SOME PROBLEMS IN WRITING TONE

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The designing of an orthography is essentially a practical matter. When this statement is made, it is usually with reference to the fact that there are non-linguistic factors, such as the reactions of the reading public, which can often compel the abandonment of certain linguistic principles. However, there are other kinds of practical considerations which can affect the design of an orthography, and I have met with some of these in designing an orthography for Saramaccan, a Bush-Negro language spoken in the interior of Surinam.

The first principle of orthography construction that Pike [1] lays down is that a practical orthography should be phonemic, i.e., there should be a one-to-one correspondence between each phoneme and the symbolization of that phoneme. This is not a linguistically proved proposition but a fact of experience; we know from experience that a phonemic orthography is efficient in that it is easy to teach. [2] Yet we should analyse Pike's principle further. From this basic principle he deduces ten practical rules, the chief of which may be formulated as follows: every phoneme should receive its own symbol in the orthography. This rule is actually composed of two complementary principles: a) two different phonemes should not be represented by one symbol, b) one phoneme should not be represented by two different symbols. In this paper we will study critically the application of these principles to the writing of tone in Saramaccan.

Tone problems solved by phonemic analysis

In this section I hope to make it plain how greatly the phoneme concept can simplify the orthography of complex tonal patterns. A preliminary study of Saramaccan seemed to reveal seven different tone levels and contours: 1. high tone, 2. low tone, 3. mid tone, 4. low-high, 5. high-low, 6. low-high-low, and 7. low-mid. Moreover there is a phonemic distinction between long (protracted) and short (unprotracted) vowels. Nine possibilities would have to be distinguished by means of diacritical signs: 1. short vowel with high tone, 2. long vowel with high tone, 3. short vowel with low tone, 4. long vowel with low tone, 5. short vowel with mid tone, 6. long vowel with contour low-high, 7. long vowel with contour high-low, 8. long vowel with contour low-high-low, 9. long vowel with contour low-mid.

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[1] Kenneth L. Pike, *Phonemics* (Ann Arbor, 1959), p. 208.

[2] Linguistic proof of the proposition is only possible on the hypothesis that the language system is the most efficient arrangement possible of the linguistic phenomena. On this, see Noam Chomsky, *Syntactic Structures*, The Hague, Netherlands, 1957.

This appears to be an impossible task. Yet it proved possible to indicate all distinctions with the help of but one diacritical sign after further phonemic analysis had provided me with better insight into the phoneme system of the language. In the first place mid-tone only occurs at the end of a sentence as a variant of the high tone caused by sentence intonation; thus in the list of nine possibilities number 5 coincides with number 1 and number 9 with 6, leaving seven possibilities over.

From the list it is apparent that tone contour always coincides with vowel protraction. Moreover it also appears that a syllable with a long vowel reacts to changes in tone through sentence-intonation in exactly the same way as a polysyllabic word: for example, the word [be·] with tone contour low-high-low 'bread' reacts in the same way as /bàbúnù/ 'sort of ape' which has a sequence of low, high and low syllables; a word such as [be·] with tone contour high-low 'stomach' reacts in the same way as the word /bátà/ 'bottle' which has a sequence of high and low syllables, etc. In this way it can be demonstrated that long vowels are composed of a sequence of identical short vowels with individual tone levels. A sequence of identical short vowels with different tone levels results (on the phonetic level) in a tone contour. [3] Thus in a phonemic orthography long vowels must be written as a sequence of identical short vowels. Each vowel constitutes a syllable and has high or low tone. Therefore we only need to distinguish between two tone-levels, thus requiring only one diacritical sign, high and low tone being indicated by the presence or absence of this sign respectively. As an example I here give the written form of seven words with all the possibilities mentioned above, except for the mid-tone:

1. short vowel with high tone: *dé* 'their'
2. long vowel with high tone: *déé* (plural article)
3. short vowel with low tone: *be* 'red'
4. long vowel with low tone: *bee* 'reddish'
5. long vowel with tone contour low-high: *fii* 'free'
6. long vowel with tone contour high-low: *fíi* 'to feel'
7. long vowel with tone contour low-high-low *beée 'bread'*

This illustrates how phonemic analysis can simplify the orthographic problem.

