A STUDY OF THE RWANDAN LEARNERS' INTELLIGIBILITY IN SPOKEN ENGLISH

by

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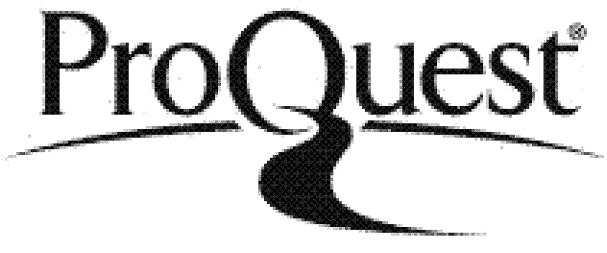
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Abstract

The present study investigates the phonological productive and perceptual competence of a group of Rwandan learners of English and the effect that phonological deviations have on their intelligibility and comprehension in spoken English.

In order to discover the hierarchy and degree of difficulty these subjects have in the segmental and suprasegmental features of English, productive and perceptual tests of words and sentences were designed and administered to a group of 60 subjects. The study also attempts to explain the effect of various interlanguage phenomena which occur in the production and perception of the pronunciation of English by Rwandan speakers. The results of this study support many of the claims of CA, EA and phonological interlanguage.

Chapter One gives background sociolinguistic information on the roles of Kinyarwanda, French, Kiswahili and English in Rwanda. Chapter Two discusses a number of theoretical key issues involved in language learning and acquisition. Chapter Three defines the topic of the study, i.e. intelligibility and comprehension, to gain insight into the study and to provide a framework for the research design and methodology. Chapter Four is a description of the Kinyarwanda and English phonological systems, which is the basis of the predictions of the difficulties and the design of data for Chapters Five and Six. Chapter Five analyses, categorizes and explains the source of deviations in the data gathered from subjects' pronunciation of words and sentences as interpreted by native English speakers. Chapter Six analyzes the effect of phonological deviations on the subjects' comprehension of spoken English. Chapter Seven concludes the whole study with a discussion of the major findings, and suggests some useful steps towards more effective teaching of the pronunciation for better intelligibility and comprehension in English.

LIST OF CONTENTS

Page

Declaration....i
Acknowledgements....ii
Abstract....iii
List of Contents....iv

Chapter 0 Introduction to the study

0.1 Definition....1
0.2 Purpose of the study....2
0.3 Main research questions....3
0.4 Significance of the study....4
0.5 Methodology of the study....4
0.6 Structure of the study....5

Chapter One: Esquisse of the Linguistic Sociology of Rwanda

1.1 Introduction.... 6
1.2 Geographical situation....9
1.3 Bantu Languages....9
1.4 Sociology and Status of 4 languages in use in Rwanda....15
1.4.1 Kinyarwanda....17
1.4.2 French....24
1.4.3 Kiswahili.... 31
1.4.4 English....36
1.5 Teaching English in Rwanda....38
1.5.1 Aims....38
1.5.2 English before 1994....39
1.5.3 English after 1994....41
1.5.4 English in Primary School....42
1.5.5 English in Secondary School....43
1.5.6 English at University....46
1.5.7 English in Adult Informal Education....47
1.5.8 Teaching Methods....48
1.5.9 Teaching Problems....49
1.6 Sociolinguistic Review and Conclusion....54

Chapter Two: Language Learning and Language Teaching

2.1 Introduction....58
2.2 First Language Acquisition....60
2.3 Secong Language Learning....61
2.4 Teaching Methods....66
2.5 Phonology and Phonetics in Language teaching....70
2.6 Contrastive Analysis....75
2.7 Language Universals....85
2.8 Error Analysis (EA) & Interlanguage....89
2.8.1 Mother Tongue Effect....96

2.8.2 Over-generalization....103
2.8.3 Simplification....104
2.8.4 Approximation....105
2.8.5 Fossilization....106
2.9 Socio-Psychological Factors Affecting L2....109
2.9.1 Exposure to L2....109
2.9.1.1 Native setting....110
2.9.1.2 Formal setting....113
2.9.2 Personality....115
2.9.3 Attitude to Language....117
2.9.4 Motivation....123
2.9.5 Aptitude....127
2.9.6 Critical Period Hypothesis....129
2.9.7 Teacher....136
2.9.8 Language Model....138
2.10 Conclusion....144

Chapter Three: Intelligibility and Comprehension

3.1 Introduction....146
3.2 Definition....148
3.2.1 Productive Intelligibility....157
3.2.2 Receptive Comprehension....158
3.2.3 Mutual Intelligibility....161
3.2.4 Accuracy and Intelligibility....167
3.2.4.1 Minimum General Intelligibility (MGI)....167
3.2.4.2 High Acceptability....169
3.2.4.3 Restricted Intelligibility....169
3.3 Intelligibility and the 4 modes of communication....170
3.3.1 Listening and Comprehension....171
3.3.1. 1 Functions of Listening....175
3.3.1.2 Factors Affecting Listening....175
3.3.2 Speaking and Intelligibility....179
3.3.3 Reading and Intelligibility....181
3.3.4 Writing and Intelligibility....182
3.4 Factors Affecting Intelligibility and Comprehension....183
3.4.1 Linguistic Factors....184
3.4.1.1 The Role of Vocabulary....185
3.4.1.2 The Role of Grammar....186
3.4.1.3 Pronunciation Teaching and Intelligibility....187
3.4.2 Non- Linguistic Factors....197
3.4.2.1 The Speaker and Listener....197
3.4.2.2 Familiarity with the speaker's accent....199
3.4.2.3 Familiarity with the topic and context....201
3.4.2.4 Attitude towards the speaker....202
3.4.2.5 Physical Fatigue....202
3.4.2.6 External Noise....203
3.5 Foreign Accent and Intelligibility....204
3.6 Testing Intelligibility and Comprehension....207

3.7 Summary.....211

Chapter Four: Kinyarwanda and English Contrastive Phonology

4.0 Introduction.....213
4.1 The orthography of Kinyarwanda.....214
4.1.1 Kinyarwanda Alphabet.....214
4.1.2 Morphology of Kinyarwanda.....216
4.2 Kinyarwanda Vowel System.....218
4.2.1 / i /.....219
4.2.2 / e /.....220
4.2.3 / a /.....220
4.2.4 / o /.....220
4.2.5 / u /.....220
4.2.6 / ii /.....221
4.2.7 / ee /.....221
4.2.8 / aa /.....221
4.2.9 / oo /.....221
4.2.10 / uu /.....221
4.3 Kinyarwanda long vowels rules.....222
4.4 Distinctive Features of Kinyarwanda vowels.....227
4.5 The Vowel System of English.....233
4.5.1 / ɪ /.....234
4.5.2 / ɛ /.....234
4.5.3 / æ /.....234
4.5.4 / ʌ /.....234
4.5.5 / ɒ /.....234
4.5.6 / ʊ /.....234
4.5.7 / ə /.....234
4.5.8 / iː /.....235
4.5.9 / ɑː /.....235
4.5.10 / ɔː /.....236
4.5.11 / uː /.....236
4.5.12 / ɜː /.....236
4.5.13 / eɪ /.....237
4.5.14 / ɑɪ /.....237
4.5.15 / ɔɪ /.....237
4.5.16 / əʊ /.....237
4.5.17 / ɑʊ /.....238
4.5.18 / ɪə /.....238
4.5.19 / ɛə /.....238
4.5.20 / ʊə /.....238
4.5.21 English diphthongs + / ə /.....239
4.6 Prediction of difficulties.....240
4.6.1 / ɪ /.....241

4.6.2 / ɛ /....242
4.6.3 / æ,ɑ: /....242
4.6.4 / ɒ /....242
4.6.5 / ʊ /....242
4.6.6 / ʌ /....242
4.6.7 / ɜ: /....243
4.6.8 / eɪ /....243
4.6.9 / ɑɪ /....243
4.6.10 / ɔɪ /....243
4.6.11 / əʊ /....243
4.6.12 / aʊ /....244
4.6.13 / ʊə /....244
4.6.14 / ɪə /....244
4.6.15 / ɛə /....245
4.7 Kinyarwanda Consonant System....245
4.7.1 / p /....248
4.7.2 / t /....248
4.7.3 / d /....248
4.7.4 / k /....248
4.7.5 / g /....249
4.7.6 / c /....250
4.7.7 / ɟ /....250
4.7.8 / β /....251
4.7.9 / f /....251
4.7.10 / v /....251
4.7.11 / s /....252
4.7.12 / z /....252
4.7.13 / ʃ /....252
4.7.14 / ʒ /....253
4.7.15 / ç /....253
4.7.16 / h /....253
4.7.17 / pf /....254
4.7.18 / ts /....254
4.7.19 / tʃ /....254
4.7.20 / m /....255
4.7.21 / n /....255
4.7.22 / ɲ /....255
4.7.23 / r /....256
4.7.24 / j /....256
4.7.25 / w /....257
4.8 Kinyarwanda Consonant Clusters....257
4.9 English Consonant System....263
4.9.1 / p /....264
4.9.2 / b /....264
4.9.3 / t /....265

4.9.4 / d /....265
4.9.5 / k /....265
4.9.6 / g /....266
4.9.7 / f /....266
4.9.8 / v /....266
4.9.9 / θ /....266
4.9.10 /ð /....266
4.9.11 / s /....267
4.9.12 / z /....267
4.9.13 / ʃ /....267
4.9.14 / ʒ /....267
4.9.15 / h /....267
4.9.16 / tʃ /....268
4.9.17 / dʒ /....268
4.9.18 / m /....268
4.9.19 / n /....268
4.9.20 / ŋ /....268
4.9.21 / l /....269
4.9.22 / r /....269
4.9.23 / j /....270
4.9.24 / w /....270
4.10 English Consonant Clusters (CC)....270
4.10.1 CC# (initial position)....271
4.10.2 #CC (final position)....272
4.11 Prediction of difficulties....273
4.12 Kinyarwanda Word Prosody....276
4.13 English Word Prosody....279
4.14 Syllable-timing and Stress-timing....282
4.14.1 Kinyarwanda....282
4.14.2 English....284
4.15 Prediction of difficulties....286
4.16 Conclusion....287

Chapter Five: A Study of the phonology of Intelligibility

5.1 Purpose....289
5.2 The Scope of investigation....289
5.2.1 Subjects....289
5.2.1.1 Hope International School....290
5.2.1.2 Windle Charitable Trust....290
5.2.1.3 Kabiria Secondary School....290
5.2.1.4 Inter-Lingual Teaching Centre....291
5.2.2 Judges....291
5.3 Recording of data....291
5.4 Analysis procedure....295
5.5 Vowel Analysis....297

5.5.1 / ɪ /....297
5.5.2 / æ /....299
5.5.3 / ʌ /....301
5.5.4 / ɒ /....302
5.5.5 / ʊ /....304
5.5.6 / ɜː /....306
5.5.7 / eɪ /....308
5.5.8 / əʊ /....309
5.5.9 Non-Target vowels....311
5.5.10 Summary....312
5.6 Consonants and Consonant Clusters....314
5.6.1 / θ /....315
5.6.2 / ð /....317
5.6.3 / dʒ /....319
5.6.4 / b # /....320
5.6.5 / d # /....321
5.6.6 / g # /....322
5.6.7 / v # /....323
5.6.8 / z # /....324
5.6.9 / nt /....325
5.6.10 / mp /....325
5.6.11 / ŋk /....326
5.6.12 Initial Consonant Clusters....327
5.6.12.1 / #pr /....328
5.6.12.2 / #bl /....328
5.6.12.3 / #tr /....329
5.6.12.4 / #dr /....329
5.6.12.5 / #gl /....329
5.6.12.6 / #sp /....330
5.6.12.7 / #sf /....330
5.6.12.8 / #br /....330
5.7 Other Consonants and Consonant Clusters....331
5.7.1 / p #/....331
5.7.2 / t #/....331
5.7.3 / k #/....331
5.7.4 / tʃ #/....332
5.7.5 / mp #/....332
5.7.6 / nz #/....332
5.7.7 / lz #/....332
5.7.8 / ks #/....333
5.7.9 / st #/....333
5.7.10 / # st /....333
5.7.11 / # sl /....333
5.7.12 Summary....333
5.8 Word Prosody....336
5.8.1 Words+-ise....336

5.8.2 Words+-ate....337
5.9 Sentence Phonology....338
5.9.1 Purpose....338
5.9.2 Materials....339
5.9.3 Native Speaker Judges....340
5.9.4 Inter-group Analysis....341
5.9.4.1 Hope International School....341
5.9.4.2 Windle Charitable Trust....341
5.9.4.3 Kabiria Secondary School –Form 2....342
5.9.4.4 Kabiria Secondary School –Form 4....342
5.9.4.5 Kabiria Secondary School –Form 6....343
5.9.4.6 Inter-Lingual Teaching Centre(ILTC)....343
5.10 Summary....344
5.11 Detailed Sentence Analysis....345
5.12 Conclusion....358

Chapter Six: A Study of the phonology of Comprehension

6.1 Purpose....363
6.2 Methodology....365
6.2.1 Subjects....365
6.2.2 Materials....366
6.2.3 Analysis procedure....367
6.3 Word phonology....368
6.3.1 Subjects' perception: Hope....368
6.3.2 Subjects' perception: Windle....369
6.3.3 Subjects' perception: Kabiria-Form 2....370
6.3.4 Subjects' perception: Kabiria-Form 4....371
6.3.5 Subjects' perception: Kabiria-Form 6....372
6.3.6 Subjects' perception: ILTC....373
6.4 Summary of Word comprehension....374
6.5 Word-list analysis....375
6.5.1 Lead....375
6.5.2 Strange....376
6.5.3 Let....377
6.5.4 Youth....378
6.5.5 Thing....379
6.5.6 Reap....379
6.5.7 Flee....380
6.5.8 Breathe....381
6.5.9 Debt....382
6.5.10 Shade....383
6.5.11 Pull....384
6.5.12 Bud....385
6.5.13 Spot....385
6.5.14 Dark....386
6.5.15 Chip....386
6.5.16 Walk....387
6.5.17 Barn....388

6.5.18 Think....389
6.5.19 Tank....389
6.5.20 Heel/Heal....390
6.5.21 Fool....391
6.5.22 Bird....391
6.5.23 Shared....392
6.5.24 Bought....393
6.5.25 Dare....393
6.5.26 *Zay....394
6.5.27 Hut....394
6.5.28 Rice....395
6.5.29 Text....396
6.5.30 Dock....396
6.5.31 Heart....397
6.5.32 Hut....398
6.5.33 Hot....398
6.5.34 Hurt....399
6.5.35 Hat....399
6.5.36 Luck....400
6.5.37 Lock....401
6.5.38 Lark....401
6.5.39 Lack....402
6.5.40 Luck....403
6.6 Summary....404
6.6.1 / iː /....404
6.6.2 / ɪ /....404
6.6.3 / e /....405
6.6.4 / æ /....405
6.6.5 / ɑː /....405
6.6.6 / ɒ /....405
6.6.7 / ɔː /....406
6.6.8 / ʊ /....406
6.6.9 / uː /....406
6.6.10 / ɜː /....407
6.6.11 / ʌ /....407
6.6.12 / eɪ /....407
6.6.13 / ɑɪ /....408
6.6.14 / ɛə /....408
6.6.15 / p /....408
6.6.16 / b /....408
6.6.17 / t /....409
6.6.18 / d /....409
6.6.19 / k /....410
6.6.20 / n /....410
6.6.21 / ŋ /....411
6.6.22 / f /....411
6.6.23 / θ /....411

6.6.24 / ð /....412
6.6.25 / s /....412
6.6.26 / z /....412
6.6.27 / ʃ /....413
6.6.28 / tʃ /....413
6.6.29 / dʒ /....413
6.6.30 / h /....413
6.6.31 / l /....414
6.6.32 / r /....414
6.6.33 / j /....415
6.6.34 / w /....415
6.7 Summary....415
6.8 Sentence phonology....418
6.8.1 Purpose....418
6.8.2 Subjects....421
6.8.3 Materials....421
6.8.4 Procedure....422
6.8.5 Sentence analysis....423
6.8.5.1 Sentence 1....423
6.8.5.2 Sentence 2....426
6.8.5.3 Sentence 3....428
6.8.5.4 Sentence 4....430
6.8.5.5 Sentence 5....432
6.8.5.6 Sentence 6....435
6.8.5.7 Sentence 7....437
6.8.5.8 Sentence 8....439
6.8.5.9 Sentence 9....441
6.8.5.10 Sentence 10....443
6.9 Conclusion....445

Chapter Seven: Summary and Recommendations

7.1 Summary....448
7.2 Major Interlanguage findings....450
7.2.1 Difficulties with English vowels....451
7.2.2 Difficulties with English consonants....457
7.2.3 Word stress....464
7.2.4 Sentence phonology....465
7.3 Pedagogical suggestions....467
7.3.1 Target:MGI....468
7.3.2 Teacher's awareness....468
7.3.3 Teacher's training....468
7.3.4 Need to focus on difficulties....469
7.3.5 Focus on difficulties – sentence level....471
7.3.6 Designing exercises....471
7.3.7 Testing....482
7.3.8 English beyond classroom....485
7.4 Limitations of the study....486
7.5 Suggestions for further research....489

References.....491
Appendices.....509

INTRODUCTION TO THE STUDY

0.1 Definition

An intelligibility and comprehension study of the phonology and prosody of central and East African English, with particular reference to the analysis of the linguistic and social ambiance in Rwanda is the issue at heart of the present work.

Though there have been a few contrastive studies which looked into the difficulties of Rwandan learners of English, mainly Rutayisire (1986) and Ruzindana (1990), no study has thus far undertaken a joint analysis of the productive and receptive phonological competence of the segmentals and suprasegmentals of English and its effect on intelligibility and comprehension. Most of the phonological studies of interlanguage have concentrated on learners' productive competence - how accurately and/or intelligibly they can pronounce - to the neglect of the learners' perceptive competence - how efficiently they can decode the phonetic signals they receive from others (Tench 2001:257-8).

The concepts of intelligibility and comprehension have recently generated a good deal of debate. In our present study, intelligibility and comprehension represent the non-native speaker's phonological productive (speaking and being understood) and receptive competence (listening and understanding) in the target language. In that respect, this study has taken a slightly different angle from a few studies already done about intelligibility, such as Tiffen (1974), Smith & Nelson (1985), Voss (1984), Daborn (1990), and Jenkins's (1996, 1997, 2000) extremely enlightening work.

Our interest in the analysis of the level of intelligibility of non-native speakers (NNS) to native speakers (NS), and their comprehension of the native speaker lies on the ground that communication should be understood as a two way process involving a speaker and a listener who usually interchange roles. The international renown that English has enjoyed for communicative

purposes for those who speak it as either a native, second or foreign language requires its users to acquire a sufficiently accurate, reasonably understandable and acceptable pronunciation in order to achieve successful intelligibility and comprehension. In that sense, there are rules and standards that regulate the pronunciation of English and thus help its speakers to avoid too much permissiveness that would lead into intelligibility and comprehension failures.

0.2 Purpose of the study

This study aims primarily at investigating, explaining and better understanding the nature and sources of phonological difficulties that the pronunciation of English represents for Rwandan speakers. It also aims at analysing and demonstrating the impact of mother tongue interference which appears to be one of the most significant factors that have led to phonological deviations in English. We also intend to show that the learners' inability to acquire the pronunciation of English correctly is likely to lead to serious comprehension problems in interpreting fluent speakers. For that purpose, our first step was to gather data on the basis of Contrastive Analysis on the assumption that a learner's mother tongue will have a considerable effect on the development of competence in the target language, especially at the level of phonology.

Secondly, this study aims at measuring the extent to which phonological errors in productive and perceptive competence of the segmentals and suprasegmentals of English by Rwandan learners of English has affected their intelligibility and comprehension. We strongly support the policy that foreign learners of English should be trained to speak it acceptably and understandably, and to be able to understand other English speakers successfully, native and non-native alike.

In the light of the description and analysis of the phonological deviations from the target forms, this study will indicate important implications for teaching methodology with the view of improving the standard of the pronunciation of

English by Rwandan learners who learn it against a background of Kinyarwanda, French and Kiswahili.

0.3 Main Research Questions

The whole objective of this research is to assess the level of phonological (productive and perceptual) competence of a group of Rwandan learners in English. It is assumed that features of their mother tongue (Kinyarwanda) would be a dominant influence on their interlanguage phonology, even though they have a competence in French and Kiswahili. It is therefore important to collect wholly original data which have in fact never been collected before, in order to discover what their main features of their interlanguage phonology are. The size of the group and its variety will ensure that the findings are reasonably representative of the Rwandan population. An analysis of the data should satisfy a number of research questions:

1. Is the Rwandan learners' interlanguage phonology in actual fact significantly influenced by features of their mother tongue?
2. What should be the role of Contrastive Analysis (CA) in a study of this kind?
3. What do native speakers in fact find intelligible and unintelligible in the Rwandan learners' interlanguage phonology?
4. Is there any significant difference in their interlanguage phonology in terms of production and perception?

0.4 Significance of the study

It is hoped that the findings from this study will help raise the level of awareness of the problems hindering intelligible pronunciation and successful comprehension of Rwandan speakers of English, with a view to seeking to devise more appropriate methods, materials and strategies towards improving the teaching of pronunciation.

It is hoped that this study will also give new insights into the understanding of the importance of pronunciation in learning English as an international language, gradually becoming a lingua franca for communication between its users as either native, second or foreign speakers.

This study could be of help to the Rwandan government and the Ministry of Education, to become more aware of the importance and relevance of proper teaching of the pronunciation of English that will be attained only if teachers are phonologically better trained and qualified for their job.

It should help teachers and language planners to better understand the language difficulties they and their students are faced with in the pronunciation of English and how to deal with them. To the teachers in particular, it should enable them to identify and understand the sources of those difficulties. This would help them to rethink strategies and better plan remedial teaching to solve them. In that sense, this work will be a contribution towards further understanding of the phonological problems that seem to hinder the intelligibility and comprehension of Rwandan learners of English and tentative ways to tackle them.

0.5 Methodology of the study

A comparison between the description of Kinyarwanda and English phonological systems is believed to display the areas of similarities, differences and difficulty for the learners of English. The identification of the sources of errors, their significance and their effect on intelligibility and comprehension will be analysed and interpreted through data collection that used written questionnaires, unrehearsed readings and recordings of lists of words and sentences.

The recordings used to test intelligibility of 60 subjects, i.e. a set of 170 words and 23 sentences will be listened to and interpreted by five native speakers of English. In testing comprehension, a group of 60 learners will be asked to listen to a set of 40 isolated words read by a male native English speaker, while a smaller group of 30 subjects will listen to 10 sentences read by a female native English speaker. In both tasks, the native speaker judges as well as the subjects themselves will be asked to write down what they think they heard. The results will be gathered, analyzed and tabulated.

0.6 The structure of the study

The present work comprises 7 chapters. Chapter One opens the whole work with an esquisse of the complex linguistic sociology of Rwanda, which uses four languages: Kinyarwanda, French, Kiswahili and English.

Chapter Two discusses a number of key theoretical issues that are relevant to second language learning and acquisition, interlanguage phonology, contrastive analysis and error analysis.

Chapter Three focuses on explaining the concepts of intelligibility and comprehension as a two way interaction process that involves both NNSs and NSs speaking and listening to each other through recordings.

Chapter Four presents a detailed contrastive description of Kinyarwanda (NL) and English (TL) phonological systems whose differences are believed to represent the source of difficulty to the Rwandan learners' interlanguage phonology. As a prerequisite to improving the teaching and learning of English and overcoming difficulties encountered by these learners, it is vital to make a sound description and comparison of the learners' first language with the target language. This description is also the basis on which the predictions of the learners' difficulties will be tested in Chapter Five and Six.

Chapter Five is the actual analysis and interpretation of data of segmentals and suprasegmentals of English to test intelligibility as interpreted by 5 native English speakers. The results are aimed at showing the extent to which data confirm the predictions made in Chapter Four or not, and support the CA hypothesis, theories of language universals and markedness universals, or not.

Chapter Six is the analysis and interpretation of the findings of the receptive competence of the segmentals and suprasegmentals of English. The results from this chapter are hoped to corroborate the difficulty that Rwandan learners have in understanding a native speaker's speech.

Chapter Seven summarizes the findings of this work and presents relevant teaching implications, as well as suggestions towards improving the learners' intelligibility and comprehension in English.

CHAPTER ONE

ESQUISSE OF THE LINGUISTIC SOCIOLOGY OF RWANDA

1.1 Introduction

Modern sociolinguistics is rightly concerned with the study of languages as a form of behaviour in social settings. It looks closely into the relationship existing between language, society and individuals, as people use the language as an instrument to perform different functions and to communicate in a variety of contexts. Language and society cannot be separated from each other. Halliday (1978:1) said that language is the product of the social process. He also maintained that language is a potential. He explained that what a person can do in the linguistic sense as speaker /hearer, is equivalent to what he 'can mean'; hence the description of language as a meaning potential. He (1973:66) also emphasized the relationship between language and social man by indicating that a functional approach to language means first of all investigating how language is used, i.e. trying to find out what are the purposes that language serves for us, and how we are able to achieve these purposes through speaking and listening, reading and writing.

Halliday (1973) further indicates that the study of social man presupposes the study of language with reference to its three generalised functions, i.e. ideational, interpersonal and textual. He explains that the 'ideational' is concerned with the content of language, its function as a means for the expression of our experience, both of the external world and of the inner world of our own consciousness. By 'interpersonal', the language is perceived as the mediator of role, including all that may be understood by the expression of our own personalities and personal feelings on the one hand, and forms of interaction and social interplay with other participants in the communication situations on the other hand. The 'textual' has an enabling function, that of creating text, which is language in operation as distinct from strings of words or isolated sentences and clauses. It is this component that enables the speaker to organize what he is saying in such a way that it makes sense in the context and fulfils its function as a message (p.105-107).

Halliday's (1994) main concern in *Introduction to Functional Grammar* is about the functions of language. He interprets language as a system of meanings accompanied by forms through which these meanings can be realised. Language is seen as relating to social structure and to its use in social contexts. In addition, this functional view of language entails that the rule system should, as far as possible, be described in terms of functional concepts, including emphasising grammatical functions, and interpersonal functions, i.e. the role language plays as a form of exchange between speaker and listener.

Language is not only a means of communicating information but also a very important means of establishing and maintaining relationships with other people. In other words, people interact at different levels and in different contexts with the help of the language (Trudgill 1974:1). Wardhaugh (1986:13) maintained that sociolinguistics is concerned with investigating the relationship between language and society with the goal being a better understanding of the structure of language and how languages function in communication; the equivalent goal is the sociology of language in trying to discover how social structure can be better understood through the study of language, e.g. how certain linguistic features serve to characterize particular social arrangements.

Language defines who individual speakers are or what they do together. Bolinger (1975:333) commented "there is no limit to the ways in which human beings league themselves together for self-identification, security, gain, amusement, worship or any of the other purposes that are held in common; consequently there is no limit to the number and variety of speech communities that are to be found in a society". Fishman (1972:1) pointed to the close and strong relationship between a language and the community using it in the following terms:

> *Man is constantly using language; spoken language, written language, printed language, and man is constantly linked to others via shared norms of behaviour. The sociology of language examines the interaction between these two aspects of human behaviour: Use of language and the social organisation of*

> *behaviour. Briefly put, the sociology of language focuses upon the entire gamut of topics related to the social organisation of language behaviour, including not only language usage per se, but also language attitude, overt behaviour toward language and toward language users.*

He describes the sociology of language in terms of its descriptive and dynamic roles (p.26) in the following terms:

> *Descriptive sociology of language seeks to answer the question who speaks (or writes) what language (or what language variety), to whom and when and to what end? Descriptive sociology of language tries to disclose the norms of language usage, that is to say, the generally accepted social patterns of language use and of behaviour and attitude toward language, for particular social networks and communities, both large and small.*

The aim of the present chapter is to describe the languages used in Rwanda , their roles and status. There are four languages in use in Rwanda: Kinyarwanda (L1) and Kiswahili (L3) as Bantu languages; French (L2) and English (L4) as European languages. Their unequal status lies in individual speakers' level of education, usefulness in people's daily life, and where they are used, whether in cities or rural areas. With reference to the number of speakers and the importance of each language in daily life, the four languages rank in the following order: Kinyarwanda, French, Kiswahili, and English. However, English has gained more ground than Kiswahili since 1996. The great majority of Rwandan nationals do not speak any other language apart from their mother tongue.

The exposé and understanding of the complex sociolinguistic situation of Rwanda is a step towards understanding the source and difficulty that the pronunciation of English poses to the intelligibility and comprehension of Rwandan learners of English. It can be assumed that the interference from the features of pronunciation of Kinyarwanda has affected the way in which its speakers perform either in Kiswahili, French and English.

1.2 Geographical Situation

Rwanda is a small country, geographically land-locked in the heart of central eastern Africa. It is surrounded by linguistically heterogeneous communities such as Uganda to the North, The Democratic Republic of Congo (former Zaire) to the West, Tanzania and Kenya to the East, and Burundi to the South. The map in appendix 1 will make the location of Rwanda clearer to the reader.

Historically, Rwanda used to be one linguistic community with Burundi, before artificial political and linguistic boundaries were arbitrarily fixed during the colonial era. 'Kirundi' or 'Rundi' is the language spoken in Burundi by almost the same ethnic groups, i.e. Hutu, Tutsi and Twa as in Rwanda. Both Kinyarwanda and Kirundi are considered as dialects or variations of the same language (Katzner, 1977:313; Grimes, 1992; Lyovin, 1997). Kinyarwanda, Kirundi and Kiswahili are classified as belonging to the Bantu language family.

