

SOME PHONOLOGICAL PROBLEMS IN TEACHING ENGLISH
TO SPEAKERS OF TSWANA

by

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TABLE OF CONTENTS

CHAPTER	PAGE
1. Introduction.....	1
2. English and Tswana consonants	
2.1 English consonant inventory.....	3
2.2 Tswana consonant inventory.....	3
2.3 Parallel descriptions of English and Tswana consonants, their allophones, distribution, and anticipated problems..	6
2.4 Problems of Tswana students in mastering the pronunciation of English consonants.....	14
3. English and Tswana vowels	
3.1 English vowel inventory.....	22
3.2 Tswana vowel inventory.....	23
3.3 Parallel descriptions of English and Tswana vowels, their allophones, distribution, and anticipated problems.....	23
3.4 Problems of Tswana students in mastering the pronunciation of English vowels.....	27
4. Phonotactics of English and Tswana	
4.1 English phonotactics.....	33
4.2 Tswana phonotactics.....	34
4.3 Parallel descriptions of English and Tswana phonotactics..	35
4.4 Problems of Tswana students in mastering the pronunciation of English consonant clusters.....	35
5. Partial Bibliography of Works Consulted.....	37

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CHAPTER 1

INTRODUCTION

1.1 In the Republic of Botswana, a large majority of the population speak only Tswana, the principal African language of that country. However, the official language of Botswana is not Tswana, but English.

1.2 Efforts are being made within the Botswana educational system to increase the quantity and quality of English usage. English instruction begins in the first standard of primary school. At the fifth standard, English officially becomes the language of instruction, though in reality, it will be several years before this is more than just a goal.

1.3 Most teachers in Botswana primary schools are not native speakers of English. Until recently, many had not received any English instruction from a native speaker. This was especially true of those individuals who teach in the lower standards, where the pronunciation habit patterns are first established.

1.4 The main purpose of this report is to identify some of the problems encountered by native speakers of Tswana who attempt to learn to speak English. Another purpose is to give some examples of drills which should be helpful in reducing these difficulties.

1.5 The scope of this report is arbitrarily limited to consideration of segmental phonology. The consonant, vowel, and semivowel phonemes of General American English and Tswana will be contrasted, including discussion of the allophonics and phonotactics of each.

1.6 There have been many analyses of the phonology of General American English, of which the one done by Trager and Smith (1957) has been selected as the basis of comparison for this report.

1.7 Analyses of the phonology of Tswana are much less common. Those done by Cole (1949, 1955) were used here along with assistance received from a native speaker of Tswana presently attending Baker University in Baldwin, Kansas.

1.8 Contrastive descriptions of English and Tswana have been done, but they are not complete (Cole, 1955), or their emphasis is on teaching Tswana to English speakers (Cole and Mokaila, 1962) (Mistry, 1969).

1.9 Until independence in 1966, some of the materials used in the teaching of English in Botswana attempted to take into account the cultural and linguistic differences between English and Tswana, but they were too general to provide solutions to the specific problems of particular area or language groups. Since independence this need is receiving more attention, and it is hoped that this study can contribute to the development of more and better English learning materials, methods, and techniques.

CHAPTER 2

ENGLISH AND TSWANA CONSONANTS

2.1 Classified according to place and manner of articulation, the consonant phonemes of English may be tabulated as they appear in Chart 1 on page 4.

2.2 Chart 2 on page 5 lists Tswana consonants according to place and manner of articulation (Cole, 1955: 21). The symbols shown are orthographic. The voiceless velar fricative /g/, usually represented phonetically by [x], shows the influence of Afrikaans on Tswana orthography. Otherwise, the chart should offer no problems of interpretation.

Chart 1

English Consonants

		Bilabial	Labiodental	Dental	Alveolar	Alveopalatal	Velar	Glottal
--	--	----------	-------------	--------	----------	--------------	-------	---------

Stops	Vl	p	b	t	d	k	g
	Vd						

Fricatives	Vl	f	θ	s	ʃ	z
	Vd	v	ð	z		

Retroflex

r

Lateral			l	
Nasals	m	n	ŋ	

Affricates	Vl	tʃ	
	Vd	dʒ	

Semivowels	w	y	h
------------	---	---	---

Chart 2

Tswana Consonants

		Place of Articulation											
		Bilabial		Dentilabial		Alveolar		Prepalatal and Palatal		Velar		Glottal	
Stop Consonants	Explosive	Med	Ej	p	t	kh	k						
			Asp	ph	th								
	Lat		Vd	b	tl	tlh							
			Ej										
	Asp												
Continuant Consonants	Fricative	Med	Vl	f	s	g	v	s					
	Vibrant Rolled	Med	Vd	r									
Vibrant Flapped	Med	Vd	{ d* l }										
Non- Fricative	Lat	Vd											
	Nas												
Compound Consonants	Affricate	Med	Ej	ts	ts ^h								
			Asp	tsh	t ^h h								
	Vd			j									
Semivowels	Med	Vd	w										
				y									

*d and l are allophones of one phoneme,
but discriminated in the orthography.

