

TANZANIAN SPEAKERS OF ENGLISH:
EFFECTS OF SPELLING ON VOWEL PRONUNCIATION

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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.¹ 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 ɪ e æ a ʌ ɔ ə u ʌ ɜ eɪ əʊ aɪ ɑ 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: fairly homogenous linguistic (Bantu) and educational background.²

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.³ 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.⁴

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

 Table 1
 Pronunciation of selected RP vowels
 by pilot subjects

	Subject A	Subject B	Subject C	Subject D	RP
*swanted	[ɪ̥] ‡	[e̥] ,	[ɪ̥] ‡		/ɪ/
*fruitments	[u̥] ,	[ui̥] ,,	[u̥] ,	[ui̥] ,,	/u/
*adjournals	[ɜ:]	[ɔ̥.]	[ɜ:]	[ɔ̥.]	/ə/
*pragmental	[ə̥l] .	[ɔ̥]	[ə̥l] ,	[ɔ̥]	/əl/ or /ɪ̥/
*bruels	[œ̥] ‡.	[uœ̥] ,,	[œ̥] ‡.	[uœ̥] ,,	/œ/
*highered	[ḁɪ̥ə̥] ‡.	[a-jḁ]	[ḁɪ̥ə̥] ‡.	[a-jḁ]	/aɪ̥ə/
*quackless	[ə̥]	[e̥] ,	[ɪ̥] ‡	[ɛ̥]	/e/ or /ɪ/

 Table 2

Pronunciations elicited from pilot subject D
 for selected experiments

Spelling	Exp. 2	Exp. 4	Exp. 8	RP
*premakers	[ɛ̥]			/ɪ/
knowledge			[ɔ̥ə]	/v/
*acknowlish	[ɔ̥ə]			/v/
glove		[ɔ̥:]	[ɔ̥:]	/ʌ/
*sircous	[ɪ̥l] ,			/ɜ/
*worthings	[ɔ̥l] .			/ɜ/
*herdments	[e̥.]			/ɜ/
machine		[ḁ]		/e/
*acknowlish	[ḁ]			/e/
forgive		[ɔ̥]	[ɔ̥]	/e/
medium		[iə̥] ,	[iə̥] ,	/ɪə/
usual		[ɔ̥]	[ɔ̥]	/œl/
*lawtide	[ɔ̥ə]			/ɔ/
label			[ɔ̥]	/əl/ or /ɪ̥/
mental		[ɔ̥]		/e̥/ or /ɪ̥/

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 weve kaka popo kuku/, are spelt by the letters 'i e a o u' in 'sisi weve kaka popo kuku'⁵. 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 'p <u>o</u> t	/o/ in 'b <u>o</u> som'
/u/ in 'l <u>o</u> se'	/ʌ/ in 'l <u>o</u> ve'
/ə/ in 's <u>o</u> c <u>i</u> ety'	/əə/ in 's <u>o</u> cial'

