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This is the 2nd installment of the **papers presented at the 3rd International Conference** on Reading and Spelling, Edinburgh, July 31–Aug. 3, 1981, sponsored by the Simplified Spelling Society.

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1. Late News

International Spelling Day, Sept. 30.
In 1981, International Spelling Day was celebrated in a wide variety of places over the world, and was even proclaimed by the mayor of Detroit.

We hope that Sept. 30, 1982 will extend the public's interest further. It's up to you to arouse interest in your local schools, newspapers, get the public interested in noticing spelling changes, mistakes or simplified spelling in public signs, street or traffic signs, supermarket products such as: Kodak, Sunkist, Mobil Oil, Gro-Mor, Welbilt, Tydy-bol, and dozens more. How many can you list? Ask for spelling games, shortened spellings, such as SR-1 in newspapers and magazines, and write feature articles to publicize Spelling Day. Cross out unnecessary silent letters in 884 words, such as: hav~~e~~, giv~~e~~, b~~u~~ild, bre~~a~~d, bre~~a~~st, ar~~e~~, de~~a~~d, de~~a~~f, he~~a~~d, he~~a~~lth, he~~a~~ven, he~~a~~vy, inste~~a~~d, le~~a~~d, barg~~a~~in, Brit~~a~~in, capt~~a~~in, mount~~a~~in, and hundreds more. Eliminating these unnecessary letters could save space and make it easier for children to le~~a~~rn how to use fonics in le~~a~~rning to spell. If you want to see the list of 884 words, let us know and we will publish it.

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The second edition of the book, Spelling Reform a Comprehensive Survey of the many aspects of the problems is now available in a limited edition. Price $30.00 plus $2.00 shipping. 304 pp. 144 articles by 72 different authors, among whom are: George Bernard Shaw, !Mark Twain, Sir Cyril Burt, Sir David Eccles, Sir James Pitman, Admiral Jas. D. Watkins and many other educators and writers. Newell W. Tune, publisher (address above)

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Members of the SSS are anxiously awaiting news about the proposed **4th International Conference** on Reading and Spelling, but plans have not progressed so far as to have definite information as to the place or time. Perhaps more information will be available for our next issue.

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Obituaries

Hugh V. Jamieson of Dallas, Tx, former owner of the Jamieson Film Co., author of the *Sensibul English Speling Dikshuneri,* died May 6, 1982, after a brief illness.

Born in 1889 in Burlingame, Kan., he graduated from Baker Univ. in 1910 with a B.A. degree in Science. He started his film career that same year, borrowing $150 to buy a movie projector.

Moving to Dallas in 1916, he started the Jamieson Film Co. and latter contributed several technological innovations to film processing. In 1942, he became a member of the War Production Advisory Committee for industrial and advertizing film producers and distributors.

Jamieson retired in the mid-1960's, and published his *dikshuneri* in the early '70's. He was a lifelong member of the Soc. of Motion Picture and Television Engineers. He presented a paper at the 1975 SSS Conference and showed a motion picture at the 1979 SSS Conference.
Survivors include his wife, Primrose, two sons, two grandchildren and one great-grandchild.

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Dr. Walter Gassner, of Randwick, Australia, died Dec. 4, 1981. He leaves his widow, Kitty. He contributed a paper to each of the three SSS conferences on Reading and Spelling. No other details are available.

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[Spelling Progress Bulletin Fall 1982 pp2–4 in the printed version]

2. Teaching and Learning English Spelling and its Difficulties

"Spelling difficulty in school leavers and adults," by Dr. Dolores Perin*

*City Univ. Grad. Center, Devel. Psychology Program, New York, N.Y.
*A paper presented at the third International Conference "Spelling: Research and Reform", sponsored by the Simplified Spelling Society, Edinburgh, Scotland, 31st July3rd August, 1981.
*A fuller discussion of the research presented here is available in Perin, Dolores (1982). "Spelling Strategies in Good and Poor Readers," v. $_2$: 1-14, Applied *Psycholinguistics*.

Abstract
This study was concerned with the use of phoneme-grapheme correspondence rules in the spelling of sixteen-year-olds and adult literacy students of varying reading skill. A task was designed which was intended to be conducive to a phonological spelling strategy: this was a word completion task where gaps in words, representing a consonant and an adjacent vowel, had to be filled in to dictation. Two experiments were carried out using this paradigm. The first involved real words and the effect of "phonetic ambiguity" on spelling strategy was studied. The second task used nonsense words. The errors made in the real word task showed that the tendency to make phonetic spelling errors, i.e., to choose plausible graphemic options, increases with reading skill. The effect of phonetic ambiguity was not significant as a function of reading skill: subjects at all reading levels tended to make more errors on phonemes with relatively ambiguous relationships to graphemes. Nonsense word results supported the hypothesis that better readers are more able than poor readers in using phoneme-grapheme correspondences in spelling.

Corpus
Educationalists and cognitive psychologists have found it useful to examine spelling errors for the clues they give about processes underlying the production of written language. Early large-scale surveys (Masters, 1927; Mendenhall, 1930) indicated that spelling errors tended to be "phonetic," that is, they retained the sound structure of the attempted word. Information processing models of spelling indicate how a phonetic error can occur: Simon's (1976) model has a level where phoneme-grapheme correspondences are employed in cases of doubt as to a word's correct spelling and Morton's (1980) logogen system allows for the use of phoneme-grapheme rules as an alternative to the retrieval of the orthographic structure of a word solely in terms of its component letters. Frith (1980) has suggested that the development of spelling ability requires a stage where phonemes are translated into graphemes.

That most errors have been reported to be phonetically accurate appears to serve the movement for spelling reform. It could be argued that phonetic errors imply the use of sound, and spelling difficulty could be seen in terms of the complex relationship between sound and symbol in English. If our writing system were completely "regular," if each phoneme were mapped by one and only one grapheme, spelling problems would not normally occur at all. Spelling reform might possibly benefit the speller or some spellers, but the cost of such reform would probably be enormous for the reader who prefers the direct (lexical) route (Frith, 1979) and would thus benefit from orthographic. relationships among words which are related in meaning but not necessarily in sound (Chomsky & Halle, 1968). The possible effects of spelling reform are not further considered here. The present concern is with the relationship of phonetic accuracy in spelling, and reading.

Reading and spelling are usually strongly associated (Horn, 1969): a good reader normally spells well and the poor reader is usually a poor speller. However, reading skill does not by any means guarantee perfect spelling (Frith, 1978) and extremely good readers will occasionally be troubled by poor spelling skill. Studies of spelling error patterns comparing good and poor readers /spellers have not been entirely consistent. For example, Nelson and Warrington (1974), Sweeney & Rourke

(1978), and Frith (1980) have reported that spelling error patterns differ with reading skill while Holmes and Peper (1977) found that good and poor readers differ only in quantity, not quality, of spelling errors. Studies of spelling have in general been concerned with children. In the present investigation, school leavers and adult literacy students were studied in order to discover whether reading ability was related to the use of phoneme-grapheme rules in spelling in these older age groups.

In two experiments, real and nonsense words were spelled. In the first experiment, besides investigating the relationship between phonetic errors and reading ability, the effect of phoneme-grapheme ambiguity was studied.

The graphemic representation of four specific phonemes was examined. Two of these were relatively ambiguous as they could each be mapped by four separate graphemes. The other two phonemes were relatively unambiguous with only two plausible mappings each. Table 1 shows the correspondence rules for the four critical phonemes.

Table 1
Phonemes used in word completion task

Ambiguous:
/f/ → <f>, <ff>, <ph>, <gh>
/ʤ/ → < g> ,+ e, <g> + i/y, <dg>, <j>

Unambiguous:
/b/ → <b>, < bb >
/t/ → <t>, <tt>

It was predicted that higher reading ability would be related to the tendency to make phonetic spelling errors. Further, since better readers were expected to use phoneme-grapheme rules more than poorer readers, the former were expected to be affected by phoneme-grapheme ambiguity, a problem arising through dependence on rules.

Two samples were studied: young adults who were to leave school shortly, and adult literacy students.

The school leavers were 36 girls and 24 boys aged 15 and 16 who were in three middle-band classes in the 5th year of secondary school. They were of working class background and were native English speakers.

The adult literacy students were 10 women and 24 men whose ages ranged from the early twenties to the mid-fifties. Almost all were working class and all had English as the mother tongue.

A preliminary test of oral reading was carried out for each subject individually as follows: School leavers read a 350-word passage from a previous year's reading exam which no subject had seen previously. A percentage reading score was derived based on 116 words (functors and repetitions were disregarded)

Adults read a 265-word passage from a brochure advertising English holidays. Since the poorer readers had considerable difficulty with the text, reading score was a dichotomous measure in this sample. Good readers read quickly and accurately, while poor readers stumbled through the first two paragraphs, at which point they were told to stop.

The experimental material was in two lists each of 44 low frequency words which appeared less than five times per million in the Kucera and Francis (1967) corpus. Words were of one or two syllables and each contained one of the critical phonemes in a word-medial or final position. This was a word completion task. The printed form of each stimulus word was presented with a gap,

always the same size irrespective of the number of missing letters, representing the critical phoneme plus an adjacent vowel and occasionally an adjacent consonant. Table 2 shows examples of stimuli.

Table 2
Examples of Word Completion Stimuli

Target	*Examples*
/f/	coughs, serf, sulphur, tariff
/ʤ/	pledged, serge, abject, baggage
/b/	tubs, lobe, hobble, proverb
/t/	stale, skit, potter, deceit

Subjects were tested in groups on the spelling task (each group spelling one list or the other) and were told to fill in the missing letters for the words, which were dictated, placed in sentences and then repeated. Guessing was encouraged in cases where subjects were in doubt as to spelling.

Spelling errors were analysed with respect to whether they were phonetically accurate and with respect to whether the ambiguous phonemes led to more errors than the unambiguous phonemes. For these error analyses, subjects who spelled four or fewer words incorrectly were excluded. This left 49 school leavers and 29 adults.

School leavers spelling the two lists did not differ in reading skill but there were different frequencies of spelling error for each list. Therefore, error analyses for this sample were carried out separately for each list. Adults' error frequencies did not differ by list and so the two lists were pooled for this sample.

Phonetic errors were productions where an incorrect choice of grapheme was made from the alternatives shown in Table 1. For each subject, phonetic errors were expressed as a percentage of total errors. Table 3 shows examples of phonetic and non-phonetic errors.

Table 3
Examples of Errors in Word Completion Task

Stimulus	*Response*	
	Phonetic errors	*Non-phonetic errors*
laughs	l *arf s*	l *arg* s
tariff	tar *af*	tar *ith*
suffrage	suffr *idge*	suffr *agge*
gadget	ga *jiet*	ga *ddi* t
drab	dr *abb*	dr *ag*
rabid	ra *bber* d	ra *pi* d
butane	bu *tta* ne	bu *bia* ne
pastel	pa *stt* el	pa *sc* el

To study the effect of phoneme-grapheme ambiguity, errors for each critical phoneme were expressed as a percentage of total errors for each subject.

In the school leavers, the percentage of phonetic errors were regressed on reading. In both lists, the relationship was significant, with better readers tending to make a larger percentage of phonetically reasonable spelling errors. There were 18 good readers and 16 poor readers in the adult sample. The good readers made a mean of 71.8% phonetic errors, compared with the poor readers' 48.28%. An analysis of variance showed that this was a significant difference, and that the direction of difference was the same as for the school sample. Table 4 shows the results of the error analysis.

In both samples, many more errors were made on the ambiguous than on the unambiguous phonemes. The school leavers had 70% of errors on ambiguous phonemes, while adults had 75%. In both samples, there was a significant difference between error rates for ambiguous and

unambiguous phonemes. A score was constructed for each subject representing the difference between percentages of error on ambiguous and unambiguous targets. These difference scores were regressed on reading scores in the 3 school sample and subjected to an analysis of variance in the adult sample. In neither sample was the extent of difference on the two types of phoneme significantly related to reading ability. The results are shown in Table 4.

Table 4
Error Patterns in Word Completion

School leavers		*Phonetic errors*		*Non-phonetic errors*		
	N	Mean %	SD	F	df	p
List 1	20	70.52	23.35	16.05	1,18	<.001
List 2	29	76.27	20.50	11.22	1,27	<.002
Adult Literacy Students	29	59.41	26.67	4.74	1,25	<.05

Difference between errors on ambiguous and unambiguous phonemes

School leavers						
List 1	20	49.00	22.60	.367	1,18	n.s.
List 2	29	27.72	26.65	.802	1,27	n.s.
Adult Literacy Students	29	50.94	25.92	3.96	1,25	<.06 n.s.

The results of these analyses indicate that although poor readers are not as competent as good readers at using phoneme-grapheme correspondences, they are prone to error in a similar way to good readers, when there is a choice of which grapheme to choose out of a number of alternatives. This sensitivity to an effect of orthographic regularity suggests that poor readers are aware of phoneme-grapheme rules to some extent. They might prefer not to use a phonological strategy in spelling, or, on the other hand, they might be less able to use this strategy than better readers. To find out more about differences between good and poor readers in using rules in spelling, nonsense words were employed. This provides a stricter test of the use of rules in spelling since, by definition, there is no established orthography for such words.

In a second experiment, 57 of the school leavers (35 girls, 22 boys) and 32 adult literacy students (10 women, 22 men) were asked to complete nonsense words to dictation.

The stimuli were based on the real words used in the first experiment. Table 5 shows examples of the nonwords used.