2.3 The charts on the following pages are of parallel descriptions of English and Tswana consonants, their allophones, distributions, and anticipated problems.

2.3 (Continued)

English Phoneme:: Tswana Phoneme	Allophonic Distribution		Anticipated problems for Batswana Learning English Consonants.
	English Allophone:: Tswana Allophone	English Tswana	
/p/::/p/	[p']::[p']	Occurs in syllable initial position, as the first member of initial clusters, and as a free variant with [p] and [p'] in final position.	Occurs in syllable initial position only.
/p/::/p/	[p]::[p]	Occurs only after <u>s</u> in complementary distribution with [p'].	The Tswana student should have few problems producing the allophones of English /p/ in isolation. However, he or she will tend to experience a great deal of difficulty with the distribution of these allophones, especially when they occur in syllable final position or within clusters.
	----::[p']		Occurs in unemphatic speech in syllable initial position only.
			Occurs in emphatic speech in syllable initial position only.
	[p']::----	Occurs in final position in free variation with [p'] and [p].	

2.3 (Continued)

English Phoneme:: Tswana Phoneme	Allophonic Distribution		Anticipated Problems for Batswana Learning English Consonants.
	English Allophone:: Tswana Allophone	English Tswana	
/t/::/th/	[t']::[t']	Analogous with [p']	Analogous with /p/. Also his two phonemes can be successfully substituted for all allophones of English /t/ with little or no distortion.
/t/::/t/	[t]::[t]	Analogous with [p]	
----::[t']		Analogous with [p']	
[t̂]::----		Occurs in syllable final position followed by a vowel.	
[t̃]::----		Occurs before [e] and [a].	
	[t̃]::	Analogous with [p]	
/k/::/kh/	[k']::[k']	Analogous with [p']	Analogous with /p/.
/k/::/k/	[k]::[k]	Analogous with [p]	
----::[k']		Analogous with [p']	
	[k̃]::----	Analogous with [p]	
/b/::/b/	[b]::[b]	Occurs syllable initially only	A Tswana student will have difficulty producing this sound in syllable final position.
----::[β]		Occurs in some dialects in place of [b].	

2.3 (Continued)

English Phoneme:: Tswana Phoneme	English Allophone:: Tswana Allophone	Allophonic Distribution		Anticipated Problems for Batswana Learning English Consonants.
		English	Tswana	
/d/::---	[d]::---	Occurs in all positions except before /e/ and /ə/.		It will be difficult for the Tswana student to produce this sound in syllable final position. Pre-vocalically, there may be a tendency to replace English /d/ with Tswana /l/ before all vowels except those produced high in the mouth.
/g/::---	[dʷ]::---	Occurs before /e/ and /ə/.		
	[ɛ]::---	Occurs in all positions		It will be difficult for the Tswana student to produce this sound in all positions. He or she will tend to replace /ɛ/ with Tswana /k/.
/č/::/tšh/	[tš]::[tšh]	Occurs in all positions	Occurs in syllable initial position only.	Production of this sound in syllable final position will be difficult for the Tswana student.
/j/::/j/	[dž]::[j]	Occurs in all positions	Occurs syllable initially only, except before high back vowels.	This sound in syllable final position will be difficult for the Tswana student to produce.

2.3 (Continued)

English Phoneme:: Tswana Phoneme	English Allophone:: Tswana Allophone	Allophonic Distribution		Anticipated Problems for Batswana Learning English Consonants.
		English	Tswana	
/f/:/f/	[f]:[f]	Occurs in all positions.	Occurs in syllable initial position only. Used by many older speakers instead of [f]	In syllable final position this sound will be difficult for a Tswana student to produce.
/v/:---	[v]:---	Occurs in all positions.		The Tswana student will tend to substitute his or her /f/ where- ever English /v/ appears.
/e/:---	[e]:---	Occurs in all positions.		These two sounds, /e/ and /ɛ/, will be difficult for the Tswana student to produce in all positions.
/ɛ/:---	[ɛ]:---	Occurs in all positions.		

2.3 (Continued)

English Phoneme:: Tswana Phoneme	Allophonic Distribution		Anticipated Problems for Batswana Learning English Consonants.
	English Allophone:: Tswana Allophone	English Tswana	
/s/::/s/	[s]::[s]	Occurs in all positions.	Occurs syllable initially only. Production of this sound in syllable final position will be difficult for the Tswana student.
/z/::---	[z]::---	Occurs in all positions.	The Tswana student will tend to substitute his or her /s/ in all positions for English /z/ is found.
/ʃ/::/š/	[ʃ]::[š]	Occurs in all positions	Appears in initial position in syllables only Producing this sound in syllable final position will be difficult.
/ž/::---	[ž]::---	Occurs in syllable final position only	The Tswana student will tend to replace English /ž/ with his or her /š/.
/m/::/m/	[m]::[m]	Occurs in all positions.	These three sounds, /m n ŋ/, will be difficult for the Tswana student to produce in final position.
/n/::/n/	[n]::[n]	Occurs in all positions	Occurs initially in syllables only.
/ŋ/::/ng/	[ŋ]::[ŋ]	Occurs in syllable final position only.	Occurs initially in syllables only.