Linguistically, Kinyarwanda has been classified in Area 61 of Zone D (Guthrie's classification of Bantu Languages, 1967:65) or as number 105E in Meinhof's (1932) classification.

1.3 Bantu Languages

The exact origin and the number of speakers of Bantu languages are the subject of slight disagreement, which nevertheless does not refute their extensiveness from West to Central, East and Southern Africa. The Bantu languages form a major component of the Benue-Congo branch of the Niger Congo family of languages. The Benue-Congo branch is believed to comprise up to 700 languages of which 500 are Bantu (Campbell 1995; Lyovin 1997).

The term 'Bantu' was coined by W.H.J. Bleek (1862-9) cited in Campbell (1995) to mean 'the people' and their language. Linguistically and geographically it defines and identifies a particular group of people whose languages share common and similar features to a certain extent, in opposition to other groups. The word 'Bantu' is in fact a plural form and is similarly expressed in different Bantu languages as Campbell (1995:49) found

out in the following table, to which we have added the Siswati and Kirundi languages.

Table 1.1 Similarity of 'Bantu' linguistic forms in different languages

	Languages	Singular Form	Plural Form
1	Rwanda	umu.ntu	aba.ntu
2	Kongo	mu.ntu	ba.ntu
3	Zulu	umu.ntu	aba.ntu
4	Horero	omu.ndu	ovà.ndu
5	Swahili	m.tu	wa.tu
6	Lingala	mo.to	ba.to
7	Sotho	mô.thô	bô.thõ
8	Shona	mu.nhu	va.nhu
9	Luganda	omu.ntu	aba.ntu
10	Siswati	umuntʉu	aba.ntʉu
11	Kirundi	umu.ntu	aba.ntu

Bleek was followed by Meinhof (1932) in defining the Bantu languages and in 1948, Professor M. Guthrie published the first part of his definitive classification, *The Comparative Bantu Languages* (complete edition, 4 volumes, 1967-70). In later works, Guthrie (1967:82) and Campbell (1995:50) respectively identified the Bantu languages according to six regions divided into different zones by assigning a letter followed by a number in order to identify them (see appendix 2).

Guthrie's (1967:65) classification:

1. North Western (NW)
   Zones A,B,C
2. North Eastern (NE)
   Zones D,E,F
3. Central Western (CW)
   Zones H,L
4. Central Eastern (CE)
   Zones G,M.N
5. South Western (SW)
   Zones K, R
6. South Eastern (SE)
   Zones P,S

Campbell's (1995) classification is similar in many ways to Guthrie's but more specific by naming languages found in each zone.

1. North West Central Africa : Duala, Fang, Buja, Lingal, Losengo
2. West and South West Central Africa : Kongo, Songe, Horero, Ciokwe
3. East Central : Swahili, Sango, Bemba, Tongo, Nyanja

4. North East Central : Luganda, Gikuyu, Nyankole, Soga, Rundi, Ruanda, Nyamwezi
5. South-East : Shona, Tsonga, Ronga, Makua, Yao
6. South : Sotho, Swazi, Tswana, Zulu-Xhosa

In geographic terms, Bantu languages cover most of sub-Saharan Africa, across which they seem to have spread from West Africa, eastwards and southwards (Guthrie, 1967; Campbell, 1995; Katzner, 1995; and Lyovin, 1997:193). Polomé (1967:13) and Katzner (1995) locate the assumed origin and homeland of the Bantu languages in the north western corner of Cameroon, and further west as far as Senegal from where they extended towards the central and east African region and further down southern Africa. Polomé maintains that the Bantu languages constitute a vast family of languages spoken south of a line stretching from the slopes of Mount Cameroon to the northern shores of Lake Victoria (i.e. region of Great Lakes), towards the east coast, with a wedge southwards into Masai territory and a bulge northward to include the Meru on the eastern slopes of Mount Kenya.

Nurse (1994) in Hombert and Hyman (1999:2) maintains that during the last half of the first millennium BC, Bantu speaking communities spread slowly east and south from the rain forests, gradually becoming the predominant linguistic population of most of sub-equatorial Africa. Kinyarwanda is one of the Bantu languages described by Nurse as belonging to the group of Great Lakes (GL) languages comprising those spoken in Uganda, the RDC (ex-Zaire), Burundi and part of Tanzania.

Katzner (1977) believes that there are many hundreds of Niger-Congo languages with perhaps as many as 300 million speakers, among them 300 Bantu languages with as many as 200 million speakers. This number shows a slight contradiction to those of Campbell and Lyovin. Kinyarwanda and Kiswahili and many languages around Lake Victoria are part of the 'narrow Bantu', a sub-branch of Benue-Congo and Niger-Congo family of languages (Grimes 1996:68/70). Kiswahili is one of the major Bantu languages with as

many as 50 million speakers (Lyovin 1997:217). It is related to Kinyarwanda in a number of ways and it will occasionally be referred to in this present work. Campbell (1995:50) and a few others point out that 'Rwanda' meaning Kinyarwanda, tops the list as the mother tongue of at least 10 million people followed by Swahili, Zulu-Xhosa and Makua (Mozambique) with 5-6 million each. However, used as a second language, Swahili comes first with some 50 million speakers. We would however think that Campbell's number of Kinyarwanda speakers is far smaller than what it actually is, in view of the mutual intelligibility that Kinyarwanda shares with dialects spoken in the neighbouring countries to Rwanda.

Some of the major Bantu languages are: Luba, Kongo and Lingala in former Zaire; Kikuyu of Kenya; Kinyarwanda of Rwanda;Kirundi of Burundi; Ganda of Uganda; Nyanja of Malawi and Zambia; Bemba of Zambia; Shona of Zimbabwe; Tswana of Botswana and South Africa; Sotho of Lesotho and South Africa; Zulu and Xhosa of South Africa.

Bantu is a generic term. The geographical spread of these languages and their similarities give a plausible hint to the fact that they have a common ancestor. Some differences which they display today, and the loss of some features from say *Proto-bantu* to *Bantu* should be considered as a direct and natural result of the language development process. Guthrie, cited in Hombert and Hyman (1999:250) says for example, that the 5 vowel system maintained in some Bantu languages may have been a reconstruction from the Proto-bantu 7 vowel system. If [i, e, ɛ, u, o, ɔ, a] is reconstructed, then the change of these 7 vowels to [i, ɪ, e, u, ʊ, o, a] could be seen as an intermediate step on the way to the widely occurring 5 vowel system [i,e,u,o,a].

Grimes' (1992) index provides an exhaustive list of different subdivisions of the Bantu languages in which Kinyarwanda (J60) and Kiswahili (G40) are shown as sub-branches of the narrow Bantu, Benue-Congo, Niger-Congo family of languages as it appears in appendix 3.

In an attempt to check vowel similarity within a few Bantu languages, the present writer has approached a group of students at the University of Wales, Cardiff, from Uganda, Kenya, Tanzania, Zambia, Zimbabwe, Botswana and Swaziland, and investigated how their respective mother tongue vowel systems work. The following table shows a strong similarity in the vowel system of the languages spoken in the above countries.

Table 1.2 Vowel similarity in different Bantu languages

	Country	Language	Vowel System
1	Rwanda	Kinyarwanda	a e i o u
2	Burundi	Kirundi/Rundi	a e i o u
3	Uganda	Kiga/ - Nkore	a e i ĩ o u ũ
4	Kenya	Kikugu/Kikamba Kiswahili	a e i ĩ o u ũ a e i o u
5	Tanzania	Kirangi Kiswahili	a e i o u a e i o u
6	Zambia	Bemba	a e i o u
7	Zimbabwe	Shona	a e i o u
8	Botswana	Setswana	a e ê i o õ u →a e i o u
9	Swaziland	Siswati	a e i o u

Also, Bantu consonant phonemes display a higher level of similarities than differences among themselves. Most of these consonants have similar English counterparts, though they may occasionally differ in manner and place of articulation, such as in the case of / t, d, h /. Katamba and Myers (1995) also confirmed some more common Bantu language characteristics in relation with word and sentence phonology, such as the use of the infinitive marker *ku-;* the sentence word pattern *SVO,* as in Shona *mwaná anoona imbwa* 'the child sees the dog' (Myers 1995:73); the place of the object prefix before the verb stem. Mtenje (1995:7) added the imperative and subjunctive forms with suffix –e, as in *mu-vundikiir-e* 'cover him'. Kimenyi (1979:16) points out that a sequence of vowels in the same word is transformed into a single long vowel as in {ku-i-βon-a } / kwiiβona / 'to see oneself'. Such transformation is also noticed in Kinande, one of the dialects spoken in the DRC (ex- Zaire) as in {tu-a-tum-a }→/ twaatuma / 'we sent'.

Moreover, a further step was taken to support a certain level of lexical similarity between Bantu languages, and a small survey was carried out with the same students used in table 1.2. The writer wanted to know what the following words were called in their own home languages: *water, child, person, head, fire*. The following table gives a clear evidence of the great degree of similarity between these words in different Bantu languages.

Table 1.3 Lexical similarity between Bantu languages

	Country & Language	water	child	person	head	fire
1	Rwanda Kinyarwanda	amazi	umwana	umuntu	umutwe	umuliro
2	Burundi (Ki)-rundi	amazi	umwana	umuntu	umutwe	umuliro
3	Uganda Kiga/Nkore	mazzi	omwaana	omuntu	omutwe	omulilo omuriro
4	Zaire Lingala	mayi	mwana	móto	mutu	moto
5	Kenya Kikuyu Kamba Swahili	 mai mai maji	 mwana mwana mtoto	 mundu mundu mtu	 mutwe mutwe kichwa	 moto moto moto
6	Tanzania Kirangi Swahili	 maji maji	 mwana mtoto	 muntu mtu	 mutwe kichwa	 moto
7	Zambia Chibemba	amenshi	umwana	umuntu	umutwe	umulilo
8	Zimbabwe Shona	mvura (= *rain*)	mwana	munhu	musoro	moto
9	Botswana Setswana	metsi	mgwana	motho	thogo	molelo
10	Swaziland Siswati	ementi	umntɟwana	umuntɟu	inwoko	umlilo

It emerges from this small comparative sample that in the way *Bantu* name things there is a linguistic relationship between many of the Bantu languages, either close as between Rwanda and Burundi or far distant from each other as between Rwanda and Botswana.

After this linguistic and geographical overview, we come to understand the term 'Bantu' as a name given to a large group of African languages to distinguish them from any other different language of different origin. We are now ready to enter into the proper sociology (i.e. linguistic ambiance) of the four languages used in Rwanda, their relative roles and their assumed impact on each other.

1.4 The Sociology and Status of four Languages in use in Rwanda

Rwanda as a linguistic community uses four languages. The sociolinguistic situation in Rwanda is relevant to this study with reference to the role played by interference of L1 in such a multilingual setting, where English is learnt against a background of Kinyarwanda (mother tongue), French (second language), and Kiswahili (third language). The writer maintains that features of Kinyarwanda will to a certain extent affect the pronunciation of each of these other languages, according to the theory of L1 interference in L2 that we shall address in due time in Chapter 2.

In the present study, we shall use "L2" as a general term to mean the target language, bearing in mind however that in a multilingual context the distinction between second and foreign language is quite clear. English is considered as a second language in Anglophone countries such as in Kenya, South Africa, Zambia or Nigeria where it is not only an official language but also often functions as a lingua franca between people from different linguistic and ethnic backgrounds. It follows therefore that English is a foreign language in Rwanda, where it is taught and learnt against a multilingual background and is not used for internal communication by most people.

Crystal (1997:54) better explains how English is used around the world as either native, second or foreign language with reference to the 'inner, outer and expanding' circles. Rwanda finds itself in the latter circle despite the move it made in 1996 to make of English a ' co-official' language with French.

The four languages are classified according to the relative degree of importance (status) that they represent in Rwandans' daily life and that determine the number of their users as well as the level of education of their speakers. Before embarking on the role and status of each language, it is helpful to get acquainted with the linguistic homogeneity and complexity of Rwandan society.

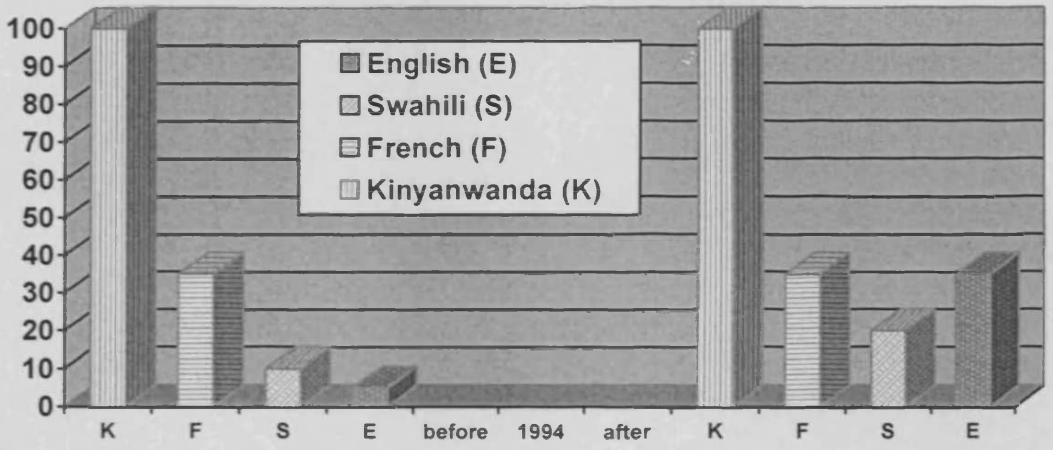
Kinyarwanda (L1) is the mother tongue and national language of Rwandans (see1.4.1). French is used as a second and official language (1.4.2). Kiswahili is classified as L3 and is a regional lingua franca in East Africa (1.4.3). English (L4) is learnt and used as a foreign language (1.4.4), but we will generally refer to it as L2 throughout this work. The ranking given above has been subject to a change since 1994. The political leadership who took over in 1994 were mainly educated in East Africa, where English is used as a second language and is also a medium of instruction. The political change has propelled English into a position it had never enjoyed before in that country as will be explained shortly.

Mazrui (1998) pointed out the fact that economic conditions, political considerations, urbanisation and industrialisation are constantly interacting and serving as agents for the diffusion of some languages at the expense of others. It is the political factor that seems to have been the driving force for the sociolinguistic change in Rwanda. The period between 1994 and 1996 is considered as a major watershed in the socio-political and linguistic history of Rwanda. Table 1.4 tentatively depicts what the status of each language looked like before 1994 and after, and gives the reader a fair idea of the extent to which these different languages were once and are now used.

The relevance of these tables lies in the fact that all the subjects investigated in our data, pertain to the educational system before 1994, when English was not given the same amount of attention as today. Comments on the teaching of English before 1994 will help us to understand better what kind of hurdles have hindered most Rwandan learners from reaching the desired intelligibility and comprehension in English.

In order to have a valid idea on the actual use of the four languages in Rwanda, the writer approached a group of eight Rwandan teachers from secondary school and university and asked them their overall impression in the following question : *In your estimate, what is the average proportional rate (%) of use of Kinyarwanda, French, Kiswahili and English in Rwanda?* Their answers have been compiled, analysed and grouped in the following graph:

Table 1.4 Ranking order of the 4 languages.



These numbers are far from being conclusive in terms of the status given to each language. The theoretical equality in status between French and English in the wake of 1994 will be explained in due course. But already, a significant boost to English and Kiswahili, i.e. from 5% (before 1994) to 35% (after 1994) and from 10% to 20% respectively, is clearly noticeable.

1.4.1 Kinyarwanda

Kinyarwanda, which has received different names : Ruanda, Kinyaruanda, Orunyarwanda, Urunyarwanda (Guthrie,1967; Grimes, 1992; Campbell, 1995; Lyovin, 1997; Dalby, 1998), is a Bantu language spoken as the mother tongue of the people of Rwanda. It is a written language which has its own system of orthography.

Rwanda is a linguistically homogeneous community which uses one common mother tongue within all its three-fold ethnic make-up, i.e. Hutu, Tutsi and Twa. Sociolinguistically, we should point out the fact that Kinyarwanda is one of the very few Bantu languages which is spoken or understood by more than least 10 million users, as explained earlier. The homogeneity of Kinyarwanda is a linguistically unique phenomenon in Africa whereby most countries count tens and hundreds of different mother tongues or tribal languages often unintelligible to each other. Katzner (1995) maintained that with regard to the Kinyarwanda linguistic environment, it is surrounded by at least 219 different dialects from the Democratic Republic of Congo (former Zaire) to the west, 38 dialects spoken in Uganda, 772 languages (dialects) spoken in Tanzania to the east, 51 dialects spoken in Kenya, and only one language with local minor variations in Burundi to the south.

Despite this homogeneity, there are however internal dialectal variations from North to South, and West to East of the country. The speakers of Kinyarwanda regional and dialectal variations remain highly and mutually intelligible to the rest of what could be termed standard Kinyarwanda speakers. Thus far, it has been difficult to clearly define what standard Kinyarwanda is and who its speakers are. However, there is an indication that standard Kinyarwanda is historically believed to be spoken by people from the central region of Rwanda, about 40 miles north of Kigali, the capital city of Rwanda, where the term 'Rwanda' is believed to have originated.

Geolinguistically speaking, there are up to nine estimated peripheral dialects to Kinyarwanda, so that it could be said that Kinyarwanda is one and diverse. Mugesera (1983:57) speaks of *Kiga, Hima, Goyi, Kinyambo, Kirasi, Mashi* and *Kirundi* dialects, a list which was repeated and complemented by Grimes (1992:355) by adding i*gikiga (Kiga, Tshiga), Bufumbwa, Lera (Ululera, Hera, Ndara, Shobyo, Tshogo, Ndogo*) and *Rutwa (Twa*). We would also include the *Havu* dialect that was unaccounted for by the above writers.

The Kiga (-lera/-rera) and Hima dialects are spoken on the border and within both northern Rwanda and southern Uganda. The Hima extends from

southern Uganda southwards on the eastern part of Rwanda. As a distinguishing feature, the Kiga dialect uses an additional verbal suffix *–ga* and has a different variation in intonation from commonly spoken Kinyarwanda. This feature does not, however, impede intelligibility with other Rwandans. It is rather a regional linguistic feature that helps to identify where a given speaker is from. For example, where other speakers say : *nkunda amata* 'I like milk', the users of that dialect say : *nkundaga amata*.

The Goyi-dialect is spoken in the north west of Rwanda, by a small number of people. Its morphological and phonemic features are meaningful in the sense that they contain contrastive consonant deviations to the ordinary and commonly used consonants of Kinyarwanda. A few examples will suffice to explain the phenomenon of that contrast.

1. / ŋh /as in [iŋha] <inka> 'cow' is said as [ŋg] <inga> instead
2. /nh / as in [inhama] ,< intama > 'sheep' is said as [nd] <indama>
3. Where other speakers use / ç / as in [içamba] <ishyamba> 'forest', that regional dialect uses / ʃ / [iʃamba] <ishamba>. This may bring confusion, since 'amashamba' may be actually interpreted as a disease, not a forest.
4. / ɟ / is interpreted as / ʒ / by the speakers of the same dialect so that [kuɟa] <kujya> 'to go somewhere', is said as [kuʒa] <kuja>.
5. /mf /as in / imfura / <imfura> 'noble, first born' is said as [imvura] 'rain'.
6. / kj / as in / ikjuuma / becomes / tʃ / in / itʃuma / 'knife '

The Kinyambo and Kirasi dialects are spoken near the Tanzanian border in the East of Rwanda. In the south west, near the border between Rwanda and the Democratic Republic of Congo, Havu and Mashi dialects are spoken by local communities on both sides, through their daily interaction in trade and other social activities. The Kirundi dialect is spoken both inside Rwanda and at the southern border between Rwanda and Burundi. It would be interesting to investigate distinguishing features of these other dialects in another research.

The presence of Kinyarwanda in neighbouring countries is explained for the most part by historical, political, economic and social reasons. For long periods, particularly since the early 40's, there were significant sporadic population movements from Rwanda towards the neighbouring countries. Reasons range from seeking jobs, looking for pastures for their animals, or searching for arable land, to fleeing famines and wars. Another historic and considerable population movement occurred before and during the 60's, largely caused by wars and antagonisms brought about by the euphoria of independence and liberation. Those who lost political power fled to neighbouring lands, thus increasing the numbers of Kinyarwanda speakers there. That explains in part the massive presence and use of Kinyarwanda in the eastern provinces of Kivu (former Zaire), stretching from the northern to the southern part, to include Bukavu and Uvira.

It is argued that historically Rwanda itself used to extend far beyond its present boundaries. With the historical colonial share of Africa among the western powers in the 40's, which fixed arbitrary and artificial border lines between homogeneous communities and people often speaking the same language, Rwanda was cut off from some of its disputed land together with its people. That seems in part to explain the considerable presence of Kinyarwanda in the eastern part of the DRC since that time until the present. Nevertheless, the writer's attempt in this work to explain the expansion and use of Kinyarwanda outside Rwanda is linguistically rather than politically motivated. On the basis of mutual intelligibility, such a presence has resulted in increasing the number of its speakers to more than some researchers have attempted to suggest. This statement can be given further support by the linguistic, social and cultural unity which characterises Rwanda and Burundi in particular, which were originally one German colony called Ruanda-Urundi. Some even go so far as to speculate about the meaning of such a name, saying that *Urundi* literally means 'another Ruanda'. However, the writer is far from attempting to substantiate such a bold and rather nationalistic speculation.

In addition, Kinyarwanda is related to other dialects across the Rwandan borders, such as *Ha (Giha)*, spoken in Tanzania and *Ganda, Tskiga*, and *Nyoro* spoken in Uganda. Rutayisire (1986:40) quotes Coupez and Kamanzi (1970) who shed light on the linguistic relationship which Kinyarwanda shared with some other dialects in its neighbourhood. The original French version is translated into English as follows:

> *In fact, the Rwanda, the Rundi and the Ha and perhaps other languages situated at the east of the two latter are so close to each other that they can be considered as dialects of the same language, which belongs to a linguistic area including at least the group situated immediately west of Lake Kivu (limited in the south by the Vira and in the North by the Nande language), the groups represented by the Hima and Ganda in Uganda and diverse other languages of the Tanganyika territory, among others the Sumbwa.*

Kimenyi (1978:1) corroborated this by saying that if Kinyarwanda-Kirundi-Giha-cluster is considered as one language, which in fact it is, then this language (Kinyarwanda) is second with regard to the number of speakers after Kiswahili among Bantu languages.

In the light of its linguistic mutual intelligibility, geographical and occupational extension accounted for in the previous pages, the total number of its speakers can be confidently estimated above 12 million, a figure far higher than either 6 or 8 million claimed by Katzner (1977:312), Grimes (1992:355) and Campbell (1995) respectively. While the author fully agrees in other respects with their views about Kinyarwanda and its dialects, they however seem to have overlooked the historical, climatic, political migrations and settlements of significant portions of the Rwandan people with their language in the neighbouring speech communities over the years. That is why Swaan's (2001:102) number of 15 million speakers of Kinyarwanda seems more realistic and in complete agreement with Mugesera's (1983:58) own estimation, which we endorse on the basis of the spread of Kinyarwanda in neighbouring countries to Rwanda that we have talked about.

In comparison with the other three languages, Kinyarwanda is greatly used in almost all activities of every day life. It is used in both formal and informal contexts, while only a small percentage of those who are educated can use

French and English. It is the language of instruction for all subjects in primary school and a subject of study on the curriculum together with French. Kinyarwanda is taught at secondary school and at university in the Department of African Languages and Literature. It is frequently used at school to help teachers to teach other languages (translation), such as French and English, particularly when students have difficulty understanding the terminology and concepts in these latter languages. Kinyarwanda gradually seems to lose its power and prestige among students as they move from primary to secondary school and to university, a period during which they are more exposed to other languages.

Mazrui (1998:200) commented that in sub-Saharan Africa, the medium of instruction has remained the preserve almost entirely of European languages. Most of the time, these languages functioned mostly at the expense of local indigenous mother tongues which were wrongly considered as inferior. This is particularly true for Rwandan learners if for example we refer to the period of the 50s and 60s whereby pupils in primary schools were forced to speak French at the school premises. Punishment was inflicted on those who were caught speaking their mother tongue. A similar strategy was reportedly used in Kenya where English was forced on Kikuyu school children.

Kinyarwanda is the language of the government, alongside French and English, today. It remains the unifying language between the small minority of new (elite) leadership in Rwanda since 1994 who speak more English than French and those who use more French than English in that country. All important communiqués and government decrees are made in, or translated into Kinyarwanda in order to reach the whole population, who in practice do not need other languages for their immediate basic needs and interaction. The power of Kinyarwanda remains stronger in rural areas than in cities where its use becomes gradually weakened by the use of Kiswahili, French and English. The impact of French and English is manifest in the growing number of coined and borrowed words from these languages into Kinyarwanda, to such an extent that today, standard Kinyarwanda is spoken

only by those who did not go to school. The level of use of code switching is very high amongst educated Rwandans.

Gafaranga and Torras (2001:219) have investigated the code switching (language shift) practice in bilingual conversation (Kinyarwanda - French) between Rwandan speakers. They found that the context and the level of education individuals have determined to a great extent the language to be used during the interaction. They confirmed that language alteration and language mixture were found to be a pattern of the medium of communication among Rwandan bilingual speakers. They also rightly said that not all instances of use of two languages in the same conversation have the same status. The following two examples may briefly suffice to illustrate the point. The underlined words are Kinyarwanda, the rest is French. One speaker said: *Oya, ni service en fait ntabwo ali ministere* 'no in fact it is an office it is not a ministry' (p.211). The second is : *wakwidocumenta ute ibitabo byave he*? ' 'how can you use references- where would you find books?' An investigation in the code switching and coining from Kinyarwanda-Kiswahili into English by Rwandan speakers would be extremely interesting and revealing. We know that words such as *ku-bipa* ' to beep ' and *amabedishiti* 'bed sheets ', *ku-drayivinga* ' to drive ', *tu-zakumissinga* ' we shall miss you ' are already in use, and certainly many more.

Kinyarwanda is the main language by far in the media, including radio, television, newspapers and magazines, and is meant to reach the great majority of the population who are not educated to understand other languages. Also, the use of Kinyarwanda, as a cohesive tie of the whole speech community highlights the identity of Rwandans as a people. This linguistic pride is reflected in its higher use than the other three languages in most of the contexts of daily life of Rwandans. The use of individual mother tongues defines who people are and says something about their culture. This is just as true of Kinyarwanda as for any other language.

The study of linguistics rightly claims that all languages are important. While agreeing with that, we should nevertheless acknowledge the fact that some

languages are more utilitarian than others, much depending on their role either locally, nationally, regionally or internationally. That seems to explain how Rwanda saw the need, supported and encouraged the teaching of Kiswahili, an African regional language, and French and English for wider and more international communication. One significant limitation that Kinyarwanda has is that it is confined to its geo-linguistic borders. Linguistically and communicatively, this keeps the country and its people isolated from the outside world. For this reason, the policy of teaching and learning other languages is relevant, and helps to compensate in domains in which Kinyarwanda fails to be effective. The economic survival of Rwanda depends in great measure on the East African community who use Kiswahili and English considerably. That explains in part why Kiswahili is given a place of particular importance in Rwandan schools. The use of Kiswahili and English has enabled Rwanda to seek integration in the East African community, particularly in the aftermath of the 1994 war. As well as that, its aspiration to membership of the Commonwealth would not be ruled out in the long run. Finally, the pronunciation of Kinyarwanda (MT) has had a significant impact on the way in which its users speak either French, Kiswahili or English.

1.4.2 French

In order to understand how French is used in Rwanda, it is necessary to succinctly explain its use both historically, politically and linguistically. Rwanda was part of the German East Africa protectorate, together with Burundi from 1884. After the defeat of Germany at the end of the First World War, Rwanda and Burundi were given by the League of Nations to Belgium to administer until Rwanda's accession to independence in 1962. That is how the Belgian pronunciation of French gradually came to be taught in Rwandan schools. The actual impact of France started being manifest in politics, administration, education and other multiple forms of bilateral cooperation from the independence years onwards. On a general note, Rwandan learners of French have learnt it mainly through formal classroom instruction, and from teachers who often were not native speakers of French to begin with. The limited competence and lower performance of Rwandan speakers of French is

due to the fact that in Rwanda it has never been used as a lingua franca to facilitate communication or solve any inter-tribal problem compared for example with the Senegalese in West Africa, or closer to home, the Congolese from the Democratic Republic of Congo where it is used on a daily basis for the purposes we just mentioned.

The French language remained the sole official and international language until 1994, and is spoken by only those who went to school. In the wake of 1994, its official status was equated with that of English, which was declared a co-official language in 1996 by the Rwandan government (Swaan 2001:105). Despite their theoretical and political equality in status however, the actual use of French has so far remained relatively higher than that of English. In practice, French does not have any extensive communicative purpose or functional role in rural areas at all.

French is extensively taught at school and all school leavers have a good level of competence which allows them to communicate. Before 1994, pupils started learning French at primary school at the age of 8 – 9 for a period of 6 years. It was a subject of study on the curriculum and a language of instruction for some subjects, particularly in upper levels of primary school. In secondary school it has always been a subject of study and a language of instruction for most subjects. Students learn it earnestly since they know that most of their examinations are written in French, and that job opportunities often require knowledge of, and fluency in it. At university level, French has constantly enjoyed a strong position. Most of the courses were taught in French until recently. The National University of Rwanda has a School of European and African languages. It aims at training and preparing candidate teachers of these different languages in secondary schools throughout the country.