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

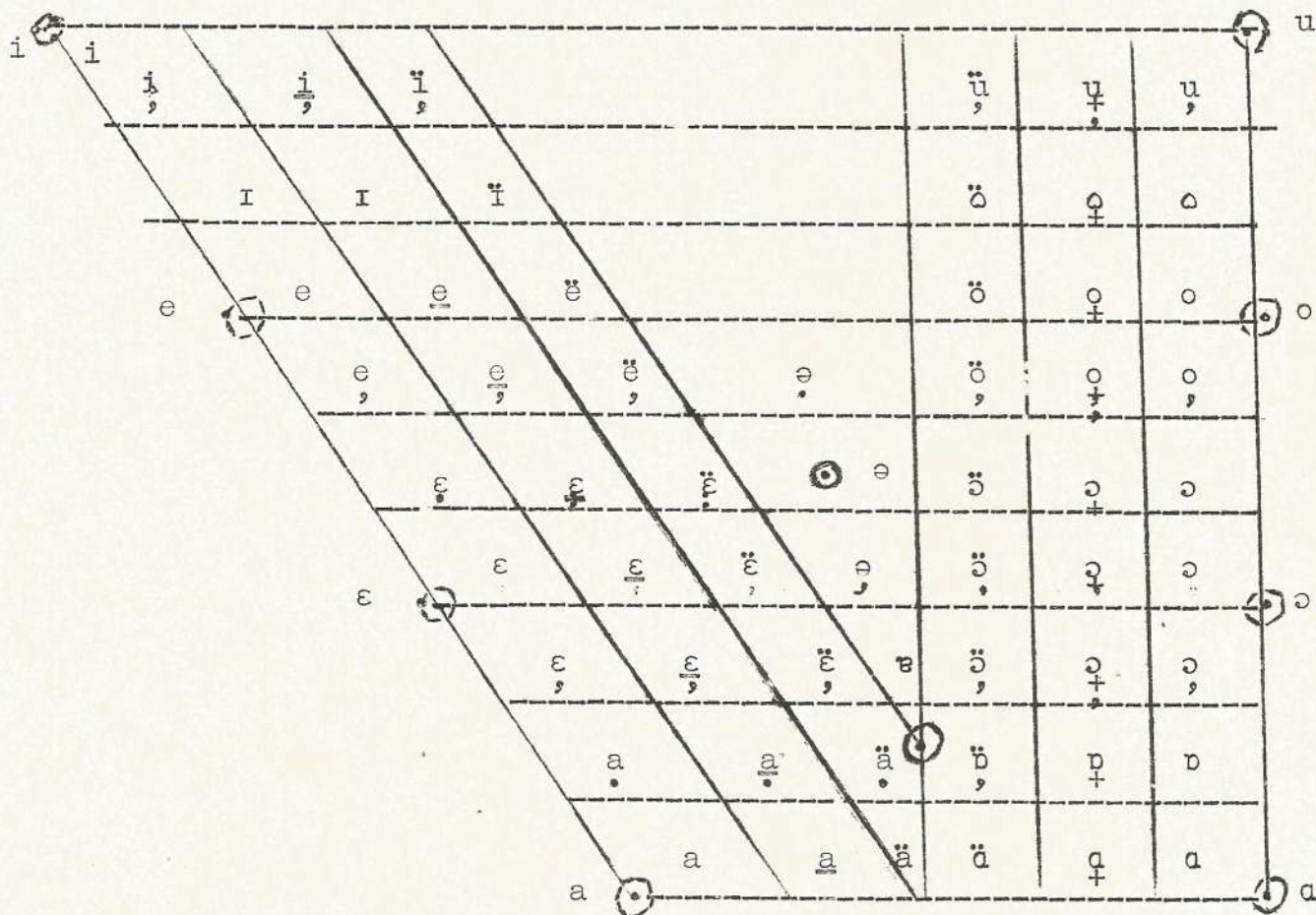
FINDINGS

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.



Figure 1,
Transcription Scheme



○ Cardinal Vowels



Figure 2

The vowels of Swahili
as pronounced by the sample

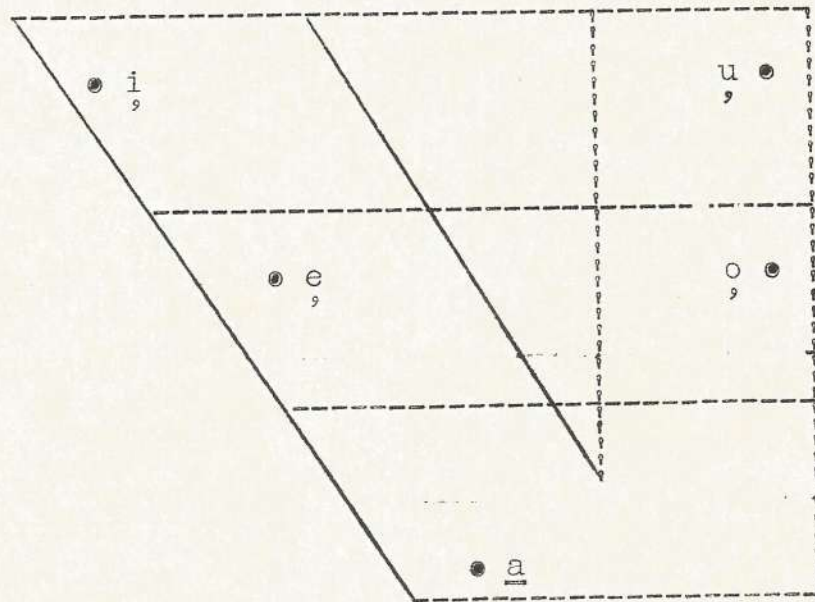
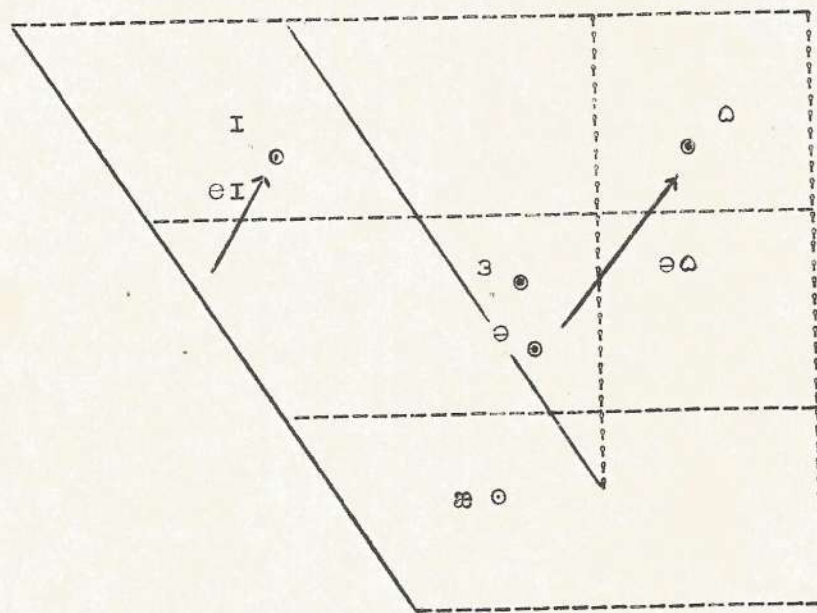