Table 5
Examples of nonsense words

Target	*Examples*
/f/	grift, toaf, suffel, tebuff
/ʤ/	ludged, gerge, tigeon, nuffrage
/b/	dobs, frab, lebuke, tadverb
/t/	stob, grat, kotive, brottis

Subjects who had spelled the first list in Experiment 1 now spelled the second, and vice versa. The paradigm was the same, with the subjects filling in gaps left in each word.

The criteria for correct responses were those indicated in Table 1. Any grapheme listed for a particular phoneme was accepted as correct. Therefore, all errors were nonphonetic errors in this task.

In both samples, the better readers were significantly more accurate than poor readers in spelling the

target phonemes. This was shown by the regression of nonsense word scores on reading scores in the school sample (who spelled a mean of 91.1% correctly) and by an analysis of variance in the adult sample (good readers spelling 94.11% correctly, poor readers 76.36% correctly). Table 6 indicates the main results. There were no list effects in either group.

The results of the nonsense word spelling task provides interesting information about poor readers. Although on the first task they had made significantly fewer phonetic errors than good readers, it cannot be concluded that they cannot use phoneme-grapheme rules. Although they did not perform as well as better readers, poor readers in fact mapped a large number of the target phonemes correctly in their spelling o£ nonsense words. Therefore it is possible that poor readers avoid the phonological route in spelling real words although such a route is useful for generating plausible alternatives which could then be matched against word recognition memory (Simon & Simon, 1973; Tenney, 1980). The phonetic errors of better readers suggest their greater use of the phonological route. The nonsense word results show that although poor readers are not as able as good readers to translate phoneme to grapheme, they do have a sufficient rule-knowledge to employ a phonological route in spelling if encouraged to do so.

Table 6
Nonsense Word Completion

	N	Mean %	SD	F	df	p
School leavers	57	91.12	7.59	45.44	1,45	<.001
Adult literacy students	32	86.34	14.83	18.40	1,28	<.001

References

Chomsky, N. & Halle, M. (1968). *The Sound Pattern of English.* New York: Harper & Row.

Frith, U. (1978). "From print to meaning and from print to sound, or how to read without knowing how to spell." *Visible Language,* 12, 43-54.

Frith, U. (1979). "Reading by eye and writing by ear." In Kolers, P.A., Wrolstad, M.E., & Bouma, H. (Eds.). *Processing of Visible Language, vol*. 1. New York: Plenum Press.

Frith, U. (1980). "Unexpected spelling problems." In Frith, U. (Ed.) *Cognitive Processes in Spelling.* London: Academic Press.

Holmes, D.L. & Peper, R.J. (1977). "An evaluation of the use of spelling error analysis in the diagnosis of reading disabilities." *Child Development,* 48, 1708-1711.

Horn. T.D. (1969). "Spelling". In Ebels, R.L. (Ed.) *Encyclopedia of Educational Research,* 4th Edition. New York: Macmillan.

Kucera, H. & Francis, W.N. (1967). *Computational Analysis* of *Present-day American English.* Providence, R.I.: Brown Univ. Press.

Masters, H.V. (1927). "A study of spelling errors." Iowa City: *Univ. of Iowa Studies in Education,* 4 (1st Series, 1938)

Mendenhall, J.E. (1930). *An Analysis of Spelling Errors.* New York: Columbia Univ. Teachers' College.

Morton, J. (1980). "The logogen model and orthographic structure." In Frith, U. (Ed.). *Cognitive Processes in Spelling.* London: Academic Press.

Nelson, H.E. & Warrington, E.K. (1974). "Developmental spelling retardation and its relation to other cognitive abilities." *British Journal of Psychology,* 65 (2), 265-74.

Perin, D. (1)82) "Spelling strategies to good and poor readers," Applied *Psycholinguistics, 2, 1-14.*

Simon, D.P. (1976). "Spelling: A task analysis." *Instructional Science.* S, 277-302.

Simon, D.P. & Simon, H.A. (1973). "Alternative uses of phonemic information in spelling." *Review of Educational Research,* 43 (1), 114-137.

Sweeney, J.E. & Rourke, B.P. (1978). "Neuropsychological significance of phonetically accurate and phonetically inaccurate spelling errors in younger and older retarded spellers." *Brain & Language,* 6, 212-225.

Tenney, Y.J. (1980). "Visual factors in spelling." In Frith, U. (Ed.) *Cognitive Processes in Spelling,* London Academic Press.

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Spelling in other languages and international aspects of English spelling

3. "The Principles of Esperanto Spelling" by Stuart Campbell.

Edinburgh, Scotland, U.K.

Abstract
Esperanto is an artificial language devised by Ludwig Zamenhof in 1887. Other artificial languages have been devised but none has achieved the popularity of Esperanto. Some rules for pronunciation in Esperanto. This example of a planned spelling system has some important reminders for spelling conservatives and reformers.

Corpus
Esperanto is the international 'auxiliary' language devised by Ludwig Zamenhof, a Polish Jew, and published in 1887. He gave it no name, but pseudonomously called himself 'Dr. Esperanto,' a name which in Esperanto means one-who-hopes. He hoped that the new language would bring peace and understanding between nations and ethnic groups.

Some called such a language 'artificial,' implying the worst meaning of that word. Truly it was man-made. But I prefer to point out that normal languages have evolved naturally, but in an unplanned way. As a consequence, they contain irregularities, but artificial languages are 'planned' and do not contain irregularities. In this respect they are superior to the natural languages. In fact *all* language is the creation of mankind.

There have been many attempts to produce a planned language for international use, not to replace natural languages, but for use beside them. However none has achieved the popularity or penetration of Esperanto. It is spoken in all countries of the world by some several million people. It is the main competitor of English as an international language.

Now one thing is clear to the creator of a new language for international use. One of its attributes must be simple spelling. Such a language will be used not only by the common people, by those who can hardly spell their own language. Its orthografy must be simple and regular.

This is a cardinal rule in Esperanto. It is a totally *phonetic* language, i.e. the same symbol is always used for the same sound. It is also totally *phonemic,* that is, every word is pronounced just as it is spelt. Consequently there are no silent letters. As far as I know, such perfection is achieved in no natural language. Esperanto has a simplified spelling system par excellence. It was made with these characteristics in mind:

1. Simplified spelling is desirable, and the ultimate would be a language which uses *absolutely* phonetic spelling and whose grammatical rules are *never broken.* Esp. *is* the only known language that has these characteristics.

2. All language is artificial (i.e. man-made) but most are 'unplanned.' Esp. is a carefully planned language.

3. A brief account of the origin and purposes of Esp. (with emphasis on simple communication without misunderstanding) will follow. Its requirement that orthography and vowels should be unambiguous is explained. The Esperanto alphabet has 28 letters 21 consonants, 5 vowels and 2 semivowels. The vowels are all pure sounds, monothongal, and for this reason Esperanto has no dialects. Names of letters are their sounds.

Vowels:	a as in bad, have	
	e as in there, lend	
	i as in see, machine	
	o as in molest, glory	
	u as in rude, boot	
Consonants:	Plosives:	p, b, t, d, k
	Affricatives:	ĉ as in catch,
		ĝ as in hedge,
		c as in cats. a voiceless alveolor affricative.
(Derives from Polish, Russian and Czech, and often begins		
a syllable, e.g., *cepo,* unlike *ts* in English.)		
	Fricatives:	f, v, s, z, h
		ŝ as in shut
		ĵ as in pleasure
		ĥ as in loch, a voiceless velar fricative
	Liquids:	l clear, as in leaf
		r should be trilled
	Nasals:	m, n.
Semi-vowels:	j, as in yes, a gliding, nonsyllabic i-sound.	
	ŭ (u), a gliding, nonsyllabic u-sound, postvocalic.	
	Both form diphthongs as follows:	
	aj, as in my. (Polish: strajk)	
	ej, as in play	
	oj, as in boy	
	uj, as in ruin	
	aŭ, as in how	
	eŭ, as in 'debutantes' *ow*.	

Notice the lack of letters q, w, x, y, which are transliterated: q = k, w = v, x (two sounds) = ks, y = j.

Esperanto does not contain the English 'th'-sounds, which are difficult for foreigners (except Spanish).
Overall, pronunciation is European, not English.

Comments on diacritics (supersigns):
For maximum internationality, Zamenhof chose word-roots that as far as possible combine international similarities of appearance *and* similarity of sounds. (The root is the basic part of a word before addition of prefixes or suffixes, or, if it is a verb-root, inflections.)

In fact, Zamenhof considered graphic agreement more important than phonetic agreement, e.g., the form 'teatro' (a theatre) is recognizable to the eye of the English reader, and gives the European

pronunciation. 'juna' (young) resembles the French 'jeune' and the German 'jung' in spelling, but is like German and English in sound.

However, letter and letter combinations (digraphs, trigraphs, etc.) are not pronounced the same way in every country, i.e. 'ch' in English has the sound ĉ, in French ŝ, and in German generally ĥ. 'j' in English has the sound ĝ, in Spanish ĥ, in German j, and in French, j.

Thus in Esperanto the word 'gardeno' looks like English 'garden' and German 'arten,' sounds like French jardin, and has similar sound and looks to Italian giardino.

Thus Zamenhof uses diacritics to unify international orthography and pronunciation, and to reduce variation and number of letters.

In fact, only two supersigns are used: ˆ and ˘ (the latter only on u.) Thus Esperanto has only six diacritic marked letters compared with 15 in Czech, 13 in French, 10 in Portuguese and Roumanian, 9 in Hungarian, Polish and Lithuanian, 8 in Welsh, 7 in Spanish and 6 in Italian.

You can get a good idea of Esperanto spelling by trying to re-spell English in Esperanto. I will give you an example, which will also demonstrate the defects in English:

Tu bi, or not to bi: dat iz di kŭestjn:
Ŭet~~ə~~ tiz noŭbl~~ə~~ in di majnd to s~~ə~~f~~ə~~
Di slingz and aroŭz ov aŭtrejĝa fortjun,
Or to tejk armz agejngt a si ov tr~~ə~~bl~~a~~,
And baj opoŭzing end dem? Tu dal; tu slip;
Noŭ mor; and baj a slip to sej ŭi end
Di hart-ejk and di tauzand natjural ŝoks
Dat fleŝ iz er tu, tiz a konsjumejŝn
Divaŭtli tu bi ŭiŝt. Tu daj, to slip;
Tu slip! p~~ə~~rĉans tu drim; aj der'z di r~~ə~~b;
For in dat slip ov det ŭ~~ə~~t drimz mej k~~ə~~m,
Ŭen ŭi hav s~~ə~~fld of dis mortal kojl,
M~~ə~~st giv us porz: der'z di respect
Dat mejks kalamiti ov soŭ long lajf.

1. d. Not in Esperanto. Used here to show voiced th.
[d with circumflex is not available.]
2. ~~ə~~. Used here for the indefinite vowel, which is needed.
3. oŭ. Used here as a diphthong.
4. Simplified pronunciation – no distinction between slip/ sleep.
5. ŧ. Voiceless th.

This example shows that English has basic defects which make it unsuitable as an international language. It also shows how foreigners would prefer to spell English. This spelling, while odd to us, would look familiar to many foreigners.

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[Spelling Progress Bulletin Fall 1982 pp5–7 in the printed version]

Spelling in other languages and international aspects of English Spelling *(continued)*

4. "Teaching English in Francophone Africa," by Henry Niedzielski, Ph.D.*

*Univ, of Hawaii at Manoa, Honolulu, Hawaii.

Abstract
As many people know, English has replaced French as the main language used for international communication. One example of this gradual loss of French to English can be witnessed in Burundi. The ambition of the Burundi government is to make the country trilingual in Kurundi, French and English.

Presently, the country is officially bilingual. The academic, social, and administrative elites communicate in French; most other Burundi speak almost exclusively in Kirundi. However, much of the country's international trade must be conducted in English because Burundi is a landlocked country and its nearest ports of access are in Tanzania or Kenya, both English speaking countries.

Consequently, more and more people are studying English, officially or privately.

Obviously, not all Francophone African countries feel the same necessity to learn English. Many, however, find it useful in order to read scientific, commercial or technical publications. Most also find it nearly indispensable for traveling and for attending international conferences. These latter purposes require the teaching of spoken English. In this respect, a question comes to mind. Is it preferable to teach English directly in the learner's native language or through French, the general and official language of instruction? I have set up an experiment to discover the answer(s) to this question. Five areas of language learning and proficiency are being analyzed. A preliminary report on this experimentation is given in this paper. The findings could be generalized to most Francophone (or Lusophone) African countries.

(Comment by VY: This paper, on learning English in a polyglot African country, illustrates forcefully that English is an international language, spelling and all, and reminds us that spelling must be considered in the context of other aspects of the English language too.)

Corpus

1. *Introduction*

As many people know, English has replaced French as the main language used for international communication. This process of substitution, noted already in the first half of this century, has recently gained momentum in some "French speaking" African countries. One example of this gradual loss of French to English can be witnessed in Burundi. It was made clear on Apr. 22, 1981 when the Minister of National Education proclaimed, at the seminary for secondary school teachers of English in Burundi, that the ambition of the Burundi government is to make the country trilingual in Kirundi, French, and English.

However, the teaching of English in Burundi suffers from many problems, some of them inherited from the colonial days. Introduced in the late fifties by the Belgians, it was taught more or less like Greek or Latin. Slowly, after obtaining their independence, Barundi have come to realize its' importance as the language of communication both regionally and internationally. Presently, in the secondary schools it is given the same number of instruction hours as French, and at the post-secondary level, it is a compulsory subject in all institutions and in all departments. It is also taught on the radio, where it was first introduced with French explanations and now presented in Kiswahili. We thus observe the first problem. At least 95% of the Burundi population speaks Kirundi as the native language, yet English is taught through another language, mostly French.

