

kòkòrà 'to write'  
 mbótò 'seed, grain'  
 mbòtò 'kind of tree'

(b) Grammatical

nàsàlà 'I work'  
 nàsàlà '...that I may work'

There are basically two kinds of contour tones: Falling and Rising, or, analytically, High-Low and Low-High. In Bantu languages often contour tones are associated with phonetically long syllables.<sup>3</sup> The following are examples of contour tones from Lingala:<sup>4</sup>

mbôngò<sup>5</sup> 'money'  
 nyónsò<sup>5</sup> 'all, everything'  
 nàákòkòrà 'I am writing'

Kisukuma<sup>6</sup>, which displays both types of tone, is one of the rare Bantu language which have three-level contrasts phonemically.<sup>7</sup> Here are some examples:

kupeelá 'to donate'  
 kupeela 'to run'  
 ikála 'member of Kala tribe (perjorative)'  
 ikalà 'a big badger'  
 ikàlà 'charcoal'  
 ikala 'stay'  
 waasolá 'he has just picked up'  
 waasolà 'he has already picked up'  
 waásolà 'you have already picked up'  
 waasóla 'you have just picked up'

Morphophonemically however only two levels can be distinguished, namely High and Non-High, i.e. Marked and Un-Marked.

## Section 2

### TONAL DISPLACEMENT IN KISUKUMA

Kisukuma has often been described as a language with "tonal displacement" in that high tones often appear to surface two syllables after the syllables to which they

belong underlyingly (Richardson 1959, 1971 Gleason 1961 Richardson and Mann 1966, Batibo 1976a, 1976b). The rules are complex, but the following selection should provide typical examples of this system.

1

An H (underlying high tone) surfaces as h (high tone) on the second syllable after if the two following syllables are characterised by N (normal tone):

(a)  $\langle \acute{V} V V V \rangle^8 \rightarrow | \acute{V} \overline{V \acute{V}} V | \rightarrow V V \acute{V} V$

e.g.  $\langle ko-bón-el-el-a \rangle \rightarrow koboneléla$

'to see something by means of'

(b)  $\langle \acute{V} V V V V \rangle \rightarrow | \acute{V} \overline{V V \acute{V}} V | \rightarrow V V \acute{V} V V$

e.g.  $\langle n-témi sagala \rangle \rightarrow ntemi sagála$

'clumsy chief'

(c)  $\langle V \acute{V} V V V \rangle \rightarrow | \acute{V} \overline{V V \acute{V}} V | \rightarrow V V V \acute{V} V$

e.g.  $\langle n-dogó sagala \rangle \rightarrow ndoga sagála$

'clumsy relative'

2

An H surfaces as h on the following syllable or on the first syllable of the following word, if this is N and the second is "displaceable" H or R (rising tone):

(a)  $\langle \acute{V} V \acute{V} V V \rangle \rightarrow | \acute{V} \overline{V \acute{V}} \overline{V \acute{V}} V | \rightarrow V \acute{V} V V \acute{V}$

e.g.  $\langle bá-ko-bón-el-el-a \rangle \rightarrow bakóboneléla$

(b)  $\langle \acute{V} V V \acute{V} V V \rangle \rightarrow | \acute{V} \overline{V \acute{V}} \overline{V \acute{V}} V \acute{V} | \rightarrow V V \acute{V} V V \acute{V}$

e.g.  $\langle ba-témi ba-dó geete \rangle \rightarrow batemi bádo geet\sigma$

'very few chiefs'

(c)  $\langle \acute{V} V V \check{V} V V \rangle \rightarrow | \acute{V} \overline{V \acute{V}} \check{V} \check{V} V V | \rightarrow V V \acute{V} \check{V} V V$

e.g.  $\langle n-témi a-laá-šik-a \rangle \rightarrow ntemi álaášika$

'the chief will arrive on that day'

3

An H on a penultimate syllable will surface as h on the following, last, syllable if the following word begins with H or F (falling tone).

(d)  $\langle V V \acute{V} \acute{V}(V) \rangle \rightarrow [V V \acute{V} \acute{V}(V)] \rightarrow V V \acute{V} \grave{V}(\grave{V})$

e.g.  $\langle \text{ba-dogó pyí} \rangle \rightarrow \text{badogó pyì}$

'all relatives'

$\langle \text{badogó gáí} \rangle \rightarrow \text{badogó gáí}$

'they are, in fact, relatives'

## 6

An H on a penultimate or final syllable (i.e. a syllable followed by pause) will surface as L (Low).

In the case of a penultimate syllables, the following syllable will also be L.

(a)  $\langle V V \acute{V} \rangle \rightarrow [V V \acute{V}] \rightarrow V V \grave{V}$

e.g.  $\langle \text{ba-dogó} \rangle \rightarrow \text{badogò}$

'relatives'

(b)  $\langle V \acute{V} \acute{V} \rangle \rightarrow [V \acute{V} \acute{V}] \rightarrow V \grave{V} \grave{V}$

e.g.  $\langle \text{ba-témi} \rangle \rightarrow \text{batèmi}$

'chiefs'

Kisukuma can therefore be described as a language with two level morphological tones H and L as well as two contour tones F and R, and that a set of complex rules relate these tones to their surface representations. Although up to now these processes have been described synchronically, a diachronic approach, such as the one undertaken in the following pages, would make explicit the different stages of tonal changes which are assumed or hypothetically thought to have occurred through time, and demonstrate that tonal "displacement" in Kisukuma is just one developmental stage of tone in Bantu languages, and should not be regarded as an isolated or phenomenal case.

Section 3  
TONAL EVOLUTION IN BANTU LANGUAGES

Looking at the Bantu languages in general from a diachronic perspective, one easily identifies four types of languages according to the kind of change the tones have undergone.<sup>9</sup>

(a) Etymological Type

These are languages whose original tones have not changed. They are therefore termed etymological. They include Bobangi (Zaire), Sengele (Zaire), Mongo (Zaire), Lingala (Zaire), Kinilyamba (Tanzania).

In these languages the tonal patterns resemble those of proto-Bantu, (Greenberg 1948, Meeussen 1969) and of Guthrie's Common Bantu (Guthrie 1967).

Examples

| Proto-Bantu/Common Bantu   | Bobangi               |
|----------------------------|-----------------------|
| *téma (Greenberg)          | -téma (cl.14) 'heart' |
| *tíma (Guthrie)            |                       |
| *beéde (Meeussen)          |                       |
| *béde (Greenberg)          | -béde (cl.5) 'breast' |
| *bééde (Guthrie)           |                       |
| *cóni (Guthrie, Greenberg) | -cóni (cl.9) 'shame'  |
| *bóko (Guthrie, Greenberg) | -bóko (cl.11) 'arm'   |
| *táma (Guthrie, Greenberg) | -táma (cl.5) 'cheek'  |
| Meeussen)                  |                       |

(b) Reversing Type

These are languages whose original tones have taken the opposite values, that is, original high tones are now low tones and original low tones are now high tones. A typical example of such a language is Chiluba, spoken in Zaire.

Examples

| Proto-Bantu       | Chiluba             |
|-------------------|---------------------|
| *bóko (Greenberg) | -bokó (cl.11) 'arm' |
| *ama (Greenberg)  | -ámá (cl.9) 'meat'  |

|        |             |                     |
|--------|-------------|---------------------|
| *bódi  | (Greenberg) | -buzí (cl.9) 'goat' |
| *kingó | (Greenberg) | -siju (cl.9) 'neck' |

## (c) Anticipating Type

These are languages whose original high tones have been anticipated on preceding syllables. Languages of this type include Tonga (Zimbabwe) and Nkhumbi (Angola).

## Examples

| Proto-Bantu/Common Bantu |                      | Tonga                  |
|--------------------------|----------------------|------------------------|
| *túm-                    | (Meeussen)           | íkúsuma 'to sew'       |
| *kánga                   | (Guthrie, Greenberg) | ínkanga 'guinea fowl'  |
| *dób-                    | (Greenberg)          | íkúloba 'to fish'      |
| *gudu                    | (Meeussen, Guthrie)  | ijulu 'sky, light'     |
| *dim-                    | (Meeussen, Guthrie)  | ikulima 'to cultivate' |

## (d) Repeating Type

In this type of language the original high tones have been repeated on subsequent syllables. Languages such as Kisambaa (Tanzania), Tetela (Zaire), Shona (Zimbabwe), Shi (Zaire), Budyá (Zaire), and Ndau (Mozambique and Zimbabwe) are of this type.

## Examples

| Proto-Bantu                 | Kisambaa     | Tetela               |
|-----------------------------|--------------|----------------------|
| *bódi (Greenberg)           | -búzi (cl.9) | -bódí (cl.9) 'goat'  |
| *búda (Greenberg)           | -fúlá (cl.9) | -vúlá (cl.9) 'rain'  |
| *táma (Greenberg, Meeussen) | -támá (cl.5) | -támá (cl.5) 'check' |

In many of these languages this phenomenon of repetition occurs also synchronically as a tonological process in utterances.

## (i) Kisambaa

{wa-ána wa-gima} → wáná wágíma 'healthy children'  
 {mu-kalá mu-babá} → mukalá múbábá 'foolish hunters'  
 {ní muntu} → ní muntu 'it is a man'

## (ii) Tetela

{ló n-senge} → ló nséngé 'in the millet'  
 {kó ndé n-ama} → kó ndé páma 'but the animal...'

## (iii) Shona

{húni mu-gomo} → húní múgomo 'firewood on the hill'  
 {ku-kwázis-a} → kukwázísá 'to greet'

It is clear that out of the four types, languages with tonal anticipation and repetition have usually many successions of two or more high tones. Also such languages increase, substantially, the number of high tones so much that in certain utterances, the number of high tones is higher than the number of low tones.