Figure 3

The seven selected vowels of RP

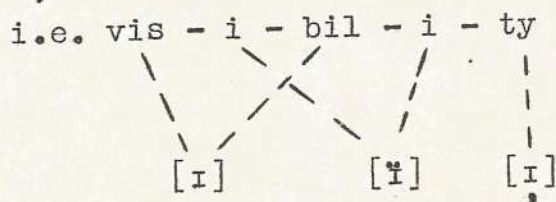


The findings presented here are primarily those for seven selected RP vowel phonemes: /ɪ æ ə ɜ ə eɪ əʊ/ (Fig. 3). The first five are monophthongs and the remaining two are diphthongs. We have here front vowels, a back vowel, central vowels and two diphthongs. This is fairly representative of the 20 vowel 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 ə 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], [ɪ̟] and [i̟]. 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 [i̟] and

once as [ɪ] (Gimson 1970), p 101).



3.1.2 The actual pronunciations produced by the sample vary, but not according to phonetic environment (Table 3). Compared with the three possible authentic RP realizations of the phoneme, the phones produced by the sample showed significant differences from them. The most obvious one is that the pronunciations of the sample contain both monophthongal and diphthongal segments. The monophthongs elicited were of five different categories: all of them ranging from front close to front open - i.e. [ɪ, ɪ̄, e, ē, a]. The diphthong is also produced entirely with the front of the tongue, closing from approximately mid - ie [ei]. Compared with the eight primary cardinal vowels, the phones elicited were not produced as 'pure categories'; each is modified by lowering, raising, retracting or advancing the tongue from the nearest cardinal position. The segments have three quantities of length: long, half long or short (ie [:], [.] or [], respectively). The result is an inventory of eleven phonetic segments all produced for the native speaker of RP's three allophones.

3.1.2. Except for [ɪ̄], the elicited segments are therefore deviant from RP. As clearly indicated by Table 3, the elicited phones were produced for definite spellings of the phoneme. The greatest percentage of segments of the [i] category were produced for the spelling 'i'

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 /a/

Spellings	Phones Elicited										Total					
	Experiment 2		Experiment 4		Experiment 8		Experiment 8		Experiment 8							
	i.	e	ε	a.	ei	i.	e	ε	a.	ei	i.	e	ε	a.	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. /a/ 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], [ɔ̃] 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, [ɔɔ], 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 (of 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 [ɔɔ] (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	ɔ	Total
	,	ɔ	ɔ	u	ɔ	ɔ	
	ɔ	ɔ	u	ɔ	ɔ	ɔ	Total
'u'	50		25	25	50	25	300
'o'	15	20	25	40	10	75	300
'oo'	10	5	3	5	5	100	300
'ou'		50	50	40	60	20	300