This observation led me to conduct an experiment to check the question whether Barundi would learn English more efficiently if it were presented with occasional explanations in Kirundi rather than in French.

2. *The Problem*

Interferences caused by the linguistic background of the Foreign Language learner may vary with the skill being acquired. Therefore, five components were determined for this experiment: lexicon, structure, conversation, pronunciation, and spelling. Actually, this division was dictated partly by the fact that investigation was carried out by eleven students in psycholinguistics and that there were ten classes available in Bujumbura for the experiment. It was also influenced by the opinions collected in short essays written by 23 advanced students in the department of English on the topic of "Present linguistic and other interferences in the learning of English in Burundi." The following statements summarize these students' thinking.

2.1 *Lexicon*

Since some words are better known in French than in Kirundi and many are graphically and/or semantically similar, the class felt that vocabulary might be taught better through French rather than through Kirundi.

However, in some situations and because of cultural contexts, some lexical items are easier to understand through Kirundi than through French (e.g. small pox, petite variole, and akarandi). Another minor danger in teaching vocabulary through French is caused by the abundance of deceptive cognates (e.g. parents, parents', relatives).

2.2 *Structure*

English grammar might be better approached from French because both languages share many structures and classify their parts of speech in a similar manner. Kirundi, for instance, has no articles and no real relative pronouns.

On the other hand, the English tense system could possibly be taught more efficiently through a direct contrast with the two main groups of Kirundi auxiliaries of aspect (Mategeko 1971: 123).

2.3 *Conversation*

Here again opinions were divided. Because culture shapes the way of thinking (Whorf's hypothesis), and since there are many more similar cultural contexts in French than in English, English conversational skills should be built on situations with which the students are already familiar in French.

Others felt that materials should be created and adapted from Kirundi by building on speech acts and speech modes equivalent to those familiar to Barundi in Burundi speech situations.

2.4 *Pronunciation*

Presently, the teaching of pronunciation is introduced through the IPA. Students suggested that the English phonological system should be introduced gradually through contrasts with the Kirundi phonological system which is much less complicated than the French. Phonetic notation could be introduced much later for reinforcement.

2.5 *Composition*

Most Barundi students perform on a much lower level in writing than in speaking. It might be due to the facts that eloquence is highly valued in Burundi culture and that, until recently, written literature did not exist. Therefore, developing and organizing techniques already acquired in French could be utilized.

2.6. *General problems*

A certain percentage of students speak Kiswahili instead of Kirundi. There is also a shortage of

local teachers, and European teachers-mostly Belgians – do not know Kirundi nor Kiswahili. Ideally, the English teacher would need a working knowledge of English, French, Kirundi, and Kiswahili. It will still take a few years before a sufficient number of so qualified Barundi is ready to teach.

Finally, there are no texts in Kirundi because the language of instruction has been French, even to the extent that university courses in Kirundi literature or culture are taught in French.

3. *Previous Research*
A thorough analysis of various "memoires" (equivalent to U.S. M.A. theses) did not reveal any formal interest in the teaching of English directly from Kirundi. The general assumption has been that English could, should, and would be taught through French.

Interviews with various methodologists and program writers at the BEPES (Bureau d'Etudes Pedagogiques de 1'Enseigment Secondaire=Planning and Programming Office for Secondary Schools) have confirmed this lack of interest in the teaching of English directly from Kirundi. Nobody had even thought of doing it. This may be explained by the fact that until recently both English and Kirundi were studied as an additional language by French majors. It seems therefore traditionally logical that the teaching of English should be based on a good knowledge of French.

The only notable exception to this state of affairs has been a M.A. thesis written in 1971 by a Burundi on a Fulbright grant at the UCLA. Zacharie Mategeko, the present chairman of the English department at the Univ. of Burundi, wrote in his introduction to A *Contrastive Analysis of Parts of the English and Kirundi Tense Systems* that Kirundi can be efficiently used in the teaching of the English tense system and of the English language in general.

Ten years later this statement had not yet been tested. This experiment is the first attempt at doing it.

4. *The Method*
4.1 *The Subjects*
Altogether 375 students distributed in ten different groups were taught in May 1981 some rudiments of English sounds, vocabulary, spelling, structure, or conversational skills. They were all first year students in Bujumbura secondary schools, who had studied French for about four years and would start studying English the next year. Table 1 shows the number of people in each group. There were only 43 females, 42 in the two conversational groups and one in the French pronunciation group.

The age of the students ranged from *12* to 21 years, the average being 16 for the boys and 15 for the girls. Between 20 and 40% of them came from Bujumbura and some of them may know Kiswahili better than Kirundi. The remainder come from up country and are native speakers of Kirundi. Parallel Kirundi and French groups were chosen in the same schools in order to ensure that the socio-cultural background would be identical and that the only decisive variable would be the use of French or Kirundi in the experiment.

4.2 *The Instrument*
Ten short teaching programs were written, discussed and dry run in my psycho linguistics class. They lasted 45 minutes except for pronunciation and conversation classes which took 55 minutes. All writing groups were tested within the same class period. The members of the conversation and pronunciation groups, which required oral testing were examined individually during the next class period under such conditions that no communication took place among the testees. Each one was questioned by the same experimenting university student with another one evaluating the answers.

5.0 *The Results*
A synopsis of results is found in Table 1. Higher performances were achieved in all groups taught directly from Kirundi, except in pronunciation where those who had been taught through French

obtained better results.

The total number of errors and the average number of errors per student in each group are shown to give a quantitative indication of overall performance of the various groups and to provide a comparison between the Kirundi and the French groups for each skill under study. The average score in percentile is not computed on the basis of the average number of errors subtracted from the perfect score. Rather it is derived from a formula multiplying a perfect score by the number of students in a group, then subtracting from this total perfect score the number of errors in that group, and finally dividing this remainder by the number of individuals in the group. It seems that this approach helps to spread the numerical results.

Conscious that for each group of individuals, statistics may be misleading because of a few unusually high or unusually low performers, all computations were redone after eliminating about 10% of the top students and 10% of the bottom students in each group. The results appear in the lower half of Table 1.

6. Conclusions and Implications

First of all, it is remarkable that all Kirundi groups performed better than the French groups except the pronunciation group. The results obtained can be construed as an indication that Barundi teenagers can learn English more efficiently directly from their native, home language.

In fact, we have seen that a serious attempt was made to reduce all socio-cultural and physiological variables by choosing each set of parallel groups in the same school. In addition, psychological factors influencing the teaching and/or learning processes were also given full consider= ation. The student teacher in each group was convinced of the superiority of his/her approach and tried [o] share his/her enthusiasm with the subjects. The latter reacted to the experiment in an overwhelmingly positive manner.

In the pronunciation groups, the results obtained were somewhat puzzling. A more thorough analysis has revealed several reasons which lead us [o] conclude that this section of the experiment lacks validity. We have seen that only consonants had been taught and tested. Out of 7 these consonants, the most frequently reported as mispronounced were [r] *89* times in Kirundi, 30 in French; [θ] *130* times in Kirundi, *52* times in French; and [ð] *130* times in Kirundi, *64* times in French. These three sounds do not exist in Kirundi nor in French, and they account for over half of the errors in both Kirundi and French groups. On the other hand, those sounds which exist in Kirundi were reported as mispronounced more frequently in the French groups. This suggests that greater differences in phonetic features cause greater difficulties. But why should the Kirundi group have scored lower than the French group on difficult sounds? At least two possibilities may have existed. The subjects may have been more attentive in French because they were working in a foreign language, and the student teacher may have been stricter. To control the latter factor, the experiment could be repeated with a jury of at least three better trained examiners, the same for both groups. It is, therefore, recommended that a new experiment testing phonetic acquisition be conducted. It should also contain vowel sounds because the tables show much greater differences between the French and English vowel systems than between the Kirundi and the English vowel systems. The hypothesis should be that the Kirundi group would perform better, based on the observation, reported above, that the greater the difference between the source and the target phonology, the greater the difficulty.

In the spelling section, the number of words which could have been influenced by French was reduced to the minimum in order not to favor either the Kirundi or French group. In addition, the word *school* was chosen because its cognate in Kirundi is *ishule. Professor* was mispelled more frequently in Kirundi, often with only one s; *exercise* was once misspelled in French as *exercice; coffee* was spelled with one *f* three times in the Kirundi group. There are no double consonants in Kirundi. A new experiment could use French cognates (of which there are over eleven thousand).

Preferably, they would be introduced without contrasting English with French in the Kirundi group. In the present experiment, no similarities or differences were pointed out.

It is probably too premature to draw any definite conclusion or recommendation for a preferable teaching approach. However, the results obtained encourage us to suggest that more *thought* should be given to the teaching of English directly from Kirundi. Since the subjects in this experiment are going to begin learning English next year, a longitudinal study could be conducted over the year with parallel Kirundi-French sections in the schools where this experiment took place.

Table 1

Category	*Lexicon*		*Structure*		*Conversation*		*Pronunciation*		*Spelling*	
	Fr	Kir	Fr	Kir	Fr	Kir	Fr	Kir	Fr	Kir
Total number of students	38	38	40	43	20	22	44	41	44	43
Total number of errors	135	82	37	36	41	42	546	514	89	77
Errors per student	3.55	2.15	0.92	0.83	2.05	1.90	12.40	12.53	2.02	1.79
Total points possible	15	15	10	10	8	8	49	49	15	15
Average score in %	76.31	85.66	90.75	91.62	74.37	76.23	74.67	74.40	86.51	88.06
No. of students minus top 10% and bottom 10%	30	30	32	33	16	16	34	33	34	33
Total errors of 80% of students	110	53	19	15	28	20	331	417	60	51
Errors per student	3.66	1.76	0.59	0.45	1.75	1.25	9.73	12.63	1.76	1.54
Average score in %	75.6	88.26	94.1	95.5	78.12	84:37	80.14	74.22	88.26	89.43

Category	*Lexicon*		*Structure*		*Conversation*	
	Fr	Kir	Fr	Kir	Fr	Kir
Total number of students	38.00	38.00	40.00	43.00	20.00	22.00
Total number of errors	135.00	82.00	37.00	36.00	41.00	42.00
Errors per student	3.55	2.15	0.92	0.83	2.05	1.90
Total points possible	15.00	15.00	10.00	10.00	8.00	8.00
Average score in %	76.31	85.66	90.75	91.62	74.37	76.23
No. of students minus top 10% and bottom 10%	30.00	30.00	32.00	33.00	16.00	16.00
Total errors of 80% of students	110.00	53.00	19.00	15.00	28.00	20.00
Errors per student	3.66	1.76	0.59	0.45	1.75	1.25
Average score in %	75.60	88.26	94.10	95.50	78.12	84.37

Category	*Pronunciation*		*Spelling*			
	Fr	Kir	Fr	Kir		
Total number of students	44.00	41.00	44.00	43.00		
Total number of errors	546.00	514.00	89.00	77.00		
Errors per student	12.40	12.53	2.02	1.79		
Total points possible	49.00	49.00	15.00	15.00		
Average score in %	74.67	74.40	86.51	88.06		
No. of students minus top 10% and bottom 10%	34.00	33.00	34.00	33.00		
Total errors of 80% of students	331.00	417.00	60.00	51.00		
Errors per student	9.73	12.63	1.76	1.54		
Average score in %	80.14	74.22	88.26	89.43		

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Spelling in other languages and international aspects of English Spelling *(continued)*

5. "The history of Spanish orthography, Andrea Bello's proposal and the Chilean attempt: Implications for a theory on spelling reform", by Iraset Pdez Urdaneta, Ph.D.*

*Caracas, Venezuela.

Abstract
In this paper the history of Spanish orthography is briefly recounted and especially a focus is made on the role of the Real Academia Espanola de la Lengua in the simplification and unification of the spelling system of the 'Spanish language. Then, two spelling proposals of particular interest are discussed: one made by Andrés Bello in 1826 in London, and another supported by him in 1844 in Chile. The analysis of the obstacles, success and/or failure of these two attempts and some others made in the course of time (all of them described in Rosenblat, 1951) allows the identification of a number of factors or conditions which may be regarded as likely to exert a direct influence in the implementation of a spelling reform (or codification) in this or other languages elsewhere. It is recognized however, that even if such conditions are met, the achievement of a spelling reform or codification also depends upon the idiosyncrasy of the community for which the norms are intended. This higher level of socio-psychological values is less easy to describe, but a satisfactory knowledge of it becomes necessary for planned orthographic changes.

Bello's spelling propositions are examined to determine their probable progressive adoption by the Academia. The paper closes by reporting about a small research project carried out to explore how certain Venezuelan students felt in relation to a modified spelling based on Bello's ideas. The results showed a general preference for current spelling, but also an interesting correlation between spelling mistakes and a desire for spelling innovation.

Corpus
In language planning, we can identify five activities: purification, revival, standardization, lexical modernization, and reform (Nahir, 1977). A look at the past reveals that some of these activities have been proposed and even carried out in different places, at different times, and with different degrees of success. Of these five activities, language purification has been the most common, and the one which has maintained a tradition still alive. Purification has been the main concern of language academies, which began to spread in Europe from 1582, when the Accademia della Crusca was founded. The academies can be regarded as true agencies of language engineering, although their interests have been essentially conservative and prescriptive. This is clearly put forward in the slogan of the Real Academia Espanola, – for example, founded in 1714 in order to *"limpiar, fijar y dar esplendor"* (to purify¸ to fix and to give splendor) to the Spanish language, an ideology also shared by the filial academies established in Spanish America since 1871 (Guitarte and Quintero, 1968).