## Section 4

## THE EMERGENCE OF AN H-DISSIMILATION RULE

It is assumed that a High Tone Dissimilation Rule appeared in some of the languages with tonal anticipation or repetition so as to limit the number of high tone successions. The dissimilation process took place in different ways.

## (a) By lowering the first high tone

According to this rule, a high tone surfaces as a low tone if it occurs on a vocalic syllable before another high tone.

Rule: If  $H_1$   $H_2$   
 ↓

Then L

Condition:  $H_1$  must occur on a vocalic syllable

Examples

## (i) Budya

{mu-ézi} → |mu-ézi| → mwezí 'moon'  
 {mu-ána} → |mu-ána| → mwaná 'child'  
 {di-ísó} → |di-ísó| → diisó 'eye'

## (ii) Shona

{mu-édzi} → |mu-édzi| → mwedzi 'moon'  
 {ma-ísó} → |ma-ísó| → meesó 'eyes'

In all these cases two processes have taken place. First, the high tone has been repeated on the subsequent syllable. Second, the first high tone has undergone a dissimilation rule in order to avoid a succession of two high tones. The result is that the high tone is now found on the subsequent syllable and not on the original or etymological position.

(b) By downstep

According to this rule the subsequent high tones are realised at a level slightly lower than the normal high.

Rule: If  $H_1$   $H_2$   
                                   ↓  
 Then                    ' $H$

'H indicates a downstepped high tone.

Examples

Kisambaa

(zumbé ní-mu-tana) → |zumbé ní mú-tána| → zumbé ní mútána  
 'the chief is good'

(ni-té-há-kúnd-a) → |ni-té-há-kúnd-á| → nitéhákúndá  
 'I want it (place)'

(taté mu-kúlu) → |taté mú-kúlú| → taté múkúlú  
 'paternal uncle'

Two processes occur. First, there is tone repetition which increases the number of high tones in succession. Second, the subsequent high tones are downstepped to be dissimilar in levels from the first ones.

(c) By having an intermediate low

This rule states that no high tone will be repeated on a syllable preceding another high tone. As a result, successive high tones will be interrupted by intermediate low tones.

## Examples

## (i) Kisambaa

(ní-fíka-kúnda) → nífikakúnda... 'I want something  
'I want something immediately'

## (ii) Shona

(ndi-rí ku-ténges-a mu-pú) → ndirí kuténgésá mupú  
'I sell some salt'

## (iii) Tetela

(ndé m-bótó) → ndé mbótó 'he left'

(ló n-kambá) → ló nkambá 'at work'

Here the monotony of successive high tones is broken by intermediate low tones. However, a succession of high tones is tolerated where a high tone is repeated on a number of successive low tones. The number of successive high tones may be as many as five or more.

## Section 5

## THE CASE OF KINYAMWEZI

In order to appreciate the tonal development of Kisukuma, it would be appropriate to observe tonal behaviour in Kinyamwezi, a language which is linguistically closely related to Kisukuma.

It could be shown that in Kinyamwezi there are two tonal processes which are interdependent. The first is that high tones are repeated on the two following syllables. The second is that all tones but the last tone are realised at a level slightly lower than that of the normal high tone. This second process is henceforward referred to as High Tone Depression. It is a phenomenon which is similar to downstep, only it happens the other way round.

(ní-fíka-kúnda) → nífikakúnda... 'I want something'



Examples<sup>10</sup>

(i)

←mu-ána→ → |mu-ána| → mwána  
 'child'

←mu-ána lo-goye→ → |mu-ána lógoye| → mwána lógoye  
 'child of rope'

(ii)

←m-búzi→ → |m-búzi| → mbúzi  
 'goat'

←m-búzi lo-goye→ → |m-búzi lógoye| → mbúzi lógoye  
 'goat of rope'

It is this high tone depression which has caused Kinyamwezi to be described as a "musical language", because an intermediate tonal level, one just below the level of the high tone, has been created.

## Section 6

## THE H-DISSIMILATION RULE APPLIED TO KISUKUMA

Kisukuma is a language which has undergone significant tonological evolution. If we regard this evolution as the result of a series of systematic changes which have been effected by certain conditions and developments, it is possible to hypothetically postulate two types of processes.

## (a) Tonal Repetition

We can postulate that, as in languages with tonal repetition, the high tones in Kisukuma are repeated on subsequent syllables, if the latter are characterised by non-marked (i.e. normal) tones. These high tones are repeated on the next two syllables within the same word, but on the first two syllables of the following word if the high tone is on the last or penultimate syllable of a word.

## 4,5

No repetition will occur if a high tone is immediately followed by another high tone or another marked tone such as Rising or Falling. In this case either the first high tone will be depressed or will be realised as high tone.

(a)  $\langle \acute{V} \acute{V} \rangle \rightarrow | \acute{V} \acute{V} | \rightarrow V \acute{V}$   
 e.g.  $\langle \acute{t}á\acute{l}á \rangle \rightarrow | \acute{t}á\acute{l}á | \rightarrow tálá$   
 'lamp'

(b)  $\langle \acute{V} \hat{V} V \rangle \rightarrow | \acute{V} \hat{V} V | \rightarrow V \hat{V} V$   
 e.g.  $\langle \acute{b}á\text{-}l\acute{á}\text{-}j\acute{a} \rangle \rightarrow | \acute{b}á\acute{l}á\acute{j}a | \rightarrow báláaja$   
 'they will go'

(c)  $\langle V V \acute{V} \acute{V} \rangle \rightarrow | V V \acute{V} \acute{V} | \rightarrow V V \acute{V} \acute{V}$   
 e.g.  $\langle \acute{b}a\text{-}d\acute{o}g\acute{o} \rangle \xrightarrow{\acute{b}\acute{u}t\acute{u}} | \acute{b}a\acute{d}o\acute{g}\acute{o} \acute{b}\acute{u}t\acute{u} | \acute{b}a\acute{d}o\acute{g}\acute{o} \acute{b}\acute{u}t\acute{u}$   
 'they are true relatives'

(c)  $\langle V V \acute{V} \acute{V}(V) \rangle \rightarrow | V V \acute{V} \acute{V} V | \quad V V \acute{V} \grave{V} \grave{V}$   
 e.g.  $\langle \acute{b}a\text{-}d\acute{o}g\acute{o} \acute{p}y\acute{í} \rangle \rightarrow | \acute{b}a\acute{d}o\acute{g}\acute{o} \acute{p}y\acute{í} | \rightarrow \acute{b}a\acute{d}o\acute{g}\acute{o} \acute{p}y\grave{í}$   
 'all relatives'

## 6

Where a high tone happens to characterize a final or penultimate syllable and therefore there is no possibility of the high tone on at least two subsequent syllables, the depression is so deep that the tones on the respective syllables are realised as low tones rather than normal tones.<sup>11</sup> Thus we can have the following minimal pairs:

$\langle \acute{k}o\text{-}\acute{s}\acute{u}m\text{-}a \rangle \rightarrow | \acute{k}o\acute{s}\acute{u}m\acute{a} | \rightarrow \acute{k}o\acute{s}\acute{u}m\grave{a}$  'to sew'  
 $\langle \acute{k}o\text{-}s\acute{u}m\text{-}a \rangle \rightarrow | \acute{k}o\acute{s}\acute{u}m\acute{a} | \rightarrow \acute{k}o\acute{s}\acute{u}m\grave{a}$  'to pick'  
 $\langle \acute{n}\text{-}k\acute{o}l\acute{o} \rangle \rightarrow | \acute{n}\acute{k}\acute{o}l\acute{o} | \rightarrow \acute{n}\acute{h}\acute{o}l\acute{o}$  'sheep'  
 $\langle \acute{n}\text{-}k\acute{o}l\acute{o} \rangle \rightarrow | \acute{n}\acute{k}\acute{o}l\acute{o} | \rightarrow \acute{n}\acute{h}\acute{o}l\acute{o}$  'heart'

There are two other differences which distinguish the above pairs. Both of these differences are phonetic. The first is that a normal tone on the final syllable is realised with a falling cadence while the low tone (i.e. the depressed high tone) on the final syllable is not. The second difference is that, where both the penultimate and the final syllables are depressed the low tone of the final syllable is realised slightly lower than the low tone of the penultimate syllable.<sup>12</sup>

Here are some more examples:

{n-dogó} → {ndogó} → ndogò 'relatives'  
'relatives'

{bá-á-bá-bón-á} → {báábábóná} → baababònà  
'they have just seen them'

Looking at this phenomenon diachronically, it is possible to demonstrate how the original high tones are now seen to surface two syllables after or are not realised at all as high tones. This is shown below

#### Proto-Bantu

\*bódi (Greenberg) ⇒ búli → búlí → mbùli (cl 9) 'goat'  
 \*béede (Mocson) ⇒ béele → béélé → lubeelé (cl 11) 'breast'  
 \*táma (Greenberg) ⇒ táma → támá → itàmà (cl 5) 'cheek'  
 \*búda (Greenberg) ⇒ búla → búlá → mbùlà (cl 9) 'rain'

#### Section 7

#### CONCLUSION

It has been possible, in this study, to describe what has been traditionally called "displacement of high tones in Kisukuma" as a series of systematic tone evolutions. By looking at this phenomenon from a historical and comparative perspective, I have succeeded in showing that tonal "displacement" in Kisukuma is not an isolated or phenomenal case, but that it is one advanced stage of one type of tonal evolution. Also I have shown that this phenomenon could be described as a result of two successive developments which have occurred also in some other Bantu languages, namely high tone repetition and high tone depression. The reason for the first development is still not clear. Emphatic, accentual or stylistic needs are among the possibilities.