French has been a very useful instrument, widely used as a method of translation to help learners understand quickly and even better, what they have difficulty with in English. Another more plausible reason justifying the use of translation from French into English and vice versa, is to develop and

maintain the balance of bilingual proficiency. It is speculatively believed that from the 50s until the 70s, the level of competence and fluency in French among Rwandan speakers was higher and stronger than it is today. In those years, learners were much encouraged to use it, to such an extent they were deterred from speaking their mother tongue at school. Learners who were heard using Kinyarwanda at school were handed a badge that they would carry around to show they were culprits. They were also either punished physically or had marks subtracted from their French course work. Such a policy has not escaped vehement criticism in the past as a sign of linguistic imperialism and dominance. Similar experience was noticed in former British colonies such as in Kenya as referred to earlier, and was strongly denounced by one prominent Kenyan novelist Ngugi wa Thiong'o who favoured *Kikuyu* and *Kiswahili* over English. In one of his works *Decolonising the mind* (1986) he writes: "English became the language of my former education. In Kenya, English became more than a language. It was the language, and all the others had to bow before it in deference. Thus one of the most humiliating experiences was to be caught speaking Gikuyu in the vicinity of the school. The culprit was given corporal punishment, three to five strokes of the cane on bare buttocks and was made to carry a metal plate around the neck with inscriptions such as I AM STUPID or I AM A DONKEY" (Crystal 1997:115). Despite its socially, psychologically and culturally negative and degrading aspects on the one hand, such practice nonetheless has been beneficial to many learners in hindsight on the other, since it has opened doors and opportunities to knowledge and the outside world which would have been unattainable otherwise.

The fact of being able to speak European languages such as French and English has often been associated with some degree of elitism, to such an extent that someone who could speak them well was called *umuzungu,* that is literally 'a white man' by most of the uneducated Rwandans. Being able to speak French was regarded as a sign of excellent learning and greatly contributed to high personal status, pride and prestige by joining the ranks of the civil service made up of the élite. Knowledge of French was a sure

instrument of access to well paid jobs in public administration, or could help to get a scholarship for further studies abroad.

However, while some consider it a privilege to acquire and speak European languages for a better cultural understanding and intellectual richness, others criticise it as colonial linguistic imperialism resulting in increased identity denial, cultural assimilation and alienation. For that matter, some learners who attempt to speak like the native speakers of either French or English are ridiculed and tagged as non-Africans, mimicking their colonial masters. They are also accused of having surrendered their African personality (Schmied, 1991:184). Without going any further into that controversial discussion, the reality today is that the knowledge of other languages has helped individuals to increase prospects for better jobs and the fulfilment of different political, economical, educational and other personal dreams.

French is less used than Kinyarwanda. It basically serves formal and official use only. It is the language used by the government to almost the same degree of importance as English today. Official documents are written in French and English, and translated into Kinyarwanda afterwards in order to reach the majority of Rwandans who have little or no knowledge whatsoever of these European languages. It is used beyond the borders of Rwanda for external relations to communicate with other member countries of the 'Francophonie' and in the arena of international meetings such as in the United Nations Organization (UNO) and African Unity (AU), where translations into other languages are readily available.

It would be worthwhile to note that though French is a powerful and prestigious language in many African (francophone) countries, its status seems nevertheless to be on the wane, largely owing to the growing impact of English in African political, economical, social and educational domains. As recently as 1994, French has lost ground to English in Rwanda, following the return of exiles educated in East Africa who took over the leadership in that country.

Mazrui (1998:197-98) commented on it by saying that if France stops fighting for its legacy in Africa, the French language will be subject to the challenge of both English and indigenous languages. He made clear references to two particular cases in the central region of Africa where French was predominant.

> *The triumph of the English speaking Rwanda patriotic front in Rwanda in 1994, was a set back for France. So was the ouster of Mobutu sese seko by Laurent Kabila in Zaire (Democratic Republic of Congo) in 1997.*

He also came to the conclusion that French in sub-Saharan Africa has begun to decline. Wherever French was taught before English, politicians and decision-makers today show more preference to English than the reverse. He validated the claim by giving an example of the Leopold Senghor University in Alexandria, Egypt, intended for Francophone Africans continent-wide. He commented that in the face of the French offensive in the Social Sciences at Cairo University, Egyptian defenders of the English language have demanded an English language stream in the faculty of Economics and Political Sciences alongside the French one. The Anglophone Egyptians are winning the battle. The diminishing influence of French is also accounted for by Crystal (1997:115) by giving the example of Algeria (a former French colony) which in 1996 opted to make English its chief foreign language in schools, replacing French. As for Swaan (2001:16), the re-emergence of Arabic in a nationalistic and religious revival of Arabization is also a threat to the influence that French used to enjoy in north Africa.

There is little doubt on the part of the writer that if the current political crisis aggravated by the war in the DRC (former Zaire) and strongly supported by Uganda and Rwanda continues, the French language will suffer yet another big setback in one of the biggest African francophone countries.

To return to the case of Rwanda, despite the fact that the great majority of the population are illiterate and communicate in almost entirely their mother tongue, they nonetheless have come to highly appreciate the value of learning other languages as a key for career opportunities enhancement. According to Swaan (ibid.105) each time that some one has proposed replacing French as

the language of instruction by an indigenous language, the parents have been the first to reject the idea: they want for their children the education that provides the best chances on the labour market and therefore, if they can afford it, schooling in the hegemonic language, French in the present case.

An important socio-political and linguistic phenomenon worth mentioning is that the change of political power in Rwanda in 1994 has in a way altered the linguistic picture of that country, to such an extent that today French and English make two distinct linguistic communities. The French élite in power before 1994 have since been replaced by the English élite. It would be interesting to analyse the relationship between language, politics and power, but doing so here would distract us from the main purpose and scope of our present study.

Kinyarwanda speakers of French have a significant problem with its vowels most of which they tend to substitute entirely with their nearest Kinyarwanda ones in their speech. In order to gauge the extent of the difficulty that French pronunciation represents to Rwandan learners, it would be pertinent to have a quick overview of its vowel and consonant system inventory, with special emphasis on the difference between Kinyarwanda and French vowels.

According to Fougeron and Smith (1999:78-79), French uses 11 oral vowels and 3 nasals as it appears in the following examples.

/i / *si* *si* 'if' / ə / sə *ce* 'this' / ɑ̃ / sɑ̃ sans 'without'

/e / *se* *ses* 'his,her' / a / sa *sa* 'his, hers' /ɔ̃ / sɔ̃ *son* 'his, hers'

/ɛ / sɛ sait 'knows' /u / su *sous* 'under' /ɛ̃ / sɛ̃ *saint* 'saint'

sɛʁ serre 'greenhouse'

/y / sy *su* 'known' /o / so *sot* 'silly '

/ø / sø *ceux* 'these' /ɔ / sɔʁ *sort* 'fate'

/œ / sœʁ *soeur* 'sister'

The difficulty with French vowels is according to Tranel (1987:8) further reinforced by the use of diacritic marks, i.e. supplementary signs which can be

combined with certain letters of the alphabet to form other graphic symbols. These marks are the cedilla (*la cédille)*, the acute accent (*l'accent aigu*), the grave accent (*l'accent grave*), the circumflex accent (*l'accent circonflexe*), and the diaeresis (*le trema*).

Most Rwandan speakers of French hardly ever pronounce all French vowels correctly. They tend to substitute them with Kinyarwanda ones. For example, [œ] is generally substituted with /e / so that the contrast between *peur* 'fear'-*père* 'father' is often lost. Similarly, [ɛ,é ,ée, è, ê] are substituted with one single /e /, so that the contrast between *ses* 'his, her' *sait* 'knows' and *saint* 'saint' is generally lost. Likewise [a, ã, ẽ] tend to be substituted with one Kinyarwanda /a /. Furthermore, French lacks the same quality of short/long vowel phonemic contrast peculiar to English. It follows from that that French learners of English will encounter some degree of difficulty when they have to produce or to perceive that contrast in English.

French and English share a number of linguistic features as both belonging to the Indo-European language family. They are believed to lead French speakers into pronunciation errors in English, because of the extended number of lexical cognates (orthographic pronunciation), such as for example, *pure*, *sure*, *endure* or in words such as *impossible*, *interest* in which the initial English vowel /i / is often nasalised as /ẽ/. It will suffice to remember that nasal vowels occur in French, but scarcely in Kinyarwanda, or in English.
French consonant phonemes do not represent the same extent of difficulty compared with vowels in the pronunciation of Rwandan speakers, except with [l] and [r].
The syllabic rhythm of Kinyarwanda seems to be reinforced by the tendency of the French language itself to use full quality vowels in unstressed syllables. The fact that French is believed to have stress on word final syllable will lead Rwandan learners to transfer such a word stress pattern entirely into English. Furthermore, deviant stress placement in English by Rwandan learners is presumably caused by the orthographic similarity between French and

English, such as between English verb *brutalise* and French *brutaliser*, *calculate* and *calculer*.

1.4.3 Kiswahili

Kiswahili belongs to the Bantu sub-branch of the Benue-Congo branch of the Niger-Congo language family (Grimes, 1996:68). Kiswahili is one of the most well known and widely spoken languages in Africa. It comes from an Arabic word *sawahil* plural of *sahil* which means 'coast people' (Polomé 1967, Awde 2002:7). The prefix *Ki-* is a marker of some names of the Bantu language family such as *Ki*-nyarwanda, *Ki*-rundi, *Ki*-ganda, *Ki*-kuyu, *Ki*-nande, and others.

According to Katzner (1977:301) Kiswahili was taken inland in the 19th century by Arab tradesmen and was later adopted by the Germans as the language of administration in the Tanganyika region. It is claimed to have been greatly modified by the interaction of the inhabitants of the east coast regions with the traders and settlers who had come to East and Central Africa by the second half of the 19th century (Polomé, 1967). Though there is a strong agreement between Katzner (1977), Lyovin (1997) and Grimes (1992) concerning the origin and extension of Kiswahili, the number of its speakers remains still in dispute. It is believed to be spoken by between 30 and 50 million people, including those who speak it as their 1st, 2nd, 3rd or even 4th language, according to the UNO estimates in 1981 (Lyovin (1997:217).

Grimes (1992) maintains that there are only 1,300,000 first language speakers of Swahili, of whom the largest group (313,200) is in Tanzania, where Swahili is the official language, and that the total number of speakers in all Africa including second language speakers is only about 30 million. He however fails to account for those many other speakers we mentioned who use Swahili as 3rd or 4th language. That is why we find Myachina's (1981:1) number of 50 million more reliable. Such a large number of speakers can be plausibly explained by the important functions attributed to Kiswahili as a lingua franca that serves groups of speakers whose mother (tribal) languages

are different and sometimes incomprehensible to each other, in facilitating commercial and communicative purposes in the central and east African region (Schmied, 1991:27).

Geographically, Kiswahili is assumed to cover the whole of the central African region, and extends from southern Somalia, to Zimbabwe, Malawi, Zambia, Central African Republic, the People's Republic of Mozambique, west to the Democratic Republic of Congo (former Zaire), Rwanda, Burundi, and east to the Comoro Islands and to the north western part of the Malagasy Republic (Awde 2002:7).

Vitale (1981) rightly acknowledges that the discrepancy in numbers of speakers of Kiswahili can be partially attributed to the varying degrees of competence and use by individuals outside of the native speech community.
Awde (2002:9) believes that trade,culture and politics, plus the fact that the language has many features in common with other local languages, have made Swahili one of the world's greatest languages of communication. It is now not only the most largely used African language in East Africa but also one of the biggest languages throughout the continent.
Kiswahili is spoken as 1st language in the coastal regions of Kenya, Tanzania and on the Island of Zanzibar. It has replaced English as an official language in Kenya and Tanzania. There is standard Kiswahili within a whole range of 20 Kiswahili dialects among which the four most important, as mentioned by Lyovin (1997:218) are:
1. Ki Unguja (Southern Swahili), originally spoken on the island of Zanzibar and now spoken on the African mainland in Tanzania.
2. Ki Mvita (Northern Swahili), spoken on Mombasa island and in other parts of Kenya.
3. Ki Amu (Northern Swahili), spoken on the island of Lamu (Northern coast of Kenya) and in the coastal area opposite the said island.
4. Ki Mwani, spoken in Northern Mozambique.

But, the Ki Unguja dialect remains the basis of standard Kiswahili above all.

The best explanation and insights into how the Kiswahili language and its phonology system work are found in Ashton (1944), Perrot (1964), Polomé (1967), Vitale (1981), Myachina (1981) and Lyovin (1997), and in Awde (2002) from whom we have drawn much information. All the seven writers agree on the number of the 5 kiswahili vowel system, i.e. /a, e, i, o, u / (see also Table 1.2). The following examples reflect the use of Kiswahili vowels: / a / in / kata / 'to cut' / o / in / moto / 'fire'

/ e / in / kelele / 'noise' / u / in / lulu / 'pearl'

/ i / in / kiti / 'chair'

Contrary to Kinyarwanda, Kiswahili uses consecutive vowels. Though it has much in common with Kinyarwanda in terms of the number and quality of the five main vowels, their use of open syllables, stress position, the use of tone and system of noun classes, it nevertheless differs considerably in the use of vowel sequences and the formation of consonant clusters many of which do not occur in Kinyarwanda. The use of such a limited vowel system in Kiswahili reinforces the difficulty that Kiswahili speakers will have in English while contrasting vowel phonemes such as / ɪ / and / i / or dealing with vowels which are non existent in Kiswahili such as the English vowels /ɜ:, ʌ,æ,ʊ /. Some features of Kiswahili are reflected in the pronunciation of English. Some of these may not necessarily affect intelligibility, such as / ə / in *September, October, November, December* which is always realised as / a / as *Septemba*, and so on. But, some others may create some level of confusion. For example, because / ɜ: /does not exist in Kiswahili, its speakers of English tend to realise it as / a / as in *baga* for *burger* (Awde 2002:130). Due to the influence of Kiswahili, Kinyarwanda speakers tend to pronounce English words *girl* and *bird* as [gali, geli] and [badi, bedi] respectively. Such substitution may affect the intelligibility of numerous English words that contain that phoneme.

Like Kinyarwanda, Kiswahili syllable boundaries are fixed by vowels, which show how words are pronounced.

e.g. / asante / 'thanks'; / kupenda / 'to like'; / mkate / 'bread'

The pronunciation of Kinyarwanda and its use of semi-vowels [y,w] to approximate Swahili vowel sequence or English diphthongs, affects the way in which its speakers handle Kiswahili pronunciation to such an extent that it becomes a distinct accent, as appears in the following examples.

Kiswahili vowel sequence	-	Kinyarwanda realisation
1. / ei / in / bei / 'price'		/ beyi /
2. / oa / in / kuoa / 'to marry' (of male)		/ kuwowa /
3. / ai / in / laini / 'soft'		/ layini /
4. / au / in / tauni / 'plague'		/ tawuni /
5. / ea / in / kuendelea / 'to go ahead'		/ kwendeleya /
6. / ua / in / barua / 'a letter'		/ baruwa /

Concerning Kiswahili consonants, most of them are similar to Kinyarwanda apart from < th >, < dh >, < kh >, < gh > which are from Arabic loan words, (Lyovin 1997:213). These are even difficult for Kiswahili speakers as their first or second language, and are often substituted with local sounds such as in replacing < gh > by / g / in *ghali* 'expensive' as *gali; tafadhali* 'please' as *tafadali* or *tafazali; thelathini* 'thirty' *as telatini* or *khamsini* 'fifty' *as hamsini..* In addition to that, there are many Kiswahili consonant clusters that do not exist in Kinyarwanda such as < mch > in *mchungaji* 'keeper'; < ft > in *kutafta* 'to look for'; < sk > in *maskini* 'poor' and many more.

Nouns in Kiswahili as in Kinyarwanda belong to different classes. Each class consists of nouns which trigger a different prefix of agreement in many adjectives and verbs. There are different plural prefixes according to different classes. Two examples in Kiswahili will suffice to illustrate the point.

mtu mrefu ni mkali 'the tall person is fierce' (singular)
watu warefu ni wakali 'the tall persons are fierce' (plural)
kitabu changu kiko nyumbani 'my book is at home' (singular)
vitabu vyangu viko nyumbani 'my books are at home' (plural)

Kiswahili was introduced in Rwanda first by German missionaries and Arab traders coming from East Africa. Kiswahili is primarily associated with the Arabic language and the Islamic religion in that particular area of Africa. It is more spoken in cities than in the countryside.

The impact that East African speakers of standard Swahili have had on Rwandan learners of it has been extremely beneficial. The education system in Rwanda has seen the need for Kiswahili and endeavoured to encourage its written and spoken standard forms in schools. Since the early 70s, a bilateral cooperation between the Rwandan and Tanzanian governments has enabled the former to employ Tanzanian nationals as teachers of Kiswahili in secondary schools and at university, and to send its nationals on exchange programmes to train in Tanzania. Due to its considerable regional importance, Kiswahili has become one of the compulsory subjects at school. It is taught at university level to students who mainly train to become teachers of Swahili.

The use of Kiswahili in Rwanda today has been considerably strengthened since 1994 by the massive influx of returning exiles from East Africa, as well as by many East African nationals in the quest for jobs in Rwanda. Kiswahili is more used in spoken than in written forms, in the media, television programmes and radio broadcasts. The Rwandans' attitude towards Swahili and its speakers has significantly changed in the wake of the 1994 civil war in Rwanda, which caused a massive exodus from the country. Between 4 and 5 million people were displaced from their homeland to neighbouring communities which use French, Kiswahili and English on a daily basis.

The knowledge of Swahili has helped many Rwandan refugees to integrate and settle down very quickly in Tanzania, Kenya, Uganda and in eastern parts of the Democratic Republic of Congo. On a regional level, the Rwandan governments of both before and after 1994 have always used it to reinforce and maintain political, commercial and diplomatic ties with East Africa. Rwanda could indeed hardly survive were its links severed from its East African neighbours. Because it is geographically landlocked, all its imports and its few exports pass through the East African ports of Mombasa and Dar

es Salam. Today, Swahili enjoys a continental status and prestige. It is one of the languages used in regional and continental African Unity (AU) meetings, of which Rwanda is a member together with its East African neighbours.

Finally, the linguistic relatedness and closeness between East African countries and Rwanda through the use of Kiswahili and English has already had and will continue to have an impact on the way in which Rwandan learners speak these. The intelligibility of the East African accent of English could be a topic of another study in its own merits.

1.4.4 English

The use of English in Rwanda can be described with reference to two distinct periods i.e. before and after 1994, a year that we consider as a landmark in the socio-political and linguistic history of that country. English has been taught as a foreign language in Rwanda for decades against a background of Kinyarwanda (mother tongue), French (second language) and to a lesser extent Kiswahili. Today however, more English is used in that country than ever before due to reasons which will be explained. It is the language strongly supported by the political élite in power, who were educated in East Africa and USA. Though it was made an official language in 1996, it is nonetheless not used to the same extent as in either Kenya, Zambia or Nigeria, where it achieves more internal functions than in Rwanda.

English is a vehicle of external communication between Rwanda and other users of English, not only regionally or continentally, but internationally. At the state level, it is, with French, the medium through which Africa as a whole can participate in the world of international diplomacy, business, and modern scientific and technological development. In terms of the growth of English around the world, Rwanda can still be described as belonging to the 'expanding circle' defined by Crystal (1997:54), as countries that recognize the importance of English as an international language though they do not have a history of colonization by members of the inner circle (USA, UK), nor have they given it any special administration status.

The idea that English has ceased to be the sole property of its native speakers, but has grown to be international for all its users was also strongly acknowledged by Schmied (1991:197-98) in pointing out the fact that the importance of English today is not based on ideological, political or cultural dominance, but on the possibilities it offers in world-wide communication, in information retrieval, in technology, in economic exchange and cooperation. Such a view about English today was further supported by Kachru (1992), Smith (1992), Strevens (1992), Crystal (1997) and Swaan (2001). This presumably shows how and why an individual country such as Rwanda positively opts for a reinforcement of the teaching, learning and use of English in the light of the considerable benefits it will gain from using a language of international importance. As the dominant language in international communication, the global economy, science and technology and in domains of learning, its use has been increasing rapidly amongst groups of people and communities for whom it is neither a mother tongue, nor a second, or even a third language as in our particular case of study.

Mazrui (1998:77) maintained that it is the official language of fewer countries than French, but it is spoken by a larger number of individual Africans. More and more people now learn it for the simple reason it is the most important language globally and for its instrumental role. He goes as far as predicting that in coming decades, English will no longer be considered as foreign, judged on its growth and functional purposes today.

The notion of 'foreign' is clearly explained by Strevens (1992:36).

> *English is a foreign language within a community when it has no special standing but is simply just another language, taught and learnt for general interest or when it has no internal function in the learner's country.*

This definition nevertheless needs some comments with respect to the case of Rwanda, as the prevailing position of English in Rwanda, for instance, would not completely respond to the above statement. In the multilingual context of Rwanda, English is considered foreign in the sense it does not

achieve any strongly meaningful functions inside the country, apart from education and government contexts. For that matter, it is less spoken than Kinyarwanda and French. Crystal's (1997:56-9) approximative number of only 24,000 of its speakers out of a population of about 8 million according to the figures released in 1995, is evidence of its lesser use than the other languages referred to. It is one thing to declare a language as official in a country, and a totally different matter altogether to be actually used effectively as such.

1.5 Teaching English in Rwanda

1.5.1 Aims

The aims pursued in the teaching of English in Rwanda are set by the government through a specialised bureau in the Ministry of Education. There are four main reasons underpining the teaching of English in Rwanda, as indicated in the introduction of a document produced by the Division of programmes for secondary education, a branch of the 'Direction of Studies and Pedagogical Research' (April, 1996).

1. It is a means of communication with the national and international world of politics, diplomacy, business, science and technology.
2. It is one of the media of instruction in the present school system that caters for the French-speaking as well as the English-speaking Rwandan communities.
3. The knowledge of that language contributes to better understanding of other people and cultures.
4. It is an integrating factor for the present Rwandan society made up of people coming from a wide range of cultural and linguistic backgrounds.

We cannot help noticing that there have always been wide gaps between theoretical objectives ascribed to the teaching of English in Rwanda and their actual implementation, in terms of training learners towards achieving sufficient phonological competence leading to successful performance. In order for the goals set above to be effective, there is a need to focus on and develop the use of the four skills of English altogether. In particular, little

progress will be achieved towards improving spoken skills, if the teachers' training is not given due attention as a means of ensuring that pronunciation is competently taught.

1.5.2 English before 1994

For decades, the English language goals were too academic. Learners learnt it passively and memorized everything just as any other subject on the curriculum in order to get good marks. English was taught as a foreign language and compulsory subject by non-native teachers, and was never used either as a medium of instruction or daily communication. Though emphatically stressed in every single curriculum, the spoken skills received little attention compared with the weight given to grammar or vocabulary, mainly due to the lack of competently trained Rwandan teachers or native English teachers to serve as models. The learners totally relied on their teachers who themselves had their own problems of pronunciation. The learners therefore did not actively and meaningfully participate. The neglect of the teaching of aural-oral skills in English in particular has detrimentally affected the Rwandan learners' level of proficiency and communicative competence.

One reliable adult informant commented on the way in which English was taught in the 50s and 60s in one of the best schools, Groupe Scolaire of Astrida, located in the southern part of the country. That school was created to train the Rwandan élite. He said that they had to memorise words, conjugations and grammar rules with their French translation, and to write extensively. There were also a lot of exercises of reading aloud in groups or individually, but they were neither trained nor given opportunity to speak English communicatively. He concluded by saying that pronunciation was a mechanical repetition after their non-native teachers (Belgian) models, and that they unfortunately never listened to a native English speaker's speech.

The language drills and practice exercises used in many text books were often artificial, as they did not represent communicative situations learners could be involved in as in real life. As a result, learners found it extremely

difficult to engage in meaningful communication in English, because they had never been taught skills to do so. The classroom was the only place where English was used to answer the teacher's question, or to do written translation work. No further practice was possible, because as soon as the class time was finished, learners switched to Kinyarwanda or French as the medium of communication. The fact that the demand for competence and performance in speaking English has not been necessary since Kinyarwanda and French were sufficient poses a problem for the better learning of English.

The situation started improving slightly with the opening of the National University of Rwanda in 1963, which began training the national élite, including teachers for secondary schools. The Department of English within the university and the candidate teachers themselves have greatly benefited from the presence and teaching of British and American teachers of English. Still, the dominance of Kinyarwanda and French and the lack of a suitable English environment to stimulate practice have continued to slow down on the improvement of the Rwandan learners' performance in English over many years.

The need and popularity of English nonetheless kept growing steadily in Rwanda as years went by, largely due to the increasing awareness of the role of English as an international language for communication. Such awareness was witnessed in particular in the growth of private (informal) teaching centres that offered evening English courses in the major cities of the country. They kept increasing in number and quality over two decades until 1994. These centres aimed at catering for learners who could not afford time to learn during day hours. Some other centres were however also open during the day, such as the most well known one at the American Cultural Centre in Kigali. The writer's guess is that such centres have maintained their momentum and became even more relevant after 1994 as many Rwandans have felt the need to become more proficient in English as one of the ways to get a job in the new political system.

The competence in English by students from either secondary school, university or private teaching centres was considered as an important tool to

help to get a good and well-paid job in various international organisations, firms and diplomatic bodies established in Rwanda. The major difficulty that all the learners have had to deal with in learning English has always been its pronunciation.

In the writer's experience as a teacher of English in upper levels of secondary school, most secondary school leavers who were submitted to compulsory final oral exams in English showed great anxiety, lack of confidence and utter frustration. This was solely due to the fact that, though their lexico-grammar competence was relatively good, they nonetheless failed to either understand the questions or to express themselves orally in English so as to satisfy the board of examiners. Another no less significant point to mention in closing this part, is that the teaching of English did not take place in primary school.

1.5.3 English after 1994

The return of hundreds of thousands of refugees from exile in neighbouring East African English-speaking communities has brought a wind of change in the educational system. Compared with the situation before 1994, English has enjoyed a stronger boost due to the change in politics in that country. The status given to English has to a certain extent lessened the power that the French language used to have in that country. Despite that, however, English does not serve any major function in ordinary daily social interaction for the great majority of Rwandans. It is not a direct challenge to most Rwandans' first language, Kinyarwanda. English is rather used more in government circles, and in high levels of administration. It is more effective and relevant in external relations with other users of English.

The rate of spoken English has increased compared to what it was before 1994, when it was spoken only by a few who wanted to become teachers of English, or those who were involved in doing business and travelled regularly to countries where English is much used. It became a 'co-official' language of the government alongside French from 1996 (Crystal 1997; Swaan 2001). Today it serves for external relations, education, the media

and for special official occasions including meetings with guests (diplomats) from English-speaking countries. According to independent sources, the time slot allocated to English on radio, television programmes and newspapers has increased though it remains smaller in comparison to the use made of Kinyarwanda or French, for the simple reason that most of the intended audience neither understand nor depend on English for their immediate needs of communication. The popularity of English has increased to such an extent that it ranks top of the list as the most preferred language in Rwanda, in view of the results of a questionnaire about the attitude towards English given to the subjects involved in the present study (see 2.9.3).

Linguistically and sociologically speaking, the upsurge of English since 1994 has created two linguistic élite communities within one nation as briefly referred to earlier. On the one hand, there are those who speak more English and hardly know any French, and on the other hand, those who speak more French and very little English. In such circumstances, Kinyarwanda and Kiswahili efficiently serve to facilitate communication. Furthermore, there are also already visible signs of the increase in the quantity and quality of English in the Rwandan speech community evidenced through the level of code switching and coining from Kinyarwanda and Kiswahili into English as briefly mentioned in 1.5.1. A deeper investigation into this topic would certainly generate interesting findings. In pedagogic terms, the fact that English was given the green light to start in primary education soon after 1994 was a significant development and a clear evidence of the importance attributed to it today.

1.5.4 English in Primary School

The year 1994 remains a milestone in political and linguistic history of Rwanda. The idea of teaching English in primary school had not been welcome before 1994. Whenever it was put forward by some progressive teachers, it was unheeded, criticised and resented. Though primary school is believed to be the right time when children can master another language easily, those who opposed its implementation argued that teaching more than

two languages at the same time would be to increase the burden on pupils and confuse them more.

There is indeed a danger for the pupils of not being able to master any of those languages properly and accurately, particularly if they are taught by teachers who themselves have problems in the target languages. It should be remembered that at this level, pupils have not even yet acquired sufficient proficiency in their own mother tongue. Today, English in primary schools is in full swing in both urban and rural areas, though at a slower pace in the latter, due to the lack of trained teachers for all primary schools in the country. We are strongly persuaded, as various researches have confirmed, that starting to learn another language at such an early age is extremely beneficial and easy for the learners.

The writer slightly disagrees with Bokamba's (1992) remark that if many children stop their education at the level of primary school, the use of European languages as medium of instruction at the level of primary school is both counter productive and unnecessarily costly. Part of our disagreement is based on the fact that it is extremely difficult to know which pupils will continue their studies to secondary school or not. Also, our strong belief is that primary school is the stage that establishes the basis of all future educational opportunities. If the Rwandan learners are catered for by better trained and qualified teachers, the current educational system is likely to produce true bilinguals in English and French. Brook (2000) reports that the Rwandan government has decided that schools should now function in French and English and that students must be proficient in both by the time they leave school. In that sense, Rwanda is likely to become the only country in Africa aiming at turning out bilingual students in English and French.

1.5.5 English in Secondary School

In secondary school education, English remains a compulsory and widely taught subject on the curriculum. While students used to start learning it at the age of 14-15 (i.e. in the 2nd year of secondary school) before 1994, today, English teaching starts in primary school. The teaching of English in

secondary school saw a significant increase in the number of hours following the new status it has acquired in the country. This is substantiated by the comparative tables 1.7 and 1.8 of the periods before and after 1994, which were designed by the *Division des Programmes pour l'Enseignement Secondaire* (D.P.E.S) 'Division of Programmes for Secondary Education', a ministerial guidance document at the disposal of schools and teachers of English. In most cases, the number of hours given to English greatly depends upon the goals and aims assigned to each field of study.