The vast work of the Academia Espanola has been the target of many criticisms, not a few of them unjustified. The nonexistence of similar institutional bodies in the Anglo-speaking countries is, according to O. Jespersen (1940/1964), a proof that there is no need for such official or semi-official authority on language affairs. Taking a different point of view, and in favor of the Academia, we could argue that it is precisely because such a body has not existed for English that this widely used language presents today the spelling problems that we all know, problems that neither Spanish nor any other Romance or non-Romance language show to the same extent. Of course, I do not mean to say that the condition for a language to have a satisfactory orthographic

system is to have a strong or efficient language academy.

The evolution of Spanish orthography is well described by Angel Rosenblat (1951) in his opening study to the fifth volume of Andrés Bello's *Complete Works.* The best way to refer to that evolution could be to consider two historical halves divided by the date of creation of the Real Academia Espanola. The first half is characterized by a diversity of unsuccessful attempts to regularize spelling, and the other, by a progressive increase in uniformity and the relative failure of all those proposals that were not sponsored by the Academia.

Rosenblat mentions as the first attempt at a spelling systematization, – one patronized by King Alfonso X, "the Wise", in the second half of the 13th century. The system proposed was not very consistent in itself. In fact, it was "flexible" on purpose, as Rosenblat notices, probably because of the large amount of phonetic and morphological variants that Castillian exhibited then. Together with this advantageous factor, there were others: the official backing and use of the system, the lack of an authorized set of spelling rules, and especially, the lack of a great number of people who could use the written materials.

The next attempt was an individual one by E. A. de Nebrija in 1517. In the meantime, Alphonsi spelling had become quite modified by ignorance and the Latinization of graphemes for the "visual pleasure" of it or the nostalgia for this classical language. In Rosenblat's opinion, Nebrija's effort at ordering and establishing the Spanish orthography was guided by the principles of *"escrivir como pronunciamos ly pronunciar como escrivimos"* ('write as we pronounce and pronounce as we write'), a persistent point of view in the discussion of the topic among Spanish scholars. Nebrija's proposal was not adopted because of the lack of an official support to counteract the arguments of a strong and erudite opposition, the unfavorable reaction of publishers, personal inconsistency in the use of the system, and inconsistency in the rules of the system itself – since some words were written in accordance with the phonetic principle, but others followed an etymological criterion – also a persistent point of view about spelling among Spanish scholars.

After Nebrija, all kinds of attempts were made by writers, obviously the people most in need of an orthographic system. Therefore, there were as many systems as writers. Some systems combined coherent propositions with representational flaws caused by wrong phonetic perceptions. Other systems included un-Romanic graphemes (we must say that no effort has been successful in any Romance language when graphemes different from those of Latin or those adopted by Medieval Latin were promoted), and other systems proceeded by the simplification of the phonology of the language, much in agreement with popular pronunciation.

In 1630, Gonzalo Correas published his *Ortografía kastellana,* regarded as the most radical spelling proposal ever made in Spanish, not so much because it was very phonetic, but because Correas was meticulously consistent in using it. The phonetic extremeness of Correas generated an intense reaction from the etymologists. One of them, Juan de Robles, argued that it was not a lack of perfection that a single letter could be pronounced in different ways. Robles also argued that too many innovations would make it impossible for literate people to understand the new writing, and for those who learned the new conventions, to read old materials. Robles defended the etymological principles, but also accepted that, in some cases, popular usage could be admitted, particularly when the etymological basis was not evident or pervasive. This point of view has more or less prevailed since then. By the time the Real Academia Espanola was created-and as Rosenblat observes- there were both an orthographic anarchy and a desire for regulation. To the criteria of pronunciation, etymology, popular usage, and conventional differentiation, a fourth criterion was added: academic authority.

Thirteen years after its creation, the Academia began to publish its *Diccionario.* The lexicographic work soon required a definition of the orthographic norms to be applied, and the Academia decided to follow a very rigid etymological criterion. [1] This criterion was abandoned later on when the

Academia realized the many difficulties fostered by such a point of view. In fact, in its *Orthographia,* published in 1741, the Academia wanted to reconcile the three criteria characterizing the making of Spanish orthography: (1) *write the same as pronounced when by pronunciation alone the letter is known;* (2) *resort* to *etymology when pronunciation is not helpful, usage is diverse and origin is known;* and (3) *follow to us age when it is general and constant.* In some homo-orthographic cases, the Academia suggested differentiation by means of stress marks, distinct graphemes or the duplication of them. From 1754 on, new editions of the *Ortografia de la lengua castellana* (notice that <th> and <ph> have been dropped) were published. In all of them, the Academia progressively incorporated changes in the tendencies of phoneticism and popular and consistent usage. Although outside the Academia, several writers attempted to promote systems emphasizing either etymology or pronunciation (or even their predilection for one grapheme over another because of its "Hispanic beauty"), the academic orthography was modern where it did not need to be conservative, and conservative where an innovation was difficult to adopt. The success of the Real Academia was ensured, little by little, by its official character, the effectiveness and coherence of its work, and, more important, by the popularization of its prescriptions.

If the situation in Spain was anarchic in regard to the spelling of the language, despite the efforts of the Academia, the situation in the Spanish New World was even worse, not because there were as many orthographers promoting personal systems, but because there was no discussion about the problem and because the diffusion of the changes adopted in the Peninsula was slower. To these facts, we must add another one: American Spanish exhibited particular phonological phenomena which were not as strong as in Iberian Spanish:

In the liberal intellectual environment of 1826's London, Andrés Bello and Juan García Del Rio, two Spanish American patriots who had come to England as representatives of republics recently born, published in *La Biblioteca Americana, o Miscelámea de Literatura, Artes i Ciencias,* a journal created to divulge in the Hispanic New World the progress of modern illustration, the article, "Indicaciones sobre la conveniencia de simplificar i uniformar la ortografía en America" ('Indications about the convenience of simplifying and uniforming orthography in América'). Bello's purpose was to suggest rather than to impose, and to simplify in order to make uniform. Bello endorsed the write-as-pronounced criterion, and justified it by arguing against the etymological and constant usage arguments. In his opinion, the perfection of a spelling system laid in the strict observation of the biuniqueness principle of *one grapheme for each sound, and one sound for each grapheme;* moreover, the task of applying such a principle wouldn't be too difficult in a language so simple in its phonology. He therefore offered for consideration a series of eight basic changes, to be carried out in two distinct stages. **[2]** For the first stage, Bello made proposals for:

l. the adoption of <j> in all cases where /h/ is pronounced (so eliminating the alternatives among <j>, 'strong' <g> and <x>, e.g. "general" and not "general");
2. the use of <i> whenever <y> sounds vocalic, e.g. "lei" and not "ley";
3. the supression of <h> when it is soundless, e.g. "onor" and not "honor";
4. the use of <rr> whenever /r/ is pronounced, e.g. "rrápi-do" and not "rápido";
5. the use of <ze>, <zi> instead of <ce>, <ci> (=[θe], [θi]), e.g. "zentral" and not "central", "zivil" and not "civil";
6. the supression of soundless <u> in <que>,<qui>(=[ke] [ki]) e.g. "qeso" and not "queso", "gieto" and not "quieto".

For the second stage, Bello proposed:
7. the adoption of <q> instead of "strong " <c> or <k>, e.g. "qolor" and not "color"; and
8. the supression of soundless <u> in < Sue>, <gui> (=[ge], [gi]), e.g. "gerra" and not "guerra", "ágila" and not "águila".

Bello did not replace <x> for <qs> for he was not sure the corresponding sounds were those of <ks> or <gs>, preferred to keep the etymologically based distinction between <b> and <v> (which

sounds like [b]) and did not pay attention to the use of stress marks, capital letters and punctuation.

None of these changes were Bello's originally, inasmuch as all of them had been suggested, here and there, by different orthographers since Nebrija. The proposition on the use of <ze>, <zi> indicates that Bello really had in mind the whole Spanish-speaking world, and that he was backing a spelling norm that was not so much for America as for most of Spain. [3] In general, his proposal did not encounter unexpected enthusiasm or rejection anywhere. Bello himself was not even consistent in using it, and he seemed very satisfied with most of the innovations introduced by the Academia periodically. The cultural situation of Spanish America at that time, the rather little need for orthographic norms in a continent still at war against Spain, without enough printing houses, and with the majority of its few educational establishments closed or dismantled, together with the unknown prestige of Bello could be taken as the most obvious reasons why such a spelling proposal was not significantly welcomed.

In 1844 Bello was in Chile and had become the arbiter of that nation's cultural and educational institutions, not to mention the legislative, and he presided over the Universidad de Chile, which had the responsibility of advising the national government in all matters relating to education. A year before, in 1843, the Ministry of Public Instruction had asked the Principal of the Normal School, Domingo Faustino Sarmiento, to prepare a report on reading methods practiced and known; in Chile. In the preparation of the report, Sarmiento was unavoidably led to the spelling problem, and, with Bello's approval and stimulation, he submitted to the School of Philosophy and Humanities his *Memoria sobre la ortografia castellana.*

The *Memoria* was very controversial, since Sarmiento, who was then notoriously anti-Peninsular, advocated a somewhat drastic reform, a spelling system exclusively for Spanish Americans. The coincidence with the proposal made by Bello in 1826 was almost complete. The University explained that the changes were not intended to promote a system so revolutionary that it would hamper the communication with other Spanish speaking peoples, or that would incite other institutions or individuals to dare so. It also believed that all changes were to be made by steps, and that modifications could be accepted if the ideas and habits of society allowed it.

The new norms were immediately made official by the national government. The educational authorities assumed the responsibility of using them. The system was taught in schools at all levels; it was used in new text books and even adopted by some local newspapers. [5] However, the acceptance was not total, and Bello himself had to publicly defend the adopted norms. [6] Soon the initial enthusiasm began to fade; the newspapers returned to the old spelling conventions after combining the two systems for a while; the government did not enforce the use of the official orthography among its bureaucracy, and the schools openly opposed it. In less than two years, the original proposal was reduced to three accepted rules: the use of <i> for vocalic <y>, the use of <j> for strong <g>, and the use of <s> for <x> (a simplification of [ks]). These three features constituted what is known as "Chilean orthography." It is not identical to what is known as "Bello orthography," since Bello only agreed with the first two changes, but rejected the third. [7]

Bello's defense of the 1841 reform was not based on strong arguments: it resorted to criticizing the spirit of conformism concerning the preference for the old system, to criticizing the spirit of conformism lying beneath the preference for the old system, to criticizing the uselessness of etymological graphemes kept for the love toward the ancient times, and the "superstitious cult" to academic prescriptions. It is possible to understand these feelings, but there are reasons which are valid to the extent that they are matter-of-fact: the unacceptability of the University proposal indicated that people did not want innovation as much as they wanted uniformity, and that uniformity was achievable by the observance of the customs or by obedience to academic precepts.

Coincidentally, the Spanish monarchy, in 1844, decreed that only academic orthography could be taught in the kingdom. The anarchy in the Peninsula easily and rapidly submitted to the trend

imposed by the Crown. America also compromised in an atmosphere of cultural *rencontre.* In 1927, a presidential decree ended the use of Chilean orthography in the name of Hispanic unity. The Real Academia has been, since then, the single and unchallenged arbiter of every move toward a simpler orthography of the language. **[8]**

What I have recounted here is useful for two reasons: first, it provides a historical picture of the attitude of the Spanish speaking people to the spelling question (a picture to be taken into account if a total or partial spelling reform is to be suggested), and secondly, it provides us with a number of facts which could be incorporated within a theory on spelling changes. Thus, we may say that, for a spelling change to be successful (i.e., accepted by an important majority), certain conditions are needed:

(1) that the reform (or the orthographic codification) be really needed (and spelling reforms are not always needed as innovations per se, but for a pragmatic reason such as ensuring uniformity, or a sentimental reason such as keeping or reconstructing a bond with the past);
(2) that the reform (or orthographic codification) have an official character, and, in some cases, be the product of academic study and support (particularly in communities with a literary written tradition);
(3) that the new orthographic rules lie: consistently, fully and exclusively used from the moment they are adopted in the government, education, the arts, and communications;
(4) that the new orthography should be easily represented, to avoid its rejection by publishers on the grounds of being uneconomical, and difficult to learn by children and adults;
(5) that, depending upon the trend in the community, a consistent criterion for representation (whether phonetic or etymological) be exclusively followed, or a consistent combination of criteria be maintained, if that satisfies the needs and habits of the people;
(6) that the reform (or orthographic codification) be not in conflict with the phonological perception that the people (especially the learned) have of their language;
(7) that the reform do not include graphemes perceived as (too) foreign by their potential users. **[9]**
(8) that the reform allow the users of older orthographic norms access to new written materials, and for the users of the new norms access to the old written materials;
(9) that the spelling criterion should be flexible enough to allow conventional differentiation of lexical items that would be homo-orthographic otherwise;
(10) that the spelling reform (or codification) should be popularized (though the emphasis may very in the case of people with either greater or less formal education);
(11) that the diffusion of spelling changes or norms be made as rapidly as possible; and, finally,
(12) that the adoption of spelling norms do not result in communicational or cultural isolation or unnecessary self-differentiation, particularly when the language or a version of it is shared by a number of nations.