2.3 (Continued)

English Phoneme::	English Allophone::	Allophonic Distribution		Anticipated Problems for Batswana Learning English Consonants.
		English	Tswana	
/l/::/l/	[l]::[ɫ]	Occurs in prevocalic position, mainly before front vowels.	Occurs in initial position in syllables only, before all vowels except /i/ and /u/.	The Tswana student may replace English /l/ with his allophone [ɫ] before high front and back vowels.
	[ɬ]::-ɬ-	Occurs in complementary distribution with [l].		The Tswana student will probably substitute his allophone [ɫ] in these positions.
	---::[ɫ]		Occurs before vowels /i/ and /u/ only, in complementary distribution with [l].	
/r/::/r/	[r]::---	A frictionless [r] which occurs initially		The Tswana student would be expected to substitute his /r/ for all variants of English /r/.
	[ɽ]::---	A fricative [r] which occurs after /t/ and /d/.		
	[ʁ]::---	Occurs in unstressed positions.		
	[r̥]::[r̥]	Occurs after /θ/ and /ð/.	Occurs in syllable initial position only.	

2.3 (Continued)

English Phoneme:: Tswana Phoneme	English Allophone:: Tswana Allophone	Allophonic Distribution		Anticipated Problems for Datswana Learning English Semi-Vowels.
		English	Tswana	
/ɪ/::/hi/	[h]::[h]	Occurs in syllable initial position only as a true consonant, and dialectically in syllable nuclei.	Occurs in syllable initial position only. In some dialects it is a phonemic sub- stitute for /f/.	The Tswana students will find it difficult to produce these sounds, /h w y/, when they appear in conjunction with the true vowels.
/w/::/w/	[w]::[w]	Analogous with [h].	Occurs in initial position in syllables only.	
/y/::/y/	[y]::[y]	Analogous with [h].	Occurs syllable initially only.	

2.4 PROBLEMS OF TSWANA STUDENTS IN MASTERING THE PRONUNCIATION OF ENGLISH CONSONANTS

2.41 Introduction. Problems associated with the consonant series are two-fold: first, the Tswana student will have to establish the articulation in isolation and use it in initial position in syllables. Secondly, he or she must then learn to use it in final position in syllables without adding an excrescent vowel, and in clusters. Once a phoneme has been established however, drill items incorporating it may be used as vehicles for establishing other phonemes. Accordingly, this chapter will deal with the establishment of consonant phonemes in isolation, in initial position and in final position. A subsequent chapter will be concerned with consonants in clusters.

2.42 Tswana consonants without counterparts in English

2.421 There are a few consonant phonemes in Tswana which have no phonemic or allophonic counterparts in English. Those that may be included in this group are:

1. Lateral alveolar stops /tɬ/ and /tɬh/.
2. Voiceless velar fricative /g/ ([x]).
3. Alveolar affricates /ts/ and /tsh/.

These sounds should not cause any interference problems, since they will not need to be used in learning the new language.

2.43 English consonants with similar counterparts in Tswana

2.431 In this case, similar means that two sounds have basically the same point and manner of articulation, both are either voiced or voiceless, and both have approximately the same patterns of distribution. These consonants are:

1. Voiceless stops /p t k/.
2. Voiced bilabial stop /b/.
3. Voiceless labiodental fricative /f/.
4. Voiceless alveolar fricative /s/.
5. Voiceless alveopalatal fricative /ʃ/.
6. Nasals /m n ŋ/.
7. Alveopalatal affricates /tʃ/ and /dʒ/.
8. Semivowels /h w y/.

In addition, some speakers of English have in their speech an equivalent to the /ny/ phoneme of Tswana in words such as canyon.

2.432 These consonants will be useful in the beginning because the Tswana student can transfer his native language phonemes and allophones with satisfactory results to the English system he or she is attempting to learn. They will first have to be established in final position. They then can be used to create frames in which totally alien and partially alien sounds may be taught.

2.44 Similar English and Tswana consonants with a different point or manner of articulation, or distribution.

2.441 In paragraph 2.431 it was stated that a number of English consonants had similar counterparts in Tswana, and that part of what was meant by similar was that they had approximately the same patterns of distribution. This qualification was inserted for several reasons: a) English consonants and their Tswana counterparts will never have the same distribution, since any consonant in English may appear in syllable final position, but no Tswana consonant is ever found in that position, and b) English voiceless stops have distribution patterns filled by two separate phoneme series in Tswana.

2.4411 Tswana has two sets of voiceless stop phonemes, one ejective; which appears to be simply unaspirated in normal speech, and one aspirated.

The highly aspirated phonemes of Tswana would tend to be substituted for the less aspirated allophones of English, and possibly for the other allophones as well. A Tswana speaker would be less likely to use his other phoneme stop series in all positions, though this is possible.

2.4412 To teach the normal distribution of English voiceless stop allophones, we might begin with drills employing the Tswana series /ph th kh/ in initial position in English syllables, progressing to drills employing the Tswana series /p t k/ in final position (a pedagogical problem here will be in eliminating the predictable excrescent vowel).

