and if you've never been stung by a spelling "bee", you've missed a painful part of education. I'll never forget the morale shattering experience which befell me when I stubbed my toe on "dissolve." It was the very first word called and I tried desperately to decide whether there were two esses or one. Then I recalled that there were many pages of "dis. . ." in the dictionary, but relatively few "disses," so I guessed the "dis", and of course was disappointed. I "dissolved," and from that day on hav loathed the irrationality of words like *bough, through, thought, numb, dumb, college, knowledge, chasm* and *deceive*, or *believe* (which is right?). Such wierd spellings hav been a part of the "establishment" for so long that, as Mark Twain sed in his entertaining essay on "Spelling Reform," "Like cockroaches under the sink, we have grown accustomed to their presence and accept them without question."

Altho we hav stedfastly closed our eyes to the thousands of inconsistencies between pronunciation and proper spelling, speech and "correct" writing, primary pupils as well as linguistic experts hav puzzled over spellings for meny generations of confused children and academic failures. Samuel Johnson's venerable *Dictionary of the English Language*, publisht in 1755, is still the standard for most users of the English language, altho in the United States there hav been several rational "variants" or "Americanizations." These alternative spellings include *honor* for *honour*, *color* for *colour*, *liter* for *litre*, *catalog* for *catalogue*. I suppose we could mention *thru* for *through*, and *defense* for *defence*, and even *tuf* for *tough*, but that *mite* be a bit *ruf stuf* for the dedicated devotees of "pure" English, or as "Ye honourable bard of ye merrie olde England" might spell it, "Englishe."

Our little two-legged computers fall into three categories: 1) those who, thru obedience training, hav lerned to accept the system; 2) those gifted with fotografic memory and therefore are essentially indifferent to the irrationalities of the system; and 3) those whose computers turn off and tell them that there's something wrong, questionable, irrational or confusing about the content which is presented for input.

Those in the third group recognize conflict, and the computer stutters, hesitates, perhaps turns off, and is therefore labelled "slow." The pupil may become temporarily confused and may get help, or the confusion may become more or less permanent and the unfortunate child may give up trying to rationalize the irrational, and eventually become a non-reader, a "dyslectic," or just another of that 15 or 20% who "can't just hack it." It is the members of this third group who may become socially mal-adjusted, unemployable, and eventually wind up as inmates of institutions for the unfit or the "enemies of society."

Those persons genuinely concerned with the plight of the illiterate, or the "functionally illiterate," may also be concerned over the dollar costs of illiteracy or academic failure to the more fortunate members of society who are charged with the bill. But society does have a choice. We can either accept the annual loss of \$180,000,000 resulting from academic failure – or we can recognize the problem and make a commitment and a start to correct the shortcomings of the system.

The first step would be to recognize the problem: our *spelling*, which is the basic roadblock to written communication and which also relates to difficulties in reading. Perhaps the initial question would be to decide **what the schools are trying to teach – "proper" spelling, or communication. The development of communicative ability is Certainly the main objective of public school education, especially in the elementary grades.** Spelling is important only inasmuch as it enables a person to communicate, to express ideas in speech, writing, and perhaps by means of computers and calculators. Spelling is useful only in so far as it expedites the use of symbols, words, and the transmission of thoughts or concepts. To make such transmission difficult or unnecessarily complicated by confusing, irrational or illogical use of symbols, letters or words, is not only inefficient, hence costly, but makes the learning of the communication system slow, tedious, and discouraging to those whose survival often depends on mastering the intricacies of the system.

The answer, obviously, is spelling reform. It has been said that altho this is, or could be, the answer, "It can't be done." To those who cry "impossible," let me remind these "naysayers" that no problem can be solved unless it is approached with determination, intelligent planning, consistency and perseverance. We may consider at least 2 approaches to a solution: 1) the painfully slow, gradual change of evolution or "natural selection," which is going to happen whether the present generation approves or not, or, 2) intelligently planned spelling reform, which, like our metric system – which is essentially our system of dollars and cents – will soon be replacing the old English system of weights, measures and quantities.

To those who say, "Metrics will never be accepted," I would remind the unconvinced that while "home measures" (cups, pints, teaspoons and tablespoons, also pinches), will probably go on forever, all scientific development has utilized complete metrics for more than 100 years, and will continue to do so regardless of the conveniences of kitchen measures and cookbooks. Similarly, as long as traditional spelling is taught in the schools, it will be used by most people who are unfamiliar with the newer or reformed modes and methods. But once the use of simplified, streamlined, easy-to-learn spelling is made available as a *rational alternative*, it will be used and adopted by all who are concerned with communication as the essential basis for learning and for the transmission of information. For those worried about the "SFTPOSB," "Society for the Preservation of Spelling Bees," they should be reminded that spelling bees may be held just as often and widely in simplified spelling as in any other kind, and to a better, more useful purpose! So let's get on with reformed spelling, NOW!

Ed. note: 7 years ago in England and 5 years ago in U.S.A. legislation was passed adopting the Metric system, to be put into use gradually. All packaged goods have been marked with both English units of measures and Metric equivalents.