It should be added that an orthography does not have to be completely phonetic or etymological to be perfect. Moreover, the biuniqueness principle of orthographic representation is not always possible to achieve in phonetic spelling, not is a phonetic spelling a sure indication of perfection. Likewise, an orthographic system does not always need to be so strictly phonetic as to include dialectal features which characterize only the variety spoken by a major subgroup.

Of course, much depends upon the idiosyncrasy of the community that wants or rejects spelling changes or orthographic codifications. The manifestations of that idiosyncracy do not have to be logical. For example, to Spanish speakers, yesterday and today, graphemes such as <k>, <q> and <w> may look "foreign" or even "ugly." Venezuelans will not give up "Venezuela" for "Benesuela", even though they know the latter is what they pronounce. The Hispanic mentality is open to innovation in points or aspects in which it could be equally negative. Although the Hispanic world is regarded as rather anarchistic, its anarchism is really a superficial one, for Hispanics are, in my opinion, *"centrifugal but not loose."* This explains the convergence of fascism and democratic monarchism in Spain today, and of dictatorship and permanent revolution in most of Spanish

America. . . not to mention the distrust and, at the same time, compliance to the Real Academia Española de la Lengua.

In a complex world such as the Hispanic, the choice or implementation of an orthographic norm has, the same as elsewhere, widespread social and political implications. Any change will attract the attention of the gatekeepers of a great written tradition, and raise popular concern when the literacy level of its masses is high enough. The Ibero-Americans want a modern, easy orthographic system authorized by the Academia, and the Academia wants the same thing without messing it up.

The spelling proposals that Bello made in 1826 and supported in 1844 have been brought back for academic consideration on many occasions. Some of Bello's propositions remain valid, and the Academia seems to be aware that the present system still contains pseudo-etymological representations, mixtures of phoneticism and etymology, and unneeded graphemes. There are 30 graphemes in Spanish: 5 vocalic (<a, e, i, o, u>) and 25 consonantic (<b, c, ch, d, f, g, h, j, k, 1, 11, m, n, ñ, p, q, r, rr, s, t, v, w, x, y, z>). Except for <i> and <u>, there are no apparent important problems with the vowels. Bello proposed to use <i> instead of vocalic <y>, and this may be a likely change in the near future. In relation to the consonants, the digraphemes <ch, ll, rr> may remain unchanged. It is probable that the replacement of "strong" <g> for <j> will come about before the suppression of <h>, so advanced in modem Italian. More difficult seems to be the reduction of "strong" <c>, <k> and <q> into one grapheme (although soundless <u>, as in <qtr-> and < gu-> may be eliminated ahead), the use of <rr> in word initial position, or the replacement of <x> by <s> or <cs>, <qs>. In a scale of unlikely immediate changes, there follows the reduction of <b> and <v> into <b> (nowadays, however, teachers, broadcasters and singers are spreading a hypercorrective [v] of obvious graphemic origin). At the bottom, I would place all those changes involving <z> for "soft" <c>, <y> for <ll> (Spanish American "yeismo") or <s> for <z> (Spanish American "seseo").

Exploring attitudes of Venezuelan students towards Bello orthography

I would like to conclude by reporting the results of a small research project carried out to explore the attitudes among Venezuelan students of two different educational levels towards Bello's orthographic system. Subjects were 150 students (equal numbers of males and females) of the third year of high school education, and identified as members of the local lower, middle and upper classes, and 50 students (equal numbers of males and females) from the course "Language and communication" at the Instituto Universitario Pedagógico de Caracas. A list of words was dictated for them to transcribe, after they had determined, in a second list, which word they preferred: the one written in Bello's orthography (MS), without indicating so, or the same word written in current orthography (CS). The scores for each group were the following:

Table 1
Group scores lot dictation and spelling choice (%)

Group:	Dictation:	Spelling choice.
UC-HS-s (n=50)	6	2
MC-HS-s (n=50)	28	38
LC-HS-s (n=50)	15	4
U-s (n=50)	10	24

As it is shown, in the dictation (which was given to test how good the student was at CS), the upper class students (UC-HS-s) did better than any other group, followed by the university students (U-s) and then those high school students belonging to the lower class (LC-HS-s). There were more mistakes in the middle class group. Regarding the choice of spelling alternative, it was found that more middle class students (MC-HS-s) tended to prefer MS, together with the university students. Both the upper and lower class students were very close in their preference for CS.

It is premature to derive sound conclusions from the facts mentioned above. Nevertheless, we may

suspect that, once again, we have here a case of what W. Labov has called "middle class linguistic insecurity." The dictation scores show that, in our testing, the middle class students did not do as well as the upper and lower class students. Insecurity may have then influenced in the choice of MS, but also the desire for a more phonetic or simpler spelling that could ensure a greater probability of orthographic success. Being more secure, the upper class group did not manifest any special preference for MS: this group has such good command of the established spelling norms as to be willing to replace them with different, more innovative ones. In the lower class group, the situation may have a distinct motivation: to ensure social ascendence, the lower class individual would pay more attention and concede more importance to the norms of stable and successful groups. The lower class group does not seem to need an innovation from a source lower than that, since such an innovation may hinder its way up. These explanations are only intended as working hypotheses for further research.

I have mentioned that the university group did better than the middle class high school students, but coincided with it in also showing a high preference for the MS alternative. Two hidden variables may be at work here: educational level and group orientation. According to the first variable, university students did better in the dictation because they had been exposed to spelling pressure longer. Moreoever, in the subject "Language and communication" they receive intensive instruction to correct spelling deficiencies. On the other hand, these university students, who are to become high school teachers, usually express a desire for a simpler orthography to be taught. Most of these students come from middle and lower classes. The feeling is less intense among students who will become teachers of Spanish grammar and literature or of other modern languages such as English or French.

In the spelling choice section, the only word which was the most accepted across all groups was "enrredo" (instead of CS "enredo"), even by individuals who had written "honra" (and not "honrra") in the dictation.

There is probably another hidden variable in this test: the fact that the inquiry was a classroom activity, conducted by teachers of Spanish grammar. Students may not have felt so free as to choose certain items in MS. Had they known that MS was Bello's, the results could have been different, due to the fact that Bello – a Venezuelan himself – is regarded as one of our nation's greatest scholars. That being the case, the spelling principle would be based on personal prestige, rather than on academic authority. Anyway, despite that prestige, the results might not have been very different from those I have presented here.

Notes

(1) Nevertheless, the Academia sanctioned some usages which can be regarded as progressive: it established <y> and <v> for consonantal and not vocalic values (although such forms as "rey" and "ley" were kept, together with such forms as "mui" and "hoi"); it established <b> and <v> according to the etymological criterion (but the Academia wrote "haver" instead of etymological "haver"); it suppressed <ç> for <z>; it distinguished when the vowels and consonants (particularly <m, n, r, c, s >) could be doubled; and it settled the orthography of the etymological consonantac sequences <bst, ct, nc, nt, pt, ns, sc, xc> etc.

(2) It is not very clear why Bello proposed two steps for the changes to be carried out. Rosenblat assumes that the reason behind it relates to the fact that the changes proposed for the second step were more "radical." A similar attitude will characterize the Chilean attempt, in 1844. The message is obvious: a *spelling reform* should not be associated with a *spelling revolution* nor foster one, perhaps because at this level of language – undoubtedly the most arbitrary – all representations are relative.

(3) It still surprises me that the spelling proposal made by Bello in 1826 was so ignored by his fellow countrymen, at a time when there was a good excuse for an orthographic revolution which,

in the long run, might have even affected Spain. I have in mind some particular cases in which a revolutionary process was accompanied by successful system-wide orthographic change. I do not mean to say however that orthographic change is possible when co-occurring with revolutionary social change (J.A. Fishman (1971) provides examples of four possible situations: (a) successful orthographic revision with and without revolutionary social change (e.g., Russian and Turkish, and Czech and Roumanian), and (b) revolutionary social change with or without successful follow through of planned orthographic revision (e.g., Soviet Yiddish and (Northern Mandarin) Chinese). Fishman also mentions cases of attempts to bring about orthographic change under non revolutionary situations (e.g., Israel, Haiti and Japan), or orthographic unification of closely related languages in the absence of accompanying societal unification (e.g., India, Africa and Indonesia-Malaysia). The case in Spanish America clearly shows that the revolution was a political affair rather than cultural, and that an orthographic change in similar circumstances may not come through when the cultural bonds between two political entities remain preserved.

(4) As far as we know, the only support came from a newspaper in Mexico, *El Sol de Méjico,* which reproduced the *Indicaciones,* and from a person who later published an article to acknowledge the good intentiones of Bello and García del Rio, but also to point out that the unification of the orthography was to be made by the Academia in order to avoid endless disputes.

(5) Vid. footnote 130 in Rosenblat, 1951: cxvi.
(6) Vid. "Ortografía" in A. Bello's *Estudios gramaticales* (vol. v: 97-115).
(7) Bello's own orthography has been analyzed and discussed in "La ortografía de don Andrés Bello. Informedictamen de la comisión editora de las Obras Completas." *Revista Nacional de Cultura,* 74 (1949): 151-166.
(8) The last orthographic prescriptions were made by the Academia in 1964. (Vid. A. Rosenblat, 1967. *Las nuevas normas ortográficas de la Academia Española.* (2 ed.) Madrid: Oficina de Educacion Iberoamericana.) For a description of the current situation of Spanish spelling, see Real Academia Española de la Lengua, 1975. *Esbozo de una. nueva gramatica de la lengua española.* Madrid: Espasa-Calpe (P.1.8, pp. 120-159).
(9) Of course, this is not the case when the reform or codification implies, for example, voluntary adoption of Roman letters.

Bibliography

Bello, Andres. (1826)/1951. "Indicaciones sobre la conveniencia de simplificar y uniformar la ortografía en America." *Estudios gramaticales (Vol. V,* Obras Completas de Andrés Bello). Caracas: Ministerio de Educación (pp. 69-87).

Fishman, J.A. 1971. "The sociology of language: an interdisciplinary social science approach to language in society." *Advances in the Sociology of Language* (vol. 1), J.A. Fishman, ed. The Hague: Mouton (pp. 217-404).

Guitarte, G.L. and R.T. Quintero, 1968. "Linguistic correctness and the role of the academies in Latin America." *Current Trends in Linguistics* (vol. 4), T. Sebeok, ed. The Hague: Mouton (pp. 562-604).

Jespersen, O. (1940)/1964. *Mankind, Nation and Individual from a Linguistic Point of View.* Bloomington: Indiana Univ. Press.

Nahir, M. 1977. "The five aspects of language planning – a classification." *Language Problems and language Planning, vol. 1: 107-123.*

Rosenblat, A. 1951. "Las ideas ortográficas de Bello." *Estudios gramaticales (Vol. V,* Obras Completas de Andrés Bello). Caracas: Ministerio de Educación (pp. ix-cxxxviii).

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Spelling in other languages and international aspects of English Spelling *(continued)*

6. "Spelling Reform in International Perspective," by Jesús Mosterín, Ph.D.*

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Abstract
The goal of spelling reform is to improve written communication between all the peoples of the world. Of course it should make reading and writing much easier for children to learn. But it should also increase the linguistic awareness of the speakers, facilitate the learning of foreign languages, diminish the burden of bilingual communities, offer a uniform and consistent system of transcription' from other writing systems, allow the unified representation of nouns in cartography, permit the design of universal word processing machines, etc. And it should be made in accordance with the principles valid for all the languages of the world. Most plans of spelling reform that have been proposed in the past are too narrow in scope, too parochial in concern, [a]nd incompatible with the possible reformed spelling of other languages.

The scheme of spelling reform proposed here is based on the principle of alphabetic spelling, that is, on the establishment of a biunivocal correspondence between the phonemes of each language and the graphemes of its writing. This principle is modified by 3 restrictions (morphemic, semantic, and transdialectal), which permit departures from it in specific cases, in order to maintain the uniform graphic representation of morphemes, to differentiate homophones, or to unify the writing of different dialects. The graphemes themselves should be chosen according to international criteria, and their shapes and values should differ as little as possible from those of the international phonetic alphabet.

This scheme has just been applied to Spanish and could easily be applied to English and to any other language.

Corpus
We live in a world and in a time full of unprecedented opportunities and of unprecedented problems. Some of our problems are due to the resistance nature opposes to our wishes. But most of our problems are of our own making: they do not arise from a withstanding nature, but from the inadequacy of our conventions.

The Greek philosophers of the 5th century B.C. made the all important distinction between *physis* and *nomos,* between nature and convention. Nature we must accept. As Galileo put it, the only way of dealing with nature is by obeying its own laws. Laws of nature can be discovered, but not agreed upon by convention. On the contrary, laws of the state, customs, dispositions and orthographies are conventions, whose only substance comes from out agreements. It would be a waste of time to discuss whether the solar system should have 9 planets or more or less. But it is very well invested time to discuss the laws of the state, the taxes, the systems of measures, and the rules of orthography.

Rationality has to do with the analysis and critical discussion of systems of conventions. It presupposes the clear articulation of the goals or functions the system is supposed to serve, and it seeks the optimization of those goals through the conscious design or redesign of those systems of conventions. Rationality leads to technology. And spelling reform is a typically technological task.

Humanity faces graver and bigger problems than those posed by inefficient and antiquated orthographies or by inadequate systems of measures. But if we are not able to cope with these relatively simple problems, much less can we hope to solve the bigger ones. By successfully tackling such problems as spelling reform, we can flex our intellectual muscles and prepare them for more ambitious enterprises.