1. Repetition Drill

[p'], [t'], [k']

pea

tea

key

2. Repetition Drill

[p], [t], [k]

peep

peat

peek

2.442 English /l/ has two allophones:

1. Light [l]. "The light [l] is the sound made when /l/ precedes a front vowel, or when it is followed by /y/, as in leave, lit, land, and value." (Bronstein, 1960:125)

2. Dark [ɫ]. The dark [ɫ] is the sound made when /l/ is found before unstressed and back vowels, in final position, and as a syllabic consonant.

2.4421 Tswana /l/ has two allophones:

1. Tswana [l] is made very similarly to English [l]. It occurs before all vowels except /i/ and /u/.

2.4431 Tswana does not have a /d/ phoneme. It does have [ɽ] as an allophone of /l/. (See 2.4421) Such a case, where an allophone of the native language is similar to a phoneme of the target language, is considered by Lado "the most difficult to overcome". (1957:15) Theoretically, it might be expected that a Tswana speaker would substitute his or her [ɽ] allophone in all positions where English /d/ is found. However, he or she might replace [ɽ] with [l] when it occurs before all vowels except /iy/ and /uw/.

2.4432 Drills to establish the articulation of /d/ in isolation would be needed first. This could begin with the Tswana [ɽ], with instructions to hold the stop longer and produce it with more fortis articulation. When /d/ is achieved in isolation, drills should then lead to its production before high front vowels, and progressively to before other vowels and in final position.

1. Repetition Drill

/d/

deep

deal

deem

2. Repetition Drill

/d/

date

dock

doom

3. Repetition Drill

/d/

paid

laid

made

2. Tswana [ɾ] is a flapped d. It occurs in complementary distribution with [l] before the vowels /i/ and /u/.

2.4422 Tswana speakers may substitute their [ɾ] for English [l] before the vowels /iy/ and /uw/, and their [l] for English [ɾ] before all other vowels. Drills along the following lines could help assure the production of [l] before front vowels and /y/, and [ɾ] in all other positions.

1. Repetition Drill

[l]

leak

lick

lack

2. Repetition Drill

[ɾ]

Luke

look

lock

3. Repetition Drill

[ɾ]

kill

feel

all

2.443 English voiced alveolar stop /d/

This phoneme has two allophones in English:

1. [d] is a voiced alveolar stop which occurs in all positions except before /e/ and /ɛ/.

2. [d̪] is a voiced dental stop occurring before /e/ and /ɛ/.

2.45 English consonants without counterparts in Tswana

1. Voiced velar stop /g/.
2. Voiced labiodental fricative /v/.
3. Interdental fricatives /θ/ and /ð/.
4. Voiced alveolar fricative /z/.
5. Voiced alveopalatal fricative /ʒ/.
6. Voiced alveolar retroflex /ɾ/.

Even though each of these seven phonemes should be completely unfamiliar to a Tswana speaker, they will present different levels of difficulty. Each will first have to be produced in isolation, then successively in syllable initial (except for /ʒ/) and syllable final position. Examples have already been given, with English /l/ and /d/, of the linear ordering needed for drills of the type required here. Thus it seems unnecessary to repeat this procedure for each of the above phonemes. Therefore, this section will be chiefly limited to a discussion of the interference problems involved.

2.451 English voiced velar stop /g/.

2.4511 This sound differs from English /k/ only in that it is voiced rather than voiceless. It occurs in all positions.

2.4512 Tswana has no phonemic or allophonic counterpart to English /g/. The Tswana student will tend to substitute either his or her /k/ or /kh/ phoneme in its place. The language teacher must drill first to establish /g/ in isolation by getting the Tswana student to voice his /k/ phoneme, then to contrast it with English /k/ in first, syllable initial and then syllable final positions.

2.452 English voiced labiodental fricative /v/.

This sound is produced in an identical manner to that of English /f/, except for voicing. /v/ is voiced as opposed to voiceless /f/. It occurs in all positions.

2.4521 Since Tswana has no phonemic or allophonic equivalent of English /v/, the Tswana student will tend to replace it with /f/ or /w/. After /v/ has been satisfactorily produced in isolation, it should be contrasted with both /f/ and /w/ in first, initial, then final position.

2.453 English interdental fricatives /θ/ and /ð/.

Both of these sounds are made by placing the tip of the tongue either in light contact with the back surface of the upper teeth or between the teeth, and allowing a stream of air to pass through the constricted space between the teeth and the tongue. The only significant difference between the two sounds is one of voicing. /θ/ is voiceless while /ð/ is voiced.

2.4531 Neither of the above sounds occurs in Tswana. Thus they will be difficult for a Tswana speaker to hear and produce. A substitution of the Tswana /s/ for English /θ/ is probably^e. As for /ð/, the Tswana speaker might alternate his or her replacements, since the sound, being a voiced fricative, is so completely alien to the language.

2.4532 Each of these sounds must first be taught in isolation, then contrasted with neighboring sounds in all positions. Only then should they be contrasted with each other.

2.454 English voiced alveolar fricative /z/.

This phoneme is the voiced counterpart of /s/. It is found in all positions.