Table 1.7 Number of hours of English/week before 1994

	Hours of English per week						
	Forms						
School / Section	1st Year	2nd	3rd	4th	5th	6th	Total
Teacher Training Education							
Primary Teacher Training	-	3	2	1	1	2	9
Technical Teacher Training	-	-	3	1	1	1	6
Sciences							
Maths – Physics	-	-	3	3	2	2	10
Biology – Chemistry	-	-	3	3	2	2	10
Latin – Sciences	-	-	3	3	2	2	10
Letters							
Literary Section	-	5	5	5	4	4	23
Secretarial Major	-	5	4	4	4	4	21
Latin and Modern Languages	-	5	5	3	3	3	19
Social Sciences							
Social Action	-	-	2	2	2	2	8
Labour Sciences	-	-	3	2	2	2	9
Social Communication	-	-	3	2	2	2	9
Economics and Trade							
Economics	-	5	5	4	3	3	20
Accounting and Trade	-	5	4	4	2	2	17
Law and Administration	-	3	3	2	2	2	12
Medical Sciences							
Medical Assistant	-	3	3	1	1	1	9
Laboratory Technicians	-	3	2	2	1	1	9
Nursing A2	-	3	3	1	1	1	9
Nursing A3	-	-	-	-	-	-	0
Nutrition and Dietetics	-	-	3	2	2	2	9
Technical Education							
Electronics	-	-	-	-	2	2	4

Source: D.P.E.S (1986)

Many of the students did not have a clear idea of why they were learning English. They learnt it because it was compulsory. There was no continuity between exercises done in the classroom and after class, as most students

neither used nor had to use English outside the classroom for communication. The fact that the demand for competence in spoken English was not necessary for most learners since Kinyarwanda and French were there to help impeded the progress in the learning of English. After 1994 however, many learners from different fields of learning, came to understand the educational and communicative role of English even beyond the classroom. The subjects involved in this study, who are exiled in Kenya, were witness to this.

Since 1994, English has gradually become a medium of instruction and a subject on the curriculum at the same time. In the new educational system called *Tronc-Commun* corresponding to the initial three years of secondary school, which is similar to a system in vogue during the 60s and 70s. English is given an equal number of hours in all schools and all fields of study, in order to give the students a solid basis of the knowledge of English from the start (see table 1.8). The main aim of TC (*Tronc-Commun*) was to give general comprehensive teaching in all subjects, so as to allow students to freely and consciously take up one particular field of study of their own choice and interest, according to their academic ability.

The orientation programme within the Ministry of Education plays a vital role in designing objectives, making curricula, allocating hours to different subjects of study, according to the priority, nature and aims of each school. In particular, the importance given to English in the different schools depends on the domain in which it is thought to be most needed after graduation. That is how, for example, after TC, students who opt for modern languages, or commerce and trade, have a slightly higher number of English hours than their counterparts doing other subjects such as Maths, Nursing or Environment.

There has been a significant error of judgement among many Rwandan learners in the past, who thought that those who were doing sciences, engineering, and medicine for instance, did not have any need of English at all. However, such thinking gradually changed, as many learners today realise

that English is par excellence one of the primary means of access to modern knowledge in almost all domains of science and technology. The following table is evidence of the increase in the number of hours allocated to English per week in a few secondary schools in Rwanda today in contrast to the period before 1994.

Table 1.8 Number of hours of English/Week after 1994

	Schools	1st form	2nd f	3rd f	4th f	5th f	6th f	Total
1	Maths & Physics	6 hrs	6hrs	6hrs	3 hrs	2 hrs	2 hrs	25
2	Bio-chemistry	6	6	6	3	2	2	25
3	Modern languages	6	6	6	7	7	7	39
4	Human sciences	6	6	6	3	3	3	27
5	Teacher-training education	6	6	6	3	3	3	27
6	Commerce & Accountancy	6	6	6	4	3	2	27
7	Secretarial Major	6	6	6	4	3	2	27
8	Economics	6	6	6	5	3	3	29
9	Nursing	6	6	6	2	2	2	24
10	Environmental studies (Hygiene)	6	6	6	2	2	2	24

1.5.6 English at University

At university level, English is given higher attention and significance particularly in the Department of Modern Languages. Today, English is even the language of instruction in many subjects which are taught by teachers most of whom do not speak any or much French. Students who particularly specialise in English are those who intend to become teachers of English in secondary schools, or who want to work in high positions in the government such as in diplomacy, international relations, radio and television.

At university, general English is taught as well as an overview of African, British and American literature. The National University of Rwanda offers a 2-year BA and MA (Licence) degree through the medium of English. The teaching personnel are extremely varied and include native speakers (British and American), East African, and a few Rwandan national teachers.

We can say that the future of English in Rwanda will be better in as much as national teachers are better trained. In practice, it amounts to actual commitment and will on the part of the government to financially support skilled teacher training in English-speaking countries. The experience and benefits that foreign teachers of English gain from spending some time in English-speaking countries are invaluable to themselves and to their students. The extent to which students who undertake English as a subject of study are efficiently and competently trained at university, will determine to a great extent the way in which English will be taught and learnt in secondary and primary schools, hence the general level of English in that country.

1.5.7 English in Adult Informal Education

English has been and still is taught and learnt informally in private education centres, as opposed to formally institutionalised education by the government. Private English teaching centres have opened their doors and undertaken to cater for adult learners desirous of learning English after daily working hours. That is why most of these centres were called 'evening teaching centres'. These centres welcome learners from different educational backgrounds. Some of them have no experience whatsoever with English, whereas others are familiar with English to some degree, as secondary school dropouts or leavers whose level of competence is not very high. The main objective of such centres is to develop learners' spoken skills for communicative purposes, in making up for inefficiencies noticed in the teaching of English in formal education.

Courses are generally arranged according to three distinct levels: Beginners, Intermediate, and Advanced. Each level lasts a year which is divided into three terms. The organisation of levels and the timetables is left to the discretion of each centre and those who run it. Learners take up to four hours of English a week, but here again much depends on the level of the learners and the timetable set by individual centres. At the end of the Advanced level (year 3), students sit a thorough examination encompassing competence in all four skills of English, with particular emphasis on spoken skills in an oral

examination. Graduates are issued diplomas upon passing their oral examinations, which propel them into the search for jobs with more confidence in the language.

Though it may sound purely subjective, the writer came to the conclusion on the basis of his experience as a teacher in both formal and informal settings, that the learners described in this section showed a higher degree of motivation in learning and practising, thus achieving more proficiency than their counterparts in formal education. A language is best learnt when there is intense motivation and when it is of immediate use for the learner. The difference between formal and informal teaching/learning of English in Rwanda is that the subjects belonging to the former found a huge gap between what they learn at school and the use to which they could put it outside the classroom, in comparison with those from informal education. This view is far from being conclusive and leaves the topic largely open to yet a further in-depth investigation and discussion.

1.5.8 Teaching Methods

Despite the recent shift to language teaching which focuses more on communicative competence, the *Grammar-Translation* method seems to have been most dominant in secondary schools by Rwandan teachers, particularly before 1994. This is mainly due to the fact that they themselves did not follow any different method while learning. This method relies heavily on memorisation of grammar, rules, and lists of words and translation in another language with the help of a teacher or a dictionary. The major weakness of this method is that often the exercises of memorisation of words and grammatical structures or repetition of new items are extremely mechanical and do not usually reflect the learners' actual needs for the use of the language in real communication. In other words, learners have not been encouraged and given opportunities in classroom activities to put the acquired theoretical knowledge into meaningful practice, as in a real-life experience.

On the whole, the application of any method fundamentally depends on who the teachers are, their competence in the target language, and where they have been trained. For example, graduates from university or those who were trained abroad in English-speaking countries namely UK, USA and East Africa seem to have applied more varied and modern techniques related to the communicative approach to the teaching of English than others. We were able to comment more confidently on the teaching of English in Rwandan schools before 1994, as we are less familiar with the prevailing teaching methods of the post-war period, an issue worth pursuing.

1. 5. 9 Teaching Problems

Despite the progress in the field of language teaching methods and classroom techniques, teaching procedures in Rwanda have remained almost the same for a long period. The teaching of vocabulary and grammatical structures was in isolation; the drilling of new items was usually mechanical in the form of repetition. The use of materials to develop the learners' receptive skills such as films, video and recordings are extremely rare. Also, the exposure to authentic language and its speakers to reinforce learning is non-existent.

In order to rightly gauge the real language problems that Rwandan learners grapple with while learning English, the writer deferred to a group of eight teachers, with sufficient teaching expertise and experience as the most reliable source of information. One of the questions put to them sought to know the degree of difficulty represented by different language areas. The question reads: *Rank from 1 (as the most serious) to 5 (as the least) what you think the most serious problem among Rwandan learners is, between pronunciation, listening, grammar, reading and writing*. The analysis of their answers showed that pronunciation emerged top as the most significant difficulty for teachers and learners, according to the following table.

Table 1.9 Degree of difficulty in learning English

	Pronunciation	Listening	Grammar	Reading	Writing
Rank	1st	2nd	3rd	5th	4th
%	40%	30%	15%	5%	10%

The above figures corroborate what the learners themselves acknowledged about the difficulty that pronunciation represents in their performance in English. The table shows that pronunciation and listening clearly stand out as the major difficulty with which the Rwandan learners of English are constantly faced. A parallel question: *How important do you think the teaching of the pronunciation of English is for Rwandan learners?* sought to know the teachers' views about the relevance of pronunciation. They overwhelmingly (100%) supported and acknowledged the importance of pronunciation for better and comfortable communication. At the same time however, they pointed to serious challenges the teaching of pronunciation represents, particularly in foreign learning contexts where learners are deprived of native speaker models and suitable language environment to reinforce the acquisition.

The way in which English was taught in Rwanda has led to a level of insufficient command of the spoken abilities in English. The fact that the demand for competence and performance in spoken English has not been necessary since Kinyarwanda, French and Kiswahili were there to help has to a great extent impeded the learning of English. Most students neither used nor had to use English outside the classroom. In order to substantiate such a claim, the writer asked the teachers to comment on what they thought might have affected the Rwandan learners' performance in English, by answering the following question: *What do you think has contributed to the Rwandan learners' current level of ability in spoken English*? More than 87% of the teachers claimed linguistic and pedagogical factors to have played a determinant role.

The reader will be reminded that the implementation of Western languages in Africa goes back in time to the period of colonialism and the division of Africa amongst Western powers since 1884 between Britain, France, Germany, Portugal, Italy, Belgium (Crystal 1997:43). In places where Britain was a colonial master and imposed English as a compulsory language in education and public administration, the level of English is understandably higher than where it was taught and learnt just as any other subject on the curriculum. It is in the light of that situation that we understand the way in which Rwanda came to use French as an official language in preference to English for a long time.

Another, no less important, factor that is thought to have hindered the Rwandan learners' high performance in spoken English, lies in the teachers and the teaching materials. The drills and practice exercises done in the classroom do not often reflect communicative contexts that learners might be involved in. It follows from this situation that most learners fail to use the language communicatively, simply because they have neither been taught and trained with necessary skills, nor have they done any meaningful practice to develop these skills.

The teachers also mentioned the lack of opportunities and insufficient time for practice to be another significant barrier to effective performance in spoken English. The issue of language environment, the amount and intensity of exposure to the language and their impact on learning another language will be explored at length in Chapter Two (2.10.1). Suffice it to mention that in the foreign teaching-learning context, the speaking environment within the classroom is very limited and artificial. The situation is aggravated by the fact that the activities learners perform in a classroom are literally interrupted as soon as the classtime finishes, and learners naturally start communicating in other languages, the mother tongue in particular.

Above all things however, the lack of sufficiently trained teachers in teaching English seems to be the most vital problem to be addressed, as we believe it has, to a great extent, affected the Rwandan learners' level of performance in

English over the past years. Some schools in Rwanda had no choice but to employ teachers with insufficient preparation, because of the scarcity of qualified teachers. A further setback in the teaching of English in Rwanda was that often the best teachers were recruited for other more attractive and remunerative jobs, or marketed themselves to private organisations and firms, where they could earn higher salaries than in the teaching profession.

The lack of good teachers has a detrimental effect on the learners' communicative competence and performance. If the teachers' own command of pronunciation is deviant, it follows that the mistakes they pass on to their students may consistently lead to deterioration of pronunciation and loss of intelligibility and comprehension altogether.This does not however mean that local accents of English are not valuable and helpful to learners, provided that they remain internationally intelligible to other users of English. The writer still remains strongly convinced of the benefits that foreign learners would draw from following a native standard model of English. The main reason that justifies the suggestion of the use of a native standard model is none other than that of facilitating easier intelligibility and comprehension with users of English as the lingua franca today.

Mazrui (1998:137), while agreeing that British standard English continues to be regarded as the linguistic norm of many Africans, thinks that in the long run and as African English deviates from the British norms in a linguistically discernible manner, it may be regarded less and less as a foreign language, and more and more as an African tongue. In other words, the pronunciation of English by African speakers clearly reflects the accent of their respective mother tongues and their potential impact on the understanding of English. The teaching of English should avoid the situation whereby learners end up speaking a non-understandable language.

Dakin,Tiffen and Widdowson (1968:101) commented that the similarities among African languages on the basis of common origin and the spread of phonetic, grammatical and semantic features are such that over very wide areas African speakers will find at least roughly similar points of difficulty.

Thus most Africans speak tonal, non-stress languages. They will probably all tend to identify stress with high pitch and not reduce unstressed vowels to the same extent as native English speakers. Finally, many Africans first encounter European languages and continue to hear them mainly from African speakers and tend naturally enough to use such African renditions as a model. What seems to be arising, then, are reasonably uniform 'dialects' of English and French, which are practically no one's first language, very much as there exists an 'Indian English'.

In order to assess the impact of the pronunciation of Kinyarwanda on English, the teachers involved in this work were asked to agree, disagree and comment on the assumption that *The pronunciation of English by Rwandan learners is more affected by Kinyarwanda, French or both.* There was a unanimous agreement from the teachers' answers which endorsed the irrefutable impact of previous use of other languages on the pronunciation of English, with the conspicuous dominance of the mother tongue. Four out of eight teachers (50%) thought Kinyarwanda was the most influential on the pronunciation of English; two i.e. 25% thought it was mainly French, and the other two i.e., 25% thought it was both Kinyarwanda and French. Ruzindana (1990:52-53) made a similar enquiry and came to different results. Out of forty teachers that he investigated, 22, i.e. 55% thought that the pronunciation of English was influenced mainly by French; 4, i.e. 10% thought it was Kinyarwanda, while 14, i.e. 35% thought it was both Kinyarwanda and French. Though the results from both researchers conflict slightly in terms of numbers, they are nonetheless both in agreement on the major role that Kinyarwanda and French play on the pronunciation of English by Rwandan learners. Further research may certainly be more conclusive on that matter.

In answering the question *What are the major problems that you encounter in teaching English, and pronunciation in particular'?* the teachers whom the writer questioned, gave different views which can be summarised in the following six major points:

1. Not being able to get students to perceive and to realise certain sounds of English as exactly as they are expected in the target model.

2. Not being able to maintain English intonation and keep up with the right rhythm and stress in connected speech in English.
3. Students tend to pronounce English as they pronounce French, and by transferring Kinyarwanda phonemes into English.
4. Lack of adequate teaching tools, books, tapes, tape players, radios, language laboratories, and films to help the teacher and the learner, in particular, to develop receptive skills.
5. Lack of consistency and positive reinforcement of what is learnt at school, which gets lost when students switch to the use of other languages as soon as they step out of the classroom.
6. Class size (40-50 pupils) prevents effective individual practice and follow-up. Some students tend to hide behind others and may spend a whole week without having actively participated in any communicative learning activity. As a result, the students rely totally on the teacher and do not contribute much.

Teachers commonly held the view that the smaller the class, the more opportunities learners get for practice and correction from the teacher. At the same time, learners are given more individual attention, which is recommendable in a language learning situation and is lacking in bigger size classes where teachers often tend to work with more able students, to the detriment of the weak or timid ones.

1.6 Sociolinguistic review and conclusion

The tentative sketch of language vitality in Rwanda that we are about to display, offers a helpful picture of the position that English occupies in Rwanda vis-à-vis the three other languages in use. We have limited ourselves to a set of only 12 domains that we thought were the most meaningful in Rwandans' daily life.

Such an analysis is relevant in a multilingual setting such as the one we are dealing with in this study, and gives the reader a fair view about the role and status of each language in different contexts. An impressionistic rate of the use and power of each of the four languages used in Rwanda was made by

the eight teachers already referred to. They were asked *to evaluate how the four languages are used by Rwandans in different daily contexts by using (1) as the most used, to (4) as the least used.* It should be borne in mind that the extent to which a language is used reflects the social status, the level of education of its users and the actual need it responds to. For example, English is rarely used at home by most Rwandans, except for a few educated parents in urban settings. These may also easily switch to other languages, much depending on who their interlocutors are, the content of the topic talked about or the level of education and proficiency of interlocutors in the language(s) being used. In the Rwandan context, Swahili, French and English are best suited for outside communication, regional and international relations, academic and technological purposes in comparison with Kinyarwanda.

Table 1.10 Ranking Order (1 = first, 2 = second, 3 = third, 4 = fourth)

	Contexts	Kinya	French	Swahili	English
1	Home	1	2	3	4
2	Market	1	2	3	4
3	Social gathering	1	2	3	4
4	Education	2	1	4	3
5	Religion-Church	1	2	3	4
6	Sports & Music	1	2	3	4
7	Written media	1	2	4	3
8	Radio	1	2	4	3
9	Television	1	2	4	3
10	Hospital	1	2	4	3
11	Government	1	2	4	2
12	Office	1	2	4	2

The reading of the table above shows that Kinyarwanda ranks 1st in 11 out of 12 contexts, i.e. a rate of 91.66% against only 8.33% as second.

French ranks 2nd in 11 out of 12 domains i.e. a rate of 91.66% against only 8.33% where it ranks first. It never came as 3rd or 4th in any domain. Swahili ranks 3rd in five contexts only, i.e. a rate of 41.6% compared with 58.3% where it ranked 4th in the remaining seven. English ranks 4th, 3rd, and 2nd at respective rates of 41.66%, 41.66% and 16.66%.The fact that English ranks 3rd in five contexts as Kiswahili which ranks 4th in seven contexts out of 12 seems to be evidence that English is gradually gaining more ground than

Kiswahili. The ranking of English as 2nd in the context of government administration and office confirms to some extent its co-official status with French today. Its position as 3rd in education equally corroborates its growing importance in that country. The consistency of the position of Kinyarwanda and French as 1st and 2nd language is stable compared with the shifting position between Kiswahili and English competing for the 3rd rank. The impression one gets from the above table is that English seems to have gained more importance than Kiswahili in view of the fact that the former ranked twice as 2nd compared with the latter which did not. Also, the table shows clearly that French and English are equal seconds in the domains of government and office.

One thing however that needs to be emphasised is that this categorisation is in no way canonical. It may indeed be subject to changes in other researches if, for example, the rural/urban variable is taken into consideration. It is also understandable that more languages are likely to be used in cities than in rural areas due to the presence of people from different social, economical and educational backgrounds.

This chapter has attempted to show how in a multilingual setting such as Rwanda, Kinyarwanda affects the way in which the other subsequent languages are spoken and used. Moreover, the importance of learning and using other languages is explained through the functions and aims assigned to each of the four languages we explored in this chapter. Language being a tool of maintaining communication, it is therefore important that people learn other languages in view of understanding other people and being understood too.

Linguistically speaking, though French and English are extremely useful, they however can have adverse effects on Kinyarwanda (mother tongue) whose status and power seem to gradually diminish as learners advance in education and embrace the former two languages. Numerous instances of code-switching in Kinyarwanda, French and English by educated Rwandans is a clear evidence of such adverse effect. Despite its instrumental importance

in international relations, wider communication, business and educational contexts, English remains a 'foreign' language in Rwanda inasmuch as most people inside Rwanda still do not solely depend on it in order to satisfy their communicative needs.

The future of the languages in Rwanda lies in the joint work of politicians, linguists and teachers complementing their views for better identification, preparation, implementation and evaluation of language policy. In order for Rwandan learners to reach an improved level of proficiency in English, there is a need not only to define attainable objectives and to better train teachers, but also to improve the teaching materials that would compensate for the lack of natural setting.

Overall, the complex sociolinguistic situation of Rwanda may explain the source and extent of the phonological difficulties the Rwandan learners encounter in either understanding other speakers of English, or in making themselves understood. The current low level of command in spoken English by Rwandan speakers is thought to be the result of the process and methods in which it has been taught, whereby learners were entirely dependent on their teachers who were not themselves always certain of their own pronunciation. Successful performance was also hindered by the limited input that the classroom provides since English is not much used outside the classroom. The way in which interference from Kinyarwanda affects its speakers' performance in either Kiswahili, French or English was touched on in this chapter. The other relevant variables related to target language learning will be covered in the following chapter on language learning and teaching.

CHAPTER TWO

LANGUAGE LEARNING AND LANGUAGE TEACHING

2.1 Introduction

This chapter is intended to locate pronunciation within the framework of language learning and language teaching as a whole. Certain theoretical key issues will be touched on that are relevant for pronunciation teaching: Contrastive Analysis, Language Universals, Error Analysis, Interlanguage, and Socio-psychological factors. This is intended as a prelude to the main subject matters of intelligibility and comprehension in Chapter Three.

The aim of language teaching is to equip learners with sufficient and accurate linguistic and phonetic competence and performance for practical purposes contained in utilitarian, instrumental and integrative functions. In other words, language learning should be considered as a natural response to communicative needs. The development of competence and performance is a prerequisite for successful communication that can be defined as being able to use the language effectively and to be understood by other speakers and to understand them.

Brown (1994) maintained that language competence represents the learner's cognitive and mental knowledge of the language in terms of grammatical rules, vocabulary and sounds. Language performance on the other hand represents how the learner performs or uses the language as a tool to achieve particular functions or goals. As for Canale and Swain (1980), communicative competence refers to both knowledge and skill in using this knowledge when interacting in actual communication. Knowledge refers to what one knows (consciously and unconsciously) about the language and about other aspects of communicative language use, while skill refers to how well one can perform this knowledge in actual communication.

With regard to the role of language in communication, Halliday (1978) puts more emphasis on 'meaning and use' in relation to competence and performance. He gives prominence to the socio-semantic approach to

language, i.e. the nature of the language system and its evolution which he calls' the meaning potential'. To define how social meanings are expressed in a language, he emphasises that linguistic possibilities are options in meaning realised in the form of grammatical, including lexical, selections. The social and the situational contexts are of primary importance as they determine the behaviour patterns that are realised through language.

Hymes (1972) maintained that communicative competence is linked to speaking ability, which enables an individual to produce coherent and appropriate sentences with reference to the social aspect they are intended to achieve. Communicative competence comprises linguistic competence and the attitudes, values, motivation and social rules governing the language, its features and use. With the advent of the communicative approach to language teaching, communicative competence has almost become equal to linguistic performance, since both deal with the use of the language to achieve clearly defined purposes. This communicative function attributed to language has been the backbone of the communicative approach which underlines the importance of meaning in studying and using a language as a means of communication. Successful communication is therefore given more weight and importance than simple accuracy of forms (Brumfit 1979, Krashen 1982). It clearly emerges from these statements that successful use of language for communication requires the development of both competence and performance. With reference to the present study, improved phonological competence and performance will enable learners to be understood by both native and non-native English speakers without major hindrances and to understand these.

Language learners use a set of learning strategies that affect their 'interlanguage' a general term that we shall explain in due course in this chapter. Some of these learning strategies are transfer, over-generalisation and simplification (Selinker 1972). Language learning has been influenced by different methods of teaching over the years. Teachers have a variety of methods from which they can choose what best suits their learners and the context in which the teaching and learning are taking place. Furthermore,

successful learning is affected by both affective, social and psychological factors such as personality, motivation, learning style, aptitude, pace of work, age of the learner, the instructor, and, last but not the least, the language environment and the degree of practice.

The distinction between language acquisition and language learning is clearly made by Ellis (1985:113) by saying that 'acquisition' is the subconscious internalization of L2 knowledge that occurs through using the L2 naturally and spontaneously. 'Learning' is the conscious study of a L2 that results in knowledge about the rules of the language.

2.2 First Language Acquisition

The distinction between language acquisition and language learning is fundamental to the extent it tells us different processes that are involved in acquiring one's first language and in learning a second or foreign language. Most writers think that the distinction between language learning and language acquisition lies in the fact that the former is the conscious process of internalising a second language, while the latter is perceived as the subconscious process of acquisition of that language.

Wilkins (1974:26) refers to language acquisition as "the process where language is acquired as a result of natural and largely random exposure to language" and he refers to language learning as "a process where the exposure is structured through language teaching situation". Krashen (1982:10) supports this view on the basis of his Monitor Hypothesis. He points out that language learners have two ways for developing competence in the target language. One is 'acquisition' a subconscious process of constructing the system of a language, like the way in which children pick up their first language. In such circumstances, language learners use it for communication, and they are not so concerned with correctness. Language is acquired in a natural way without explicit teaching and learning. The other is a 'conscious' learning process in which learners attempt to know the rules of the language and should be able to use them appropriately. The language is learnt formally in the classroom. Error correction is considered as a useful device to help the

learner figure out the right form of a rule. The rationalists' view about language is that language acquisition is innately determined almost in its entirety, that we are born with a built-in device that predisposes us to language acquisition, resulting in the construction of an internalised system of language.

The way in which children acquire their mother tongue is quite different from the way a second or foreign language is learnt, with reference to strategy, language input and output, language environment and their obvious impact on acquisition. Any mother tongue is first of all learnt informally. Children depend on natural language input surrounding them from birth and from their immediate social environment, i.e. members of their families. All children acquire a native language without formal instruction during their early years. As they grow, formal teaching gradually takes place and reinforces the cognitive competence they have of their mother tongue.

We cannot claim to know or understand what goes on in the brain of young learners and how they acquire the mastery of sounds and the ability to say things. What is clear however is that direct and constant exposure to the language and natural practice facilitate its acquisition. Children start by hearing sounds around them, without even attempting to say anything. Gradually, they acquire words, which develop into phrases. It does not take long before they acquire simple spoken grammatical rules. They are then able to make fully comprehensible utterances that help them to communicate more meaningfully and confidently with other speakers.

Finally, it is generally acknowledged that the interference (negative transfer) from the mother tongue has evident effect on the learning and use of subsequent language(s), particularly with reference to sound production and perception.

2.3 Second Language Learning

Learning a second language presents new and different challenges from those with which learners are confronted in learning their mother tongue.

From the start, it is right to assume that it is extremely difficult or even impossible to create a learning ambiance in which a second language can be learned in a similar way as the first language. A second language can be acquired in various ways, either formally as in tutored or guided learning in the classroom or informally as in daily spontaneous interactions free from classroom teaching. Behaviourists believe that language learning is verbal habit formation based on trial and error, imitation and reinforcement, and practice is seen as the key to success. This view was however challenged by Chomsky (1965), who maintained that children are endowed with sophisticated innate language learning abilities that take the form of a Language Acquisition Device (Chomsky 1959). Through this device, children acquire a language by making hypotheses about the form of the grammar of the language with which they are surrounded. They then compare this with their innate knowledge of possible grammar. In this way, the child internalizes a knowledge of the grammar of the native language (competence), and this competence makes language use (performance) possible in concrete situations.

Second language acquisition is referred to by Richards (1985:68) as the field within the applied linguistics of language teaching that studies the development of communicative competence in second language learners. The system learners use is almost similar in the way in which children acquire their first language. Learners are almost unaware that they are acquiring the language though they are aware of the fact that they are using it for communication. For Ringbom (1987:26), second language acquisition has two different uses. One denotes the process of learning another language without guidance from teaching or books in an environment where the language is frequently spoken. The other is a blanket term to cover not only second language acquisition proper but also second language learning in a classroom situation.

As long ago as 1945, Fries made a relevant statement that in learning a new language, the chief problem is not first that of learning vocabulary items, it is

the mastery of the sound system, to understand the stream of speech, to learn the distinctive sound features and to approximate their production (p.3). Success in learning a second language is an extremely complex task which involves different skills no less complex in themselves. Within the four main modes of communication, i.e. listening, speaking, reading and writing, the current study will deal mainly with spoken skills in which the productive and receptive aspects of sounds are accounted for as a major factor that affects learners' intelligibility and comprehensibility in English.

Successful learning of a second language is constantly impeded by interference from L1, particularly in the area of pronunciation. Westermann and Ward (1990:1) shed light on this issue by saying

> *Languages differ from each other not only in grammar, idiom, and vocabulary, but in the production of the sounds which make up the language in the way sounds are linked together to make words and sentences, in the distribution of breath force over words and syllables, and in the way the voice goes up and down in speaking, i.e., in intonation. The learner of a new language, unless he is exceptionally gifted or unless he has a special training, transfers into the new language all the speech habits of his mother tongue. The new habits do not come naturally.*

Such a statement shows the relevance of training the ear for speech sounds of learners of English as a foreign language, particularly those whose native language markedly differs from the target language. Westermann and Ward go on further to say that unless learners can distinguish the sounds of the language they are learning, they stand little chance of ever being able to imitate them. They also mention the recognition and acquisition of the correct length of sounds, the distribution of stress and the intonation of the language to be a significant difficulty to the learners of a new language. Another difficulty in pronunciation is fluency, which is evidence of the ease and speed with which sentences are said. The same writers maintain that when the students can say all the sounds of a language with fair ease in all kinds of combinations, they are likely to attain fluency in speaking. The structuralists' view of learning a second language might mean replacing one set of habits with another or at least overcoming its influence. In that sense habits from the

learner's mother tongue were perceived as constantly interfering with the acquisition of a new set.