The second development is clearly a result of the emergence of a more recent dissimilation rule which states that no two high tones should occur on two successive syllables. Synchronically, these developments could be looked at as two morphophonemic processes which take place successively. First there is high tone repetition, then all but the last high tones are suppressed. This kind of analysis is clearer and indicates once more that strict separation of synchronic and diachronic approaches<sup>13</sup> in the study of certain linguistic phenomenon limits, rather than helps, in discovering the actual mechanisms or patterns involved, especially when one is dealing with complex cases<sup>14</sup> such as the tonal system of Kisukuma. The traditional approach of tonal "displacement" as proposed by the late Professor Richardson leaves much to be desired.

## NOTES

- 1 The original version of this paper was presented at a Staff-Student Seminar organised by the Department of Foreign Languages and Linguistics at the University of Dar es Salaam on Wednesday 15th October 1978
- 2 The acute accent ( $\acute{V}$ ) stands for High Tone, the grave accent ( $\grave{V}$ ) stands for Low Tone, and, in this paper, the absence of mark indicates that the syllable is characterised by "Normal Tone".
- 3 Contour tones occur also where two adjacent and identical vowels belong fundamentally to two morphemes with different pitches, but are realised as one syllable.
- 4 Falling Tones will be marked ( $\hat{V}$ ) or ( $\hat{VV}$ ), and rising tones will be marked ( $\check{V}$ ) or ( $\check{VV}$ ).
- 5 Phonetically [mbô:ŋgo] and [nõ:nso].
- 6 This is a Bantu language (Guthrie's F 21) spoken by about two million Tanzanians who live to the south and south-east of Lake Nyasa (or Victoria). The four main dialects constituting the language are named according to their geographical position. Although these four dialects differ mostly phonetically, phonemic and lexical variations are not infrequent. However these differences, though linguistically significant, have little bearing on general intercomprehension. The dialect described here is kimunasukũmũ or the "the northern way of speaking".
- 7 The only other three level tone Bantu language known to the author is Bafia, spoken in Cameroon (Guarisma 1973). The three levels are High ( $\acute{V}$ ), Normal ( $\check{V}$ ) (unmarked) and Low ( $\grave{V}$ ). Normal tone is by far the most frequent.
- 8 The braces  $\{ \}$  indicate morphophonemic representation, while the vertical lines indicate the operational level at which the displacement takes place. See Batibo 1976a pp467-82.
- 9 In this section we are not going to discuss languages which have lost their tonal distinctiveness or which have developed "restricted" tonal systems.
- 10 We regret giving somewhat irregular examples. This is because the questionnaire was

- 10 We regret giving somewhat peculiar examples; this is because the questionnaire was specially prepared to extract certain tone patterns.
- 11 It is this reason which prompted Batibo 1976b to introduce the term "downslip" to describe such phenomenon.
- 12 This is one reason why Batibo 1976a p28 introduced the term "infra-bas" (extra-low) to describe this tone level.
- 13 For a longer discussion of this issue, see Equipe de Recherche du Centre National de la Recherche Scientifique 1971 pp147-59.
- 14 As has been pointed out by many linguists including Richardson 1971 and Gleason 1961, the tonal system of Kisukuma is one of the most complex among the tonal languages.

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TANZANIAN SPEAKERS OF ENGLISH:  
EFFECTS OF SPELLING ON VOWEL PRONUNCIATION

J B Maghway

Section 1  
INTRODUCTION

1.1 The learning and use of English in Tanzania has in recent years attracted the attention of scholars. Impressionistic views have been expressed regarding written and spoken English in Tanzania. Some research has also been done in both areas. Previous literature in this area suggests that there is deviance from RP in the pronunciation of the vowels of English as spoken by Tanzanians. This is in view of the fact RP is the official target for the teaching of pronunciation in English in Tanzanian schools.<sup>1</sup> Kassulamemba (1977) reports that his respondents made "errors" in the pronunciation of seven "problem vowels"; that is to say they produced un-RP-like sounds for each of the vowels for which tests were administered. He attributes the "errors" severally to four causes:

- (i) interference from mother-tongue
- (ii) intralingual factors
- (iii) induced errors
- (iv) negative attitudes towards English

Professor T Hill (1973) also relates his impressions, based not on formal research-data but on long-term, first-hand observation of the Tanzanian linguistic scene. These can be summed up as follows. Although taught the pronunciation of English with RP as target,



Tanzanians do not learn to speak RP, however defined (p 4). The deviance from RP reported by Hill and termed "errors" by Kassulamemba can, in fact, be perceived by the casual ear capable of discriminating what is RP and what is not.

1.2 In the following pages are presented the findings of a study conducted among Form Five students in a Dar es Salaam school in 1979. Its object was to find out what, if any, is the relationship between the spelling of vowels and their pronunciation by Tanzanian speakers of English.

1.3 For the purposes of the complete study, the vowel phonemes of RP are understood to consist of /i e æ a ɒ ɔ u ʌ ɜ eɪ ə ɑɪ ɔɪ iə eə ə/ in seat, pit, pet, pat, part, pot, port, put, pool, pearl, appeal, bay, bow (n), buy, bow (v), boy, beer, bare, boor,. The description of RP vowel phonemes followed is chiefly that given by Gimson (1970); reference is, however, also made to those given by others such as O'Connor and Jones (see Bibliography).

1.4 The sample for the study was made up of 20 Form Five students with a Bantu language as vernacular, who had completed the eleven years formal programme for English. They came from eight Regions of Tanzania. The 11 Bantu languages they represented are: Yao (1), Swahili (1), Ngoni (2), Kinga (1), Hehe (1), Kaguru (1), Sukuma (2), Pare (1), Chaga (6), Haya (3) and Bena (1). The choice of the sample was guided by its character: a fairly homogenous linguistic (Bantu) and educational background.<sup>2</sup>

1.5 Each RP vowel phoneme was contextualized in genuine English words and nonsense-words. The latter resembled the former in all respects, but were in fact not items in the English lexicon. Several experiments were then designed.<sup>3</sup> The words containing the common spellings of each RP vowel were presented in isolation and in lists of sentences. The aim was to simulate slow speech in the first and normal or fluent speech in the second. The subjects' pronunciations were then recorded in each experiment.

1.6 A research hypothesis was formulated: the deviance from RP reported in the speech of Tanzanian speakers of English is related to the spelling that represents the sounds in the written medium, which is central to the learning of English in Tanzania. The aim of the study was primarily to verify this hypothesis with respect to the 20 vowel phonemes of RP. But it also aimed to establish the reported deviance itself.

1.7 The elicitation of data was conducted in an atmosphere as informal as was possible. That notwithstanding, several problems defied all attempts at solution. The presence of both the researcher and such research paraphernalia as taperecorders was a constant source of inhibition to the subject as he was observed and recorded. The recording itself was not done in an environment free from external interference: there was no studio accessible for the purpose. Furthermore, for the analysis of the recorded phonetic data, no instruments were available to measure the quality and quantity of each with accuracy. These, together with the time constraint under which the study had to be done, mitigated against a high

degree of accuracy and objectivity aimed at in the whole exercise. However, it is believed that the findings, on the whole, remain both objective and reliable.<sup>4</sup>

1.8 The actual field study was preceded by a pilot survey which was restricted in sample and in the experiments performed. Its object was two-fold. It sought to establish (a) the legitimacy and research-worthiness of the problem area, and (b) the validity and adequacy of the main experiments designed for the collection of data. Only three of the experiments were performed: Experiment 2 (Nonsense-words), Experiment 4 (wordlist of genuine English words) and experiment 8 (genuine English words in sentences). Three of the four **pilot** subjects were educated Tanzanians whose spoken English showed rather divergent pronunciations (B,C,D in Table 1). The fourth was an educated native speaker of RP (**subject A**). Sample results of the pilot survey are set out in Tables 1 and 2.

1.9 The data for pilot subjects B and D (Table 1) indicates significant evidence of deviance from the pronunciation of the native speaker of RP (Subject A) for the corresponding items. Table 2 brings together further evidence of deviance in the phones elicited from D. The deviance from RP, as reflected by the two tables, correlates with the spelling more than with the native speaker's pronunciations for the same items. Thus, for example, /e/ is systematically pronounced [a] when it is spelt 'a', but [ɔ] when spelt 'or', or 'e' and 'a' followed by 'l'. /ɜ/ is pronounced [ɪl] when spelt 'ir' and [ɔ] when spelt 'or', but the same phoneme is pronounced [e] when it is

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 Table 1  
 Pronunciation of selected RP vowels  
 by pilot subjects

|             | Subject<br>A | Subject<br>B | Subject<br>C | Subject<br>D | RP           |
|-------------|--------------|--------------|--------------|--------------|--------------|
| *swanted    | [ɪ̥]         | [e̥]         | [ɪ̥]         |              | /ɪ/          |
| *fruitments | [u̥]         | [ui̥]        | [u̥]         | [ui̥]        | /u/          |
| *adjournals | [ɜ:]         | [ɔ̥.]        | [ɜ:]         | [ɔ̥.]        | /ə/          |
| *pragmental | [ə̥l]        | [ɔ̥]         | [ə̥l]        | [ɔ̥]         | /el/ or /ɪ̥/ |
| *bruels     | [œ̥]         | [uœ̥]        | [œ̥]         | [uœ̥]        | /œ/          |
| *highered   | [aɪ̥ə̥]      | [a-jḁ]      | [aɪ̥ə̥]      | [a-jḁ]      | /aɪə/        |
| *quackless  | [ə̥]         | [e̥]         | [ɪ̥]         | [ɛ̥]         | /ə/ or /ɪ/   |

-----  
 Table 2

Pronunciations elicited from pilot subject D  
 for selected experiments

| Spelling    | Exp.<br>2 | Exp.<br>4 | Exp.<br>8 | RP           |
|-------------|-----------|-----------|-----------|--------------|
| *premakers  | [ɛ̥]      |           |           | /ɪ/          |
| knowledge   |           |           | [ɔ̥ə]     | /ɒ/          |
| *acknowlish | [ɔ̥ə]     |           |           | /ɒ/          |
| glove       |           | [ɔ̥:]     | [ɔ̥:]     | /ʌ/          |
| *sircous    | [ɪ̥l]     |           |           | /ɜ/          |
| *worthings  | [ɔ̥l]     |           |           | /ɜ/          |
| *herdnents  | [e̥.]     |           |           | /ɜ/          |
| machine     |           | [ḁ]      |           | /e/          |
| *acknowlish | [ḁ]      |           |           | /e/          |
| forgive     |           | [ɔ̥]      | [ɔ̥]      | /e/          |
| medium      |           | [i̥ə]     | [i̥ə]     | /ɪə/         |
| usual       |           | [ɔ̥]      | [ɔ̥]      | /əel/        |
| *lawtide    | [ɔ̥ə]     |           |           | /ɔ/          |
| label       |           |           | [ɔ̥]      | /el/ or /ɪ̥/ |
| mental      |           | [ɔ̥]      |           | /e̥/ or /ɪ̥/ |

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spelt 'er'. These patterns become even more systematic in the data from the actual sample.