3.4 RP 11 & 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 long¹ 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).⁶ 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 ['mɑtʃə], ['dɒktə], etc.), while that marked 3 is produced in word non-final positions (as in ['aftəwɛdz], [ə'leɪn], etc.), and the one marked 4 is pronounced when /ə/ is adjacent to velar consonants (eg. [ə'klɒk], [ə'gensɪ], 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).⁷ 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 /e/

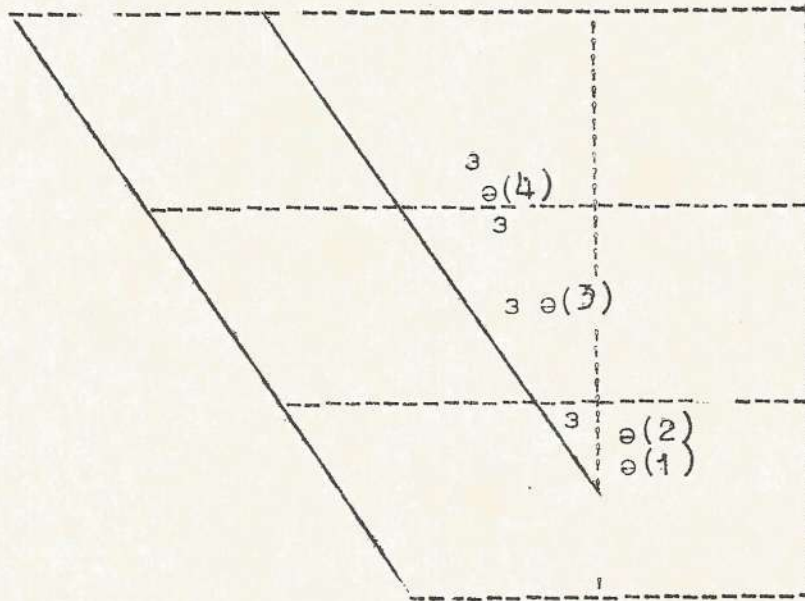


 Table 6
 Phonos elicited
 for the spellings of /ɜ/

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 %
	[i]	[e]	[ə]	[u]	[ɔ]	[a]	[ɔ̃]	[ə]	
'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 /ei/

Spelling	P H O N E S E L I C I T E D					Total %
	[i]	[e]	[ε]	[e.i]	[ε.i]	
'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 [ɛ̠]). The second, produced for 'ur' by the entire sample, is [ʌ] (sometimes centralized to [ɛ̠]). 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 be 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], [eɪ̯] 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.ɪ̯] and [ɛ̞.ɪ̯] 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 /eə/

3.6.1 The fourteenth vowel of RP is the diphthong closing towards [ə] (similar to the ending of /aə/ or the beginning of /əə/). 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, [ə]. 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 - [ɔ̞ə], or front, [əɛ]. The diphthong [ɔ̞ə] is the only one acceptable as a possible allophone for /eə/ for the native speaker. It is phonetically similar to the native speaker's [ɔ̞ə] allophone. All the other elicited phones are deviant.

Table 9
Phones 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]	[ɔ]	[ə]	[ə]	[i]	[e]	[ɔ]	[ɔ]	[ə]	[ə]	
'o'			95	5			70	10	20				200
'oa'			95	5			90	10					200
'oe'	10	15	75										100
'ol'			100				100						200
'ou'			35		55	10	50		45		5		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]
/ɪə/	g <u>e</u> ographical	100% [ɪ.ə]	'g <u>e</u> ography' [dʒɪ'ɒgrəfi]
	id <u>e</u> ological	100% [ɪ.ə]	'id <u>e</u> ology' [aɪdɪ'plɒdʒɪ]
/e/	s <u>a</u> ys	83% [eɪ]	's <u>a</u> y' ['seɪ]

Table 11
Spelling-pronunciation

Phoneme	Spelling	Elicited	cf. Swahili
/ɪə/		100% [ɪə]	'njia' [nɟia] 'path'
/aɪ/	' <u>e</u> ither'	90% [eɪ]	'bei' ['bei] 'price'
/ɪ/	'f <u>o</u> re <u>i</u> n'	80% [eɪ]	" " "
/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 /eo/ 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 /ai/ (as in the nonsenseword *'lite') was pronounced, nondeviantly, as [a.ī] by 90% of the sample. This is probably due to the subject recalling the genuine English 'like' (RP ['laik]) - 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,