Corder (1973) maintains that learning a second language after acquiring verbal behaviour in the mother tongue is a matter of adaptation or extension of the existing skills and knowledge rather than the relearning of a completely new set of skills from scratch. The impact of learners' mother tongue (L1) transfer into L2 acquisition (Gass and Selinker 1983; Schmied 1991) will be explained in due course in this chapter (2.8.1). However, non-attainment of proficiency in L2 cannot be totally attributed to transfer alone. There are other equally significant factors to consider.

The impact of age in learning a second language has raised strong debates among researchers over the years, especially when it is advanced that children are more able to acquire native-like proficiency (fluency and accuracy) than adult learners. It is particularly believed that in L2 phonology, learners beyond puberty have more problems in the pronunciation of L2, while younger learners will easily acquire native-like pronunciation if they live in the target language environment. It should not wrongly be concluded however, that young learners are better in all other aspects of the target language. For example, it is believed that in grammar, lexis and listening comprehension tasks, adults do much better than children (Krashen, Long and Scarcella 1979). The relevance and effect of age to language achievement is broadly explained in 2.9.6

Learning a second language has a social and psycholinguistic dimension which is regarded as acquiring elements of a different ethnolinguistic community. This seems to explain why and how language learning cannot be separated from a study of the society and culture that language represents. Gardner and Lambert (1972) maintained that acquisition of a second language involves two tasks. One is the acquisition of a new linguistic code, students must learn new and different symbols to represent various concepts. The other involves the acquisition of the cultural behaviour patterns which are characteristic of the cultural linguistic group whose language is being studied.

The recent contribution of sociolinguistics has been its stress on the communicative value of a language in different social contexts each of which requires a particular and appropriate language use.

Success in second language learning is measured not only in terms of the learners' competence but also in their performance. Performing in a language is doing an action, in which speakers produce particular forms for meaning by choosing from a variety of all those which are available to them. Such a view reinforces De Saussure's (1964) distinction between 'langue' and 'parole'. While 'langue' refers to language as a formal structure and system, 'parole' refers to language as 'use' or as 'performance' (Chomsky 1965). The two pairs of concepts i.e. competence and performance, 'langue' and 'parole' do not work independently of each other.

Hymes (1977) extended the notion of linguistic competence by introducing a new concept of 'communicative aspect' of a language. In his earlier study (1972) of the ethnography of speaking and communication as an approach to socio-linguistics, he pointed to the fact that communicative competence was not only the knowledge of grammar, but also the social and cultural rules of a language, reflecting the competence of actual speakers, through different channels, codes, settings and forms of messages as well as different genres.

Schmied (1991:44) comments that the notion of competence has led to much confusion in theoretical linguistics and applied/socio-linguistics, because Chomsky's grammatical concept, even when he talks of pragmatic competence, is much narrower than Hymes' socio-linguistic one. A further difficulty arose when the concept of communicative competence became fashionable, usually in reference to language learning and teaching. In second language teaching learners should be trained to maintain a sufficient level of communication, by improving both the socio-linguistic concept (emphasising the communicative value) and the proficiency concept (emphasising the fluency and acceptability).

Richards and Schmidt (1983:xi) put it that since the goal of language teaching is to enable learners to use language in ways which are communicatively effective and appropriate, the study of the communicative functions of language has taken on an increasingly important role in recent years within applied linguistics. This has meant a movement away from a narrow linguistic perspective, which is primarily message oriented, to looking at the broader implications of considering speakers and hearers as social beings, operating within a context, that is at the same time personal, conceptual and interpersonal, as well as being anchored in social and cultural reality.

The effectiveness of language learning and teaching depends on the nature and quality of the training to which teachers are submitted before entering their career, as well as on the methods used to teach.

2.4 Teaching Methods

Teaching methods should aim at developing learners' competence and performance in the four skills of the target language being learnt. A special focus must be given to pronunciation in teaching, since it affects intelligibility and comprehension in the target language more than grammar and vocabulary do. Brown (1994:159) defines methods in language teaching as a generalised prescribed set of classroom specifications for accomplishing linguistic objectives. Methods tend to be primarily concerned with teachers and students' roles and behaviours, and secondarily with such features as linguistic and subject-matter objectives sequencing, and materials. They are almost always thought of as being broadly applicable to a variety of audiences in a variety of contexts.

The issue of methods is closely related to the goals of the language instruction. The teacher makes decisions on which method to use on the basis of what the goals of the language instruction are and which strategies therefore will be most effective to meet those goals. One of the problems is that teachers do not know which method to use. They end up teaching through the method in which they were taught, which may not necessarily be the best for their students. In this section, we shall only make a brief overview

of the most commonly used methods in the field of language teaching, with particular attention on the importance that each has given to pronunciation skills.

First, the *Grammar-Translation Method* was popular in the teaching of classical languages such as Latin and Greek, and has been applied in the teaching of modern foreign languages. Readers with a French and Latin background will remember 'thème et version', in which learners were asked to translate from French into Latin and vice versa. The method emphasises grammatical rules and vocabulary as the basis for translation from the target language into either the learners' native language or the second language. Translation was often helped by the use of dictionaries. More emphasis was laid on written language at the expense of spoken exercises. Learners spent a lot of time in memorising grammatical rules, vocabulary and reading aloud in order to succeed in their exams. It was not effective in preparing the learners to use the target language communicatively, and pronunciation was given very little attention.

Second, the *Direct Method* sought to make up for the failures of the translation method and improve the learners' competence by teaching them directly in the target language. It was also meant to help learners to use the target language to communicate by developing speech without recourse to translation. One major advantage of the method is that students as well as teachers are required to use the target language only. This is particularly good for learners who have strong motivation towards learning another language. However, the learners' linguistic environment, the teachers' limited phonological competence, class size, the time allocated to an English class hindered it from achieving its initial aims. In non-native teaching contexts, translation is still used and is sometimes advisable particularly when the learners are faced with difficult or new linguistic categories.

The direct method was replaced by the *Audio Lingual method* whose objectives are broadly similar to those of the direct method, that is, to help the learners to communicate in the target language. It discarded the use of the

learner's native language in the classroom. It was however criticised on both theoretical and practical grounds. Language learning is not a matter of habit and conditioning only, but a creative process (Chomsky, 1965). In that sense, teachers are expected to consider the learners' creative participation in classroom activities as being more important than avoiding errors in the target language. The Audio Lingual method used the results of Contrastive Analysis in the area of pronunciation and required extensive ear training (discrimination exercises) and production practice. Therefore, classroom activities were conducted in a way which aimed at getting students to use the language structures they learnt in producing error-free speech.

The *Cognitive code Method* considers conscious grammatical knowledge as an essential tool to the target language learning process. One of the major assumptions of this method was that perception and awareness of second language rules preceded their actual use. Learning is cognitive since it involves internal representations that regulate and guide performance. Competence is strongly emphasised in language instruction in as much as it enables the learners to perform well in the target language. Pronunciation was given less emphasis.

The *Total-Physical Response Method* was inspired by Asher (1977) who stated that when children acquire their native language, they spend many months listening to the people around them before they start to speak. It is based on the learners' physical performances in response to the teacher's utterances prompting them to do things. Language learning according to this method is seen as primarily oral. In other words, the understanding of the spoken word comes before its production. Learners learn the language by saying what they are doing. For example, the teacher asks a learner: 'open the door'. The learner opens the door and says, 'I open the door'. Learners, in their turn are allowed to be the ones who give commands to their own class mates, as in a role play.

This method develops the learners' understanding of the spoken word before production. It also teaches learners to start from simple structural forms and

gradually use more complex language. As a technique, it provides contexts to help the learners to understand the language, and the teacher to know whether or not utterances are understood. The teacher is expected to be tolerant about the learners' errors and only correct those thought to be major ones for communication. Above all, this method is extremely effective in the early stages of the learning, but it tends to lose its impact as learners become more competent in the target language.

Finally, the *Communicative Approach* seems to have overtaken all other methods and rightly so as it emphasises communication as the goal of language learning through communicative activities. Johnson and Morrow (1981) pointed out that there should be three features for activities to be truly communicative. The first is an information gap which exists when one person in an exchange knows something that the other person does not. The second is a choice in which the speaker chooses what he will say and how he will say it. The last is feedback, in which the speaker can evaluate whether or not his goal has been achieved based upon the information he receives from his listener. Students usually work on all language skills from the beginning and their errors are seen as the natural outcome of the development of communicative skills.

The acquisition of competence in grammar and vocabulary are considered an important step towards achieving that goal. However, communication may fail if only these are taught. The goal of the communicative approach is to help learners become communicatively competent. This requires them to possess the knowledge of linguistic forms, meanings and different functions in different kinds of situations. In that approach, classroom activities are communication oriented. That is, the teacher prepares tasks aimed at helping the learners use the target language in actually performing communicative activities, which range from games, problem-solving situations to role-plays. In such activities, learners are more involved in using the language to find solution, in speaking instead of thinking of the language structures.

To summarise, no single method is either sufficient in itself to solve all the learners' problems or can always work successfully. This seems to be due to the fact that different learners have different abilities and work at different rates. Therefore, it would be difficult to know for certain which method or technique is better than others to apply to all learners. Much depends on aims, motivation, attitudes, environments, etc. Nonetheless, teachers should be encouraged to choose positive aspects from different approaches. This was called 'eclecticism'. Rivers (1981:55) defines eclecticists as "those who adapt their methods to the changing objectives of the day and the types of students who pass through their classes. They gradually evolve a method which suits their personality". To be successful, an eclectic teacher needs to be imaginative, energetic and willing to experiment. With so much to draw from, no eclecticist need lack ideas in order to keep lessons varied and interesting. Therefore, teachers should keep themselves informed about different methods and styles of teaching from which to choose what suits their learners best.

Any second language teaching method should give priority to pronunciation, in view of the effect it has on the learners' intelligibility and comprehension.

2.5 Phonology and Phonetics in Language Teaching

The phonetics of a language concerns the concrete (articulatory, acoustic, auditory) characteristics of the sounds used in languages, whereas phonology concerns how sounds function in a systematic way in a particular language. Phonetics is defined by Crystal (1991:259-60) as

> *The science which studies the characteristics of human sound making, especially those sounds used in speech, and provides methods of their description, classification and transcription. It comprises three branches: (1) articulatory phonetics is the study of the way speech sounds are made (articulated) by the vocal organs; (2) acoustic phonetics studies the physical properties of speech sound, as transmitted between mouth and ear; (3) auditory phonetics studies the perceptual responses to speech sounds, as mediated by ear, auditory nerve and brain.*

Wardhaugh (1986:217) explained that there is a relationship between the sounds, words, and syntax of a language and the ways in which speakers of that language experience the world and behave in it. Teaching a language includes teaching its phonology and phonetics. There would be no point in learning a modern language one can neither speak nor understand. In order to be able to communicate comfortably and interact meaningfully and intelligibly in a foreign language, learners have to understand and correctly acquire its sound system.

Phonetics and phonology are teachable and learnable as a science. Westerman and Ward (1990:1-2) maintained that "pronunciation like any other branch of language study could be and should be taught scientifically, that it is possible to find out the exact nature of every speech sound used in any language, to investigate how the sounds are distributed, and to present these other scientifically ascertained facts in such a way as to make it easier for the student to acquire a good pronunciation".

Pronunciation, however, is more than an accomplishment of the basic sounds of speech, it is more than an ability to articulate consonants and vowels. Each language has a system of sounds (or phonemes) which pattern in different ways to represent the words of that language. The system itself and the various patterns are the basis of what might be called word phonology, i.e. how words are represented in the spoken form of the language. Thus, English has its own particular word phonology, French has another. Swahili's word phonology is quite different again and so is the word phonology of Kinyarwanda. Each language has also some kind of prosodic system that helps to construct the phonological shape of its words. English, French and Swahili have word stresses, although the way stress operates in each of these languages is different. Kinyarwanda has (lexical) tone in addition to stress.

It is worth bearing in mind, as Crystal does in the above quotation, that people not only articulate the "basic sounds of speech" and transmit them to other people, but they also have to perceive them. It could well be argued that such

a perceptual ability is primary in language acquisition/learning, for presumably, learners can only produce what they perceive, apart from accidental cases of acceptable production. In this study, priority was in fact given to the productive processes of interlanguage phonology (see chapter 5), but they have been balanced by a comprehensive study of perceptual competence in interlanguage phonology (see chapter 6).

Speech, however, is more than the pronunciation of words. Words come together in phrases, and phrases come together in clauses and sentences. Sentences themselves come together as text in the production, and perception of discourse. Thus there are phonological features and processes involved when words come together as phrases, what could be called phrase phonology, as opposed to word phonology.

Phrase phonology involves processes of simplification like assimilation, elision, epenthesis and liaison (cf.Tench, 2003). Just as the systems and patterns of word phonology vary from one language to another, so do the processes of simplification. Phrase phonology also involves matters of rhythm, which are very conspicuous in English in the shape of weak forms as opposed to strong forms of many grammatical items as in , for instance, *he could have gone* / hi kəd əv gɒn /.

Likewise, there are phonological features and processes involved when phrases come together to form clauses and sentences. In this case we are moving into the area of intonation, sometimes known, in fact, as 'sentence phonology'. Then, clauses and sentences form text for discourse, involving what Tench (1996) calls 'phonological paragraphing', and finally, such paragraphs (or 'paratones') form total discourses. The features and processes of these higher levels are often designated 'discourse phonology' or ' discourse intonation'.

The present work has only made a initial attempt to include phrase phonology in order to measure learners' productive and perceptive spoken abilities.

Though it greatly affects communication, intonation was not accounted for in our work.

If learners are going to be successful in talking and listening in a foreign language, they must reach some degree of competence in all these levels of phonology referred to above. This must be part of the teaching syllabus and should figure in a teacher's training. Teachers should be trained in phonetics and phonology, including matters of rhythm and intonation. This should be the case for teachers who are native speakers of the target language, because otherwise, they will not overcome a typical lay person's misunderstanding that, for instance, English has only got five vowels, or that the < th > is the same in *thank* and *other*. How much more then should a non-native speaker of the target language be trained in phonetics and phonology? Not only must their understanding be broadened, but often their own pronunciation must be improved.

It seems obvious that teachers need training in the phonetics and phonology of the target language, but it may not be so obvious that a knowledge of the phonetics and phonology of the learners' mother tongue would be valuable too. Learners at school do not come to the task of acquiring and/or learning an additional language as they did when they acquired their mother tongue (see 2.2 above). When they come to the later task, they bring with them their mother tongue phonology already "in place" in their minds. If they come to this later task after a certain age (see the discussion on CPH in 2.9.6), then their mother tongue phonology is not only "in place", but entrenched, and will very likely interfere with the acquisition of the phonology of the additional language.

Thus it would be good for the teacher to be well aware of the phonetics and phonology of the learners' mother tongue. This, incidentally, is the advantage that teachers have who share the learners' mother tongue as their own ; they know where their learners are coming from. Equally, this is the disadvantage of native speaker teachers of the target language, unless they inform themselves of the phonetics and phonology of the learners' mother tongue.

Thus it is worthwhile for both native and non-native speakers of the target language to become acquainted with the phonetics and phonology of both the target language and the mother tongue. In a multilingual setting like Rwanda, such training could suitably extend to the other languages that are used in society, in this case French and Swahili. However, in this piece of research, attention is confined to just English and Kinyarwanda; although it is recognized that the learners' possession of some degree of competence in French and Swahili is relevant when English is acquired as a fourth language, the task would have been too great to incorporate all that information too. Nevertheless, when it seems pertinent to mention the possibility of interference from these two languages, then a relevant comment is made in the analysis in chapters 5 and 6.

The aim in this research is to assess the intelligibility of Kinyarwanda learners speaking English and their ability to comprehend a native English speaker's pronunciation. It is assumed that the phonetic and phonological features of their mother tongue will interfere in their production and perception of English. Such interference is usually referred to as transfer. In any walk of life, old habits get transferred in the process of acquiring new skills until the new skills are "embedded".

However, as applied linguists regularly discuss, transfer is not the only process involved. Major (1995:115) maintained:

> *In L2 acquisition there are two categories of processes that have been described extensively in the literature: language specific transferprocesses and non-language specific universal developmental processes, similar or identical to L1 acquisition processes.*

The second of those two categories includes reference to language universals on the one hand and to developmental strategies on the other. Language universals will be considered in 2.7 and developmental strategies will be considered in the context of Error Analysis in 2.8 and of Socio-psychological factors in 2.9. First, however, transfer will be considered in the context of Contrastive Analysis in 2.6

The importance of spoken abilities through pronunciation is stressed by Wilkins (1972:54-55) who commented that "imperfect utterance disturbs the hearer and the inability to master a phonetic distinction leads to misinterpretation and the ensuing communication actually becomes more difficult". This view was shared by Rivers (1968:112) in maintaining :

> *Often a foreigner has great difficulty in speaking understandably not because of his lack of knowledge of the language (competence), but because the sounds he produces sound peculiar to English speakers, who often call it a 'foreign accent', defined as the complex of consistently occurring phonetic (and phonological) differences from the norms of a language, which native speakers of that language recognise as uncharacteristic of any dialect of their language.*

The relevance of pronunciation clearly stands out in the way in which it affects the extent of what is said and heard. Foreign accent can be seen as the result of deviant teaching reinforced by interference from the learner's native language, as well as the degree of difference between the learner's L1 and the target language.

2.6 Contrastive Analysis

Contrastive Analysis (CA) is a systematic comparison of a description of the learners' mother tongue with that of the target language. Contrastive analysis has been concerned with the effects of interference of L1 features and deviations observed in L2 learners. The theoretical value of CA is reflected in Corder's (1973:145-56) three orders of applied linguistics: (1) Description of languages, (2) Comparison (intralingual, interlingual, error analysis), and (3) Teaching methodology and materials (content of syllabus).

Contrastive analysis is based on the assumption of interference from the learner's mother tongue. Lado (1957) explains that the principle of CA rests upon the assumption that interference from L1 and learning difficulties in the target language can be predicted and explained by comparing the similarities and differences between two languages on the basis of their systematic description. Differences in two languages imply learning difficulties due to contrast between two different sets of habits, whereas similarities imply

learning facility, due to transfer of similar structures from the L1 to the L2. It was also claimed that the errors were likely to occur at the points where the two languages were different.

> *... in the comparison between native and foreign language lies the key to ease or difficulty in foreign language learning.... We assume that the students who come in contact with a foreign language will find some features of it quite easy and others extremely difficult. Those elements that are similar to his native language will be easy for him and those elements that are different will be difficult"* (Lado 1957:1-2).

According to this theory, an individual learner tends to transfer the forms and meanings of his native language and their distribution and function both productively and receptively to the foreign language. Differences in two languages imply learning difficulties due to contrast between two different sets of habits, whereas similarities imply learning facility, due to transfer of similar structures from the L1 to the L2. It was also claimed that the errors would occur at the points where the two languages were different. Contrastive analysis theory rests on psychological and pedagogical assumptions which were strongly supported by Fries (1945), Lado (1957), Lee (1968), James (1980, 1998) and Schmied (1991). They considered contrastive linguistic analysis as a major component of the materials preparation and methodology of target language teaching and learning, as the comparison between two languages is thought to help the teacher know better what the learning problems are and help the learner accordingly.

The psychological assumption is that the learner's native language habits are transferred into the target language in either positive or negative forms. Positive transfer occurs when the same forms function similarly in both the learner's language and the target language, i.e. where the L1 facilitates learning in L2; whereas negative transfer happens when the learner's language forms are different from those of the target language and cannot be used in the target language without causing problems of intelligibility or comprehension. Wilkins (1972:198) further explained the notion and role of negative transfer or interference from the learner's mother tongue and its impact on the learning of the target language:

> *If a comparative study – a contrastive analysis of the target language and the mother tongue is carried out, the differences between the languages can be discovered, and it becomes possible to predict the difficulties that the learner will have. This in turn, determines what the learners have to learn and what the teacher has to teach. The results of the contrastive analysis are therefore built into language teaching materials, syllabus, tests and research.*

The pedagogical implication was that CA was able to predict the areas of difficulty a learner would encounter in learning a target language and the errors which would occur at those points where the two languages differ. It also looked into why errors are made. Fries (1945:9) maintained that:

> *The most effective materials are those based on a scientific description of the language to be learned, carefully compared with a parallel description of the native language of the learner.*

This view was shared by Lado, who suggested three major points to take into account whenever comparing two phonemic systems, i.e. the linguistic analysis of the sound system, the comparison of the sound system, and the description of the troublesome contrasts evidenced in the languages under consideration. Schmied (1991:113) noted that "English cannot be taught efficiently unless the teacher has some understanding of the systematic differences in English use and usage between standard English and the local performance norms".

CA plays a vital role in the teaching of a foreign language. First, it gives a detailed description of the systems of the given languages, in showing their differences and similarities. Second, it is basically concerned with helping teachers to understand certain problems and errors as they arise during the learning process of their students. Such understanding can be a significant step towards helping them to design remedial exercises and strategies aimed at preventing the same errors re-occurring. Also the comparison between the two languages gives teachers and text-book writers relevant information which can help in designing relevant and appropriate classroom materials for teaching and assessment purposes.

The Contrastive Analysis Hypothesis (CAH) falls into two distinct versions: 'the strong version of CA', also called 'the predictive version', and 'the weak version', known as 'the explanatory version'. Wardhaugh (1970:123) explains:

> *The strong claim implies that the difficulties may be predicted from a comparison of equivalent description of the two languages before the actual learning situation is observed, whereas the weak claim of contrastive analysis is an attempt to explain already discovered deviations.*

The strong version of the CAH supports the claim that the difficulties the learner will meet with may be predicted from the comparative description of both the learner's and the target language (Lado1957:1). The descriptive comparison is therefore a valid source of information about language learning difficulties, and helps the teacher to prepare for some of the sources of the learners' errors.

Lee's (1968:186) claims also offered support for the strong version. He maintained:

(1) that the prime cause or even the sole cause of difficulty and error in foreign language learning is interference from the learner's native language;

(2) that the difficulties are chiefly, or wholly, due to the difference between the two languages;

(3) that the greater the differences are, the more acute the learning difficulties will be;

(4) that results of a comparison between the two languages are needed to predict the difficulties and errors which will occur in learning the foreign language;

(5) what there is to teach can best be found by comparing the two languages and then subtracting what is common to them so that what the students have to learn equals the sum of differences established by the contrastive analysis.

Such points are extremely relevant to the present study. It should however also be borne in mind that there are other equally significant factors that affect learning an L2 besides the influence of L1. For instance, in the present study, the multilingual background of Rwandan learners has undoubtedly affected

their learning of English, particularly in the area of pronunciation. According to CA theory, interference is inevitable, and more so for learners from a multilingual context.

The weak version of the CAH is a subcomponent of Error Analysis (EA) which attempts to explain the learner's deviations and errors. It lays emphasis on evident linguistic interferences which correspond to the similarities and differences between two language systems. At the same time, it empowers the teacher to use their ability to explain and deal with the observed difficulties during the learning process. Nevertheless, it does not make any prediction of which errors will be made. Wardhaugh (1970:181) maintains that CA being unable to predict all language learning problems, is pedagogically less helpful than error analysis.

> *In contrast to the demands made by the strong version, the weak version requires of the linguist only that he use the best linguistic knowledge available to him in order to help account for observed difficulties in second language learning. It does not require what the strong version requires, the prediction of those difficulties and conversely, of those learning points which do not appear to create any difficulties at all*

Nemser (1971) explained the weak version as follows:

> *I take contrastive linguistics to be a field concerned with drawing the implications in terms of learning facilitation and inhibition, of structural similarities and differences between the language or languages a learner has already acquired and the language he is seeking to acquire. On the basis of a comparison of the descriptions of the phonologies, grammars and lexicons of the languages in question…Contrast linguistics offers hypotheses concerning identifications a learner will make between elements of his base and target systems, thus providing predictions and explanations concerning his learning behaviour of presumed high value in planning learning and teaching strategy.*

However, the predictive power and contribution of the CAH have been questioned on the basis that though it predicted some errors, it failed to predict them all. Not all errors are necessarily caused by the differences between L1 and L2. It was in particular questioned with reference to its

emphasis on the role of interference and interlanguage errors in learning a target language. Some errors are due to learning strategies, teaching techniques and the teacher. Wilkins (1972) maintained that errors are caused by mother tongue interference among other things, but that however, not all of them are caused by evident differences between L1 and L2, and surely some errors are due to the intrinsic natural complexities of the target language at grammatical, lexical and phonological levels.

The most cogent argument put forward by its opponents is that the learners' errors in the target language can be identified without any reference whatsoever to their native language or from a comparative analysis between the target language and the learners' language. Corder (1967:162) maintained that:

> *The major contribution of the linguist to language teaching was seen as an intensive contrastive study of the systems of the second language and the mother tongue of the learner ... Teachers have not always been very impressed by contributions from the linguist for the reason that their practical experience has usually already shown them where the difficulties lie and they have not felt that the contribution of the linguist has provided them with any significantly new information. They noted for example, that many of the errors with which they were familiar were not predicted by the linguist anyway.*

Wardhaugh (1970) pointed to the fact that CA cannot be used to predict language learning problems, yet it may be useful in explaining known or discovered difficulties. Furthermore, CA does not explain "the extent to which L1 acquisition mechanisms, processes, strategies, and parameters are available to the L2 learner and whether the resulting interlanguage systems behave according to the principles of natural languages" (Major and Faudree 1996). In addition, Anderson (1987:280) argued that language universals hypothesis actually excludes the necessity of referring back to a learner's mother tongue:

> *The language universals hypothesis does not take into account NL structure; instead, it bases its predictions of difficulty on universality. The least expected or least universal forms across the languages of*

the world are considered to be the most difficult for L2 learners to acquire, while the most expected or natural forms are considered to be the easiest, independent of native language transfer.

A further criticism against CA pointed to its failure to predict all errors a learner makes and most of all, the degree of their difficulty and their seriousness.

The case of German learners of English is a relevant example to illustrate this discussion. In Tench's experience (personal communication) with German learners of English, a CA of English and German phonology would not predict that they would have any difficulty in producing English / v / because German too has a / v / phoneme. Yet it is a common observation that German learners stereotypically pronounce *village* as **willage*. On the other hand, CA would predict that German learners would have difficulty with English / w / because there is no equivalent consonant in their mother tongue. It was observed that many a beginning German learners of English will indeed produce *which way* as * *vich vay*, but it is quickly learnt and "over-used" as in the first example. CA did not predict the first difficulty nor did it predict the relative ease in overcoming the second case. The first difficulty appears to be the consequence of a spelling mismatch: English /w/ is orthographically<w>, but German <w> is phonemically /v/. The learning strategy is a case of hypercorrection.

English learners of French are predicted to have difficulty with French initial /ʒ / because the English equivalent does not appear in initial position. German learners of French are predicted to have difficulty with French final /ʒ / because the German equivalent does not appear in final position. What CA was not able to do was to predict that the German acquisition of French final /ʒ / would be a harder task than the English acquisition of French initial /ʒ /. As Major (1987:64) pointed out, "in its early forms CA was not concerned with rate or order of acquisition, therefore it fell short of proposing universals similar to those in L1 acquisition".

French learners of English are predicted to have difficulty with English / ɪ / and / ʊ /, since French does not have equivalent vowels that contrast with their / i / and / u /. Such predictions are borne out by experience, but what CA does not do is grade the impact of failure to produce the contrasting pairs in English. The functional load of English / iː-ɪ / is much greater than that of English /uː-u /, so failure with the first pair has much greater consequences than failure with the second pair. CA failed to grade the importance of difficulties. The limitations of CA are therefore: (1) failure to predict all the errors; (2) failure to predict degrees of difficulty, and (3) failure to grade the importance of errors.

Historically, these limitations led to serious attacks on the value and viability of CA, and people turned to Error Analysis, and promoted it as the only valid alternative. However, despite its limitations, CA also had its strengths, notably the pedagogical information relevant to the teacher, textbook writer and tester.

In all the criticisms of standard traditional CA what nevertheless remained was the observation that aspects of the phonetics and phonology of the mother tongue get transferred to the learners' production of a new language, and also to their perception, at least initially. With time, effort and practice, such transferred items are gradually reduced as new skills are developed. Transfer, nevertheless, existed.

Eckman (1977) did not abandon CA, but rather modified and developed it into the Markedness Differential Hypothesis (see 2.7). In a later study (Eckman 1981), he admits: "However, the deviation that is observed is always in the direction of conformity with the phonetic forms of the respective native languages" (p 26). The "deviations" in that study were the way Cantonese and Japanese learners of English coped with English final voiced obstruents; the Cantonese tended to devoice them, in conformity to the Cantonese system which allows final voiceless consonants but not voiced ones; the Japanese tended to add a final schwa to conform to Japanese syllable structure.

In a later study still (Eckman 1991), Eckman promotes his Structural Conformity Hypothesis in an investigation of learners' acquisition of English consonant clusters. His main contention related to universals in the acquisition of clusters in the mother tongue and in a second language; the same universal rule applies. The data also shows, however, the influence of learners' first language on their incomplete acquisition of the English clusters.

In a more recent study (Eckman et al. 2001) of learners coping with contrasting phonemes in the target language that correspond to allophonic variations of a simple phoneme in their mother tongue, it is accepted that

> *Potential impediments to this learning arise from two areas: 1) from certain inherent difficulty in learning the various TL lexical items and rules, and 2) from areas of the NL that may interfere with this acquisition* (p.22).

In other words, one of their starting points is an actual contrastive analysis and the acknowledgement of native language (NL) interference. They go on to make a valuable point that successful learning of L2 pronunciation amounts to more than "simple mimicking of TL sounds" (p 46); it must lead to " abstract phonology (p.47), in other words a phonological system that is capable of generating the pronunciation of L2 words - a phonological competence. But their starting point is CA and possible transfer.