## Section 2

### ENGLISH VOWELS: SOUNDS AND LETTERS

2.0 This Section gives a brief account of the relationship between pronunciation and spelling in English vowels. Speech is primary and writing secondary (Saussure, 1959). Many modern languages such as English or Swahili are however, both spoken and written. Their orthographies, as writing systems are called, are essentially conventional systems of symbols which attempt to represent graphically the sound system of the spoken medium. Whereas the spoken medium of a language utilises a set of sounds, writing makes use of a set of graphic symbols. As the sounds of a language belong to its phonological system, the sets of graphic symbols used in writing it are letters of its alphabet.

2.1 Writing systems are said to bear a 'phonemic' or 'graphemic' reference to the spoken medium (Gleason, 1961). The English orthography bears a phonemic reference to spoken English. It consists of the 26 letters of the English alphabet. However, the phonemes of English, say of the RP dialect, do not have a one-to-one relationship with the letters of the English alphabet. In languages such as Swahili, it is the case that the vowel sounds, for example, have a simple correspondence with the letters used to represent them. The result is spelling-pronunciation: what you say is

exactly what you write, and vice versa. Thus the five Swahili vowel phonemes /i e a o u/ in /sisi wewe kaka popo kuku/, are spelt by the letters 'i e a o u' in 'sisi wewe kaka popo kuku'<sup>5</sup>. The relation of sound to letter is regular: one vowel sound one vowel letter.

2.2 In English that is far from the case. The English vowel letter 'o', for example, has several common phonemic references.

e.g. /ɒ/ in 'pot                      /ɔ/ in 'bosom'  
       /u/ in 'lose'                      /ʌ/ in 'love'  
       /ə/ in 'society'                /əʊ/ in 'social'

In English, therefore, a given vowel letter often spells more than one phoneme. Several vowel letters also often spell the same vowel phoneme. This can be illustrated for the central vowels as follows.

|     |       |            |     |       |           |
|-----|-------|------------|-----|-------|-----------|
| /ʌ/ | 'o'   | 'love'     | /ɜ/ | 'er'  | 'herd'    |
|     | 'ou'  | 'southern' |     | 'ir'  | 'bird'    |
|     | 'u'   | 'butter'   |     | 'ear' | 'heard'   |
|     |       |            |     | 'or'  | 'word'    |
| /ə/ | 'a'   | 'alone'    |     | 'ur'  | 'burn'    |
|     | 'i'   | 'possible' |     | 'our' | 'journey' |
|     | 'u'   | 'minimum'  |     |       |           |
|     | 'er'  | 'rivers'   |     |       |           |
|     | 'or'  | 'forgive'  |     |       |           |
|     | 'oar' | 'cupboard' |     |       |           |
|     | 'ure' | 'nature'   |     |       |           |

This state of affairs is summarised appropriately by Wijk (1966:7). "There is hardly a letter or combination of two or three letters in the English alphabet which cannot be pronounced in two or three different ways, and a good many ... actually have from half a dozen to a dozen different pronunciations."

2.3 There are therefore sharp irregularities in the relationships between the vowel phonemes of RP and the letters of the English alphabet used to spell them. These irregular relationships are a potential source of difficulty in literacy, not only for second and foreign language learners, but even for native speakers. The irregularities account for the high degree of unpredictability of either the pronunciation of a given vowel letter in English or the appropriate standard spelling of any given vowel phoneme of RP in an English word. Nevertheless, the phonemic reference of English vowel letters is not totally arbitrary and random. As Gleason (1961) says, it is merely a complex and intricate fit (p 411). The intricate fit is partly the result of the fact that the phonological systems of the dialects of spoken English possess vowel phonemes much in excess of vowel letters in the standard orthography of English. Another explanation (Wijk, 1966; Scragg, 1977) attributes it to the different rates of historical development of the English language -- in its phonology on the one hand, and orthography on the other. The English orthographic system, has, over the years, come in contact with and borrowed heavily from those of Greek, Latin and

French. The phonological system has, however, not been as avaricious. Therefore, to accommodate the 20 vowel phonemes of RP, the spelling system uses a variety of strategies: (1) the single vowel-letters; (2) the consonant letters 'y' and 'w' at the end of a syllable or words; (3) vowel digraphs and trigraphs; (4) combinations of single vowel-letters, digraphs or trigraphs with the letter 'r' (at the end of a syllable or word), and (5) the environment provided by the consonant letters.

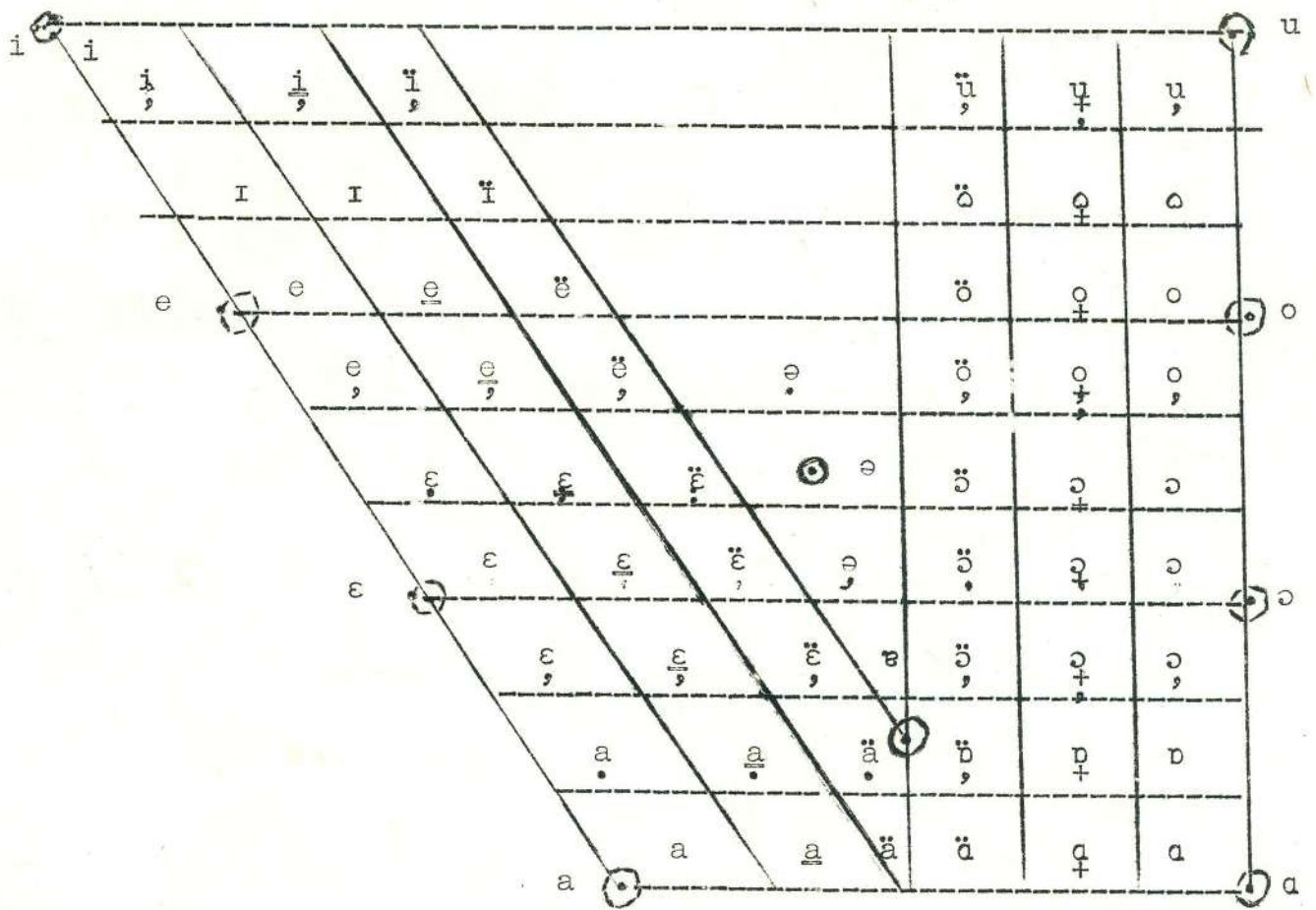
### Section 3 FINDINGS

3.0 All the actual pronunciations elicited from the sample were rendered into a narrow phonetic transcription according to the transcription scheme shown on the following page. They were then

- (a) compared with the cardinal vowels as demonstrated by Jones (1955);
- (b) compared with the most significant phonetic features of RP vowel phonemes (as described by Gimson and others);
- (c) compared with the pronunciations of the native speaker for the same item (ie with the pilot subject A);
- (d) compared with the pronunciation of Swahili vowels by the Sample (Fig. 2), and
- (e) correlated with the spellings for which they were elicited.