2.4541 The Tswana student can be expected to replace /z/ with /s/. After satisfactory production in isolation, it should be contrasted with /s/.

2.455 English voiced alveopalatal fricative /ʒ/.

This sound, the voiced counterpart of /ʃ/, occurs in both syllable initial and syllable final positions. However, it never appears in English in word initial position.

2.4551 This sound appears in relatively few words, mostly some of those English has borrowed from French. It is not present in the Tswana sound system. It will most likely be interpreted as /ʃ/. When teaching the sound, first establish it in isolation until satisfactory results are achieved, then progress to drills that require production in other positions.

2.456 English retroflex /r/.

American English /r/ is formed in various ways as a result of slight differences in the tongue position. It is usually accompanied by a slight protrusion of the lips.

2.4561 English /r/ has several allophones, the most important one being the frictionless type [r] that occurs initially. It is considered the most common type of English /r/.

2.4562 Tswana /r/ is "fully rolled, never fricative as in English". (Cole, 1955:27) From a theoretical point of view, Tswana students may be expected to substitute their rolled /r/ for the English retroflex in all cases. Experience has proven this to be true. Since English has a trilled allophone of /r/ in words such as three, it would perhaps be fruitful in this case if the drills begin with this allophone as a basis, then progress to others which would ultimately result in the production of the English retroflex in all positions.

CHAPTER 3

ENGLISH AND TSWANA VOWELS

3.0 Tswana learners of English commonly experience difficulty with the English vowel system. This can be largely accounted for by the fact that the English vowel system has a greater number of contrasts than that of Tswana. In several instances, vowel phones which are assigned to separate phonemes in English have Tswana counterparts which are considered allophones of the same phoneme.

3.1 According to the position of the highest part of the tongue during articulation, the vowel phonemes of English may be classified as follows:

Chart 3

English Vowels

	Front	Central	Back
High	i	ɪ	u
Mid	e	ə	o
Low	æ	a	ɔ

3.11 These nine vowel phonemes combine with the semivowels /w y h/ with dialect and idiolect variations to form the "gliding" vowel nuclei so characteristic of English, and the traditional diphthongs /ay oy aw/. With reduction of stress all may undergo modification in quality in the direction of central so that in unstressed syllables they frequently are morphophonically replaced by /i/ or /ə/. The front vowels are made with spread lips, the back vowels with lip rounding; in both cases the lip action is progressively less prominent from high to low, and neutral for the central vowels (Engler, 1962:10).

3.2 The vowels of Tswana also may be tabulated according to the position of the high point of the tongue during articulation. In terms of current orthography the vowels would be represented by /i e ě u o ǝ a/, but this would tend to make it difficult to keep track of counterpart correspondences from chart to chart. This study therefore follows a suggestion made by Cole (1955:12) and uses the symbols appearing in the Tswana vowel chart below in an effort to minimize that confusion. The phonemic symbols adopted here are shown in black, and the corresponding orthography symbols in red.

Chart 4

Tswana Vowels

	Front	Central	Back
	[^] i i		[^] u u
High	i e		u o
Mid	e [^] e		o [^] o
Low		a a	

3.3 The charts on the following pages are of parallel descriptions of English and Tswana vowels, their allophones, distribution, and anticipated problems.

3.3 (Continued)

English Phoneme:: Tswana Phoneme	Allophonic Distribution		Anticipated Problems for Batswana Learning English Vowels.
	English Allophone:: Tswana Allophone	English Tswana	
/i:/::/i/	[i y]:::[i]	Occurs in stressed syllables.	Occurs when vowel in immediately following syllable is /i/ or /u/. The Tswana students will tend to have difficulty separating their allophones into distinct English phonemes. Production of the glide will also be a problem.
/i:/::/i/	[ɪ]:::[ɪ]	Occurs in stressed syllables.	Occurs when vowel in immediately following syllable is other than /i/ or /u/, or word finally.
/ey/::/e/	[ey]:::[e]	Occurs in stressed syllables.	Occurs when vowel phone Analogous with /iy/ and /i/. in immediately following syllable is other than [e], [ɔ], or [a].
/e/::/e/	[e]:::[e]	Occurs in stressed syllables.	Occurs when vowel phone in immediately following syllable is [e], [ɔ], or [a].
/æ/::/æ/	[æ]:::[æ]	Occurs in stressed syllables.	A Tswana student will tend to interpret this sound as a member of his or her /e/ phoneme.