Most proposals for spelling reform have been a failure. In a sense, this has been a pity, for children and adults and foreigners have been burdened with needless problems, frustrations and waste of time and effort. In another sense it has been fortunate, for a successful spelling reform would be an enormously laborious and expensive process, which should not be gone through more often than once a century. But most proposals for spelling reform have been so parochial that, had they succeeded, very soon the need for a second spelling reform would have been felt.

One typical system of conventions is the systems of measure units. Every country in the world has had two different problems with its traditional system of measures:

(1) the traditional system used to be more or less accidental or absurd, the units were not interrelated by any simple proportions, the computations with them were unnecessarily difficult and cumbersome; and

(2) the units of such a system used to be different and incompatible with the units of other countries, and this diversity hampered commerce and industry, science and communications. Each country could have coped with the first problem by itself, arriving at a satisfactory solution, but one different from the solutions arrived at by other countries. This reform would have simplified the life of the citizens of that country: But the second problem would have remained intact, and the need to deal with it would have soon led to the need for a second reform to be felt. Of course, it would have been much better to catch both flies with the same stroke. And that is the opportunity offered by the International Metric System.

The British or Americans could have proposed a new and thoroughly rationalized system of measure units based on their old pounds, ounces, drams, grains, and so on. But a wholly new system of units and measures is something difficult to impose or to accept, as it so severely impinges on the habits of the people. Nevertheless one of the best arguments for the Metric System was that not only would it facilitate the learning of physics by children and the making of computations by adults, but also that it would greatly promote the exchange of all kinds (economic, cultural, scientific, medical, etc.) among all countries of the world. Evidently the 'sex appeal' of a system which is not only logical and simple, but moreover of international validity, is much greater than that of any merely parochial or provincial one, whatever its merits.

The same applies to spelling reform. We should spare ourselves and others the trouble of having to go through two different spelling reforms, a first one simplifying spellings of different languages independently of one another, and a second one harmonizing and changing again all previously reformed spelling. Also in this domain, we should aim at catching both flies with the same stroke. In order to achieve that, we have to devise and promote a world spelling reform, valid for all the languages of the world.

Let us consider for a moment the English palato-alveolar fricative phoneme /ʃ/, which appears in such words as *shoe, ship,* or *machine.* One problem about this phoneme the spelling reformers have been. well aware of has been the one posed by the pathological diversity of its graphic representations in traditional English orthography: sometimes it is represented by *sh,* other times by *ch, sch, s, ss, ti, si, sci, ci* or *ce*. Of course, this is an absurd situation. It could be remedied, for example, by writing always *sh* for /ʃ/, as many reformers have proposed. But we should not forget

that this is only *one* problem about phoneme /ʃ /, the problem of its polygraphy in English orthography. There *is another* problem, which has received very little or no attention at all by spelling reformers of the past. It is the problem posed by the different and mutually incomparable graphic representation of the phoneme /ʃ/ in the orthographies of the many other languages which possess such a phoneme. Limiting our attention to the best known west European languages (all of which are written in the Roman alphabet)which possess the phoneme /ʃ/, we easily notice that no two of them represent it in the same way. English represents it (mainly) by *sh*, Italian by *sc* or *sci*, French by *ch,* German by *sch,* Dutch by *sj* or *stj*, etc. This is a real problem which should be tackled from the beginning. It is not enough that this particular phoneme gets a uniform representation in the reformed orthography of English, another and different uniform representation in the reformed orthography of French, a third one in that of German, and so on. All spelling reforms should be so coordinated from the beginning that this phoneme gets the same uniform graphic representation in the reformed spellings of all the languages. A spelling reform which ignores or forgets the second problem is a merely parochial reform and perhaps it is not worth while being carried through.

Look at German. They write the labio-dental fricative phoneme /f/ sometimes as *v*, sometimes as *f,* and sometimes as *ph*. So the initial consonant of the three words *forms, vorn, phosphor is* the same, /f/, but it is written in 3 different ways. Of course, this is absurd and every German spelling reformer worth his name will want to change this. So Ftitz Vonficht proposed a uniform graphic representation of /f/ in German by writing it always as *v*. That is reasonable in the context of traditional German orthography, where /v/ is represented by *w*, so that the letter *v* always represents the phoneme /f/. But this is incompatible with the writing of every other language of the world, and so it must be rated as a very bad proposal. If Germans want to unify their graphic representation of phoneme /f/, they should choose the letter for doing it, because it is the internationally accepted letter for that sound.

Look at Spanish. It possesses the velar fricative phoneme /x/ (the same sound pronounced at the end of Scottish *loch*), which is sometimes written as *j* and sometimes as *g*. Every Spanish spelling reformer Las proposed to eliminate this anomaly by unifying the graphic representation of /x/. But most of them (like Andrés Bello and Juan Ramon Jimenez) have proposed to use the letter *j* for doing the job. Again this is quite correct in the context of traditional Spanish orthography, but no writing system of any other language in the world uses the letter *j* for representing the phoneme /x/. If international considerations are taken into account, Spanish speakers should use the letter *x* and not *j* for representing the phoneme /x/.

Look at French. André Martinet, certainly one of the most eminent linguists of our century, devised in 1973 a phonemic alphabet, called *alfonic,* that should serve as an initial teaching alphabet for children, on the one side, and as a possible means of written communication among adults, on the other. There *is* nothing to reproach in the phonemic analysis which is its base. And there is nothing new about the shapes of the letters. But the values he assigns to some of them are strange indeed. He assigns the phoneme /ʃ/ (the one at the beginning of ship) to the letter *h.* Here again, there is no problem with this choice in the narrow context of the French language, which lacks any glottal fricative /h/ (like English *hat*). But French is not alone in the world. Many other languages possess that phoneme /h/, for which the letter *h* should be reserved. The suggestion of representing /ʃ/ by h is too idiosyncratic to be accepted by anyone but the French. If the French went along with that proposal, their reformed spelling would be (at least in this point) utterly incompatible with any other actual or reformed spelling of other languages. The French children would have to learn anew to read and to write every time they learnt a foreign language (just as now) and the same would happen to foreigners wanting to learn French. The lot of bilingual communities with French as one of their languages (in Alsace, in Quebec, in Brussels, etc.) would continue to be an unnecessarily hard one.

Look at English, and at its spelling reformers. Consider for example the close, forward, unrounded and long vowel phoneme /i/ which appears in *cheese, me,* or *macbine.* This is a very common phoneme, to be found in most languages. Of course, the polygraphic representation of this phoneme in traditional English orthography (by the different phonograms *ee, e, ea, ie, ei, ey, i*) *is* absurd. But some of the proposed medicines are perhaps still worse than the disease they are supposed to cure. So the Simplified Spelling Society's New Spelling proposes to represent the phoneme /i/ by the letter combination *ee.* That would have the advantage of unifying the now chaotic graphic representation of /i/ in English, but it would be utterly unacceptable from an international point of view. No other language of the world could represent /i/ as *ee.* Sir James proposal of the idiosyncratic sign [joined] ee, is still worse. Consider now the diphthong /ai/, found in words like *time, die* or *aisle* (and now written as *i, y, igh, eigh, ie, ye, ei, ai*). New spelling's proposal for it is the letter combination *ie.* That also is utterly unacceptable in any other language. Dr. Gassner's suggestion for /ai/ is the letter *y*, also wholly off the mark, if we look at it from an international perspective.

We should beware of this sort of proposal. Some of them (like writing *machine, police, prestige* or *suite* with *ee* in place of actual i) would make English spelling still worse than it is today, from any point of view (and to begin with from the phonetic point of view). And they would carry English spelling still further away from international practices.

If we look at the future destiny of the English language, we must take into account that, on the one hand, every year fewer people are going to speak English as their first language (due to the demographic trends now at work) and, on the other hand, every year more people are going to use English as a second language. There are already many more people who speak Chinese than English. And soon there will be more people who speak Spanish or Hindi than English. Nevertheless English has the best chance of becoming the international auxilliary language. This means that many hundreds (perhaps even thousands) of millions of people are going to learn and use English as a second language (besides their native Chinese, Hindi, Spanish, German, Russian; French, Japanese, etc.), many more than those learning and using it as their first language. In this perspective, it is imperative to reform the spelling of English, not only in order to regularize its present extravagant patterns, but also with a view to accomodating its orthographic conventions to the needs and interests of the speakers of other languages (which, by the way, are identical with the true needs and interests of English-speaking children). R. Venezky excuses some of the oddities of traditional English orthography with the observation that "English spelling is geared for the convenience of the native speakers, not for the foreigner" (*The Structure* of *English Orthography*, p. 121). This callous, parochial and irresponsible attitude has to give way to a much broader frame of mind when analyzing or redesigning English spelling, or the spelling of any other language, for that matter.

The biunivocal correspondence between the phonemes of the language and the graphemes of the writing is the essence of the alphabetic way of writing. This we should never forget. But of course, it is not as simple as that. A purely phonemic transcription would not be a good working orthography. Other considerations have to be taken into account, like the need for preserving the uniform graphic representation of the same morphemes, the need for differentiating in writing some homophonic morphemes and the need for maintaining the unity of the writing code beyond the dialectal frontiers. This is not the place for me to dwell on these most important subjects. Much more space would be required to deal with them adequately.

Let me just remark that the full consideration of these essential topics does not impinge at all on the general principle that the most economic, efficient and easy use of alphabetic writing can only be achieved by having at our disposal as many different letters in the alphabet as we have phonemes in the language. And that means that in most languages (and anyway in English, French or German)

we need more letters than are available in the Roman alphabet.

We need not invent the new letters. They have already been invented and have been in general use in the scientific community for many years. They are the letters of the International Phonetic Alphabet (I.P.A.), designed by the International Phonetic Association. The I.P.A. is called to play in spelling reform a role similar to that played by the International Metric system in the reform of national systems of units and measures.

Spelling reform is one of the most important, socially relevant and intellectually fascinating tasks which confront us. We should approach this task with a certain awe and with a certain humility, but at the same time with a fresh openness of mind and a bold grasp of the aims.

We need more letters than the Roman alphabet has. That is a fact. Any spelling reform proposal which forgets that is not worthy of its name. (Another question is the tactics of implementation. But clear ideas are more important now and in the long term than mere tacticing and compromising). In choosing the new letters and in assigning values to the old ones, we should resist any temptation of personal originality and of idiosyncratic invention. We should always proceed according to the shapes and values proposed by the International Phonetic Alphabet. Only so shall we arrive at scientifically sound and internationally compatible spelling reforms of all languages of the world.

Some spelling reformers are anxious to get some movement in the actual spelling, to get people begin to change their traditional and often absurd ways of writing. To them I would like to give the advice: Do not press for all changes in spelling you think good or conforming to your favourite scheme. Press just for the ones which are compatible with international uses and with the International Phonetic Alphabet. Forget about the others for the time being and until more research has being carried out. Forget about pressing for writing *ee* for /i/, or *ie* or *y* for /ai/, or *j* for /ʤ / (as in *George).* There is still enough little changes you can press for with a good conscience, like the ones accepted at the 1981 Edinburgh Conference on Spelling, i.e., writing the letter *e* (instead of *a*, *ie, ai, ea,* etc.) for the phoneme /e/ in words like *frend* (instead of *friend), hed* (instead of *head), eny* (instead of *any), meny* (instead of *many*), *sed* (instead of *said), insted* (instead of *instead),* etc., and writing the letter *f* (instead of *ph)* for the phoneme /f/ in words like *filosofy* (instead of *philosophy), fonetic* (instead of *phonetic), foto* (instead of *photo),* etc. These are changes which go in the good, internationally acceptable direction. As a matter of fact, the last one, for example, is a change the Italians (and Spaniards, Portuguese, etc.) who are nearer to the Latin sources, have already made long ago. Now they write *filosofia, fonetico, foto.*

Spelling reform is a grander task than some reformers thought. Let's rise to the occasion.

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Spelling for Electronic Communication

7. "Computer transliteration of shorthand," by Colin P. Brooks,

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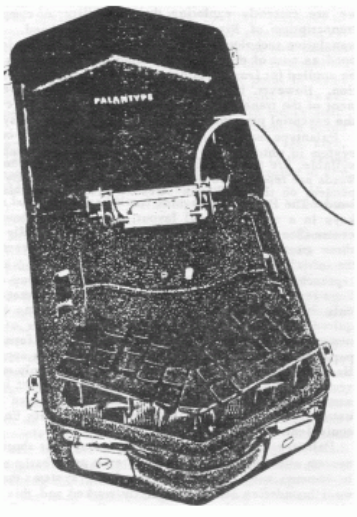
Summary
This paper reviews the development of two specialised text processing techniques for computer transliteration of shorthand. It is concerned with the problem of trying to reconstruct automatically an ideal orthographic transcript from imperfect, phonetically-based, shorthand notes. This work forms an integral part of a project to allow a simultaneous transcript of almost verbatim speech to be presented to a post-lingually deaf audience.

Corpus
Introduction
The Family Welfare Association estimates that between 0.8 and 1.1 million Britons suffer a hearing loss sufficiently acute to be regarded as a social handicap. [1] Whilst many of these people manage remarkably well with a conventional hearing aid, there are still a considerable number for whom attending a public meeting, or watching a television programme, is either difficult or impossible. However, since a high percentage of these people are post-lingually deaf, having become deaf in later life, one way in which it is possible to help is to provide them with a simultaneous written transcript;of speech, such us subtitles on television. At the Dept. of Electronics, Southampton Univ., we have been investigating the problems of providing the deaf with a simultaneous written transcript: of speech for a number of years.