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Figure 1  
Transcription Scheme



○ Cardinal Vowels

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Figure 2  
 The vowels of Swahili  
 as pronounced by the sample

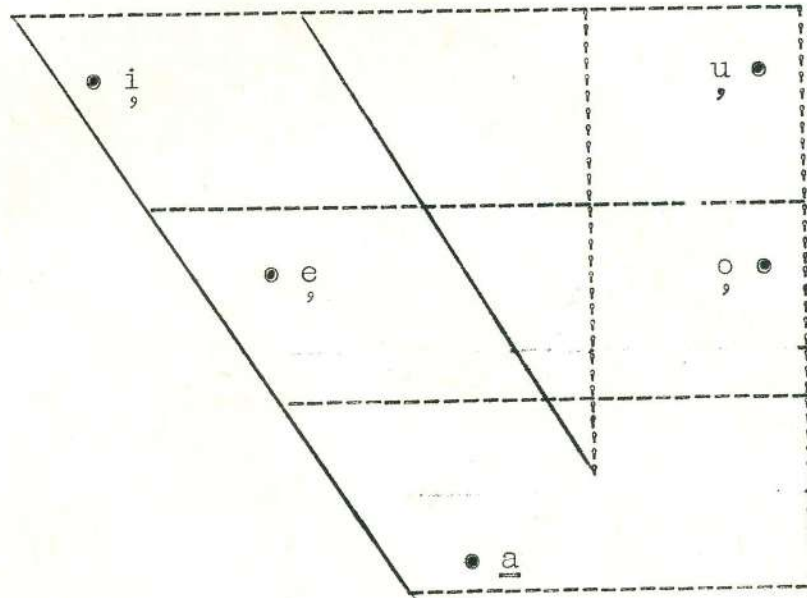
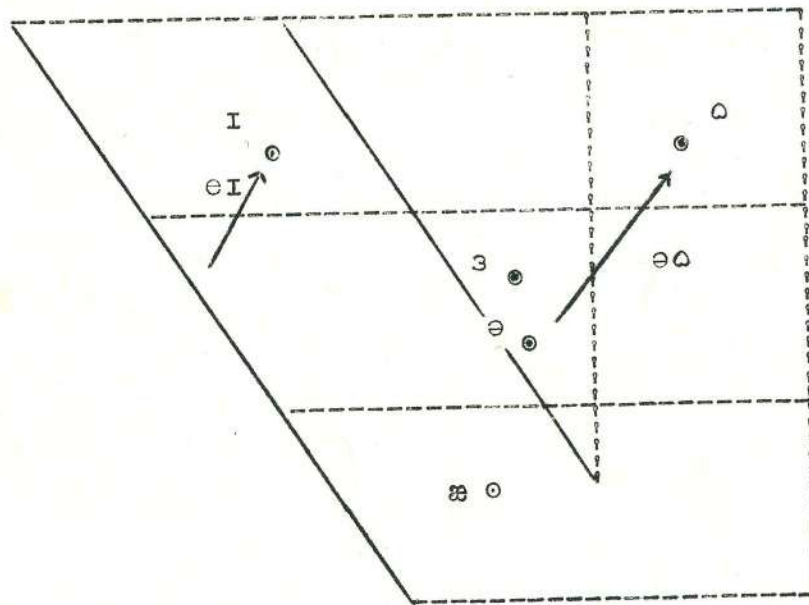


Figure 3  
 The seven selected vowels of RP



The findings presented here are primarily those for seven selected RP vowel phonemes: /ɪ æ ə ɜ e eɪ əʊ/ (Fig. 3). The first five are monophthongs and the remaining two are diphthongs. We have here front vowels, a back vowel, central vowels and two diphthongs. This is fairly representative of the 20 vowel phonemes of RP and the phones elicited for them from the sample. Apart from the fact that there is not sufficient space here to present findings for all 20 (see Maghway 1980), the seven are also those selected by Kassulamemba to "test" for "errors". This therefore provides occasion to compare the findings of the two studies on spoken English in Tanzania. The findings for each of the seven are presented following the order /ɪ æ ə ɜ e eɪ əʊ/. Then those for the remaining 13 RP vowels are summarised in the final paragraph in the Section.

### 3.1 RP 2: /ɪ/

3.1.1 This phoneme is described as short, produced with the front of tongue slightly above half-close and between centre and front. Its typical RP pronunciations are [ɪ], [ɪ̞] and [i̞]. In the standard orthography of English it can be spelt in several ways. The spellings presented to the sample were: 'i, y, e, ua, ei,' in 'city, happiness, useless, remember, prepare, elect, employ, enclose, extend, wanted, perfect, biggest, language, foreign'; and 'a' in 'lagage, surface'. The three typical RP pronunciations are conditioned by their phonetic environment. They do not depend upon the different spellings used to represent the phoneme. A good example is the word 'visibility', in which RP 2 occurs five times - twice as [ɪ], twice as [i̞] and



or 'y' in 'city, pit, daily', etc. In the three major experiments, the [e] and [ɛ] segments were produced for all the spellings of /ɪ/ which contain either the letter 'e' or 'a' in an unstressed syllable as in 'wanted, enclose, surface, climate, management', etc. The spelling 'ua' - as in 'language', also elicited [e] and occasionally [ɛ]. Some of the 'a' spellings elicited the segment [a]. The overall picture that one gets from Table 3 is that the sample produced eleven slightly different vowel segments for /ɪ/. The segment produced is generally a monophthong, but occasionally also a diphthong. The segment is in all cases a front vowel sound. This relates in a systematic way with the vowel-letters used in spelling /ɪ/ and presented to the sample. All the vowel-letters seen in the words presented are those normally used to represent front vowel sounds in English (ie the letters 'i, y, e, a'). More significantly, these letters, with the exception of 'y', are those used to spell the vowel sounds of Swahili /i/, /e/ and /a/ (cf fig. 2). This correspondence between the vowel segments produced by the sample for the different spellings of /ɪ/ is too characteristic to be fortuitous.

### 3.2. RP 4 /æ/

3.2.1 The fourth vowel phoneme of RP has one main typical realization by the native speaker of RP. However the phonemically normally short sound [æ] becomes longer in the environment of a following voiced sound. Thus 'cap, bat, back', and 'cab, bad, bag' are pronounced [kæp, bæt, bæk] and [kæ:b, bæ:d, bæ:g], respectively. The English orthography usually spells this phoneme with the

letter 'a' followed by a single consonant letter or a sequence of these (eg bat marry, bands, etc.). In a limited number of words, it is also spelt with 'ai', as in 'plait, plaid'.

3.2.2 When these spellings were presented in different words to the sample, several different phones were elicited in the actual pronunciations (Table 4).

-----

Table 4

Phones elicited  
or the spellings of /æ/

| Spellings | Phones Elicited |    |    |   |              |    |   |   |              |    |    |   | Total |    |    |     |
|-----------|-----------------|----|----|---|--------------|----|---|---|--------------|----|----|---|-------|----|----|-----|
|           | Experiment 2    |    |    |   | Experiment 4 |    |   |   | Experiment 8 |    |    |   |       |    |    |     |
|           | i.              | e  | ɛ  | æ | ei           | i. | e | ɛ | æ            | ei | i. | e | ɛ     | æ  | ei |     |
| 'a'       | 5               | 50 | 10 |   | 5            | 80 |   |   | 20           |    | 65 |   |       | 35 |    | 300 |
| 'ai'      |                 |    |    |   |              |    |   |   |              |    | 5  |   |       | 95 |    | 100 |

-----

3.2.2 Again the phonetic character of the phones elicited depended upon the spelling of the phoneme in the words presented, rather than on environmental conditioning of any kind. All respondents produced [a.] for the spelling 'a' (with a following 'l', as in 'balance'). For the spelling 'a' before any other consonant letter, the greatest percentage of phones elicited was for [e] or [ɛ]. However, the phone elicited from 95% of the sample was the diphthong [ei] when words with the digraph 'ai' were presented. Thus the elicited phone is generally predictable from the spelling. /æ/ is generally pronounced [a.] when in its spelling 'a' precedes 'l'; it tends to be pronounced [e] when in the spelling 'a' is followed by any other consonant letter, and when spelt with the digraph, the elicited phone is almost invariably the closing diphthong [ei] (clearly due to false analogy with the pronunciation of 'ai' in eg. 'bait' - ie [ˈbeɪt]).

### 3.3 RP 8

3.3.1 This vowel phoneme corresponds to the /ɪ/. Like the latter, it is produced with the tongue in the half-close position. However, while RP 2 is produced with the front of the tongue, /ɔ/ is articulated with the back of the tongue. The RP realizations of RP 8 recorded are [ɔ], [ö] and [ü]. These variants are idiolectal; they do not depend on conditioning by phonetic environment (Gimson 1980, p 117). But they are phonetically very similar.

3.3.2 Four spellings were presented for this phoneme. They are 'u, o, oo, ou', as in 'butcher, woman, book, should (stressed)'. They elicited six phones (Table 5). Excepting those elicited for 'ou' in Experiment 2, the responses received are monophthongs. The only diphthong, [ɔə], was produced for 'ou'. A front monophthong [a] was produced for the spellings 'u', 'o' and 'oo'. The remaining elicited phones, produced for all four spellings, are back monophthongs (approximately between half close and close). Of all the elicited phones, [ɔ] is the nearest to the RP realizations of /ɔ/. The remaining elicited phones are either too close or too open (cf. 'transcription scheme').