3.3 (Continued)

English Phoneme:: Tswana Phoneme	English Allophone:: Tswana Allophone	Allophonic Distribution		Anticipated Problems for Batswana Learning English Vowels.
		English	Tswana	
/ɛ::---	[ɛ̃]::---	Occurs in unstressed syllables; and occasionally in stressed syllables.		The Tswana student will have problems distinguishing this sound. He or she may assign it to either the /i/ or /e/ phonemes.
/ə::---	[ə]::---	Occurs in all positions, in stressed and unstressed syllables.		Tswana students will tend to substitute their /a/ phoneme for English /ə/ in stressed syllables. In unstressed positions, they may replace it with one of several others
/a::/a/	[a]::[a]	Occurs in all positions, in stressed and unstressed syllables.	Occurs in all positions, NO PROBLEM IS PREDICTED. is always stressed.	
/u::/u/	[uw]::[u]	Occurs in stressed syllables.	Analogous with [i].	The Tswana student will have difficulty distinguishing and producing these two sounds ([uw] and [u]) separately.
/u::/u/	[u]::[u]	Occurs in stressed syllables.	Analogous with [i].	
/o::/o/	[ow]::[o]	Occurs in stressed syllables.	Analogous with [e].	Analogous with /uw/ and /u/.

3.3 (Continued)

English Phoneme:: Tswana Phoneme	English Allophone:: Tswana Allophone	Allophonic Distribution		Anticipated Problems for Batswana Learning English Vowels.
		English	Tswana	
/ɔ/::/o/	[ɔ]::[ɔ]	Occurs in stressed syllables, as an alternative of /a/, since short /a/ and short /ɔ/ do not usually occur in the same dialect.	Analogous with [ɛ].	
/ay/::---	[ay]::---	Occurs in stressed syllables.	See 3.50 below	NO PROBLEM IS PREDICTED.
/aw/::---	[aw]::---	Occurs in stressed syllables.		NO PROBLEM IS PREDICTED.
/oy/::---	[oy]::---	Occurs in stressed syllables.		NO PROBLEM IS PREDICTED.

3.4 Tswana students will have problems hearing and producing the difference between English minimal pairs such as beat/bit, bait/bet, Luke/look and low/law. In this section each of the nine English simple vowels and the related glided syllabic nuclei /iy ey uw ow/ typical of General American will be discussed, with reference to their Tswana counterparts.

3.41 English high front unrounded lax vowel /i/.

3.411 This vowel is produced by raising the tongue high in the mouth and allowing the air to pass over the arch made by the tongue. The lips tend to be spread. Phonetically, this vowel would be symbolized by /ɪ/.

3.412 Tswana also has a vowel phoneme /i/. It has two allophones, [ɪ] and [ɨ]. The relationship between these two allophones is complex. Most simply stated, the normal phonetic realization of the phoneme is [ɪ], which occurs when the vowel in the next syllable is not /i/ or /u/. When the vowel in the next syllable is /i/ or /u/ this preceding vowel becomes more tense, approaching the quality of /i/. This realization is represented phonetically by [ɨ], though "In the pronunciation of some speakers... it closely resembles normal /i/, while with others it can hardly be distinguished from the vowel /i/". (Cole: 1955:6)

3.413 At least two implications can be drawn from the above. The most obvious and most important one for us is that the Tswana student will have a great deal of difficulty differentiating between such words as feet and fit. A second implication, one which is beyond the scope of this study, is the problem of what a Tswana student might do when the same type of vowel sequence (low or mid vowel followed by high vowel) occurs in English.

3.414 English glide /iy/ is phonetically similar to the raised allophone of Tswana /i/. This should prove helpful when the language teacher

begins designing drills to be used to differentiate between English /i/ and /iy/. The Tswana student should first learn to recognize and then produce these two sounds. If the student can first learn to produce his or her [ɪ] allophone as a replacement for English /iy/, he or she should be encouraged to do so, while continuing to work toward the production of the /y/ glide. The teacher may be able to help him in this effort through the use of the following types of drills:

1. Recognition Drill

Say 'same' if the two utterances are exactly alike; say 'different' if they are not.

mean	mean	(same)
Tim	team	(different)
did	deed	(different)

2. Repetition Drill

/i/	/iy/
bit	beat
sit	seat
mitt	meat

3. Repetition Drill

It's a feat.
It's a fit.

It's a scene.
It's a sin.

3.42 English mid front unrounded lax vowel /e/.

3.421 This vowel is made with the tongue blade slightly lower in the mouth than for /i/. The lips are less spread. Phonetically, this phone is realized as [ɛ].

3.422 There is also an /e/ phoneme in Tswana. It has two allophones, [ɛ] and [e]. As with Tswana /i/, we must attempt to separate these two

allophones. Since English glide /ey/ is phonetically similar to the raised allophone of Tswana /e/, the same types of drills should be used here as were suggested for English /i/ and /iy/. (See 3.414)

3.43 English low front unrounded lax vowel /æ/.

3.431 This sound is produced with the tongue blade lower in the mouth and pulled slightly back from the position of /e/. The lips and mouth are more open than for any other front vowel.

3.432 This sound is not found in Tswana, even as an allophone of another phoneme. The Tswana student will "hear" this sound as a member of his or her /e/ phoneme. In teaching /æ/ to Tswana speakers, it will probably be necessary to contrast it with both allophones of this phoneme. After doing this all three phones should be presented in one drill. The following types of drills will demonstrate this approach:

1. Recognition Drill

'Same' or 'Different'		
mat	mate	(different)
tap	tap	(same)
lamb	lamb	(same)

2. Recognition Drill

'Same' or 'Different'		
bat	bat	(same)
bad	bed	(different)
dad	dead	(different)

3. Repetition Drill

/æ/	/ey/
sat	sate
nap	nape
rap	rape

4. Repetition Drill

/æ/	/e/
bad	bed
bat	bet
vat	vet

5. Recognition Drill

'Same' or 'Different'

rack	rake	(different)
pack	peck	(different)
wreck	wreck	(same)

3.44 English high central lax vowel /ɪ/.

3.441 While this sound occurs frequently in all varieties of English, in stressed as well as unstressed positions, its phonemic status is not universally accepted.