Unfortunately, there is a fundamentalproblem with speech transcription concerning the maximum speed at which it is possible to enter text into a machine. Speech varies greatly in speed, but normal conversation usually lies somewhere between 120 and 220 words per minute (wpm). A good typist, on the other hand, can normally only manage between 60 and 80 wpm, and may even have difficulty sustaining this speed over a prolonged period. Modern word processors considerably reduce typing effort, put they do not significantly improve on these figures for text input. The fact remains that it's usually not possible to type fast enough on a conventional QWERTY keyboard to keep up with verbatim speech.

FIGURE 1
A Palantype shorthand machine.



Neither does automatic speech recognition provide a solution. Although theoretically attractive, simultaneous recognition of unconstrained speech is, as yet, impossible and is likely to remain so for some time. [2,3]
Fortunately, there is an alternative. Numerous shorthand notations have been devised and used over the centuries to allow the verbatim recording of speeches, debates, and court proceedings. However; it would be of very little use simply to present a deaf person with a simultaneous shorthand transcript of a TV programme, for example. Ignoring any technical problems which might arise, most deaf people would be either unwilling or unable to learn what is, after all, a complex code based on a mixture of phonetic and graphemic principles. Instead, the deaf person requires a readable transcript presented in a reasonably familiar manner. In order to be simultaneous, such a transcript needs to be produced automatically.

2. Automatic transcription o/ shorthand

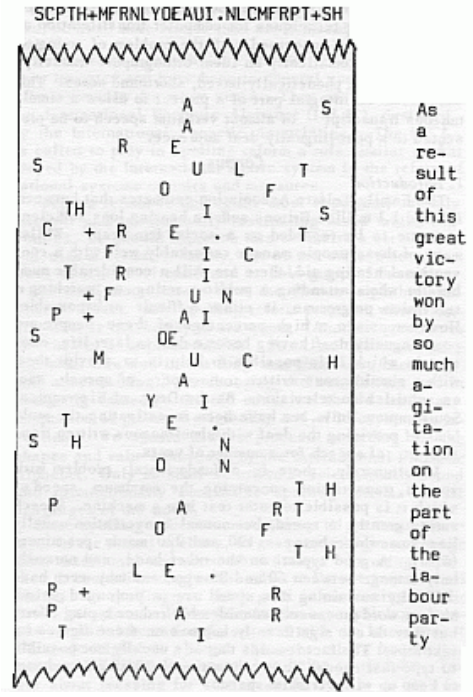
During the course of our research, we have built a number of prototype shorthand transcription systems, each comprising an electric Palantype keyboard, microprocessor-based transcription unit and television monitor screen. [4] These systems allow a Palantypist to provide a simultaneous written transcript of speech on a television screen for deaf people to read. Two of these systems are in daily use by deaf businessmen, who find them of great benefit. [5]

Palantype machine shorthand is particularly suitable for this purpose because, being keyboard-based, it interfaces very conveniently to a computer. However, we have maintained our interest in other shorthand systems and, as part of a wider investigation into man-machine systems, we are currently exploring the feasibility of computer transcription of Pitman's handwritten shorthand. The translation techniques described in this paper were developed as part of this research, although the findings may be applied (at least in principle) to either shorthand notation. However, before going on to discuss the development of the translation processes in detail, let us review the essential principles of both of these shorthand systems.

Palantype machine shorthand [6] is a phonetically-based system in which groups of keys, representing a complete syllable, are pressed simultaneously to form a "chord." Words are represented by a number of chords, usually dependent on the number of stressed syllables within the word. The Palantype machine itself has a keyboard of 29 keys in a rather unusual layout, symmetrical about the centre (See figure 1). The keyboard divides naturally into three groups: a left hand group of 12 keys representing the initial syllabic consonants, a central group of 5 keys representing medial vowels, and a right hand group of 12 keys representing final syllabic consonants. As there are only 29 keys in total, a certain amount of. coding is required in order to represent a sufficient number of phonemes. The output from the machine is in the form of a paper band on which each chord is printed on a separate line. Unlike an ordinary typewriter, the paper only moves vertically, and each key always causes an imprint in the same position horizontally across the line. Figure 2 illustrates an example of Palantype output with its English equivalent.

FIGURE 2

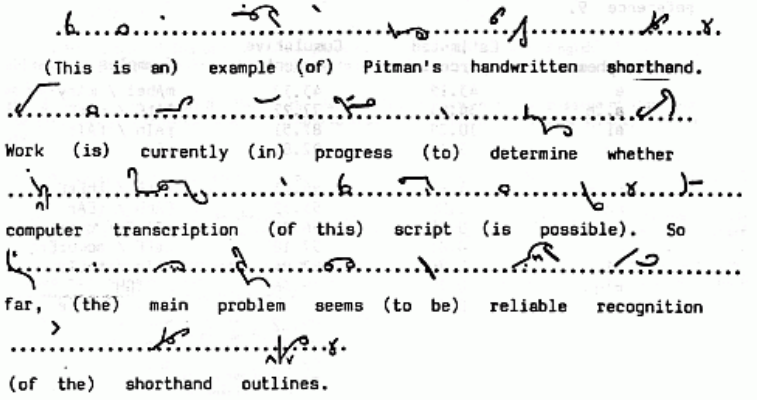
An example of a conventional Palantype band and its English equivalent. (The layout of the printed characters across the Palantype roll is shown at the top of the figure. Normally, the band would be about 6 cm wide.)



Palantype machine shorthand is a very fast shorthand system allowing accurate outlines even at verbatim speeds. In common with all machine shorthand systems though, word boundaries are not explicitly marked and this complicates transcription by computer. Despite this Palantype shorthand is highly suited to this application and suffers from only one major disadvantage. Unfortunately, unlike handwritten shorthand, it is a comparatively rare skill and there may be as few as 100 practicing Palantypists left in the United Kingdom.

FIGURE 3 17

A short sample of Pitman's 2000 shorthand. The words shown in brackets have been represented by short forms.



In contrast, Pitman's shorthand [7,8] is undoubtedly one of the most commonly used shorthand notations in the world.

It is another phonetically-based system in which the consonant 'kernel' of a word is represented by a sequence of simple, single-stroke, geometric shapes, such as straight lines or shallow curves. The vowel sounds, added only if time permits, are represented by dots of dashes written alongside the consonant symbols. In addition to the basic range of 40 phonemes, there are special symbols for orthographic features such as common prefixes, suffixes, and consonant digraphs, etc. In common with Palantype, very common words and phrases are represented by highly abbreviated symbols called short forms, and these tend to reduce the phonetic quality of the script, particularly at speed. Figure 3 illustrates a short sample of good quality Pitman's 2000 shorthand.

In comparison with machine shorthand, handwritten outlines are highly abbreviated and lack many of the finer details of the original words. Pitman's shorthand in particular emphasises the importance of the consonant kernel, often at the expense of disregarding vowels and unstressed syllables altogether. However, despite the comparatively poor quality of written shorthand notes, they do have a subjective advantage over their machine counterpart. On the whole, word boundaries are preserved, and this has a number of advantages in subsequent automatic processing and in readability of the final transcript. There is one other difference between these two systems. Although Pitman's shorthand allows verbatim transcription, provisional studies indicate that a speed of about 120 wpm will probably represent the upper limit for transcription by machine. Beyond that speed, outlines become too highly mutilated (both physically and linguistically) to be transcribed automatically.

3. Text processing objectives

One possibility originally considered was that of displaying the (recognised) shorthand outlines directly in some form of phonetic alphabet. This, of course, would alleviate the need for any sophisticated linguistic processing. A number of possible alphabets were considered, including the International Phonetic Alphabet (IPA) and the Initial Teaching Alphabet (ITA). As might be expected, ITA would suit Pitman's shorthand quite well, but, despite this, use of a conventional alphabet was selected because of overwhelming advantages. It is not impossible to electronically display an alphabet such as ITA, but it would require non-standard equipment which is considerably more expensive. Furthermore, since most existing public data transmission services (such as Teletext and Prestel) only allow display of a standard alphabet and rudimentary graphics, use of any different alphabet would prevent compatibility with these. More importantly though, there appears to be very little, if anything, to be gained from the deaf reader's point of view in deliberately departing from a standard alphabet and traditional orthography.

The objectives of the linguistic processing system were thus established as follows:

a. To produce an ideally orthographic target script from the pseudo-phonetic source script,
b. To suppress, or at the very least, tolerate mutilations in the source script,
c. To produce a target script which can, within reason, be traced back to the original sources phonemes in the event of error,
d. To be computationally "cheap."

Two different methods of achieving these objectives were originally considered: these were' translation by dictionary lookup & transliteration by rule. (Transliteration is the name given to the process of conversion from a source script written in one alphabet to a target script written in another.) Each technique was found to have a number of advantages and disadvantages. Generally speaking, a dictionary based system has the advantage of a very" high performance, but at the cost of being intolerant of error and computationally quite "expensive" to implement. Transliteration by rule, on the other hand, offers a lower performance, but one that is considerably "cheaper" to implement and more tolerant of error. (There is no danger of a mutilated outline being transformed into something entirely different by an erroneous dictionary match.)

In the current generation of transcription computer, we have chosen a compromise solution. A small dictionary is incorporated to deal with the most common words (which are usually short forms), but all other words are processed by spelling 'rule.' It is interesting that this is an approach also adopted by a number of spelling reformers in their proposed reforms.

4. Transliteration by rule

To reiterate then, the transliteration procedure must govern the conversion of the pseudo-phonetic source script (the shorthand notation) into an ideally orthographic target script. The spelling 'rules' mentioned above must therefore reflect how best to represent a phoneme graphemically in any given situation, taking into account numerous factors such as the position of the phoneme and the conventions of the particular shorthand notation. The rules currently being developed also take into account the relative frequency of every possible graphemic representation of each phoneme. For simplicity, only the most common of the possible range of graphemes for each phonemes are considered. Each phoneme is assigned a specific set of transliteration rules; each member of that set relates to the transliteration of that phoneme in a particular contest. Phonetic context was chosen as the best means of distinguishing possible graphemic outcomes because of the inherent simplicity in comparison with other possible techniques and because studies indicate" that this may be one of the most important factors influencing phoneme-grapheme relationships.

By way of example, consider development of the set of rules relating to transliteration of the long /A/ vowel. Table I lists the range of possible graphemes for this phoneme, which number 16 in all. (This table also serves to illustrate another complication caused by working from an imperfect phonetic code such as shorthand. In practice, the Pitman /A/ vowel is actually used to represent two distinct phonemes corresponding to the vowel sounds of "hay" and "hair".) Many of these graphemic options occur comparatively infrequently (i.e. less than 2%) and so may he disregarded without significant loss. This leaves four possible graphemes, namely <a>, <a. . e >, < ai > and <ay>. A survey was performed of the most common words in English to determine in what circumstances /A/ would be spelt <a>, and when it would be spelt <a. . e>, etc. Words belonging to each category were grouped and any suitable spelling pattern isolated manually. An automatic technique for detecting spelling patterns would have been preferable, but this was not possible in the time available. However, the use of rhyming dictionaries and reference to the work of several spelling reformers aided the collection of an adequate number of examples of each grapheme **[10,11,12,13].** Reference to a rank list of the most common words in English was also found particularly useful in this respect. **[12]** The resulting spelling patterns for the /A/ phoneme are listed in table 2. A similar set of rules have been isolated for every other phoneme in the Pitman shorthand alphabet.

The transliteration rules for the /A/ phoneme would be read as follows. Consider the first rule governing the grapheme < ay >. This rule would be read:

"If the /A/ phoneme is preceded by any phonetic consonant AND followed by a word boundary, THEN the /A/ phoneme is probably best represented by the grapheme <ay>"

This rule would thus be satisfied by the words "pay", "may" and "say." Similarly, the second rule would read: "If the /A/ phoneme is followed by the phonetic consonant /n/, which in turn is followed by any inflection or word boundary, THEN the /A/ phoneme is probably best represented by the grapheme <ai>."

This rule would thus be satisfied by the words "pain," "rain" and "training," for example. The other rules in this table would be read in an exactly analogous fashion. In the event that no specific context rule was satisfied, then the grapheme shown on the bottom line (label led context "else") would be output. Naturally, this should normally be the most common graphemic representation of

the phoneme, and in this case is just <a>.

In addition to the groups of rules relating to the transliteration of specific phonemes, the overall process must also be sensitive to a number of the more 'general' rules of English spelling". For example, the following spelling conventions have also been incorporated:

TABLE 1
This table illustrates the phoneme-grapheme correspondences expected for the Pitman long /A/ vowel (as used in "HAY" and "HAIR"). After Hanna et al., reference 9.

	Estimated	Cumulative	
Grapheme	percent	percent	Examples
a	43.19	43.19	mAbel / mAry
a..e	34.03	77.22	lAtE / cArE
ai	10.29	87.51	rAIn / fAIr
ay	05.30	92.81	pAY
e..e	1.62	94.43	fEtE / thErE
ea	1.09	95.52	EAch / tEAr
ai..e	0.85	96.37	rAIsE / questionnAIrE
e	0.81	97.18	cafE / sombrEro
ei	0.76	97.94	vEIn / thEIr
eigh	0.72	98.66	slEIGH
ey	0.60	99.26	thEY / EYrie
et	0.36	99.62	bouquET
aigh	0.16	99.78	strAIGHt
ei..e	0.08	99.86	sEInE
au..e	0.04	99.90	gAUgE
ay..e	0.04	99.94	AYE

TABLE 2
This table lists the transliteration rules for the Pitman long /A/ vowel.