Another authority on interlanguage phonology (Major 1987) also acknowledges the value of CA and transfer as a starting point, while acknowledging its limitations: "Even though it seems incontrovertible that a learner's L1 influences L2 acquisition, the question of phonological similarity between L1 and L2 on rate of acquisition has not been adequately addressed by research"(p.64). That latter issue is the subject of that particular article, but he does not ignore the "successes" of CA: "Predictably, speakers of languages which have no / r / - / l / distinctions generally have difficulty with English /r / and / l /, and many of these learners' substitutions are the

corresponding allophonic variants in the learners' first languages (L1s)" (p.63). The main point of his paper is that transfer of similar items like Portuguese / e / and English /ɛ / when learning English are much more difficult to eradicate. Transfer happens, whether it is deemed "negative", "positive" or "straight". A detailed CA will not only identify differences but also similarities, and thus some value to CA is vindicated.

Incidentally, one could take issue on one, passing, observation he made (p.63): "Thus, CA cannot explain why a given English speaker may successfully produce Arabic pharyngeal fricatives on the first attempt". At least two points could be made: any 'given English speaker' will differ in aptitude or talent in motor skills from any other English speaker (see 2.9), but more pertinently, there is a huge difference in being able to produce an Arabic pharyngeal fricative in isolation on a first attempt and in being able to produce one fluently in a word in spontaneous speech.

A later study (Major 1995) investigates the status of different phonological "underlying representations" in interlanguage. Although the whole notion of alleged "underlying representations" has never featured in classical phonemic theory nor in (so-called) Prosodic Phonology (Palmer 1970) nor in Systemic Phonology (Tench, 1992), and its forms are uncertain even in generative grammar – Major admits (p113): "The exact nature of these URs has always been a source of debate"- there is an acknowledgement that URs of learners' native language (NL) are relevant in the study of 'interlanguage'. Major considered nine possible relationships between learners' phonological URs, three of which proved irrelevant; of the remaining six, four were illustrated with examples that were overtly cases of transfer from L1, and the others were illustrated with examples that could be called "half-successes" which showed traces of L1 transfer.

All these studies show that in an investigation of interlanguage phonology, transfer cannot be ignored, and that CA helps to account for the cases of transfer that occur. Lado's original principle of "If it is different, it is difficult" is

admittedly quite inadequate. But that is no reason to reject either the concept of transfer or the power of CA to illuminate it.

CA and EA remain vital components of applied linguistics, research into the problems, learning strategies and language teaching. They complement one another for an effective explanation of interference. "... some features of interlanguage are explained by comparing L1 with L2: this is predictive CA, while others are identified by comparing interlanguage with L2: this is EA" (James 1994:180). Perhaps the 'C' in CA should stand for Comparative rather than Contrastive or both, since the latter highlights differences rather than provide an overview of the whole. The value of CA in the present study is to provide relevant information for the design of the instruments for assessing interlanguage phonology both productively and perceptually. It was not used primarily for predictive purposes, but rather for design purposes.

2.7 Language Universals

We now turn to address the weaknesses of CA and consider the ways in which CA has been developed and refined to become a more efficient source of relevant information. The first well known development was Eckman's attempt to incorporate information from Greenberg's established analysis of language universals (Greenberg 1978), and in particular the notion of 'markedness'.

The concept of 'markedness' in L2 acquisition is claimed by Eckman (1977, 1981, 1991) to be an improvement on the contrastive analysis (CAH) which needed to be reviewed so as to be able to predict not only areas of difficulty in the target language, but also the relative degree of difficulty. Markedness Universals in the area of phonology have been formulated on the basis of primary languages to account for certain facts about second language acquisition (SLA) that include order of acquisition. Initially proposed by Eckman, markedness universals was further considered by other researchers (Anderson 1987, Tarone 1987, Carlisle 1994, 2001). In addition to the structural form of CAH that attributes the learners' errors in second language

acquisition to interlingual interference, a markedness differential hypothesis would also attribute them to both intralingual and interlingual interference. Eckman's markedness differential hypothesis evolves around the concept of 'typological markedness' and its implicational relations in which the 'degree of difficulty' corresponds to the notion of ' typologically marked'. According to this theory, the errors will be dependent on the native language to the extent that the areas of difference between it and the target language are 'marked'. He (1977:60) explains 'markedness' :

> *A phenomenon A in some language is more marked than B if, the presence of A in a language implies the presence of B, but the presence of B does not necessarily imply the presence of A.*

He further maintained (p.61) that the areas of difficulty that second language learners will have can be predicted on the basis of a systematic comparison of the first and the target language, in such a way that:

(a) those areas of the target language which differ from the native language, and are more marked than the native language, will be difficult;

(b) the relative degree of difficulty of the areas of the target language which are more marked than the native language, will correspond to the relative degree of markedness;

(c) those areas of the target language which are different from the native language, but are not more marked than the native language, will not be difficult.

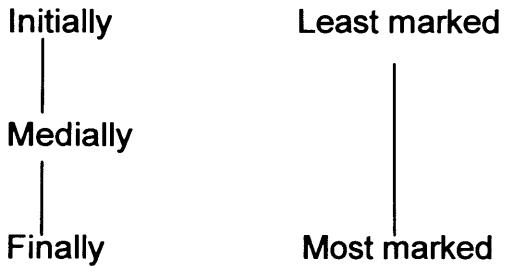
In applying the theory of markedness to voicing contrasts for example, he notes that there are no languages with just voiced obstruents, for any language that has voiced obstruents always has voiceless obstruents, but not the reverse. From that observation, he stated that voiced obstruent phonemes are more marked than voiceless ones. The most quoted example to highlight the effect of markedness is about voice contrast in German learners of English. He states (1981:19) that because in German only voiceless stops occur in final positions, German learners of English will tend to devoice English stops in final position. The problem is the maintenance of a voice contrast in final position. Thus, a German speaker's substitution of / kæp / for

cab in English is predictable due to L1 interference coupled with the fact that voiced final stops are marked (Eckman 1977).

Further exemplification to support the markedness differential hypothesis is given in the contrast between French and English / ʒ /- / ʃ /. French has initial / ʒ / -/ ʃ / contrast, but English does not. Therefore, what is involved is the maintenance versus non-maintenance of a voice contrast in initial position.

A voice contrast hierarchy in which a voice contrast in initial position is less marked than a voice contrast in medial and final position is given by Eckman (1977:62).

Voice Contrast Hierarchy



This means that it should not be as difficult for an English speaker to learn to contrast / ʒ /- / ʃ / in initial position in French, as it would be for a German speaker to learn to contrast / p /- / b / in final position in English, or indeed to contrast / ʒ /- / ʃ / in final position in French (see p.84).

Eckman's voice contrast hierarchy is based on universal syllable structure. The structure CV is found in all languages, but the structure CVC is not; the latter is therefore 'marked', and the implication is that the presence of CVC means that CV is also present. (Similarly VC is also marked, so is CCV; CCVC implies a greater degree of markedness, since it contains two marked features). Since a voiced obstruent is marked, and CVC is marked, the presence of a voiced obstruent in final position is 'doubly' marked; but a voiced obstruent in initial position is less marked.

Tarone's (1976) study showed a tendency towards a simpler CV pattern in language learning. She analysed the spontaneous speech of six subjects

(Cantonese, Korean and Portuguese) learning ESL and found that they simplified target consonant clusters by reducing them to simpler CV patterns. Carlisle (2001:5) maintained that the CV syllable is an absolute substantive universal; all languages have CV syllables and some have only CV syllables. Any syllable types that are more complex than the CV syllable are therefore marked, the degree of markedness directly dependent on the degree of complexity. According to Carlisle, given that CV syllables are unmarked, some researchers in L2 acquisition hypothesized that the CV syllables are produced in interlanguage independent of native language transfer. He (p.8) further commented that though the CV syllable is the unmarked syllable type, syllable structures fall along a continuum of markedness. Thus, CVCC syllables are more marked than CVC syllables, which in turn are more marked than CV syllables. Therefore, the general hypothesis was that the less marked onsets would be acquired before more marked onsets, for example / sp- / before / spr-/ and / sk- / before / skr-/.

If such universal marked features influence L1 acquisition, it is then maintained that they will influence L2 acquisition likewise. Smith (1973) maintained that there are four universal tendencies in the child's phonological system: (i) a tendency toward consonant and vowel harmony; (ii) consonant cluster reduction, leading to a CVCV general canonical form; (iii) systematic simplification (mostly deletion and substitution); and (iv) simplification (e.g. the employment of a single CV syllable for all unstressed syllables).

However, Eckman's MDH takes advantage of both universals and the notion of transfer from the mother tongue, to refine the CAH with a notion of degree of difficulty; see also Eckman (1981). In the present study, it can be expected that Rwandan learners of English will have difficulty with both / θ / and / ð /, but that the latter will be more difficult, especially in final positions. Similarly, the acquisition of English short vowels will be more difficult than the acquisition of diphthongs, because the former are marked in universal terms and also must be followed by a consonant, whereas the diphthongs may

appear in a CV structure which is the favoured syllable structure in Kinyarwanda.

Eckman (1991) further claimed that language universals that were derived from natural languages apply also to learner languages, 'interlanguages'. He proposed the Interlanguage Structural Conformity Hypothesis: "The universal generalizations that hold for the primary languages hold also for interlanguages"(p.24). For him, no language will have words with longer initial or final clusters without also having words with shorter clusters in the same word positions, where those shorter clusters are continuous subsequences of the longer clusters. No language for that matter will have initial [skr-] while lacking words with initials [sk-] or [kr-]. Interlanguages are, in fact, languages that learners use to generate discourse and interpret it. So what is true of 'primary' (i.e. natural) languages should be true of 'secondary' languages (i.e. interlanguages). Thus Rwandan learners' phonological interlanguage will display the same generalizations that are displayed in natural languages.

Major (1995:115) drew attention to "non-language specific universal developmental processes, similar or identical to L1 acquisition". Having considered the incorporation of a language universals dimension into a L2 acquisition hypothesis, namely Eckman's Markedness Differential Hypothesis, we turn now to developmental processes and strategies, first of all in the context of Error Analysis (2.8) and then in more general socio-psychological factors (2.9).

2.8 Error Analysis and Interlanguage

Error analysis (EA), which focuses mainly on actual observed data, came in the 1960s and 1970s as a radical alternative to (predictive) contrastive analysis. EA originally relied on the underlying assumption that the learners' deviations from the target language could be identified without any reference to the learner's mother tongue.

For Crystal (1987), EA is a technique for identifying, classifying and systematically interpreting the unacceptable forms produced by someone learning a foreign language using any of the principles and procedures provided by linguistics.

The principle of EA, distinguishing it from CA, was that the mother tongue was not supposed to enter into the picture and that errors do not necessarily reflect the L1 structure. Therefore, errors could be fully described in terms of the TL without the need to refer to the L1 of the learner. Halliday (1964:119) maintained:

> *Any errors in English can be described with complete accuracy by reference solely to the description of English, without taking any account of the student's native language or even knowing what it is. Each error is stated as a specific deviation from a described English feature.*

The above statement, however, seems to only go halfway towards the full understanding of what actually happens in linguistically complex situations where English is learned against a background of other languages. Disregard of the obvious impact languages have on learners, would be to minimise the valuable theory of interference. While CA focuses more on describing and comparing languages a learner is dealing with, as well as on teaching materials, EA is 'learner-centred' and focuses on their language output and the materials used to help the learning.

Corder (1967) explained that:

> *The errors of a foreign language learner are errors of competence, systematic and serious, because they reveal the learner's failure to master the system of the target language and represent either a transitional stage in the development of a grammatical rule or the final stage of the learner's knowledge. The learners are using a definite system of language at every point in their use of the L2, although it is neither the adult system nor that of the second language. The learner's errors are evidence of this system and are themselves systematic" (p.164-166).*

He distinguished 'errors', which are 'systematic' from 'mistakes' (socially inappropriate forms or errors of performance) and 'lapses' i.e. slips of the

tongue. Corder (1973:24) later noted that "the objective of EA is to describe the whole of the linguistic system and to compare it with that of the target language. It is also believed that EA, by identifying the areas of difficulty for the learner, can help (a) in determining the sequence of presentation of the target items in textbook and classroom, with the difficult items following the easier ones; (b) in deciding the relative degree of emphasis; (c) in devising remedial lessons and exercises, and finally (d) in selecting items for testing the learner's proficiency".

For James (1998:78) 'error' is an instance of language that is unintentionally deviant and is not self-corrigible by its author. A 'mistake' is either intentionally or unintentionally deviant or self-corrigible only with the benefit of feedback. 'Lapses' or slips of the tongue or pen, can quickly be detected and self-corrected by their author unaided. Of the three, errors are more serious and need more attention.

Many studies conceded that errors in learning have been perceived as a clear sign of failure on the part of the learner to reach expected correct forms of the target language and that the interference of the learner's mother tongue plays a crucial part in the process of learning. EA is not considered only as a way of identifying learners' errors and of classifying them, but also as a way of explaining their occurrence in terms of psycholinguistic, linguistic and pedagogical factors. Nemser (1971), Corder (1974), Selinker (1972), Krashen (1981), Richards (1974), James (1980, 1998).

First, the psycholinguistic objective of EA purports to describe how languages are learned and the relationship between the process of first language acquisition and foreign language learning. At the same time, it aims at providing an explanation of the learners' competence and the difficulties they meet with.

Second, the linguistic aim of EA is mainly concerned with the systematic description and explanation of the errors made by second language learners. In linguistic terms therefore, we can understand that there are transfer errors

which are caused by the interference from the learners' mother tongue (and other previously used languages), as well as those originating from knowledge of the target language thus far acquired.

Third, EA is orientated pedagogically as a help to the teacher in locating difficult items which are the source of problems for the learner, but which nevertheless need to be learnt. Within the target language, the more difficult an item is, the more explanation and certainly more practice it requires. Errors help the teacher to measure the learner's present competence and performance in comparison with the required target forms. Error analysis informs the teacher about how effective their teaching methods are, and gives them an evaluation of the progress or indication of any change needed in teaching techniques. In that sense, therefore, EA is helpful not only in designing course textbooks and grading classroom materials, but also in constructing language tests.

Richards also (1974:205) presented a three-level categorisation of error, i.e. interference errors, intralingual and developmental errors. He explained that interference errors reflect the influence and evidence of the dominance of the learner's mother tongue in their attempt to reproduce the target language, particularly with reference to the differences between the two languages.

Intralingual errors are errors originating from within the intrinsic structures of the target language itself. Developmental errors are a continuation of the intralingual ones. Such errors are evidence of the learners attempting to build up hypotheses and make assumptions about the target language from the limited experience and knowledge they have acquired until then. They are due to ignorance and incomplete application of rule restrictions. In such cases, learners usually apply already learned rules to contexts where they do not correctly apply. In that sense, these can be related easily to overgeneralization and transfer. Many instances of such errors occur both in grammar and speech sounds. For example, the lack of *–s* in *eat* in a sentence like *What does he eat?*, may lead to a lack of of *–s* in *He eat a banana.*

However, such errors tend to gradually disappear as learners gain more competence in the target language.

Errors, as opposed to mistakes and lapses, not only show a lack of competence, but also they show that at least learning is taking place. The best and most comprehensive explanation about the significance of errors is found in Corder's (1974:25) most quoted comments. According to him, errors are significant in three different ways:

> *First to the teacher, in that they tell him, if he undertakes a systematic analysis, how far towards the goal the learner has progressed, and consequently what remains for him to learn. Secondly, they provide evidence of how a language is learnt or acquired, and of what strategies or procedures the learner is employing in his discovery of the language. Thirdly, they are indispensable to the learner himself, because we can regard the making of errors as a device the learner uses in order to learn. The learner is using a definite system of language at every point in his development, although it is not that of the second language, the learners' errors are evidence of this system and are themselves systematic.*

Corder argued further on that from the study of the learner's errors, we are able to infer the nature of their knowledge at that point in their learning, and discover what they still have to learn. By describing and classifying their errors in linguistic terms, we build up a picture of the features of the language which are causing them learning problems.

Errors provide feedback and inform the teachers about the effectiveness of their teaching techniques and materials. They equally show them what parts of the syllabus which he has been following have been inadequately learned or taught or need further attention. James (1998:12) maintained that errors tell the teacher and the researcher what needs to be taught and how learning proceeds. They are also a means whereby learners test their hypotheses about the L2. Richards (1974:19) summarised it in this way:

> *Errors show the teacher the areas of difficulty and should help to direct the teacher's attention to these areas so that he might devote special care and emphasis in his teaching to the overcoming or even avoiding of these predicted difficulties.*

All errors, whether lexical, syntactical, textual, discourse, orthographical and phonological belong to two major categories, i.e. global and local. They are measured according to the gravity of their impact on communicative success or breakdown. Burt and Kiparsky (1975) maintained that 'global errors' are those which significantly hinder communication, and affect the overall sentence organisation, whereas 'local errors' affect a single element in a sentence and do not hinder or affect the communication act.

Error analysis has its own weaknesses and limitations. It has mainly been criticised for example, for not being able to detect all the learner's errors. James (1980:186) explained:

> *There is a further problem of error identification without prior CA. If it is true that CA can predict errors which fail to materialise, it is equally true that EA can fail to recognise errors which have materialised. In other words, without the expectancies generated by a prior CA, it is possible that real errors will go unnoticed.*

Schachter (1974) criticised EA for its poor statistical inference, the subjectivity of its interpretation of errors, and its lack of any predictive power (something any scientific procedure must have) on the one hand; on the other hand, EA fails to recognise that learners have a tendency to avoid TL items they are not sure about, and so not to commit errors which they would be expected to make.

Despite criticisms however, EA has contributed a great deal to the teaching and learning of a second language. The results provided by EA can be usefully used for designing classroom materials and textbooks. EA shows how the learners are operating at the moment, what competence/ performance they have and display in constructing and understanding utterances in L2, i.e. their "interlanguage".

Interlanguage (IL) refers to systems and competence that learners use to construct and understand utterances in L2 during their learning. Interlanguage assumes that the learners usually create their own system of rules from the language to which they are exposed in order to build a model of the target

language and so to be able to learn and communicate in it. They thus hypothesize about the forms and patterns of vocabulary, grammar and phonology. In other words, the second language learners create their own system which lies between their native language and the target language. Corder (1981:67) argued that the terms 'intralingual' and 'interlanguage' suggest that the learners' language will show signs of features of both the target language and other languages they may know, most obviously their mother tongue. The term 'interlanguage' was introduced and explained by Selinker (1972) who maintained that "it refers to the interim grammars constructed by second language learners on their way to the target language ...It is used to refer to the learner's language at a single point in time as a unique and dynamic system, distinct from both his native language and the target language, but having properties common to both languages".

Interlanguage was also called 'transitional competence' or 'idiosyncratic dialect' which imply constant and developing change as the learner progresses in learning and acquiring new things, Corder (1967,1971). Nemser (1971:55) called this process of learning an 'approximative system', hinting at the incompleteness of the learner's language, but progressive and developmental toward standard forms of the target language. In other words, it is the deviant linguistic system actually employed by the learner, attempting to construct the target language.

For James (1998:63) interlanguage is the learners' substitutive language, whereas incompleteness is the failure to attain full native speaker like performance. In interlanguage there are more phonological errors caused by negative transfer (interference) from the learners' pronunciation of their mother tongue, than there are in the transfer of grammatical and lexical forms (Selinker,1972). In particular, the interlanguage phonology of some African learners of English reveals features not only from their mother tongue, but also from other languages spoken prior to learning English. Transfer from the L1 is the main process influencing the interlanguage phonology. According to Selinker (1972:37-40), interlanguage is the product of five central cognitive processes involved in second language learning:

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(1) language transfer : some items, rules and subsystems of the interlanguage may result from transfer from the first language;
(2) transfer of training : some elements of the interlanguage may result from specific features of the training process used to teach the second language;
(3) strategies of second language learning: some elements of the interlanguage may result from the specific approach to the material to be learnt;
(4) strategies of second language communication : some elements of the interlanguage may result from specific ways people can learn to communicate with native speakers of the target language;
(5) overgeneralization of the target language linguistic materials: some elements of the interlanguage may be the product of over-generalisation of the rules and semantic features of the target language.

These factors account for the errors in competence in the target language. The first is treated below (2.8.1), followed by a consideration of the fifth (2.8.2). The fourth is discussed in terms of simplification (2.8.3), approximation (2.8.4) and fossilization (2.8.5). The second and the third are discussed in 2.9.

2.8.1 Mother Tongue Effect

Interlanguage phonology is in part affected by learners' native language interference. The mother tongue effect hypothesis lies in the assumption that features and strategies previously known and used by the learner are likely to be transferred in the target language learning. Interference is described as "those instances of deviations from the norms of either language, which occur in the speech of bilinguals as a result of their familiarity with more than one language" (Weinreich 1953:1). With regard to L1 transfer, when L1 and L2 phonological structures differ, pronunciation errors are likely to occur. These errors seem to reflect the system of the learners' native languages.

Major (1987:64) pointed to the influence of L1 in the acquisition of L2 on the basis of phonological similarity by saying that" if L1 and L2 are very different

phonologically, an L2 speaker usually has a greater number of difficulties than when L1 and L2 are similar, because there is more to be mastered when L1 and L2 are dissimilar, and thus there is little opportunity for positive transfer". The effect of different mother tongues is reflected in the existence of different L2 English accents around the world, whereby language habits of each speech community have shaped and patterned the pronunciation of English in a distinct and recognisable way. Many L2 speakers of English sound as if they were producing their native language.

Flege (1995:237) explains the effect of mother tongue in the way in which for example French / y / is mispronounced as / i / by Portuguese learners, but as / u / by native English learners. It is also suggested that native Portuguese learners of French may hear / y / tokens as / i /, whereas English learners of French hear / y / tokens as / u /. Japanese and Russian both have / s / and /t /, but lack / θ /. Japanese learners mispronounce it as / s / and Russians as / t /. The mother tongue has been referred to as the major cause of variations in English by African learners for example, because it clearly influences their pronunciation of English. Lanham (1965) quoted in Schmied (1991:53) explains that

> *In every major linguistic area in the world where English is learnt as a second or foreign language, there is a characteristic set of deviations from authentic English, each of which is a point of easy transfer from the mother tongue into English. With the passage of time these deviations become institutionalised and give a specific stamp to Indian English, African English in its various forms, Spanish English, and so on. In an area where one generation supplies the English teachers to the next, mother tongue interference can be cumulative so that, with time, English in that area can deviate more and more from accepted norms.*

It could be maintained therefore that many foreign learners of English tend to pronounce and hear it through the filter of their mother tongue. On that basis, the predominance of habits from one language on another is a determinant factor for potential deviations which have an effect on intelligibility and comprehension. This can be supported by one example of Rwandan learners of English who say *heal* when they actually mean *hill*, because they have no

such contrast as /iː /-/ɪ / in Kinyarwanda vowel system. Interference or negative transfer is more detrimental to the learners' performance in connected speech. There is a commonly held view that foreign accent is due to the interference of the learner's first language. The influence of NL structures and features on target language phonology is acknowledged by James (1988:30):

> *By common consent, it has been assumed that NL structural influence on foreign language performance will be far greater in the area of phonology than in other areas of linguistic structure, since the acquisition of a new sound structure includes too the learning of new patterns of articulation and perception. Such patterns involve physiological aspects of language behaviour, which, it is assumed, are resistant to change and adjustment than the more 'cognitive' aspects of language behaviour associated with knowledge of higher levels of linguistic structure, such as syntax.*

Also, it is the dominance of the features peculiar to each language that help us in part to account for the variety of accents of English worldwide, as either native, second or foreign language. In that sense, we can easily identify American, British, Arabic, Japanese, German, French and African speakers of English from each other. Accentedness is however not restricted to non-native speakers only. It is also noticeable even among native speakers themselves. For example, in the British Isles, though speakers from different home regions generally maintain mutual intelligibility, and that no one can say that the others are right or wrong in their accent, they nonetheless can be distinguished from one another on the grounds of regional accent. It is in that sense that Ward in Kachru (1992:65a) cautioned against the easy belief that all native English speakers do always understand each other.

> *It is obvious that in a country the size of the British Isles, any one speaker should be capable of understanding any other when he is talking English. At the present moment, such is not the case: a Cockney speaker would not be understood by a dialectal speaker of Edinburgh or Leeds or Truro, and dialect speakers of much nearer districts than these would have difficulty in understanding each other.*

Such regional/dialectal factors are sharper in African multilingual contexts where different tribal languages pattern the way in which they speak English (and thus also define speakers' different cultural identity). Transfer from

individual learners' pronunciation of their mother tongues in English reflects the learner's ethnic, linguistic and cultural identity and values. For Jenkins (1996) "pronunciation is closely bound up with feelings of personal and group identity, and learners who achieve a high degree of proficiency in English in all other aspects, frequently retain many L1 features in their English interlanguage"(p.16). She explained in particular that no matter how well foreign learners may progress in the target language, they still retain something of their mother tongue in their accent which they cannot get rid of. It may however be the case that retention of one's mother tongue features in the realisation of the target language may simply indicate failure to acquire correct target pronunciation more than a matter of deliberate choice to sound 'foreign' for some degree of pride.

Having said all that, the bottom line remains that as long as there is mutual understanding, accent is not a problem. Native speakers themselves may have problems with other native speakers when their accents diverge too much. It is not therefore so much a matter of native versus non-native accents, but divergence of accents, whoever speaks them. Accent is unavoidable not only among non-native speakers but also among native English speakers (Smith 1992, Nelson 1982, Kachru 1992).

In explaining the sociology of language, Fishman (1972) argues that the way in which people talk is an indicator of who they are and where they are from. The case of East Africa can be a good example to illustrate the point. In East Africa, speakers can identify themselves from each other as either Ugandans, Kenyans or Tanzanians merely by the way they speak Kiswahili as the lingua franca. Within Kenya, Kikuyu, Wakamba and Luo people differ from each other in the way in which they speak either Kiswahili or English, with noticeable local language characteristics. Schmied (1991:57) confirmed it in the following terms:

The factors that play a part in the acquisition of English in Africa act very differently on the individual in different countries, regions and towns; that is why linguists or linguistically conscious listeners who are used to these forms from their own experience can indicate a speaker's home area or tribe from the way he speaks English. Whereas Nigerians recognise Yoruba speakers because they tend to replace the English dental fricatives [θ, ð] with alveolar plosives [t,d] and Hausa speakers with alveolar fricatives [s,z], Kenyans recognise Luos from their lack of [ʃ] 'sure' is pronounced as [sue] and Kikuyus from intrusive nasals before plosives, as in [salaⁿd] or their [l] as an [r], and so on.

He (p.60) further acknowledged that many other important features of African English are supra-phonemic, that is, they are related to the pronunciation of larger sound units, to word stress, intonation and to general rhythmic patterns. He mentioned consonant clusters as a major phonotactic problem, as many African languages have a relatively strict consonant vowel syllable structure (CV-CV-CV) which may explain African English tendencies with regard to consonant clusters and final consonants.

The use of 'epenthesis' (insertion of a vowel between elements of a consonant cluster) is evidence of L1 negative transfer in the production of English by Rwandan learners of English. For example, a word like 'street' containing a consonant cluster /#str- / which they do not have in Kinyarwanda, can take three forms as either /stiriti/, /sitriti/ or /sitiriti/. The strategy of adding a vowel in final word position (paragoge) is yet a reflection of habits from Kinyarwanda which always follows the CV pattern in word final position in contrast to English. A similar strategy was noticed among other African speakers of English such as Shona speakers in Malawi and Zimbabwe as confirmed by Pongweni (1990). Such a strategy is claimed by Tarone (1987) to be characteristic of L2 learners to get around a pronunciation difficulty. However, it should be conceded that such elements do not seem to affect intelligibility, but produce an evident intelligible foreign accent.

Mazrui (1998:138) commented that as African English deviates from the British norm in a linguistically discernible manner, it may be regarded less and less as a foreign language, and more and more as an African tongue. The

writer was presumably referring to the fact that English is spoken with African accents strongly affected by interferences from different local mother tongues.

The effect of mother tongue on subsequent phonological learning was also accounted for by Valdman (1964:1):

> *The pronunciation habits of one's native language constantly interferes with the acquisition of the pronunciation habits of the target language in two ways: Firstly, every language forces its users to be systematically deaf, that is, to hear sounds selectively and to focus on certain sounds distinctions while ignoring others. Secondly, in producing a foreign language, native articulatory habits will constantly get in the way.*

This seems to indicate that in actual fact, the level of interference that foreign learners have in the target language largely determines the way in which they perceive and pronounce the sounds of the target language. In the case of the Rwandan learners of English, some of the segmentals and suprasegmentals are likely to cause difficulty, largely due to the differences between Kinyarwanda and English on the one hand, and the lack of appropriate teaching and learning on the other. The role of the home language and the teacher in the context of African speakers of English was reported by Nkayi (1989) citing Lanham and Trail (1975) who argued that many Africans learn English from teachers who do not speak it as their mother tongue and although they may learn to read and write it very well, they pronounce it in almost exactly the same way as their home language.

Ioup (1984) found, as Selinker did, that first language interference is more prevalent in phonology than in other areas of language, such as syntax. She tested whether native speakers could identify different foreign accents in speakers of English as a second language from different backgrounds and without the aid of phonological cues. The results showed that though native speakers of English are able to identify learners from the same mother tongue backgrounds when phonological cues are present, they cannot do so using only syntactic evidence.