3.442 This sound does not occur in Tswana. Practically, due to this vowel's low functional load, the Tswana student need only be made aware of its existence. This could be done by introducing it in some of the words in which it occurs, such as:

horses

churches

parted

3.45 English mid central lax vowel /ə/.

3.451 This vowel is known as 'schwa'. It occurs in stressed and unstressed syllables and, as noted earlier, is a common morphophonetic replacement for other vowels under reduced stress.

3.452 This sound does not occur in Tswana. Tswana students asked to recognize and produce this sound in monosyllabic words will tend to assign it to their /a/ phoneme. Practice in discriminating schwa from

/a/ can result in satisfactory recognition and production control in a limited environment. However, if real control of English is desired, Tswana students would need instruction on English vowel reduction in unstressed syllables. Since all Tswana vowels are quite tense, this would be difficult for a Tswana student to do. A contrastive study of the intonation patterns of English and Tswana would be necessary, and this is beyond the scope of this report.

3.46 English low central unrounded slightly tense vowel /a/.

3.461 /a/ is the vowel sound found in the speech of some individuals in words such as cop, sock and hot. Other speakers use /ɔ/ in this environment.

3.462 Tswana has an /a/ phoneme which can readily be substituted in most positions where English /a/ occurs. The only problem that might appear is when /a/ occurs in unstressed syllables. A Tswana speaker would continue to stress the phone in all positions.

3.47 English high back rounded lax vowel /u/.

3.471 This vowel appears only in medial position, i.e. in closed syllables. Phonetically, it is represented by [ʊ].

3.472 A phoneme /u/ is found in Tswana. It has two allophones, [ʊ] and [ɯ], which have approximately the same distribution as the allophones of the /i/ phoneme of Tswana. (See 3.412) For the third time we are faced with the problem of separating two Tswana allophones into distinct English phonemes, /uw/ and /u/. Therefore, drills following the pattern established for separating /i:/ /iy/ and /e:/ /ey/ should be useful here. (See 3.414)

3.48 English mid back rounded tense vowel /o/.

3.481 A pure form of this vowel rarely occurs in English. Instead it assumes in most cases a diphthongal form, where a slight off-glide appears. This off-glide would be represented, as with the high back vowel /uw/, by the semivowel /w/.

3.49 English low back rounded vowel /ɔ/.

3.491 This sound does not appear normally in the speech of the author and many other Americans. It is replaced by /a/ in nearly all instances.

3.492 Tswana has an /o/ phoneme. This phoneme has two allophones, [o] and [ɔ], distributed in a similar manner to the allophones of Tswana /e/. Here we find our fourth example of two allophones of a Tswana phoneme constituting separate phonemic units in English. The same procedure should be followed here if separating them is desired. It may not be since /a/ could be used with satisfactory results as a replacement for /ɔ/ in most instances.

3.50 English diphthongs /ay aw oy/.

3.501 Phonetically, these complex vowel nuclei can be said to be composed of two vowels. They begin with one vowel and glide into the second.

3.502 These combinations of vowels are found in Tswana, as the sequence of two vowels separated only by a syllable boundary. These diphthongs should cause no real problems for the Tswana student, and practice with them should bring about satisfactory production in all positions.

CHAPTER 4

PHONOTACTICS OF ENGLISH AND TSWANA

4.1 English Phonotactics

4.11 Phonotactics is the study of possible sequences of sounds in a language. The fact that Tswana speakers so often render such English words as train and stop as "tirena" and "sitapa" demonstrates that Tswana does not permit such sequences as /tr/ and /st/, nor of closed syllables. This section will therefore be devoted to a survey of English consonant clusters and syllable structure, with reference to counterpart Tswana structure. This survey will serve as a basis for predicting and identifying the nature of this sort of interference.

4.12 In English a syllable is composed of an obligatory nucleus, usually a vowel, but sometimes a syllabic consonant such as /m/, and optional consonants either preceding and/or following the nucleus. All consonants except /ʒ/ and /ŋ/ may appear before the vowel nucleus. After the nucleus, any English consonant may be found in final position in the syllable. In addition, combinations of consonants may appear together without the intervention of a vowel, juncture, or syllable boundary. These combinations or consonant clusters may be found in initial or final position in a syllable.

4.13 Initially, a limited number of combinations of as many as three consonants may be found together in an English syllable, e.g., /spl-/, /spr-/, /str-/, and /skr-/. The total number of words using these initial clusters is very small.

4.14 In final position, a cluster of as many as four consonants may appear in an English syllable. The /-mpst/ of glimpsed is an example of this possibility. This occurrence is infrequent, and the number of possible combinations limited.