3.3.3 There is a characteristic relationship between the different phones elicited and the four spellings of the phoneme. It is true that each of the spellings elicits more than one phone, and the same phone can be produced for more than one spelling. However, for each spelling there appears to be one or two phones that it most commonly elicits. The phones less frequently elicited by a given spelling might be regarded as aberrations from the general 'norm' of the sample's performance. Thus most characteristic pronunciations of the sample for RP 8 in words in which it is spelt 'u' is [a] or [ɔ]; [ɔ] when the spelling is 'o'; [u] when the spelling is 'oo', and [ɔə] (rarely [u]) when the spelling is 'ou'. It appears that the explanation for these emerging tendencies is partly related to analogy and partly to spelling-pronunciation. The phone [a] was elicited elsewhere for 'u' found in words such as 'butter, burn, minimum', etc.



The [a] elicited for the 'u' spelling of /o/ therefore seems to be the result of the subjects making a false analogy. They see the letter 'u' as the graphic representation of the English vowel sounds they elsewhere realize with an [a] sound. Likewise, it is suggested here that the phone [ɔ] produced for 'u' and [ɔ], produced for 'o', are evidence of spelling-pronunciation. These correspond to the phones the sample generally produced for Swahili vowel similarly spelt.



Table 5

Phones elicited  
for the spellings of /o/

| Spelling | Phones Elicited |    |              |    |              |     | Total |
|----------|-----------------|----|--------------|----|--------------|-----|-------|
|          | Experiment 2    |    | Experiment 4 |    | Experiment 8 |     |       |
|          | [a              | o  | ɔ            | ɔ  | u            | ɔɔ] | Total |
| 'u'      | 50              |    | 25           | 25 | 50           | 25  | 300   |
| 'o'      | 15              | 20 | 25           | 40 | 75           | 15  | 300   |
| 'oo'     | 10              | 5  | 3            | 5  | 5            | 100 | 300   |
| 'ou'     |                 | 50 | 50           | 40 | 60           |     | 300   |



## 3.4 RP 11 &amp; 12 /ɜ/ /ə/

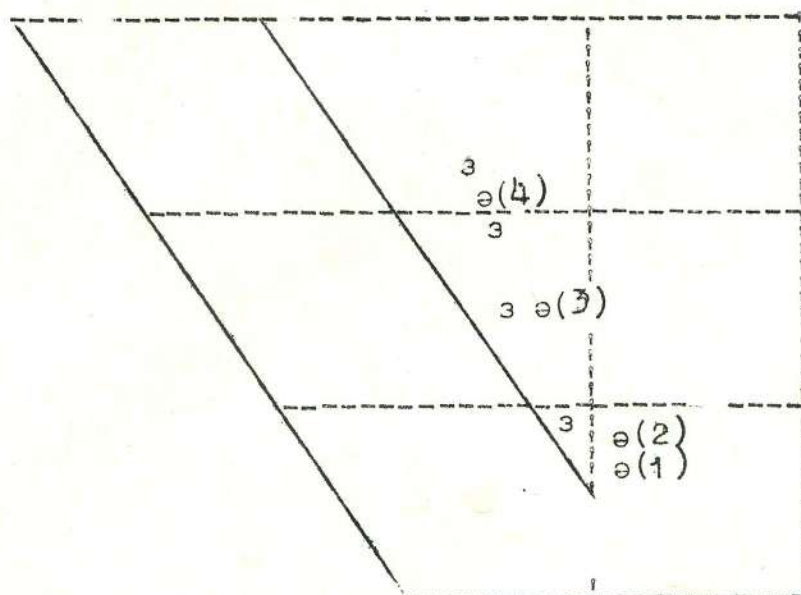
3.4.1 This paragraph deals with the two RP central vowels /ɜ/ and /ə/. Although both vowels have phonemic status, /ɜ/ normally occurs mainly in stressed syllables and /ə/ in unstressed ones only. They are both pronounced with the highest part of the tongue in central position. /ɜ/ is pronounced long<sup>1</sup> and /ə/ short. Their phonetic variants are shown in Fig. 4.

3.4.2 The variants of /ɜ/ are independent of phonetic environment. Within the central area, "great latitude of degree of tongue raising is permissible" (Gimson 1980, p 122).<sup>6</sup> For /ə/, however, the variants - although covering much the same latitude - are environmentally conditioned. The variants marked 1 and 2 (fig. 3) occur in final position (eg. in ['mʌt̩ə], ['dʌkt̩ə], etc.), while that marked 3 is produced in word non-final positions (as in ['aftəwɛdz], [ə'lɔːn], etc.), and the one marked 4 is pronounced when /ə/ is adjacent to velar consonants (eg. [ə'klɒk], [ə'gens], etc.).

3.4.3 In the orthography /ə/ can be represented by each of the five vowel letters; these combine with 'r', etc. (see 2.2). /ɜ/ is usually spelt with a vowel-letter (or vowel-letter combinations) followed by 'r' (2.2).<sup>7</sup> When commonly used words containing the usual spellings of /ɜ/ and /ə/ were presented to the sample, the results set out in Table 6 and Table 7, respectively, were obtained.

-----

Figure 4  
Positions of the phonetic variants  
of /ɜ/ and /ə/



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Table 6  
Phones elicited  
for the spellings of /ɜ/

| Spelling | [ i , e , a , ɔ , o , u , e , r , ɛ , ä , ia , ea ] | Total      |      |
|----------|---|------------|------|
| 'ear'    | 75  | 20 5       | 100% |
| 'er'     | 5 55  | 10 5 15 10 | 100% |
| 'ir'     | 80  | 10 5 5     | 100% |
| 'our'    | 25  | 60 5 20    | 100% |
| 'ur'     | 100   |            | 100% |
| 'or'     | 85  | 15         | 100% |

-----

Table 7  
Phones elicited  
for the spellings of /ə/ 9

| Spelling       | P H O N E S    E L I C I T E D |     |    |     |    |    |       | Total<br>% |
|----------------|--------------------------------|-----|----|-----|----|----|-------|------------|
|                | [ i ,                          | e , | ɔ̄ | u , | ɔ̄ | al | ɔ̄a ] |            |
| 'data'         |                                | 100 |    |     |    |    |       | 100        |
| 'breakfast'    |                                | 100 |    |     |    |    |       | 100        |
| 'island'       | 60                             | 40  |    |     |    |    |       | 100        |
| 'gentleman'    | 25                             | 75  |    |     |    |    |       | 100        |
| 'salad'        |                                | 100 |    |     |    |    |       | 100        |
| 'animal'       |                                |     | 95 |     |    | 5  |       | 100        |
| 'travel'       | 20                             |     | 80 |     |    |    |       | 100        |
| 'social'       |                                | 5   | 95 |     |    |    |       | 100        |
| 'nation'       | 100                            |     |    |     |    |    |       | 100        |
| 'doctor'       |                                | 100 |    |     |    |    |       | 100        |
| 'cupboard'     |                                |     | 95 |     |    |    | 5     | 100        |
| 'father'       |                                | 100 |    |     |    |    |       | 100        |
| 'confirmation' | 75                             | 1   | 15 |     |    |    |       | 100        |

Table 8  
Phones elicited  
for the spellings of /er/

| Spelling   | P H O N E S    E L I C I T E D |     |    |     |       | Total<br>% |
|------------|--------------------------------|-----|----|-----|-------|------------|
|            | [ i ,                          | e , | ɛ  | e.ɪ | ɛ.ɪ ] |            |
| 'gate'     |                                | 65  | 20 | 15  |       | 100        |
| 'bait'     |                                | 30  | 60 | 5   | 5     | 100        |
| 'pray'     |                                | 5   | 10 | 80  | 5     | 100        |
| 'break'    | 2                              | 65  |    | 10  |       | 100        |
| 'streight' |                                |     |    | 100 |       | 100        |
| 'prey'     |                                |     |    | 100 |       | 100        |

3.4.4 The results show that, although a very large number of vowel phones was produced for either phoneme, no central vowels were elicited from the sample. The nearest approximation to a central vowel was either a front vowel so retracted, or a back vowel so advanced, that it was perceived as centralized vowel. Thus all the phones elicited for the spellings of /ɜ/ and /e/ could, strictly, be described as deviant from typical RP realizations of the two phonemes.

3.4.5 The deviant phones elicited for the spellings of RP 11 are not apparently readily predictable from the spelling. But a close analysis of the data reveals that there is a certain general tendency for the pronunciation of the spellings presented for /ɜ/. This is that there are two phones which appear to be the sample's approximation for /ɜ/. The commonest of these - which is used by the largest percentage for all the spellings except 'ur' (and less frequently for 'our') - is [e] (sometimes centralized to [ɛ]). The second, produced for 'ur' by the entire sample, is [ʌ] (sometimes centralized to [ɚ]). Thirdly, the phone [ɔ] is generally produced for the spelling our (eg. in 'journal'). Matters are not so different in the case of /e/. For instance, the spelling 'io' in 'nation' elicits nothing but [e], and when 'a' (e.g. in 'separation, alone, etc.') was presented, it also elicited a high percentage of [e]. These, together with the tendencies for the spellings of /ɜ/ could perhaps be attributed to what we may here call 'stereotypes'. These are the phones produced as approximations of a given RP vowel, the actual phone - though not the same as that which would have been elicited by the same spelling in

Swahili - is determined by the spelling. The other phones elicited for /e/ could on the whole be regarded as instances of 'spelling-pronunciation'. All responses received for the spelling 'a' in 'data', 'breakfast', salad', were for the phone [a]. The highest percentage of responses produced [i] for 'ir' in 'confirmation'; [e] for the 'e' in 'government' and 'label'.

### 3.5 RP 13 /eɪ/

3.5.1 This is a front closing diphthong: from about mid-front to approximately RP 2 (like /aɪ/ and /ɔɪ/). Typical RP allophones for this phoneme are [eɪ], [e̞ɪ] and [ɛɪ] (Gimson, p 128). The spellings presented in Experiment 8 to the sample, together with the pronunciations elicited, are laid out in Table 8.