Should tone changes be written?

So far I have demonstrated only the orthography of isolated words. However, I know of no language in which isolated words are pronounced in exactly the same way as when in the context of a

[3] See my article, "An Orthography for Saramaccan", *Word* XV (1959), pp. 437-445. As a supplement to that article I must make an exception of words ending with a long vowel with a high tone, which behave differently. However, this is a special group of words which express the intensity of another word.

sentence. Pike deals with this in two of his "rules" for orthography and advises that abbreviated forms should be written as they are spoken, unless they are forms which are uttered in extremely rapid speech. [4] I have already had to face this problem on an extensive scale in Sranan, a language in which elision of the unstressed vowel is the rule in non-emphatic speech, e.g. /'suku/'seek' becomes /suk/ and /pa'sa/ 'pass' becomes /psa/.

The same problem arose again in a totally different form in Saramaccan. It is seldom that one finds a sentence in Saramaccan in which at least one word does not show tonal change (perturbation). The sentence *dí ómi pai wán mujée-miii* 'the man got a daughter' for example, is pronounced /dí ómí pái wán mújéé-míii/ (note the several tone changes).

Apart from what has been said above about mid-tone, there are two types of tonal changes in Saramaccan:

a) change of high tone into low tone at the end of the sentence,

b) change of low tone into high tone under the influence of tone sandhi [5] in certain syntactic constructions. [6]

Should these tonal perturbations be reflected in the orthography or not? In other words, should one write the example given in the first or second manner? Here, completely in accordance with the rule already cited, Pike says: "Tonemes substituted in morphology or syntax or sandhi should be written as pronounced. Failure to observe this principle obscures the functional system of the language, hinders the natives in learning to read, and imposes unnecessary burdens upon the foreign student." [7]

The last argument I can endorse from personal experience. In order to read perfectly a text in which the perturbations are not indicated, a foreigner must learn a complicated system of perturbations by heart and be able to apply them speedily. This applies only to the foreigner who does not learn to speak the language in the practical way; it is surprising how quickly one can learn to apply the rules automatically with a little practice. Moreover, although the foreigner may more quickly learn to read a text aloud if the perturbations are indicated, it makes identification of the words, and thus comprehension of the text, more difficult. This is evident from what follows, but it is also true for other languages. The accentuation of composite words is mostly not indicated, although it can often differ appreciably from that of the component parts; nor

[4] Kenneth L. Pike, *Phonemics* (Ann Arbor, 1959), pp. 209f.

[5] Tone sandhi is an automatic change of tone which occurs when two words come together in a sentence.

[6] This is extensively described in my article "Le ton et la grammaire dans le Saramaccan", *Word* XVII (1961), pp. 146-163.

[7] Kenneth L. Pike, *Tone Languages* (Ann Arbor, 1957), p. 37. In a personal communication Pike has said that he now sees sufficient reason in recent publications to try a different solution.

is intonation normally indicated, although the wrong intonation can lead to confusion of the meaning.

However, this final consideration of Pike is certainly not the most important; an orthography is obviously not designed for the foreign student but for the inhabitants. If the interests of the two groups are in conflict, that of the foreign student must give way. The other two arguments are therefore more important. If Pike's first argument means more than the dictum already cited, that "a practical orthography should be phonemic", I find it difficult to agree without qualification. I have already pointed out that the value of the phonemic system is a matter of practical experience and does not rest upon linguistic proof. It may not be simply assumed that the whole language system is of the same practical value in orthography preparation. Thus we are thrown back upon Pike's second argument as the only basis for making a decisive choice: the efficiency of the orthography for teaching purposes. Is it true that "it hinders the natives in learning to read" if we neglect the tonal perturbations in the orthography?