4.15 The most common clusters in English are those composed of two consonants, both in initial and final position. The chart below shows the most frequently appearing initial and final consonant clusters found in a study by Wallace (1950:111).

Chart 5

ENGLISH CONSONANT CLUSTERS BY FREQUENCY

<u>INITIAL</u>	<u>FINAL</u>
1. / pr /	1. / nt /
2. / st /	2. / ts /
3. / hw /	3. / nk /
4. / tr /	4. / st /
5. / fr /	5. / nd /
6. / pl /	6. / rz /
7. / θr /	7. / n(t)s /
8. / dr /	8. / n(d)s /
9. / bl /	9. / rd /
10. / kl /	10. / mʒ /
11. / tw /	11. / rt /
12. / gr /	12. / ld /
13. / sp /	
14. / kw /	

4.2 Tswana phonotactics

4.21 All Tswana syllables are open, and may be composed of a) vowel only; b) consonant plus vowel; or c) syllabic consonant. Any consonant may appear before the vowel, though there are restrictions on which consonants can appear with certain vowels. A limited number of words are spelled as though /ŋ/ occurred in post-vocalic position, but even in those cases the

/ng/ is actually in the following syllable.

4.22 Tswana has no consonant clusters. In certain grammatical constructions, two consonants do appear together without the intervention of a vowel, but they are separated by a syllable boundary.

4.3 Parallel descriptions of English and Tswana phonotactics.

<u>English</u>	<u>Tswana</u>
1. Syllable nucleus composed of a vowel or syllabic consonant.	1. Syllable nucleus composed of a vowel or syllabic consonant.
2. All consonants except /ʒ/ and /ŋ/ may appear pre-vocalically.	2. Any consonant may precede the vowel nucleus.
3. Any consonant may appear in syllable final position.	3. No consonant may precede ^{follow} the vowel nucleus.
4. Consonants may combine without the intervention of a vowel, juncture, or syllable boundary; as many as three preceding the syllable nucleus, and as many as four following the syllable nucleus.	4. No consonant combinations.

4.4 Problems of Tswana speakers in mastering the pronunciation of English consonant clusters.

4.41 English consonant clusters will tend to be difficult for Tswana speakers to produce in both syllable initial and syllable final positions. Pedagogical information on the teaching of English consonant clusters appears to be very scarce. Most authors seem content to merely list the possible combinations, as Wallace did, instead of suggesting methodology. One exception is O'Connor (1967: 93ff), who proposes a number of possible methods for teaching clusters.

4.42 One method that might be used to teach consonant clusters will be presented here. The initial cluster /gr/ has been arbitrarily chosen

to demonstrate this approach, though the pedagogy shown should be applicable, with or without modification, to most other consonant clusters.

4.421 Words which employ the first consonant of the cluster in the last position in the syllable (it is assumed that the two consonants in the cluster, /g/ and /r/, have already been taught in isolation, syllable initial and syllable final positions. See 2.451ff and 2.456ff), should be paired with words which use the second consonant of the cluster in initial position. Such pairs might be:

leg room

fog ray

bog rot

The Tswana student will be encouraged to first shorten the juncture between /g/ and /r/, and then to switch the syllable boundary so that it occurs before the /g/ instead of after it. In the case of the above word pairs, this would result in the following:

le groom / ley gruw/

fo gray / fa grey/

bo grot / ba grat/

When he or she can do this switching successfully, single words employing this consonant combination should be practiced.

4.422 The same type of methodology could be used in the teaching of final clusters. With initial and final clusters of more than two consonants, begin with a consonant cluster already learned and combine it with the new consonant in the same manner we described for two consonant clusters. For example the cluster /spr/ could be taught by combining /s/ with /pr/ as in mass + pray, which would become ma spray /mac sprej/.

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SOME PHONOLOGICAL PROBLEMS IN TEACHING ENGLISH
TO SPEAKERS OF TSWANA

by

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AN ABSTRACT OF A MASTER'S REPORT

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While Tswana is the first language of the vast majority of the citizens of the Republic of Botswana in southern Africa, English is the official language. This fact makes it incumbent upon the education system of the country to provide instruction in English as a second language, beginning in the first standard of the primary school.

This study is intended as a contribution to the efforts being made to develop ever more effective and efficient materials, methods, and techniques for this English teaching effort. Applying the structuralist approach, it presents the consonants, consonant clusters, vowels, and semi-vowels of General American English contrasted with their counterparts in Tswana. This analysis yields a prediction of the places where the Tswana speaker may be expected to have difficulty learning to pronounce English, and defines the nature of the difficulty. On the basis of this information, drills are suggested for learning each pronunciation feature in the face of the expected interference.

The main difficulties discussed are in connection with production of English /g v θ ð z ʒ r/ in any position, production of any consonant in final position, production of consonant clusters in any position, production of /æ i ə/, and contrasts /iy i/, /ey e/, /uw u/, and /ow ɔ/. English /a/ should present little difficulty.

A bibliography of works consulted is included. Several of these, particularly that of Mistry, contain helpful further bibliography.