3.5.2 Five phones were elicited: four monophthongs and three diphthongs. Both the monophthongs and diphthongs are produced entirely in the front. Of all these, [e̞.ɪ] and [ɛ̞.ɪ] are the only ones acceptable as possible RP realizations of /eɪ/. The remaining ones are deviant. The spellings 'a' and 'ea' produce the greatest percentage of the deviant phones. They each elicit 65% of [e]. They are followed by 'ai', which elicits 30% and 60% respectively, of the deviant phones [e̞] and [ɛ̞]. On the other hand, 'ei' and 'ey' tend to produce 100% non-deviant phones, followed by 'ay' - which elicits 85% non-deviant phones. This shows one important tendency. It shows that the sample, when presented with words containing digraphic spellings of /eɪ/ ending in 'i' or 'y', tends to

produce phones which are not deviant from the typical, diphthongal, RP realization of /eɪ/. On the contrary, when presented with a monographic spelling of /eɪ/ or a digraphic one not ending in 'i/y', the sample tends to produce the greatest percentage of deviant phones.

### 3.6 RP 14 /əʊ/

3.6.1 The fourteenth vowel of RP is the diphthong closing towards [ɔ] (similar to the ending of /aʊ/ or the beginning of /oʊ/). Its beginning point is "a central position between half-close and half-open", with neutral lips (Gimson 1980, 133). The articulation of the second element of the diphthong entails slight closing of the lower jaw and the rounding of the lips. There are two typical RP realizations for the phoneme. The first, conservative, begins about back half-close - [ɔ̞] or [ɔ̞̞], and the second, advanced, begins anywhere from mid central to mid front - from [ə] or [ɜ] to [ɛ]. Both end approximately slightly above back half-open, [ɔ]. Of the six spellings presented, only 'o' and 'ol' were not digraphic. Table 9 shows the phones elicited by the spellings presented in Experiments 2 and 8.

3.6.2 As for the previous phonemes investigated, the phones elicited are either monophthongs or diphthongs (Table 9). The monophthongs are either front ([ɛ], [e] or back ([ɔ̞], [ɔ̞̞]); the diphthongs are either closing from back - [ɔ̞ɔ̞], or front, [əɔ̞]. The diphthong [ɔ̞ɔ̞] is the only one acceptable as a possible allophone for /əʊ/ for the native speaker. It is phonetically similar to the native speaker's [ɔ̞ɔ̞] allophone. All the other elicited phones are deviant.

Table 9  
Phonemes elicited  
for the spellings of /əʊ/

| Spelling | P H O N E S      |    |    |   |    |    | E L I C I T E D     |    |    |    |    |    | Total % |
|----------|------------------|----|----|---|----|----|---------------------|----|----|----|----|----|---------|
|          | Experiment No. 2 |    |    |   |    |    | Experiment Number 8 |    |    |    |    |    |         |
|          | i                | e  | ɔ  | o | ɔɔ | əʊ | i                   | e  | ɔ  | o  | ɔɔ | əʊ |         |
| 'o'      |                  |    |    |   |    |    | 70                  | 10 |    | 20 |    |    | 200     |
| 'oa'     |                  |    |    |   |    |    | 90                  | 10 |    |    |    |    | 200     |
| 'oe'     | 10               | 15 | 75 |   |    |    |                     |    |    |    |    |    | 100     |
| 'ol'     |                  |    |    |   |    |    | 100                 |    |    |    |    |    | 200     |
| 'ou'     |                  |    |    |   |    |    | 50                  |    | 45 |    | 5  |    | 200     |
| 'ow'     |                  |    |    |   |    |    | 85                  |    | 15 |    |    |    | 200     |

Table 10  
Analogy

| Phoneme | Spelling     | Elicited  | Analogue                 |
|---------|--------------|-----------|--------------------------|
| /aɪ/    | lite         | 90% [a.ɪ] | 'like' ['laɪk]           |
| /ɪə/    | geographical | 100% [jɔ] | 'geography' [dʒɪ'ɒgrəfi] |
|         | ideological  | 100% [jɔ] | 'ideology' [aɪdɪ'ɒlədʒɪ] |
| /e/     | says         | 80% [eɪ]  | 'say' ['seɪ]             |

Table 11  
Spelling-pronunciation

| Phoneme | Spelling  | Elicited  | cf. Swahili               |
|---------|-----------|-----------|---------------------------|
| /ɪə/    |           | 100% [ia] | 'njia' [nʃia] 'path'      |
| /aɪ/    | 'either'  | 90% [ei]  | 'bei' ['bei] 'price'      |
|         | 'foreign' | 80% [ei]  | " " "                     |
| /əʊ/    | 'fuel'    | 90% [ue]  | [usicu'kue] 'do not take' |



Table 9  
Phonemes elicited  
for the spellings of /əʊ/

| Spelling | P H O N E S      |    |    |   |    |    | E L I C I T E D     |    |    |    |    |    | Total % |     |
|----------|------------------|----|----|---|----|----|---------------------|----|----|----|----|----|---------|-----|
|          | Experiment No. 2 |    |    |   |    |    | Experiment Number 8 |    |    |    |    |    |         |     |
|          | i                | e  | ɔ  | o | ɔɔ | əʊ | i                   | e  | ɔ  | o  | ɔɔ | əʊ |         |     |
| 'o'      |                  |    |    |   |    |    | 70                  | 10 |    | 20 |    |    | 200     |     |
| 'oa'     |                  |    |    |   |    |    | 90                  | 10 |    |    |    |    | 200     |     |
| 'oe'     | 10               | 15 | 75 |   |    |    |                     |    |    |    |    |    | 100     |     |
| 'ol'     |                  |    |    |   |    |    | 100                 |    |    |    |    |    | 200     |     |
| 'ou'     |                  |    |    |   |    |    | 35                  |    | 55 | 10 |    | 50 | 45      | 200 |
| 'ow'     |                  |    |    |   |    |    | 40                  |    | 60 |    |    | 85 | 15      | 200 |

Table 10  
Analogy

| Phoneme | Spelling              | Elicited   | Analogue                          |
|---------|-----------------------|------------|-----------------------------------|
| /aɪ/    | l <u>i</u> te         | 90% [a.ɪ]  | 'l <u>i</u> ke' ['laɪk]           |
| /iə/    | g <u>e</u> ographical | 100% [i.ə] | 'g <u>e</u> ography' [dʒi'ɒgrəfi] |
|         | id <u>e</u> ological  | 100% [i.ə] | 'id <u>e</u> ology' [aɪdɪ'ɒlədʒi] |
| /e/     | s <u>a</u> ys         | 80% [e.i]  | 's <u>a</u> y' ['seɪ]             |

Table 11  
Spelling-pronunciation

| Phoneme | Spelling                   | Elicited   | cf. Swahili               |
|---------|----------------------------|------------|---------------------------|
| /iə/    |                            | 100% [i.ə] | 'njia' [nʃia] 'path'      |
| /aɪ/    | ' <u>e</u> ither'          | 90% [e.i]  | 'bei' ['bei] 'price'      |
|         | 'f <u>o</u> re <u>i</u> n' | 80% [e.i]  | " " "                     |
| /əʊ/    | 'f <u>u</u> el'            | 90% [ue]   | [usicu'kue] 'do not take' |

3.6.3 The phones elicited show a pattern of relationship with the spellings. The following will illustrate. The non-deviant phone [ɔ̄] is most frequently produced in words in which /əʊ/ is spelt 'ou' or 'ow'. When the phoneme is spelt by 'o' or 'o' followed by a letter other than 'u' or 'w', the most frequently elicited phone is the monophthong [ɔ̄.] which is deviant.

### 3.7 Other RP Vowels

3.7.0 The 13 vowel phonemes of RP the findings for which are not included in the preceding sections manifest patterns similar to those seen in the seven selected phonemes. The three prominent tendencies noted for the seven can also be observed in the remaining vowel phonemes. Only a few examples for each tendency will be cited in the paragraphs that follow.

3.7.1 Analogy is that tendency to produce a given phone for a given spelling because it resembles another spelling whose pronunciation is apparently known to the subject. For example the 'i' of /aɪ/ (as in the nonsenseword \*'lite') was pronounced, nondeviantly, as [a.ɪ] by 90% of the sample. This is probably due to the subject recalling the genuine English 'like' (RP ['laɪk]) - which resembles the nonsenseword in both spelling and even pronunciation, except for 'k' and 't'. Other examples are given in Table 10.

3.7.2 Spelling-pronunciation is the tendency for subjects to realize a given spelling of an RP vowel with a phone similar to one which would realize that spelling in Swahili. Stated differently,

this tendency is analogising the spelling of English vowels with the vowels of Swahili. For example, the spelling of /ɪə/ in 'Indian' was only-a-little deviantly pronounced [iə] by 100% of the sample. This is also the sample's pronunciation of 'ia' in the Swahili 'njia' ([ˈnɟia]. See Table 11 for more examples.

3.7.3 Stereotype is used here to describe the phone, deviant or non-deviant from typical RP pronunciation for a given phoneme, produced by a high percentage of the sample for one or more spellings of a given RP vowel. For example, the stereotype pronunciation for many spellings of /ə/ is the phone [ə], which is little deviant. The spellings of /ɜ/, however, elicit [e.] and [ə.] to name two, as its deviant stereotypes (Table 12).