It should be stated in advance that I have little experience in teaching the orthography of Saramaccan. However, I have taught an informant to handle the orthography in such a way that he was able to take down dictation. In the process I noticed that he was completely unaware of the tonal perturbations and tended to learn the spelling of words by means of a fixed word-image. Further I taught two evangelists, in training, to read the language; they were not Saramaccans themselves but members of another Bush-Negro tribe. However, they were often in contact with Saramaccans and spoke their language. Right from the beginning these pupils had not the slightest difficulty in reading aloud from the text in which the perturbations were not noted. Two other evangelists did not know the language and I had to design an aid to help them read the perturbations. This was not necessary for the first two; they were equally unaware that they made any changes in the tone as noted in the script; it was for them completely automatic. Thus although my experience in teaching is very limited I have discovered no reason for believing that my system of notation hindered users of the language from learning to read.

It is possible to distinguish between the basic tonal form of a word and its perturbed forms. For monomorphemic words the basic form is identical with the form of the isolated word.[8] The basic tonal form *kumútu* 'come out' has four perturbed forms: /kúmútu/, /kumútú/, /kúmútú/ and /kumutu/. Given the rules for peturbation

[8] Composite and reduplicated words are here left out of consideration, for in these cases the basic form is not identical with the form of the isolated word. I would refer those who are interested to the article already mentioned above, "Le ton et la grammaire dans le Saramaccan."

the perturbed forms can be deduced from the basic form, but the basic form cannot be deduced from the perturbed forms. On the basis of the notation of the example above (with perturbations indicated) /dí ómí pâí dí mújéé-mííi/, it is impossible to discover whether the basic form of the second word is *ómi* or *omí*, even when the rules for perturbation are known. Both forms are possible. Because no such word as *omí* exists there is here no confusion possible. However, with word pairs such as *túu* 'all' and *tuú* 'true', *ƒii* 'feel' and *ƒíi* 'free, set free', *kái* 'call' and *kaí* 'fall' etc., confusion is indeed possible.

It can be definitely stated that the basic form of a word is more distinctive than any of the perturbed forms. The language users are always clearly conscious of the basic form of a word, but in most cases do not know what perturbed forms they use in a certain context. Seeing that we here mean by reading not mechanical reading aloud but the identifying of words and word groups, and only thereafter the pronunciation of the words aloud, I conclude that the form which is best identifiable, i.e. the basic form, is the one which should preferably be written.

There is one last reason why I decided not to write the perturbed forms. I have just been speaking of easy identification of words, and recognisability plays an important part in this. Recognisability is even more important in teaching to write. When being taught one learns word-images which are reproduced in writing and recognised in reading. Thus the efficiency of an orthography is to my mind largely dependent on consistency of word-image. When one has to reproduce and recognise only one word-image of the word *kumútu* instead of four, this simplifies the process of learning and thus makes the orthography more efficient. Therefore I would advocate that tonal perturbations which follow fixed rules should not be written.

REFERENCE WORK BOOK

The B.F.B.S. has published a Reference Work Book, the purpose of which is to enable translation committees to furnish their Bibles with reference systems suited to the particular needs of their church and constituency. No reference system, states the introductory note, is wholly adequate for all purposes. Some readers require fuller references (e.g. the R.V. and J. H. Moulton's *New Testament with Fuller References*); while others are satisfied with a much simpler system (e.g. the R.S.V. and the Short Bible Reference System, Helps for Translators, Vol. IV). The references given in the B.F.B.S. Work Book were based on two or three standard systems which have been tested in use over many years. In their adapted form they were used for the first time in the Standard Swahili Bible. Though not final, these lists are intended to provide a substantial basis for those who wish to work out a system suited to their particular needs. The book has been prepared in separate fascicles so that wherever possible the pages may be distributed among several collaborators, thus cutting down the time involved.