As we have argued in 2.6 above, interference and transfer are concepts that should be taken seriously whenever a linguistic study is undertaken between languages that are linguistically very different from each other, such as Bantu and European languages. Odlin (1989:27) explains that "transfer is the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired". There are two types of transfer generally referred to: "positive" (where the L1 facilitates learning in L2) and "negative"(where the L1 is likely to cause an error in L2). It is assumed that where the structures of the L1 and L2 are similar, positive transfer would occur; and where the structures of the L1 and L2 differ, negative transfer would occur. For example, positive transfer is likely to occur among French learners of English in their use of French / t / for English / t / since that phoneme is present in both languages; whereas negative transfer would occur with the same learners in their production of English phoneme / θ / and / ð / which do not occur in French. Negative transfer is considered to be the most serious cause of all errors in L2 pronunciation in which the learners use incorrect patterns of their mother tongue to realize the sounds of the L2.

The teaching of English in Africa should never underestimate the effect of indigenous languages on it. Schmied (1991:53) sums it well:

> *Today, when the vast majority of English teachers in Africa are Africans who can speak African English themselves, it is not surprising that this African dialectal influence is much more dominant than a theoretical British norm, which is still upheld in books but rarely experienced in use in present-day Africa.*

The data collected and analysed in Chapter Five of this work are an attempt to describe the phonological interlanguage of Rwandese learners of English. It is expected that their interlanguage will display the effect of interference from the segmental and suprasegmental features of Kinyarwanda into English. In addition to mother tongue effect, however, there are other strategies and developmental processes that pattern IL phonology, such as over-generalisation, simplification, approximation and fossilization.

2.8.2 Over-generalization

As indicated above, over-generalization is the way in which learners will incorrectly apply what they already know from the experience they have about the language in order to make sense of new experiences in the target language contexts. Jakobovits (1969:55) maintained that:

> *It is the use of previous available strategies in new situations in second language learning ... some of those strategies will prove helpful in organising the facts about the second language, but others, perhaps due to superficial similarities, will be misleading and inapplicable.*

In over-generalization foreign learners create deviant structures on the basis of their experience of other structures in the target language. Brown (1994:91) maintains that this strategy in second language learning is "a process that occurs as the second language learner acts within the target language, generalizing a particular rule or item in the second language irrespective of the native language, beyond legitimate bounds". For Ellis (1994:59) overgeneralization is a phenomenon whereby errors arise when the learner creates a deviant structure on the basis of other structures in the target language. It generally involves the creation of one deviant structure in place of two target language structures such as in * '*He can sings*' where English allows, '*He can sing*' and '*He sings*'. Second language learners often over-generalize the use of past tense *–ed* marker such as in the sentence *What did he intended to say*?, where the past tense morpheme *–ed* is extended to an environment in which to the learner, it could logically apply, but just does not (Selinker 1972). In that respect, second language learners are not significantly different in making such errors from learners learning their mother tongue. Observation has shown that children often over-generalize the past tense *–ed* as in '*goed*' for *went* or '*eated*' for *ate* or '*seed*' for saw .

Major (1987:79), for example, maintained that some Portuguese learners overgeneralised Portuguese / ɛ / (orthographically e´) to English / ɛ / and / æ / due to the influence of Portuguese which has only one vowel roughly in the phonetic space of English / ɛ / and / æ /. Also, the orthography of English is

full of examples that mislead second language learners into errors of phonological over-generalization. For example <ea> is pronounced differently in words like *meal, great, heard, hear, head* which can be confusing for many foreign learners. The writer has come across this problem in his teaching experience, having difficulty in convincing some of his students that the pronunciation of English does not always follow its spelling, hence the reason why *meal* and *head* could not be pronounced like *great*. The homographs *read* (infinitive) and *read* (past tense) are a particular problem. Learners inevitably over-generalize from spelling.

2.8.3 Simplification

Littlewood (1984:30) maintains that the main creative processes which underlie second language learning are transfer and over-generalisation. Simplification through omission would appear to have a less directly creative role. However, it may perform an important function in ensuring that the learner can devote more of his available learning capacity to other aspects of his developing language system.

The relevance of simplification is the extent of its effect on intelligibility. The omission of certain forms of the language such as articles, pronouns and inflections does not necessarily impede intelligibility. For example, the omission of / k / of *like* in *I lie coffee* would not prevent the listener from understanding. But there are cases of simplification that can severely affect intelligibility. For instance, Major (1987:123) found that simplification (deletion of a vowel) in a word may obstruct intelligibility. He used an example of Japanese learners who often devoiced and deleted high vowels in English between voiceless obstruents in the realisation of *city* as [sti]. This clearly shows the presence of mother tongue-like features which are incorrect according to the rules of the target language in the learners' performance in the target language. However, as learners advance in learning they get over this transitional phase. The current study showed some evidence of simplification (omission of one consonant in a consonant cluster) as interpreted by the native speaker judges. For example in 5.6.12.2-5-7-8, # bl-

in *blow* was interpreted as / l / in *law, low*; # gl- in *glow* as *law*; # sf- in *sphere* as / f / in *fair, fear*; and # br- in *brief* as / r-l / in *reef, roof, live* respectively.

2.8.4 Approximation

Approximation is a learning strategy that learners use by transferring features of their native language that are not actually identical to those of the L2, in order to represent those of the target language. It is caused by the lack of mastery of the appropriate target forms which results in using a near equivalent L2 item from the learners' L1.

Approximation in the pronunciation of non native learners of English reflects numerous instances of such transfer from their L1. For example, learners whose native languages lack the contrast of English / ɪ-iː / would presumably produce and perceive English /iː / as their own (not necessarily long) /i /. English diphthongs realised as two syllables by Rwandan learners of English can also be taken as another examplification of approximation. Major (1995) maintains that an English learner of French conceptualizes French dental / t / as alveolar and produces it as an alveolar (as well as aspirated [t^h]) sound, since the speaker thinks of both / t /s as equivalent (p.121).

With regard to markedness and phonological similarity between L1 and L2, Flege and Hillenbrand (1987) claimed that native English speakers produced French / y / (they used the symbol /ü /) more accurately than / u /, even though / y/ is more marked than / u /. They hypothesize that this was because the learners judged French and English /u / to be equivalent categories, whereas / y / was not judged to be equivalent to any English category (Major 1987:65), and presumably received extra attention compared with / u /.

In a similar study of the acquisition of English / ɛ / and / æ / by native speakers of Brasilian Portuguese, Flege & Hillenbrand suggested that the phonetic similarity of English and Portuguese / ɛ / caused speakers to assume that they were already accurately producing / ɛ / in English, while the existence of

the separate category / æ / in English caused speakers to focus on this sound (p.80). The relative poorer quality of / ɛ / was due to the approximation of Portuguese / ɛ / with English / ɛ / that shows the satisfaction that these learners had that their mother tongue would do. It is worth noting that the strategy of approximation does not adversely affect the learner's intelligibility, and that is indeed one of the reasons that it is generally referred to as positive transfer.

2.8.5 Fossilization

Fossilization in adult L2 learners is one of the issues often discussed whenever a study of interlanguage phonology is undertaken. Fossilization is used for linguistic structures that are deviant from the structures of the target language but remain in that deviant form no matter how much exposure or correction the learner receives. Though transfer from learners' mother tongue is claimed to play a part in that process of fossilization, the impact of poor instruction and the establishment of incorrect habits in early stages of L2 learning play no less a significant role. The term 'fossilization' comes from Selinker (1972), to refer to the cessation of acquisition before the complete mastery of the grammar at a native speaker's level. He (p.215) explained fossilization as follows:

> *Fossilizable linguistic phenomena are linguistic items, rules and sub-systems which speakers of a particular NL will tend to keep in their IL relative to a particular TL, no matter what the age of the learner or the amount of explanation and instruction he receives in the TL.*

Nemser (1971:117) noted how "stable varieties of approximative systems are found in immigrant speech, that is, the speech of long-term users of a target language who, often having attained considerable fluency in this language have yet obviously reached a plateau in their learning". Selinker and Lamendella (1980:132) defined it as a cessation of further systematic development in the target language. This view was strongly echoed by Corder (1981) who suggested that the process of fossilization may account for the stereotyped notions about the language of immigrants. Selinker argues that fossilization results from language transfer. In the domain of phonology,

fossilization often results in a foreign accent. For example, French learners are thought to retain the French uvular / R / in their English interlanguage pronunciation and English-speaking learners to retain the English / r / in their French interlanguage pronunciation, English rhythm in the IL relative to Spanish, which are all attributable to the influence of phonological system of the first language. Flege (1987) links fossilization to 'motor control patterns' whereby adult learners become less able to modify previously established articulatory patterns. He supported this by giving an example of native speakers of French who might realize the / s / in English words with a dental rather than alveolar place of articulation because they are unable to modify articulatory patterns, not because they fail to detect the acoustic differences between English and French / s / that might arise from small differences in phonetic realization (p.49).

Fossilization can be explained in relation to Critical Period Hypothesis (CPH), in physiological and/or neurological terms. The physiological explanation is that as learners get older the muscles and nerves of the tongue and mouth are less flexible so that native-like pronunciation is not possible. This view is supported by Lenneberg's (1967) concept of "lateralization", according to which the termination of cerebral dominance affects language acquisition. With lateralization, the brain loses its function for language acquisition, and this loss seems to affect the pronunciation more than the grammar or vocabulary of the L2. For Baker (1980:1) fossilization refers to mistakes which have been repeated for years that have become impossible to eradicate. James (1998:244) emphasised the fact that erroneous forms fossilize and improvement is blocked. We attribute erroneous forms of pronunciation to poor instruction by non-native English teachers, poorly trained in phonology, and the lack of practice according to standard forms. It is claimed that there is however no absolute fossilization in interlanguage if we consider interlanguage as a systematic continuum that can vary among individual learners in different contexts. Learners' language does change over time and under optimal learning conditions even for native speakers of any given language.

It has also been claimed that fossilization can be strengthened by pride and eagerness of preserving one's cultural identity. It is believed that for psychological reasons, some learners readily decide to retain their accent, for the sake of asserting who they are (preservation of personality) and the identity of the group to which they belong (Giles 1979; Giles and Coupland 1991). Flege (1987:49) maintained that it possible that social and/or psychological factors prevent adults from maximizing their capabilities for speech learning. It may however be the case that the retention of the mother tongue features in one's speech is but evidence of the learner's failure to attain correct target pronunciation rather than a matter of deliberate choice to sound foreign for some degree of pride.

The fear of loss of identity associated with acquiring correct pronunciation of the target language was dismissed by the learners involved in the present work. They rather deplored their inability to pronounce English according to native speakers' standard, and the lack of native speaker teachers to help them achieve better pronunciation. They further commented that their pride would rather reside in being able to understand any speaker of English, natives as well as other proficient non-natives and being understood without being categorised as 'foreign'.

It should be emphasized that there is nothing intrinsically wrong in keeping one's own accent, provided it is understandable. Kenworthy (1987:12) maintained that "speaking with a foreign accent is only a problem if it leads to a breakdown in communication". Accent is unavoidable not only among non-native speakers but even among native English speakers as well (Smith 1992, Nelson 1982, Kachru 1992b). The bottom line remains that as long as there is mutual understanding, accent is not a problem. We have argued earlier that native speakers can have problems with other native speakers when their accents diverge too much. It is not so much a matter of native speakers' versus non-native speakers' accent, but divergence of accents (whoever speaks them).

2.9 Socio-Psychological Factors Affecting Language Learning

Though individuals vary greatly in the way they learn and in their degree of success, there are, however, features that are characteristic of all learners. Ellis (1985:99) makes a distinction between personal and general factors, modifiable ones (such as motivation), and unmodifiable one (such as aptitude, personality, age). He adds that both personal and general factors involve social, cognitive and affective aspects which all affect learning in one way or another.

Social aspects are considered as external to the learner and concern the relationship between the learner and a native speaker of the second language, and also between the learner and other speakers of his own language. The cognitive aspect is concerned with the nature of the problem solving strategies used by the learner, whereas the affective side deals with emotional responses aroused by the attempts to learn a second language.

A socio-psychological dimension of the present study deserves full attention in the way it looks into the learners' difficulties in their L2 learning. Difficulties involve not only interference from Kinyarwanda, French and Kiswahili, but also socio-psychological factors like exposure to the target language (2.9.1), personality (2.9.2), attitudes towards the language and the teacher (2.9.3), motivation (2.9.4), aptitude (2.9.5), age (2.9.6), and the teacher's competence (2.9.7).

2.9.1 Exposure to L2

Several studies show a relationship between proficiency in the second language, the extent of exposure to the L2 and the length of residence in the second language environment. In those respects, young children are thought to be superior to adults in the acquisition of pronunciation in the early stages of exposure to L2 and this affects their proficiency.

There are two types of setting in which learners are exposed to the target language, i.e. native (natural) setting and formal setting (classroom). These two settings are generally defined with reference to the amount of exposure to

the target language in terms of human interaction and direct teaching/learning input.

2.9.1.1 Native Setting

Natural exposure implies the learners live in a native context, generally an English speaking country, where the target language is used on a daily basis in all contexts and interactions. In second language acquisition, the general belief is that the longer the exposure to the second language the more competent and proficient the learners become. In native situations, learners are not always aware they are learning a language, they are only conscious they are using it for communicative purposes.

Ellis (1985) commented on the relationship between age and exposure to the target language and their impact on successful learning and maintained that both the number of years' exposure contributed greatly to the overall communicative fluency of the learners, but starting age determines the levels of accuracy achieved, particularly in pronunciation (p.106). With regard to pronunciation, Fathman (1975) maintained that the length of the residence correlated with the level of proficiency for her sample of children. She found that the children who had been in the United States for three years did better on the SLOPE test than those who had been there for two years. She also found that preteen children (6-10) were more successful in learning the phonology of a new language whereas the children aged (11-15) years were more successful in morphology and syntax of a L2. This suggests that the L2 acquisition process changes with age in terms of success; there seems to be optimal times for learning different aspects of a L2. Therefore, with more exposure, the younger the better for L2 pronunciation acquisition.

Another relevant example often used to show the effect that early stages of exposure to the target language has on the learners' general proficiency is from Asher and Garcia (1969). They observed the foreign accentuation from 71 Cuban immigrant students, aged 7–19. It is reported that none of them were judged accent free although earlier arrivals had much less accent than the later ones. Longer stays in the USA were associated with better

pronunciation. However, Oyama's (1976) own study offered opposite results and found no correlation between the length of stay and proficiency. Our own experience as foreign learner and teacher of English strongly supports the impact of length of stay in a native country and better performance in the target language. For Carroll (1977), naturalness refers to a context and activity that focus on the meaning of utterances rather than their forms and requires living in native country of the language in question. Carroll (ibid) carried out an experiment to discover the relationship between time spent in a native country whose language is being learnt and the learners' performance. It was found that those (learners) who reported a year's study abroad performed best, those who reported a summer abroad, performed next best, and both of these groups outperformed those who had studied only in a foreign language environment (in this case, the United States) in formally structured classroom situations.

Language exposure relates in great measure to the amount of time the language is used and heard by the learner in different contexts. Burstall (1975:17) conducted an investigation about the teaching of French language in the primary school and concluded that:

> *The achievement of skill in a foreign language is primarily a function of the amount of time spent studying that language, ... and that children who started French in primary school tended to outperform those who did not start until their secondary school.*

The benefits derived from native exposure to language acquisition were further evidenced in findings from experiments carried out in what was called "immersion program" in the United States. Lambert and Tucker (1972) cited in Krashen (1982:17), carried out research in a full immersion program in Spanish as the language of instruction for American students in Culver City, California. It has been demonstrated that children in these programs acquire an impressive amount of the second language, perform satisfactorily in subject matter taught in the second language and do not have significant problems in first language skills.

Billows (1961:67) commented about the effect of native or non-native exposure on learners of a target language by maintaining that in order to speak a language with confidence, learners must have the opportunity of learning it spoken correctly and fluently, so that their minds can move rapidly in the language without reflection on the individual words or their position in the sentence. Flege, Munro and Mackay (1995) pointed out that the length of residence, age of learning (AOL), gender and relative use of the L1 and L2 had an effect on the learner's accentedness. In a study of 240 native Italians (NI) who began learning English between the age of 3 and 21 years in Canada, Flege mentions that the conclusion reached by native English speaking listeners was that the later in life the NI subjects began learning English, the more strongly foreign-accented their English sentences were judged to be.

In our investigation, Rwandan refugees in Kenya where English is used as a second language, have massively confirmed that they had significantly improved on their proficiency in English and Kiswahili since their arrival in 1994. The main reason was that they were using these two languages on a daily basis for both instrumental and integrative purposes. They not only learn these languages at school, but also, have opportunity to hear them spoken constantly and practise them after school in their communication with Kenyans. They also mentioned the positive impact of radio, TV programs in both languages, and newspapers in English, the extent of which they had almost never experienced before their exile.

Furthermore, Rwandan teachers of English, including the present writer, who have been trained either in UK or USA corroborated the effect that natural exposure has on proficiency in a target language. They admitted that by the end of their training their overall English had significantly improved, particularly in speaking and listening skills.

On a larger scale, it was found in the experience of new immigrants or from purely bilingual families that "whereas with adequate exposure children become completely ambilingual, being able to speak both languages with a

fluency and accuracy that makes them indistinguishable from monolingual speakers, adults brought into contact with the second language for their first time never succeed in ridding their speech in the second language of traces of the mother tongue" (Gardner and Lambert, 1972:186).

Even though one of the goals of language teaching is to encourage the acquisition and use of authentic and understandable English as early as possible, resources in most non-native teaching contexts are extremely limited to such an extent they do not allow both the teacher and learner to meet their expectations in L2.

2.9.1.2 Formal Setting

In formal teaching contexts, classrooms can be considered as a second best environment for target language learning and practice. Learners in formal setting have less advantage in terms of exposure to the target language and the opportunity to use and hear it than those in native setting. Formal setting is believed to be the optimum environment for the development of conversational management and negotiation of meaning, by the use of group work (Swain 1985). The value of the classroom lies ideally in improving competence and performance in the four basic language modes, i.e. listening, speaking, reading and writing. There are many learning activities that can be carried out in the classroom such as language drills, language games, problem-solving, oral presentation, or debates, in which learners are not only made aware of the rules and the learning process, but also of their errors which are corrected when they get feedback. Most of the time, however, classroom contexts can be extremely 'artificial', in the sense that all the learning activities are totally structured and controlled by the teacher.

Formal setting seems to develop more competence at the expense of performance in non native contexts, since surely the listening and speaking modes are developed best in the native setting. That explains for example how learners can spend years at school learning English as a compulsory subject, memorising structures and rules without developing expected spoken

performance. The fact that the learning activities which are done in the classroom are usually interrupted as soon as the class time comes to an end is in itself a great impediment to the learners' higher achievement. The natural tendency for most learners is to switch to their mother tongue as the medium of communication. We have tentatively explained that language environment refers in part to the amount of the target language the learners are exposed to, both in or after class and in daily interactions. Most second language learners have no opportunities to speak or hear authentic target language, as they have little chance of interacting with native English speakers or proficient speakers of English.

Gimson (2001) explains the impact that artificial teaching context has on the second language learners' performance by saying that "It is no wonder therefore, that the learning of another language later in life, acquired artificially in brief and sporadic spells of activity and often without the stimulus arising from an immediate need for communication, will tend to be tedious and rarely more than partially successful" (p.3).

The artificiality of classroom is further explained by Dulay, Burt and Krashen (1982) who pointed out that memorised dialogues and mechanical drills appear to do little to encourage further development of fluent conversational skills. D'Anglejan (1978) argued that in classrooms where there is explicit teaching of the language, the communication that results rarely corresponds to any acceptable definition of communication outside the classroom. In our experience, there are many learners who score high marks in written English examinations, and therefore wrongly assume that they are good at English. But, when opportunities to use the language communicatively arise, they fail to interact.

Before concluding, mention needs to be made of the role played by classroom size. There has been much speculation about the issue of classroom size and its effect on the learners' achievement. In the writer's own experience, overcrowded classes, like the ones found in Africa, make the task of giving each individual learner the attention needed, remedial corrections, and the

opportunity to practise the language extremely difficult. On the principle that language requires practice, and that in most non-native contexts the classroom is the only place where learners come into contact with the target language, it logically follows that smaller classes are by far the most advantageous. With particular regard to spoken skills, large class size hinders the teacher from undertaking any sustained check on individual learners' pronunciation and progress. This is because only the 45 minutes that are allocated to an English lesson are realistically not enough to cover a whole range of other language aspects.

There is room to suggest that native learning setting is superior to the classroom or formal learning setting, in a way that the range of discourse that second language learners are exposed to in classroom is quite limited. Krashen (1982:59) for example, points out that the classroom is no substitute for the outside world, and therefore its aim is to bring learners to the point where they can begin to use the outside world for further learning.

Despite all the criticisms levelled at formal setting, classroom remains the only convenient place in non-native learning settings to help learners develop their abilities in second language.

2.9.2 Personality

The effect of personality on language learning remains a very subjective matter and yet real. Stern (1984) supported the view that there are certain personality characteristics which are helpful or detrimental to successful language learning. One of them is that extrovert learners learn more rapidly and are more successful than introverted learners. It has been suggested that extrovert learners have more chances of acquiring a language more successfully and quickly than introverts, on the grounds that they will find it easier to make contact with other users of the L2 and therefore will obtain more input (Ellis 1985:120).

On the one hand, Shore (1995:92-93) substantiated the above view and correlated individual differences in learners of a language with boldness and timidity, caution/ reserve and outgoing, shyness/vigilance and outgoing/bold. Brown (1987:104-5) argued:

> *Risk taking and risk of being wrong is an important step towards successful learning of a second language. The silent student in the classroom is one who is unwilling to appear foolish when mistakes are made. Self-esteem seems to be closely connected to a risk-taking factor: when those foolish mistakes are made, a person with global self-esteem is not daunted by the plausible consequence as of being laughed at.*

On the basis that language improvement requires practice, it is our contention that it is those who are not afraid of taking opportunities to speak the language, who make significant progress compared with those who keep quiet and attempt nothing. Krashen (1981) supported the idea that an outgoing personality may contribute to 'acquisition'. The extrovert classroom learner may also benefit from getting more practice in using the L2. This view may not however be acceptable to some who find no significant correlation between extroversion/introversion and proficiency. Further research in that area would certainly be extremely helpful to generate more conclusive results.

Personality is also evidenced in the way in which children and adult learners react differently to some classroom activities. From our teaching experience children seem to reproduce and repeat sounds of another language in imitation of the teacher in a playful way and with little difficulty, as opposed to older learners who, at times, find repetitions extremely boring and childish. From a psychological point of view, children have greater ego permeability, as compared with adults who want to protect and preserve their cultural habits and identity even in learning. This would to a certain extent confirm what was said earlier regarding preserving one's identity by maintaining one's non-standard accent that only few fluent speakers can deliberately do. Wilkins (1972:187) expressed it well in the following terms:

> *The primary age child usually lacks all the self consciousness of the older learner and is altogether more prepared to submit to the norms of a new language and to perform in it without feeling at risk of making a fool of himself.*

Personality is closely related to attitudes, which in their turn play a determinant role in learning, as we shall shortly see.

2.9.3 Attitude to the language

It is not always easy to make a clear distinction between attitude and motivation, because they complement each other to a certain extent. Attitudes towards a language generally vary according to individuals' different interests. Nonetheless, the fact remains that attitude in learning affects the degree of success. Littlewood (1984:64) maintained that learners with a high capacity for empathy (that is, appreciating other people's thought and feelings) may perform better in at least one aspect of a second language, pronunciation, since the way that a person speaks is closely associated with his sense of identity. In Africa, the attitude towards English among Africans depends on whether it is a second or foreign language in different specific countries. For some, English is associated with the colonial past as an imposed language, often thought of as trying to westernise Africans, thus destroy their identity, their language and cultural values. For many others who have a more conciliatory view, English is simply another additional language used for wider communication. For that reason, it is not a threat to their identity, culture and language.

The effect of attitude on learning can be explained in terms of cultural allegiance i.e. the learner's attitude towards the target language and its speakers. Brown (1987,1994) defined attitude with reference to the set of beliefs that the learner holds towards members of the target language group (i.e. whether they are seen as 'interesting' or 'boring', 'honest' or 'dishonest') and also towards his own culture. He maintained that language learning was affected by the learner's attitude towards the native speakers of that language.

A positive attitude is likely to reinforce and improve learning, because it psychologically prepares learners to try and practise the language they are learning. The reverse is equally true. Those learners who have a negative

attitude towards the language, its native speakers, its teachers and even the materials used, make less effort towards learning and avoid chances of interacting with other speakers of the same language. Ellis (1994) commented that "learners who are interested in the social and cultural customs of native speakers of a language they are learning are likely to be successful. Conversely, learners with little interest in the way of life of native speakers of the L2, or with low instrumental motivation, can be expected to learn slowly and to stop learning some way short of native speaker's competence".

Furthermore, Gardner and Lambert (1972:132) pointed to the fact that social psychologists support the view that success in mastering a foreign language would depend not only on intellectual capacity and language aptitude, but also on the learner's perception of the other ethno-linguistic group involved, his attitudes towards representatives of that group, his willingness to identify and to adopt distinctive aspects of behaviour, linguistic and non-linguistic, that characterise that other group. Brown (1987:127) maintained that a positive attitude and self-esteem correlate strongly with attained proficiency.

> *It seems intuitively clear that second language learners benefit from positive attitudes and that negative attitudes may lead to decreased motivation and in all likelihood, because of decreased input and interaction, to unsuccessful attainment of proficiency.*

It should be emphasized that in most foreign teaching/learning contexts, it is rather the attitudes that learners have towards the target language itself and the teacher, which is determinant, since many have no contact and interaction with the native English speakers.

The attitude of Rwandan learners to English was tentatively measured through the answers to four specific questions regarding the number of hours they would like their English course to have in comparison with the three other languages, what type of accent of English they like, who they would like their teachers of English to be, and whether or not to it is a good thing to teach English from primary school. The respondents were 50 Rwandan students living in exile in Kenya who attended Hope International school, Windle Trust

and Kabiria secondary schools. In the following tables, TNR stands for 'total number of respondents'.

Question 1: *Should English course have more hours than French at school* ?
Table 2.1 Attitude towards English vis-à-vis French

	Schools	TNR	More hours (English)	Less Hours
1	Hope	10	4	6
2	Windle	10	5	5
3	Kabiria	30	15	15
		50	48%	52%

As the table shows, a slightly higher percentage of learners wanted French to maintain a higher number of hours at school in comparison with those who preferred English, despite the fact that the latter had more importance to them than French in their present circumstances. The preference is not however very marked, as it would have sufficed for only one subject to move from 'less' to 'more' to have equal preference.

Incidentally, there seems to be a great divergence in preference between learners from formal and informal system described in 1.5.4. Though students from ILTC (Inter-Lingual Teaching Centre) in Kigali did not answer these questions, the director of the centre provided the writer with sufficient information about students' attitude towards English. He pointed to the fact that the number of those who registered for English was much higher than those who wanted to learn either French or Kiswahili. One would presume that the main reason is that many would to a certain extent know these two already. He also added that learners in English evening classes had persistently requested an increase in the number of English hours from 3 to 5 or 6 a week. Such an attitude is a direct reflection of the impact of the linguistic change that occurred in Rwanda from 1996, a year when English was given a higher official status than it used to have before then. It also shows the actual importance and level of use of English in that country today.

Question 2: *Should English course have more hours than Kinyarwanda at school?*

Table 2.2 Attitude towards English vis-à-vis Kinyarwanda

	Schools	TNR	More hours (English)	Less Hours
1	Hope	10	9	1
2	Windle	10	7	3
3	Kabiria	30	30	0
		50	92%	8%

The overall impression is that a very high proportion (92%) would prefer more hours of English to their mother tongue, against only 8% of those who would like Kinyarwanda to have more hours. Though the writer did not attempt to ask why there was such a seemingly negative attitude towards Kinyarwanda, the speculation can only be that they already know it sufficiently, and that they would benefit greatly from learning English. More importantly this shows that learners have come to clearly realise that Kinyarwanda is strictly limited to its immediate frontiers, and therefore is not useful as a means of external communication in the way English and French are.

Question 3: *Should English course have more hours than Kiswahili at school?*
Table 2.3 Attitude towards English vis-à-vis Kiswahili

	Schools	TNR	More hours (English)	Less hours
1	Hope	10	10	0
2	Windle	10	7	3
3	Kabiria	30	30	0
		50	94%	6%

The figures suggest that the students from the three schools certainly wanted English to have more hours than Kiswahili. Though Kiswahili is a very important and popular language in East Africa as well as in Rwanda, Burundi, and the Democratic Republic of Congo, the impression given by such figures (94% > 6%), is a clear evidence of the fact that they feel they need English more than either Kinyarwanda or Kiswahili. The above percentages are in

agreement with our findings about the importance given to English today over Kiswahili in Chapter 1,Table 1.10.

Question 4 sought to know *the respondents' attitudes towards either British, American or African accent of English*. The following table sums up their attitudes.

Table 2.4 Attitude towards Accent

	Schools	TNR	British	American	African
1	Hope	10	9	1	0
2	Windle	10	7	2	1
3	Kabiria	30	13	12	5
		50	58%	30%	12%

The results from this table show that British and American accents taken together were overwhelmingly preferred at the rate of 88% as compared with only 12% of those who prefer African accents. In a similar vein the same learners have strongly asserted that it is extremely important to be taught a foreign language accurately and that native English-speaking teachers would be best indicated to do it. The reason behind the 28% difference between British and American English could presumably be linked to the influence of the Commonwealth in Africa. The writer nonetheless concedes that it would have been interesting to further inquire the reason behind such difference in preference from the investigated subjects themselves.

Question 5 asked the respondents to state their preference among teachers of English by whom they would like to be taught.

Who would you like your teacher to be: British, American, Rwandan, or *East African*? Their views are expressed in the following table.