#### Section 4

#### A COMPARISON

4.1 The seven vowel phonemes of RP which have been the focus of Section 3 were referred to as "problem vowels" in Kassulamemba's 'error analysis' (1977). Although, as already pointed out in an earlier section, this study is based upon a sample with much the same background as Kassulamemba's, its findings differ with those of the earlier study. Kassulamemba's findings suggest that a single phone is produced for each of the phonemes tested, except /ə/. In contrast, the findings presented in Section 3 reveal that the sample possesses a large phonetic inventory for the same seven vowel phonemes. For each of the seven vowel phonemes, several phones are elicited under

Table 12  
Stereotypes

| Phoneme | Spelling  | Stereotypes elicited |
|---------|---|----------------------|
| /ɜ:/    | {<br><u>bird</u><br><u>herd</u><br><u>heard</u><br><u>word</u><br>} | 85% [ė, i̇]         |
|         |   | 95% [ȧ]             |
|         |   | 100% [yȧ]           |
|         |   | 100% [ɔ̇]            |
| /œ:/    | {<br><u>poor</u><br><u>usual</u><br><u>pure</u><br>}                | 100% [i-wȧ]         |
|         |   | 100% [ɔ̇]            |
|         |   | 100% [ɔ̇]            |

Table 13

Comparison of the findings of Kassulamemba (K)  
and those of the present study (JBM)<sup>10</sup>

| K's Findings | RP Phoneme | JBM's Findings  |
|--------------|------------|---|
| i            | /ɪ/        | [ė] most frequently, also [ɛ̇], [ei̇], [i̇], [ɪ̇], [ȧ]                    |
| ʌ            | /æ/        | [ė] or [ɛ̇] for 'a', [ei̇] for 'ai'  |
| u            | /ʊ/        | [ɔ̇] or [u̇] for 'u', 'oo', 'ou', [ɔ̇] for 'o', [ȧ] for 'u', [ɔ̇] for 'ou' |
| a            | /ɜ:/       | [ė] for 'er, ear, or, ir', [ȧ] for 'ur', [ɔ̇] for 'our'                   |
| e            | /eɪ/       | [ė] for all spellings, also [ė.ɪ̇] for 'ei, ey, ay', [i̇] for 'ea'        |
| ɔ            | /œ/        | [ɔ̇] generally, also [ɔ̇ɔ̇] for 'ou, ow'                                    |
| ʌ            | /e/        | [ȧ] most frequently  |
| a            |            | [ė] for 'e, a, ai, io, er'   |
| ɒ            |            | [i̇] for 'ir'   |
| ɔ            |            | [ɔ̇] for 'or, oar, ou, o', vowel + r/l                                      |
| ɔ            |            | [ẏ] for 'u, ou'  |

differing circumstances, although one or two of these are more frequently heard for that phoneme. The phonetic variants elicited were generally predictable from the spellings presented for a given phoneme. They tended to be the result of analogy spelling-pronunciation and stereotype pronunciation. The two findings are juxtaposed for easy comparison in Table 13.

## Section 5 CONCLUSION

5.1 It has been demonstrated at length for the seven vowel phonemes focussed upon in this paper, and briefly for the remaining 13, that the sample did not produce a small list of phones for RP vowel phonemes. When analysed with some precision, the pronunciations elicited from a Tanzanian speaker of English shows a rich inventory of phones produced for English vowels. This, therefore contradicts such earlier research as Kassulamemba's which suggests that only a limited list of phones is elicited for RP vowel phonemes from a sample similar to that on which this study is based. However, none of the diverse phones elicited was a central vowel. The nearest to a central vowel was a centralized front or back vowel.

5.1.2 The rich phonetic inventory of elicited phones is not distributed systematically with respect to the vowel phonemes of RP, unlike that of the native speaker. Compared with the description of RP vowel phonemes and their realization by the native speaker, the elicited pronunciation is generally deviant. The variants elicited for each phoneme differ significantly from those of the native speaker of RP for corresponding

phonemes. This therefore corroborates suggestions put forward in previous literature on spoken English in Tanzania - that its pronunciation is deviant from RP (which is the official target for pronunciation teaching).

5.1.3 The findings presented in Section 3 also verify the hypothesis advanced at the beginning of the study: that the deviance (reported in previous literature and corroborated by this study) is probably related in certain ways to spelling. It has been shown that the distribution of the phones elicited for each phoneme is generally predictable from the spellings presented for it. Normally, for any given spelling of a given phoneme, one or two phones were most frequently elicited. These seemed to be the result of one of three tendencies: (a) analog, (b) spelling-pronunciation, and (c) stereotype pronunciation. The first frequently leads to a non-deviant pronunciation, but more frequently to a deviant one. The second, as a rule, leads to deviant pronunciation. The last tendency results in both non-deviant and deviant phones. If the findings attribute the deviance in pronunciation primarily to spelling, they do not exclude other causes - such as those suggested in earlier literature (1.1).

5.2 More studies are required for a better and more complete understanding of spoken English in Tanzania. Consonant pronunciation is not expected to produce any startling results. Only the phonemes /ʒ/ (and perhaps /r/ and /l/) are likely to produce significantly deviant phones. Therefore, there remains a study on RP sounds in sequence, and another one on the rhythm of connected English

speech and intonation. Apart from the vowels, these are areas in which the greatest degrees of deviance could be elicited. In a future study, the sample ought to be made more inclusive to represent different categories of Tanzanian speakers of English.<sup>4</sup> Such a relatively more comprehensive study is a prerequisite if the teaching and learning of English in Tanzania is to be enhanced by making it more meaningful and realistic to its speakers.

5.3 The primary role of spelling in the pronunciation of English vowels by Tanzanian speakers is doubtless due to overdependence on spelling for the pronunciation of English vowels. The overdependence on spelling is, in turn, due to too much emphasis upon the visual medium rather than the aural-oral medium in the teaching and learning of English in Tanzania. There is too little spoken English in the learners' environment within as well as outside the school. Reading and writing are therefore the main skills acquired with some proficiency. There is a need to increase drastically the opportunity for learners to hear as much spoken English as possible, and also to encourage them to speak English as much as possible. This not only means that the opportunity of the English class must be maximised.<sup>11</sup> There is also an urgent need to simulate an aural-oral English environment outside the English class.<sup>12</sup> But by far the most crucial step is to choose the most rational and realistic target for spoken English in Tanzania; once such a choice is made (be it the retention of RP or otherwise), it is necessary to stick to it with all possible rigor.<sup>13</sup> That entails a genuinely adequate preparation of the teachers

who go to the Colleges of National Education to teach future teachers of English in schools.<sup>14</sup> Finally, from the findings of this study, it is imperative that the beginning of English in the Primary schools be delayed (at present in the first year) to distance it from the beginning of the reading and writing skills - introduced in Swahili in the first year.<sup>15</sup> All this is tied to the fact that Tanzania still needs and will continue to need English - just as other nations of the world do - not only for its interaction with the outside world, but also for many of its development endeavours. The Government's persistent efforts to revitalise the teaching of English at all levels is witness to this.

#### NOTES

- 1 See Institute of Education 1974
- 2 It was therefore similar to the sample of Kwasulamemba
- 3 These were termed 'experiments' because 'tests' seemed more appropriate for the error analyst, who evaluates and then makes value judgment as to 'correct' and 'incorrect'.
- 4 Any part of the findings can be corroborated by making even casual observation of Tanzanian speakers of English (especially within the category of the sample).
- 5 Swahili for: 'we/us, you brother, bat, hen' respectively
- 6 For both /ɜ/ and /e/ it is permissible to vary considerably the height of the tongue within the central position because, apart from /ɛ/ in the fully open central position, there are no other vowels that come into contrastiveness with /ɜ/ and /e/.
- 7 The word 'colonel' was included in some experiments despite the fact that 'olo' as spelling for /ɜ/ occurs only in that word. However, the word was commonly known by the sample.
- 8 The findings presented here are from Experiment 4 only.



- 9 The findings presented here are from Experiment 8. They are, however, quite representative of all the results for this phoneme.
- 10 K's findings are reproduced here exactly as they appear in the original (1977 p 31). JBM's findings shown in Table 13 are a summary of both those presented in Section 3 as well as those for experiments not included in this paper; the phones are presented in order of frequency.
- 11 Many teachers of English in Tanzania are known to conduct their classes bilingually, presenting new material in English, but giving the explanations in Swahili.
- 12 There was a time when schools had a regulation requiring pupils to speak English only, within the school. If they flouted it, they were punished. They learned and used the language, albeit from fear of penalty. That strategy cannot perhaps be invoked today; But schools could, for instance, oblige their pupils to speak no other language but English at school on certain days of the week or at certain times of the day. The teachers should provide the model.
- 13 At present, although the official target is Received Pronunciation, no one really cares what target the teacher is prepared in and what he actually teaches in the classroom. Since no local standard for spoken English has been evolved in Tanzania, it is essential we select one target dialect and stick to it. If it is RP we choose to retain as target, perhaps there is need to modify the vowel system to make it rational and realistic for Tanzanians, (in the light of Section 3). Learners may not need to be able to produce [əʊ] in ['rɔʊd] or [ɔ] in ['rɔd] and [ɒ] in ['rɒd] as distinctly as the native speaker of RP. But they do need to recognize that in English it is necessary to recognize three different kinds of 'o' sound, as opposed to the single one of Swahili and many of their own languages. They must also be able to produce three different 'o' sounds for the native speaker's RP 14, 7, and 6. It is not important what exact phonetic features these will have, provided they are not confused with any of the remaining phonemes, and they are distributed systematically.

This will enable them to recognise and produce distinctly without confusion:  
/hr left ðə rɒd ɪn ðə reɪd wen ðə laɪən rɒd/.

- 14 With the introduction of U.P.E. (Universal Primary Education) the rate of increase in the number of schools exceeds that of teachers. Standard seven leavers are therefore being recruited as a panacea for the shortfall in teachers. Should these continue to be permitted to teach English, the consequences are easy to predict.
- 15 This has in fact happened already. The Ministry of National Education has announced the delaying of the beginning of English until the third year of Primary School. (See Daily News, 17th December 1979)

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