Rule			
Number	Phonetic context		Grapheme
1	(consonant),	A,(word boundary)	ay
2		A,N,(inflection or boundary)	ai
3		A,D>2,(word boundary)	a..e
4		A,D<3,(word boundary)	ai
5		A,(consonant; but NOT N or D),(NO vowel)	a..e
6		else	a

(a) The addition of a silent 'e' following a final consonant preceded by a long vowel, such as occurs in "cake" "like" and "mute."

(b) The removal of a silent 'e' before the 'ing' and 'ed' inflections, such as occurs in "taped" and "taping." (c) The doubling of a final consonant following a short vowel and preceding the 'ing' and 'ed' inflections, as in "map", "mapping" and "mapped."

The overall translation process thus operates in this manner. Working with a word at a time, the

transcription computer sequentially examines each of the phonemes in the shorthand outline. For each of these phonemes, it attempts to match the context in the shorthand outline with one of the context rules listed in transliteration tables like the one in Table 2. If the context in the outline matches one of the listed context rules, then the grapheme recommended by that rule is used. If no specific rule is matched, then the phoneme is simply represented by the most common grapheme for that phoneme. Meanwhile, the computer also checks to determine whether any more general spelling rules are applicable, and if so, takes the necessary action. This process continues sequentially for each of the phonemes within the source text until the whole outline has been transliterated.

At present, over 100 context rules have been isolated for the Pitman notation. Work is currently in progress to develop a similar system for Palantype shorthand, but in this case, it is necessary to preceed the transliteration process with some means of accurately locating word boundaries. Many of the transliteration rules rely on word boundary information to determine the most appropriate grapheme for a given grapheme. The rules are still provisional, and much more work needs to be done to achieve the best compromise between overall complexity, accuracy and tolerance to error when working from real shorthand outlines.

5. Vowel marker insertion
As already mentioned, an additional problem when working from a Pitman transcript is that the outlines are often vowel deficient; non-essential vowels are omitted in order to increase recording speed. Hence, it was also necessary to develop some means of automatic 'vowel insertion' in order to improve the readability of the final transcript.

The principle of operation of the vowel insertion scheme is quite simple. Every pair of adjacent consonants that have a low probability of occurence in everyday English are split, and a generalised vowel marker sign (currently a "+") inserted. The insertion of such a marker merely denotes that it is likely that the stenographer left out a vowel character in that position from the original outline. It is not possible to reliably insert a specific vowel, except perhaps in the case of final silent 'e'. Although experiments have not been done by the author, a number of related experiments by psychologists interested in reading" imply that this technique should improve readability by helping to restore the correct word 'shape.'

In order to achieve the best possible performance from this technique, the insertion process has been devised to reflect the different initial, medial and final vowel structures common in English words. Special attention is given to consonant digrams which occur near word boundaries, as psycho-linguists believe" that word boundaries play a particularly important role in reading. To this end, contextual sensitivity is achieved by having not one, but five vowel insertion lookup tables. Each table summarises exactly which consonant digrams are permitted and which must be split in a given situation. The tables are the result of analysis of the most common vowel structures in written English, and in the prototype system, are arranged to split all digrams with a probability of occurence of less than about 40% in everyday English. Figure 4 illustrates the effect of the vowel insertion process on a small passage of vowel deficient text.

Figure 4.
An example of the effect of the vowel insertion process on a highly mutilated passage of English, in which all vowels in words of two or more consonants were first deleted and then automatically re-inserted.

Original Text:
This is a short demonstration to illustrate the effect of the vowel insertion process on a short passage of highly mutilated English. As can be seen, although it is normally only possible to insert a

generalised vowel marker symbol, this does appear to improve readability.

Mutilated version:
Ths is a shrt dmnstrtn to Ilstrt th ffct of th vwl nsrtn prcss on a shrt pssg of hghly mtld nglsh. As cn be sn, lthgh it is nrmlly nly pssbl to nsrt a gnrlsd vwl mrkr symbl, the ds ppr to mprv rdblty.

Vowel Inserted Version:
Th+s is a sh+t d+m+nstrt+n to +ll+strt th +ff+ct of th v+wl +ns+rt+n pr+c+ss on a sh+rt p+ss+ge of h+gh+ly m+tl+t+d +ngl+sh. As c+n be s+n, l+th+gh it is n+rm+lly +nly p+ss+ble to +ns+rt a g+n+rl+s+d v+wl m+rk+r symble, th+s d+s pp+r to+mp+rve r+d+bl+ty.

Figure 5
A. The result obtained by transliteration of a 'good' phonetic transcript of the text is shown in Figure 3. The words shown in brackets are short forms and would normally be processed by dictionary.

(This iz an) eksmple (ov) pitmns hnd ritn shrthnd. Work (iz) currently (in) progress (tue) determin whether computer transcription (ov this) skript (iz possble). Sow far (thu) main problm seams (tue be) relliable rcomnsion (of the) shorthand outlns.

B. The result obtained by transliteration and subsequent vowel insertion of the shorthand notes are shown in Figure 3 after simulated recognition. The words shown in brackets are short forms and would normally be processed by dictionary and therefore appear correctly spelt in this transcript.

(This is on) egs+mple (of) p+tm+ns h+nd r+t+n sh+rth+nd. Wrk (is) c+r+ntly (in) progrs (to) d+trm+n wh+ther computer tr+nskr+ption (of this) skr+pt (is possible). So far (the) main pr+bl+m s+ms (to be) reli+bee r+nd+sion (of the) sh+rth+nd outl+nes.

6. Performance of *the transliteration procedures*
The performance of the two text processing techniques described in this paper are illustrated in Figure 5. The first paragraph, Figure 5a, was obtained by transliteration of a 'good' quality phonetic transcript of the passage shown in Figure 3. A stenographer was asked to write out this text as accurately as possible in the Pitman alphabet, as if writing full shorthand outlines. As can be seen, the resulting transcript is highly readable and compares quite well with the original, despite the fact that some vowels are still missing. A transcript approaching this quality should be possible from Palantype machine shorthand provided that word boundaries can be accurately determined by some other means.

The second paragraph, Figure 5b, was obtained by transliteration and subsequent vowel insertion of the shorthand notes written by the same stenographer, also shown in Figure 3. In order to remove any possible effects of machine error, the shorthand outlines were recognised manually. This transcript is distinctly more difficult to read, but by no means impossible. However, a number of causes of error are clearly evident. Possibly the most serious of these errors is that caused by excessive abbreviation or syncopation of the outline as in the case of "rension" for "recognition." Here, the effect of the error is emphasised because "rension" is seemingly a reasonable word. There is little that can be done about this category of error except to encourage the stenographer to be as accurate as possible; accurate transcription of the beginning of a word is particularly important. Another problem evident in Figure 5b occurs when a transliteration error also induces a vowel insertion error. In particular, vowel insertion errors about a word boundary (as in "+sk+ript" for "script") can cause serious difficulty. In the future, a single text processing technique implementing both transliteration and vowel insertion on a phonetic level may help to reduce this type of error.

Conclusion

This paper has discussed the development of two specialised text processing techniques for computer transliteration of shorthand notes. The problems encountered during this research were found to be similar to those experienced by spelling reformers searching for a logical spelling strategy for written English. In this case, however, the task was complicated by the use of an imperfect phonetic script such as shorthand. Although it was not possible to satisfy all of the original objectives, it was possible to devise a transliteration scheme which produces a readable, if not orthographic, transcript of the original shorthand. Further research is expected to improve the performance of these techniques but will never enable traditional orthography to be produced completely automatically. However, practical experience shows that, at least in some applications, an 'imperfectly' spelt transcript can be quite acceptable.

Acknowledgements

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References:

1. "Guide to Social Services, 1976", Family Welfare Association, Macdonald and Evans, London, 1976.
2. Newell, A.F., "Can speech recognition machines help the deaf?", *The Teacher* of *the Deaf, v.* 72, no. 428, Nov. 1974, pp. 367-374.
3. Underwood, M.J., "Machines that understand speech," *Radio and Electronic Engineer, v.* 47, nos. 8-9, Aug.-Sept. 1977, pp. 368-376.
4. Downton, A.C., "Speech transcription as a communication aid for the deaf," *Child: care, health and development,* v. 5, 1979, pp. 41-48.
5. Hayward, G., "Palantype in the office," *Hearing,* May-June, 1978, pp. 104-108.
6. *The Palantype Manual,* obtainable from the Palantype Organization, London.
7. Pitman Shorthand, new course, New Era Edition, Pitman Publishing Co.
8. Pitman 2000 Shorthand, First Course, Pitman Pub. 1975.
9. "Phoneme-grapheme correspondences as cues to spelling improvement," Hanna, P.R., Hanna, J.S., Hodges, R.E., Rudorf Jnr, E.H., Washington, D. C., U.S. Gov't. Printing Office, 1966.
10. Horn, R., "Phonetics and Spelling," *Elementary School Journal*, May, 1957, pp. 424-432.
11. Vallins, G.H., *Spelling*, Andre Deutsch, 1954.
12. Wijk, A., *Regularized English,* Almqvist and Wiksell, Stockholm, 1959.
13. Walker, J., *Rhyming Dictionary of the English Language* – in which the whole language is arranged according to its terminations, Geo. Rutledge & Sons, London, 1890.
14. Kucera, H., Francis, W.N., *Computational Analysis of Present Day American English,* Brown Univ. Press, 1967.
15. Pillsbury, W.B., "A study in apperception," *American Journal of Psychology*, v. 8, no. 3, Apr. 1897.
16. Brunet, J.S., O'Dowd, D., "A note on the informativeness of parts of words," *Language and Speech*, v. l, 1958, pp. 98-101.
17. Thorndike, E. L., *Teacher's Word Book of 20,000 Words*. New York: Columbia Teachers' College, 1931-2 187 pp.

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[Spelling Progress Bulletin Fall 1982 p20 in the printed version]

8. Spelling Reform – Pro and Con
"Spelling Reform – Let's be Practical," by John Downing, Ph.D.*

*Pres. Simplified Spelling Soc., Univ. of Victoria, Victoria, B.C., Canada. Presented in absentia.

Abstract
Obstacles to reforming our spelling: children's opinions – those who are now learning our present spelling, literate adults, stability of present spelling and printing, costs of making the changes, objections by printers (valid or not?), librarians, teachers, employers, etc.

Reasons for making changes: economic, removal of confusion, easier to teach, illiteracy due to inability to cope with erratic, confusing spelling, possibility of accepting changes depends on how practical they are.

Corpus
Recently we interviewed children aged 6 to 12 in a Canadian city about their views on spelling. One of the questions asked whether or not spelling should be simplified. As many as 45% said "no." Already after only one year in school, this was about the level of opposition to spelling reform. Two main reasons were given by the children. First, "I have worked hard to learn how to spell, and I don't want to do it all over again." Second, "it would confuse people if there were two ways to spell everything – the old way and the new way." These are not novel arguments against spelling reform, but it is interesting to see how early in life these anti-reform motives develop.

Many people from a variety of occupations see the potential benefits of simplifying English spelling, but the majority of men and women in the English-speaking countries are not motivated to bring about the change. If members of the S.S.S. rely on their powers of persuasion to affect public opinion and bring about a democratic change in English spelling they are deluding themselves. The history of the organic growth of English spelling shows that it never has changed in that way. Occasionally some political or lexical authority has produced minor changes based on logical reasoning, but the strongest force for change in English spelling over the past 1000 years has been an economic one. For example, the *h* got into *ghost, ghoul* and *ghastly* because of Caxton's spelling and derivational errors when he had a monopoly of printing at Westminster. The *h* got out of *girl, goat* and *geese* when Caxton's monopoly was broken. Why the *h* stayed on in *ghost, ghoul* and *ghastly is* an interesting academic question, but the main events in the *g* versus *gh* seesaw were determined by the economic events of the time.

For the past two centuries, English spelling has been almost entirely frozen. Again this is oft economic reasons. Publishers and Printers stabilized spelling because they believed that their customers wanted words to be spelled always the same way. They were able to produce books, newspapers, magazines and so on with stabilized spellings at a more reasonable price.

But this long period of stability in English spelling is coming to an end. Everywhere we see signs of the collapse of standards of spelling in books and periodicals. Automation of typesetting and the high cost of proofreading now make it impossible to provide stable spelling at an acceptable cost. This breakdown in standards is comparable to that which occurred during the Norman occupation of England in the 11th and 12th centuries. English spelling is becoming erratic again for the same reason.

We can't afford the high price of stability.

Nevertheless, readers prefer stability, and history shows that producers of books and other printed materials strive to return to stability by improving their technology. Then customers can again have stable spelling at a reasonable price.

I believe that we are on the verge of a major change in English spelling because this economically motivated cycle is on the move once again. Therefore members of the S.S.S. should consider forming a committee whose membership would include people from the world of printing and publishing who are concerned with obtaining inexpensive stable spelling for English. Of course, in the modern world there are other considerations than those in the businesses of printing and publishing. But we cannot escape the fact that our ability to enjoy good printed materials depends on their being financially within our reach. Therefore, future changes in English orthography are bound to be once again very much dependent upon technological advances in the printing and publishing industries. The effects of any such changes on education are likely to be great. A committee of the S.S.S. such as I have proposed could include educators and members of related professions who could influence the specific details of technologically motivated changes. The committee should be international so that different parts of the English-speaking world are all served.

Spelling reform? Let's be practical! The next major change in the history of English spelling is around the corner. It's coming, as usual, for economical reasons. If we want to contribute to the coming change then we'd better be in touch with those who are going to make it happen.

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