7. AN ALPHABET FOR EASIER FRENCH-ENGLISH BILINGUALISM

With the same letter values, etc. in both, so far as possible, a real necessity here in Canada. Changing those keyboards is a trivial item, compared to coping with unrelated spelling systems, even if both were made phonetically consistent. Let's both bend a bit!

The NS6 alphabet uses a dotted i and a dotted or grave j to indicate their French values, with the undotted letters used for the English values. The é also has a French value (long a), while a shorter undotted i serves as the schwa, so that all stressed, clear syllables stand out distinctly. The sharp-top printed o comes closer to what is now traced in longhand; the name o is the round one and is traced anti-clockwise, to keep it round; the broad, open o (broad a) is traced the other way and kept round on top to distinguish it from script s, which is a closed form. The round or script a (a) is reserved for the soft sound as in the IPA while the short a is traced like Greek Alpha. The left and right risers of the u are easy to shorten in longhand, to provide symbols for the uu-oo pair of related vowels, while the ç indicates the ch sound as in Turkish.

In a one to one phonetic French, soft c would, of course, be spelled as s & nasal vowels could be marked (garçon – garsç, the n only being added when sounded, before a vowel. In Canada, it becomes simply gar.

% Use	WES	NS6	TO	NS6	SCRIPT	RIT	NS6	WES
3.79	a	- a	- band	- band	- <i>band</i>	- <i>bc</i>	- b	- b 1.83
.50	aa	- a	- palm	- pam	- <i>pam</i>	- <i>w</i>	- p	- p 2.08
3.53	e	- e	- den	- den	- <i>den</i>	- <i>cv</i>	- d	- d 4.31
2.10	ae	- é	- take	- téç	- <i>téc</i>	- <i>vc</i>	- t	- t 7.28
4.08	i	- i	- jinx	- jircs	- <i>jircs</i>	- <i>z</i>	- j	- j .44
1.89	ee	- i	- cheese	çiz	- <i>çiz</i>	- <i>z</i>	- ç	- ch .53
6.61	?	- i	- gauges	gèçiz	- <i>gèçiz</i>	- <i>z</i>	- g	- g .77
1.42	uu	- u	- could	- cud	- <i>cud</i>	- <i>ç</i>	- c	- k 2.74
1.96	oo	- u	- move	- mvv	- <i>mvv</i>	- <i>v</i>	- v	- v 2.30
1.50	u	- u	- fun	- fun	- <i>fun</i>	- <i>v</i>	- f	- f 1.88
1.66	oe	- o	- though	to	- <i>to</i>	- <i>ç</i>	- t	- th 3.48
2.88	o	- o	marathon	merat7on	- <i>merat7on</i>	- <i>h</i>	- 7	- thH .38
1.25	au	- o	- cause	coz	- <i>coz</i>	- <i>ç</i>	- z	- z 3.03
33.18			misty	- misty	- <i>misty</i>	- <i>ç</i>	- s	- s 4.67
			measure	- meçur	- <i>meçur</i>	- <i>ç</i>	- j	- zh .05
DIPHTHONGS			she	-)i	- <i>ç</i>	- <i>ç</i>	-)	- sh .83
1.63	ie	- d	- high	- hd	- <i>hd</i>	- <i>ç</i>	- h	- h 1.85
.64	ou	- au	- mouse	- mdus	- <i>mdus</i>	- <i>w</i>	- m	- m 2.81
.09	oi	- oi	- noise	- noiz	- <i>noiz</i>	- <i>ç</i>	- n	- n 7.39
* .31	ue	- iu	- musing	- miuzic	- <i>miuzic</i>	- <i>ç</i>	- r	- ng .97
2.36	* Dewey		ripoff	ripçf	- <i>ripçf</i>	- <i>ç</i>	- r	- r 7.00
33.18	%age not added.		little	litil	- <i>litil</i>	- <i>ç</i>	- l	- l 3.81
35.54			why	- wa	- <i>wç</i>	- <i>ç</i>	- w	- w 2.11
64.46			feud	- fiud	- <i>fiud</i>	- <i>ç</i>	- ç	- y 1.92
100.00			but using	- yuzic	- <i>yuzic</i>	- <i>ç</i>	- ç	- ç 64.46
			and you	- yu	- <i>yç</i> , etc.	- <i>ç</i>	- ç	- ç

K	"	/	\$	%	'	7	*	()	=	J
k	2	3	4	5	6	f	8	9	0	-	j
a	W	E	R	T	Y	U	I	o	P	q	
a	w	e	r	t	y	u	i	o	p	o	
A	S	D	F	G	H	u	u	L			
a	s	d	f	g	h	u	i	l			
	Z	X	C	V	B	N	M	?	ç	ç	
	z	x	c	v	b	n	m	,	.	é	

As shown above, the French keyboard can have 34 bars unchanged and 2 just moved, to make room, under the 2 'smartest' fingers, for 4 very frequent vowels now lacking. A wider keyboard would be better, but the 88 place machine could hav n for & and 1/2 etc. for the fractions and other little used, old symbols lacking. This Remington electric will be altered thus very shortly.

Write: Arn Rupert, Lunenburg, Ont. Can.