Table 2.5 Attitude towards teachers of English

	Schools	TNR	British	American	Rwandan	East African
1	Hope	10	5	2	3	0
2	Windle	10	4	5	1	0
3	Kabiria	30	14	12	4	0
		50	46%	38%	16%	0%

The table shows that 84% of the learners highly appreciate native English teachers in comparison with Rwandan or East African. Respondents maintained that native speakers represent natural and real models of correctness and performance in the target language. They would therefore teach them accurate pronunciation and other nuances of the target language that non-native English teachers do not know. A few students mentioned the fact that native speakers not being able to speak to them either in French, Kinyarwanda or Kiswahili, would be more helpful for their own improvement in English. The preference of some learners towards Rwandan teachers over East African should not go unnoticed. The reason for their choice seemed largely to be that the former are easier to understand. Secondly, they would explain difficulties in a language the learners know. Then last but not least, Rwandan teachers know their own students' problems in English and would be more understanding towards solving them. We failed to ask the learners why no preference at all was made for East African teachers, with whose accent they had become very familiar.

In question 6 the learners were asked about their *attitude towards the idea of starting English lessons at primary school.*

Table 2.6 Attitude to English in Primary school

	Schools	TNR	For	Against
1	Hope	10	9	1
2	Windle	10	9	1
3	Kabiria	30	28	2
		50	92%	8%

The overwhelming majority of students (92%) expressed great support to the idea of starting learning English at an early age. It is this stage that establishes the basis of all future better learning and opportunities. Such level of support is consistent with the theory of the Critical Period Hypothesis which will be looked into later on in this section (2.9.6). Despite the high rate of positive attitude towards 'native', many foreign learners neither have any choice of which model to follow nor have they any say on who their teachers

will be. The fact that in foreign language teaching contexts most of the teachers are non-native speakers of the target language can have an effect on the quality of accuracy and proficiency that learners acquire.

We remain convinced that overall, learners who nurture a positive attitude towards the language they are learning and towards their teachers are psychologically more open and better prepared to learn and improve than those who do not. This psychological predisposition renders the learning task even easier and more enjoyable. We believe that language achievement is influenced by attitude, independently of aptitude and intelligence. As Strevens (1980) pointed out students frequently come to language learning with positive or negative attitude derived from the society in which they live and these attitudes in turn influence their motivation to learning the second language.

Finally, there is room to say that any discussion about attitude may imply some degree of subjectivity, as there still might be learners who do extremely well in a target language without necessarily being attracted by it or liking the teachers.

2.9.4 Motivation

Motivation in learning answers the question 'why is one learning?'. Motivation is thought to be one of the basic factors that affect learning, and certainly one of the sources together with the aptitude of individual differences in L2 acquisition (Gardner 1985; Krashen 1980). According to Gardner and Lambert (1972:132)

> *Learning takes place when the learner wants something, notices something, does something, and receives something... Learning requires the interplay of four essential components: motivation (the wanting aspect), perception (the noticing aspect), responding (the doing aspect), and reward or reinforcement (the receiving aspect). If any component is neglected, learning will not take place, that is to say, if motivation were set to zero, for example, or if no reward were forthcoming for responses made, learning would be disrupted.*

The prominent function attributed to motivation in learning a language seems to be the desire to get meanings across and the pleasure of successfully satisfying our immediate practical needs. Equally important, the satisfaction that successful communication gives through the use of the language being learnt is an incentive in itself that motivates the learner to learn even more enthusiastically.

There seems to exist a correlation between motivation and learning. Stronger or higher motivation is associated with success, whereas lower motivation is associated with failure. In other words, when learners clearly see the link between learning and its practical outcome they are more likely to perform well. Therefore it can be said that goals are a significant agent of motivation to learn. Nevertheless such claims remain very controversial and highly subjective, as there are other factors that make learning easy or difficult besides motivation.

There are two types of motivation most commonly referred to: instrumental and integrative. Gardner and Lambert (1972) speak of 'an instrumental outlook' reflecting the practical value and advantages of learning a new language, for utilitarian purposes, such as promoting a career, improving social status or fulfilling an educational requirement. The 'integrative outlook' reflects a sincere and personal interest in the people and culture represented by the other groups (the acquisition of cultural behaviour patterns). They conducted experiments in their studies of Americans who were learning French in three different socio-geographical contexts: Louisiana, Maine, and Connecticut. They found in all three contexts substantial evidence for the separate roles played on the one hand by intelligence and aptitude, and by aptitude and motivation in the development of L2 competence on the other hand. It became evident, that students with strong motivation and a desire to learn French obtained good grades in French at school.

Motivation in the three settings above was supported by different attitudes. In Louisiana, parental support and encouragement helped the children more, while in Maine, success was attributed to the students' desire to identify

themselves with their French teachers; and in Connecticut, it was rather an integrative orientation and the realisation of the usefulness of knowing the language.

There exists positive and negative motivation. They both bear significant and opposite consequences in language learning. Wilkins (1972) explained the two concepts by using two comprehensive expressions: 'he wants to' (meaning the learner) as opposed to 'he has to'. He also maintained that if, to satisfy our needs, to influence the actions and thoughts of others, to pursue our occupation and our recreation, it is necessary to use a foreign language, then we will learn that language more rapidly and effectively than under any other condition. It should be noted that in a foreign teaching context however learners may be highly motivated to learn English, but fail to acquire a desired level of performance due to the quality of teaching. Corder (1973:226) summarised the whole point in saying:

> *The ease or difficulty of learning something is not simply related to the nature of the task, but has components of motivation, intelligence, aptitude, quality of the teaching and teaching materials. More importantly, it depends upon the expectation the learner has of success.*

Gardner (1985) points to the fact that in L2 acquisition, integrative motivation implies a combination of positive attitudes towards the target language community with some interest in interacting with the target language speakers and a willingness to invest effort towards that goal. For Krashen (1981), the learner's type of integrative motivation in his desire to be valued as a speaking member of the second language community and the learner's possession of such integrated motivation should encourage him to interact with speakers of the second language and obtain intake. Instrumental motivation however reflects the learner's desire to achieve proficiency in the language for utilitarian or practical purpose and the presence of this type of motivational orientation will encourage its performers to interact with the second language speakers so as to achieve certain ends.

Ellis (1985:117) comments that:

> *Integrative motivation is associated with the need by the learner who wishes to identify with the culture of the L2 group. Instrumental motivation occurs when the learner's goals for learning the L2 are strictly functional. For instance, learning directed at passing an examination, furthering career opportunities, or facilitating study of other subjects through the medium of the L2 are all examples of instrumentally motivated learning.*

Learners of present-day English as a foreign language are usually more strongly instrumentally motivated because they need to learn the language for specifically anticipated instrumental uses in the light of its roles as an international language (Fishman 1992, Kachru 1992c, Strevens 1992).

With reference to an African context, Schmied (1991:170) found that instrumental and integrative views for learning English have a personal basis. He found that the most obvious reason is the claim that English is useful for getting a better job, that English is seen as a personal asset and as an instrument to promote a personal career. The instrumental value of English (as to some extent any other additional language) is recognised by all, even those who have not benefited from it.

Such practical reasons associated with motivation were tentatively gathered from Rwandan learners of English who took part in this work by way of a questionnaire. Answers ranged from English being a compulsory subject to more personal or distantly instrumental future goals.

The final question 7 asked each respondent to "*state at least three reasons for learning English*". Answers were summarised in the following table:

Table 2.7 Reasons for Learning English

	Reasons	TNR		%
1	It is an important international language and is much used in business	50	20	40%
2	I simply like it (satisfaction)	50	20	40%
3	It is a language for communication with other speakers; for information; travelling	50	43	86%
4	the pride to know it and speak it	50	15	30%
5	It is helpful for studies, to pass my exams	50	7	14%
6	It helps me to move around easily and integrate with Kenyans	50	15	30%
7	It is a key language to get a good and highly paid job in international organisations and NGOs	50	40	80%
8	To become an interpreter	50	1	2%
9	To become a teacher of English	50	1	2%
10	Because it is a compulsory course	50	3	6%

The reading of this table clearly shows that learners exhibit a high level of awareness and appreciation with regards to the need of English in global communication and as an instrument to get a good job. In the writer's own experience, such instrumental motivation is even higher among adult learners in informal education (evening teaching centres in Kigali). The great majority of learners are prompted to learn or even relearn English in order to enhance their prospects of getting a job or doing better and securing the one they have already got. Motivation can be strongly or weakly maintained by the teacher, his teaching method and techniques.

2.9.5 Aptitude

Aptitude is an innate ability, a predisposition individuals have that affects success in language learning. Wilkins (1972:178) explained that it is only logical that individual learners are not identical in their ability to learn foreign languages. Some are naturally more gifted than others and this applies not only to languages but to any other subject of learning or any other human activity. Aptitude affects overall success in language learning. In establishing a relationship between aptitude, language learning and language acquisition, Krashen (1981) concluded that aptitude relates only to learning and that

acquisition is the subconscious internalisation of L2 knowledge that occurs through using the L2 naturally and spontaneously. Learning is the conscious study of a L2 that results in knowledge about the rules of the language.

Ellis (1985:11) explains that "aptitude refers to the general ability that governs how well we master a whole range of skills, linguistic and non-linguistic". For McDonough (1981:126), aptitude relates to the capacity rather than contexts of the mind i.e. the underlying ability to learn, rather than the actual knowledge that is supposedly measured by intelligence tests. According to Skehan (1986), aptitude consists of auditory, linguistic and memory abilities. Auditory ability refers to the capacity of processing the new sound system. Linguistic ability consists of grammatical sensitivity and the capacity for generalisation from data. Memory ability relates to the retention of both lexical material and analysed rule structure. Testing has shown that some successful learners have great linguistic sensitivity, whereas others have exceptional memories, although some are superior in both areas.

Language aptitude can be measured. Carroll (1991) speaks of four aspects in measuring language aptitude (the first one being especially relevant in this study).

(a) phonetic coding ability i.e. the ability to perceive auditory phonetic materials;

(b) grammatical sensitivity i.e. the individual's ability to demonstrate awareness of the syntactical patterning of sentences of a language;

(c) role memorisation ability i.e. the ability to learn a large number of associations in a relatively short time;

(d) inductive language learning ability i.e. the ability to infer linguistic forms, rules and patterns from new linguistic content itself with a minimum of supervision or guidance.

In gauging the role played by aptitude in L2 acquisition, Ellis (1985:112) came to the conclusion that just as all children acquire their first language according to a universal pattern, so too, second language learners operate the same basic cognitive processes in second language acquisition. Rather, aptitude is

expected to influence the rate of development, particularly in formal classroom learning.

There is a close link between aptitude and talent. In language learning, talent is something real as for any skill, academic or other. For example, some learners possess such ability and a gift that they are able to learn and speak four languages quite easily and fluently, while others struggle with only one. It seems that talented learners do not seem to exert the same amount of effort in learning as those who are less talented in a given subject. The talented learners seem to possess a superior associative memory and the ability to master new codes as well as an ear for phonetic cues (Nova et al., 1988; Obler, 1989). Pimsleur (1966:182) explains the term 'talent' with reference to three main characteristics:

> *... the 'talent' for learning foreign languages consists of three components. The first is verbal intelligence, by which is meant both familiarity with words (measured in the LAB), and the ability to reason analytically about verbal materials (this can be measured by the part called 'Language Analysis'). The second component is motivation to learn the language which is measured by the 'interest' part. The third component of language learning is called 'auditory ability'.*

2.9.6 Critical Period Hypothesis

There seems to be a general consensus about the role played by the critical period hypothesis in language learning. Penfield and Roberts (1959) maintained that there is a critical period which terminates around 9 to 12 years, after which complete mastery of a language is difficult. This is on the basis that the critical period coincides with a period of plasticity which implies flexibility of the young brain. It is during this period that different areas of the brain are thought to be able to assume a variety of functions, including language. They also point out the fact that before puberty, the brain has a plasticity which is subsequently lost and that with it the capacity for learning languages is lost too. They explain that "the brain's control of motor activities is located in the left hemisphere of the brain. If the brain should be damaged in this area and the control of motor activities lost, it is only children below the

age of puberty who can transfer control of motor skills to the right hemisphere. The use of the language clearly involves muscular activity, so that there is the possibility that new articulatory skills for example are less easily acquired once this watershed has been passed". Flege (1995) citing Lenneberg (1967) and Scovel (1988) links CPH with neurological maturation and maintains that new forms of speech cannot be learned perfectly once a critical period has been passed (p.234).

In physiological terms, it is thought that as learners get older, the muscles and nerves of the tongue and mouth become less flexible, to the extent that native-like imitation of correct pronunciations becomes difficult or even impossible. The theory confirms that the early years of life were crucial to learning, meaning that the brain of a young learner was much more receptive for the development of speech mechanisms than that of the adult. It is believed that with regard to the pronunciation of the target language, younger learners generally acquire L2 pronunciation more easily than older learners.

Steinberg (1993:208) maintained that skills of pronunciation and speech are better developed at a younger age. Older learners in their turn seem to be able to master morphology and grammar of the target language better than young learners, to process new information more quickly by formulating and relying on previous learning experience, and testing hypotheses, which children do not. In other words, adult learners pay more attention to the language forms, whereas children are much more interested in what the language does for them (Halliday 1973). Fathman (1982) explained the relationship between age and acquisition process. In her study, preteen children (6-10) were more successful in learning the phonology of a new language whereas the children aged (11-15) were more successful in morphology and syntax of a L2. This suggests that there is optimal period for learning different aspects of a L2.

From a neurological point of view, Lenneberg's (1969) theory of the critical period and of cerebral lateralisation for language acquisition past a certain critical age, explains that the development of hemisphere specialisation sets

age limitation on language acquisition. He thought that the critical period for language learning extends from 2 years of age until puberty. The CPH predicts that speech learning after the critical period will proceed more slowly and eventually less successfully than learning before the close of critical period. It is for that reason that adults cannot achieve native proficiency in a foreign language. He further suggested that language learning was difficult after puberty because cerebral lateralisation of language functions in the left hemisphere was thought to be completed by this age. The theory goes on to explain that the germination of cerebral dominance affects language acquisition, and with lateralisation, the brain loses its function for language acquisition, and this loss affects the pronunciation more than the grammar or vocabulary of the L2. Lenneberg's argument was based on evidence that damage to the left hemisphere of children under 12 years of age often resulted in the transfer of language functions to the right hemisphere, but such transfer was not often found in individuals who suffered brain damage after 12 years of age.

Stern (1984) comments that young children exposed to another language seem to acquire it more rapidly and without much effort. Fujii's (1992:93-4) experiment with 3 Japanese children who arrived in UK at the age of 5, 3 and 3 corroborates the effect of early arrival and motivation on the learning of the pronunciation of English. They were learning English in order to communicate with British people more satisfactorily and to gain closer contact with them and their culture. They also wanted to achieve a necessary proficiency at school. He found that their English was much better than their parents'. Our own investigation of five Rwandan refugee youngsters aged 6-8 who arrived in UK in 1995 with no English knowledge strongly substantiates the claim that age and exposure play a significant role in language learning and in improving pronunciation. After three years of stay in UK, they could communicate in very good English and follow their studies at the same rate as their native English classmates, according to their teachers' report.

The ease which children have in learning another language compared with adults is explained by Gimson (2001:3): "as we grow older, the acquisition of

a new language will normally entail a great deal of conscious analytical effort, instead of children's ready and facile imitation". He further maintained that the later in life that a second language is begun, the more learners will be subject to resistance and prejudices deriving from the framework of their original language. For Crystal (1997:14), there is a naturalness with which children more than adults, assimilate another language, once they are regularly exposed to it.

> *if a global language is taught early enough from the time that children begin their full-time education, and if it is maintained continuously and resourced well, the kind of linguistic competence which emerges in due course is a real and powerful bilingualism, indistinguishable from that found in any speaker who has encountered the language since birth.*

According to Ellis (1985:105), the commonly held belief with respect to the effect of age on the rate and success in second language acquisition is that rate and success in second language acquisition (SLA) appear to be strongly influenced by age. That is, if learners at different ages are matched according to the amount of time they have been exposed to the second language, it is the older learners who reach higher level of proficiency. Krashen (1973) has maintained that adolescents are better performers than young learners. He questioned the neurological explanation of better language learning attributed to the age before puberty, since in his view, critical lateralisation happens before the age of five, and that lateralisation does not necessarily imply loss of any ability.

While contrasting the differences in learning before and after puberty, Schumann (1975) pointed out that in the early years of life there is a greater social and emotional permeability to language influences than is available to adolescents and adults. It is believed that children move through stages of acculturation more quickly and acquire the second language more quickly too. He further argued that as adults have reached a state of social and psychological maturation, they tend to develop form ego boundaries, attitudes and motivational orientations which place constraints on the initiating factors and thus leading to cognitive processes being blocked or at least inhibited from operating in the target language exposure. Brown (1980) shared the

same view and argues that young children are seen as socio-culturally resilient, because they are less culture bound than adults. They move through the stages of acculturation more quickly and so acquire the second language more quickly.

With regard to pronunciation, there is a definite critical age and children seem to acquire L2 pronunciation more easily than adults in natural setting. Adults will inevitably speak a foreign language with an obvious foreign accent if they began learning in late adolescence or adulthood (Scovel 1969; Seliger, Krashen and Ladefoged 1975; Oyama 1976). From a psycholinguistic point of view, it is generally believed that adults find it hard to make the neuro-muscular adjustments necessary to reproduce the sounds of an L2. The alleged reason for this is related to the termination of the critical period around puberty (Scovel 1969). Neufeld (1980:296-97) explained the limitation in articulation of adults in the following terms:

> *Correct articulation of new sounds and sound sequences, in linguistic or non-linguistic contexts, requires transmission of cerebral signals to the vocal apparatus along with efficient muscular response to those signals, whether they emanate from the right or left hemisphere, in other words, there was strong evidence to demonstrate retained flexibility of the adult's articulatory apparatus.*

Age is the variable that has been most frequently considered in discussion of individual differences in second language acquisition. Despite a few disagreements, it is generally believed that the ability found with younger learners derives from the theory of that the two hemisphere of the cerebral cortex have not yet reached the lateralisation that characterises the adult brain. The claim that older learners have more difficulties with phonological features of the target language than younger ones, can be explained by the fact that during the age before puberty, speech habits in the first language are not fixed to the extent of seriously hindering the learning of the new speech habits of another language. Corder (1973:133) supported this view by saying that it is rare after the critical period of language acquisition is past for anyone to learn a native pronunciation.

Success in learning another language is related to the age when the learning started and to the place where it takes place. The age factor is best explained by the way in which immigrants to English native countries perform in the target language. Oyama (1976) found that age at the arrival of sixty Italian male immigrants (from 5 to 18 years) in the USA was a far more determinant factor on the levels of pronunciation they achieved than was length of stay. Native-like pronunciation was found in the earliest arriving subjects, with accent developing as age of arrival increased. In a similar study, Flege (1995:242) found that when 240 native Italians who began learning English between the age 3-21 years in Canada were asked to evaluate their own ability to pronounce Italian and English, the subjects who began learning English before the age of 12 years said they pronounced English better than Italian; whereas the reverse hold true for those who began learning English in later life.

Ahn (1997) reported the experiment made by Seliger *et.al* (1975) to highlight the same impact of age in accent acquisition. Their study examined 394 immigrants in the US and Israel and asked if native speakers of their second language (either English or Hebrew) could identify them as non-native speakers. They concluded that age was an important factor and that puberty was the turning point after which native accent was harder to acquire.

There are also affective reasons that can tentatively explain why children are better at pronunciation skills in a new language. Among other things, children are inhibition-free and monitor themselves much less than adults do. They are also more flexible and do not seem to mind learning through repetitions and corrections. They are good imitators and pick up the language in a playful way, which adults find boring or childish. Adults often resent being told how to do things in a rigid way, because they feel their 'ego' attacked. Many adult learners may feel frustrated to be told that they make errors. Such attitudes obviously build up inhibition which is not conducive to successful language learning.

Neufeld (1978) stresses how affective factors are related to age differences in second language acquisition. He distinguishes 'primary' and 'secondary' levels of language. The primary level includes a reasonably large functional vocabulary, and basic mastery of pronunciation and grammatical rules. The secondary level includes the ability to handle complex grammatical structures and different language styles. All learners according to Neufeld have an innate ability to achieve secondary levels more than adults because they are much more strongly motivated by the need to be accepted by their peer group. Whereas the adult is happy to maintain a foreign accent for instance, the child who is exposed to the first language culture is anxious to achieve a native-like pronunciation (p.109). The theory goes on to explain that the germination of cerebral dominance affects language acquisition, and with lateralisation, the brain loses its function for language acquisition, and this loss affects the pronunciation more than the grammar or vocabulary of the L2.

In sum, the age at which L2 learners started learning English was found to play a significant role in their phonological competence in many studies, though not alone. However, in some instances, there were cases of reservation about the overal role played by age in learning. Major (1987) maintained that it has not been sufficiently demonstrated that age is truly the causal factor for the problems encountered by L2 learners (p.186). Flege (1987:160) observed that the age of L2 learners is inevitably confounded with other conditions that co-vary with chronological age.

Overall, the critical period hypothesis is strongly related to the concept and role of age in language learning. It would therefore seem clearly rewarding to encourage the teaching of the pronunciation of English as a foreign language in primary schools for the children's enhanced competence and performance. This idea was strongly supported by 92% of the subjects who took part in the present investigation (see 2.9.3 Table 2.6). Wilkins (1972) explained that teaching foreign languages in primary schools is educationally desirable, since attitudes are usually formed at this age, the foreign language teaching will prevent the development of any tendencies towards ethnocentricity.

2.9.7 Teacher

The language teacher's duty is to prepare and equip learners with linguistic skills so that they are able to acquire and use the language they are learning competently, acceptably and communicatively in different situations. In non-native settings, learners usually come into contact with English as a subject to learn in the school curriculum, or as a medium of instruction by their non-native teachers. In non-native contexts, most of the teaching is done by non-native teachers of English themselves. In those settings, opportunities to use the language outside the classroom are minimal, and exposure to the language outside the classroom is also very limited. That seems to be the reason why we believe that trained teachers should be the resources and models from whom learners correctly learn and perform in the target language. Training non-native teachers is therefore extremely important as it helps to reduce deviations from native speaker's norms. Furthermore, it keeps them from transmitting errors to their own students. Schmied (1991:109) expressed it this way:

> *The greatest concern about English standards is the fear that a vicious circle may develop when the pupils' English deteriorates, some of them are still trained to be teachers and their 'bad English' results in their pupils learning even worse English. Thus the problem may constantly be aggravated as education expands and not enough qualified teachers are available.*

He further commented that English cannot be taught efficiently unless the teacher has some understanding of the systematic differences in English use and usage between standard English and the local performance norm (p.113). The teacher's personality, competence and motivation can be also significant factors to boost the learners' achievement. Teachers who display both knowledge and social qualities are likely to influence their students positively towards the course than otherwise. With dedicated teachers students feel motivated to work hard and pass the course and thus avoid losing the esteem from their teachers.

These affective factors are extremely relevant in learning and should never be underestimated. Students who do not like their teacher, may equally dislike

the course and fail it, as those who like their teachers generally like their course and stand better chances of passing it.

With particular reference to pronunciation, non-native English teachers are supposed to be the model that learners should depend upon and imitate, hence their duty to have an accent that is as close to native norms as possible. Wilkins (1972:38) explained it more plainly:

> *If we can anticipate the achievement of learners will fall short of the model that is put before them, it is all the more important that that model should be as accurate a sample of speech as possible.*

If the model is poor in quality, learners will pick it up as it is and grow with it. The achievement becomes worse in places where the linguistic environment is poor, as is often the case in foreign learning contexts. The teacher's correct pronunciation as a model for learners is also strongly recommended by Gimson (2001:299) who points to two major reasons highlighting its importance.

> *Firstly, his students will imitate bad pronunciation as exactly as they will good pronunciation; and secondly, if he is using illustrative recorded materials, his own pronunciation must not diverge markedly from the native model.*

The teachers' success in teaching their students efficiently depends on three factors: first, their own proficiency in the target language, and secondly their knowledge and expertise in the methods and techniques of language teaching. As regards the Rwandan situation, the fact that most of the Rwandan teachers of English have not been sufficiently trained in the teaching of pronunciation, underlines the writer's belief that they should not be a principal model for their students. The third factor is the model of the pronunciation of English to teach in foreign contexts, which is the subject we intend to look into briefly in the following section.

2.9.8 Language Model

The current status of English as an international language requires all its users to be intelligible to one another. Such a statement bears significant pedagogical implications with regard to the teaching of English today, and to the choice of a model to suit a particular group of learners. It is agreed that the most important aspect of L2 speech is intelligibility and that therefore a speech model/performance target for L2 learners should be chosen in order to ensure that successful communication with other speakers of English occur. Gimson (2001:297) maintains that the choice of a model for second language learners to follow is a matter of special importance as far as English is concerned "because of the world-wide use of that language and because of the profusion of differing spoken forms existing not only in such mother-tongue areas as Britain, North-America, Australia and the Caribbean's but also in those vast regions of Africa and Asia where English is used as an adopted lingua franca".

The main reason for following particular standard models of pronunciation is twofold. One is to prevent learners from diverging too far away from acceptable target forms. The other is to ensure that learners can reach a standard that is acceptable and understandable to other users of English. The aim of teaching/learning an international language such as English for communication would have failed if too much permissiveness or 'laissez-faire' was tolerated in its pronunciation as it can hinder successful communication.

There exist differing views with regard to the goals and the choice of a pronunciation teaching model. The most widely cited models of English whenever pronunciation issues arise, are the British Received Pronunciation (RP) and General American (GA). Today, however, the increasing number of non-native users of English has caused the emergence of other no less important, regional varieties of models around the world such as Indian English, the West African accent, the East African English, etc.

The main criterion in determining the necessary standard of pronunciation should be based on intelligibility (Lado 1961:39) and on the goals pursued in learning the target language. In his view, phonemics is the solution to the problem and the aim of the foreign language learner should be to hear and produce the major phonemic contrasts of English. This view is shared and developed by Gimson (2001:298-99) who suggested three levels of intelligibility, i.e. high acceptability, minimum general intelligibility and restricted intelligibility. The last level should not however be taken as a model in teaching.

The term 'model' for non-native speakers of English is explained by Kachru (1992a:48) as follows:

> *In pedagogical literature the term 'model' is used in two senses: First in the sense of acceptability, generally by the native speakers of a language; secondly in the sense of fulfilling codified prerequisites according to given 'standard' or 'norm' at various linguistic levels. In this sense, then, we may say that a model provides a proficiency scale. This scale may be used to ascertain if a learner has attained proficiency according to a given norm.*

Gimson (2001:297) notes that whatever abilities the learner may acquire in the later stages of learning English, he will be well advised at the beginning to model his productive performance on one of spoken English and to restrict himself to a 'careful, colloquial' style. Wilkins (1972:29) had maintained that "if one is to teach speech, then it is necessary that the model of speech one is aiming at should be the natural speech of native speakers of that language". Dalton and Seidlhofer (1994b), cited in Jenkins (2000:18) drew a distinction between a model and norms:

> *If we treat RP and/or General American as a norm, we connect them strongly with ideas of correctness. The norm is invariable and has to be imitated independently of any considerations of language use. The aim, however unrealistic, is 100 percent attainment of the norm, which is regarded as an end in itself.*
>
> *On the other hand, if we treat RP and/or General American as a model, we use them as points of reference and models for guidance. We decide to approximate to them more or less according to the demands of a specific situation or a specific*

> *purpose. In other words, a model is always connected to language in use and is therefore variable. Pronunciation models are pedagogic means to achieve the end of effective communication for specific learners. Ideas of correctness do not really apply – a pronunciation is simply more or less appropriate to a specific use of language.*

In the choice of any teaching model, Gimson (2001:297) suggests that "the decisive criteria must be that it has wide currency, is widely and readily understood, is adequately described in text books and has ample recorded material available for the learner". Though it is not spoken by a large body of the population in UK, RP seems to fulfil these requirements. That may explain why it has been for a long time recommended to foreign learners and teachers alike, and is still used despite the attacks to which it has been subject.

Jones (1956:3) had supported RP as a model for foreign learners of English by saying that it is the only British accent that has received a detailed description, and it is widely and easily understood throughout the English speaking world. Strevens (1992) defined RP as 'standard English', i.e. a particular dialect of English being the only non-localized dialect of global currency, without significant variations, universally accepted as the appropriate educational target in teaching English , which may be spoken with an unrestricted choice of accent. Roach (1983:5) admitted that RP is the accent that has always been chosen by British teachers to teach foreign learners, and is the accent that has been most fully described and has been used as the basis for text books and pronunciation dictionaries.

However, the number of its supporters has dwindled quite dramatically. The loss of enthusiasm for RP seems to be related to sociolinguistic changes. It is believed that in the near future, only an extremely small number of native speakers will be using it instead of regional English dialects. Abercrombie cited in Kachru (1992:51) described RP to be bad for a model and that it does not represent 'educated people today', as more educated people do not speak it than do. Wells (1982:118) generously maintained that "less than 10 percent today speak RP and that RP is on the way out, because of the social class

changes people tend more and more to adopt local accents". This view is shared by Crystal (1990:63)

> *Today with the breakdown of rigid divisions between social classes and the development of the wars media, RP is no longer the preserve of the social élite. It is no longer as widely used as it was 50 years ago, and only about 3 percent of British people speak it as a pure form now.*

He (1995) later maintained that, many people among natives, use a modified RP which is a combination of RP and regional features. Daniels (1995) explained that if regional accents have now become the L1 rule and RP is rather an exception, there seems to be little reason to base the teaching of L2 English on an RP model, other than the fact that 'even in the inner circle only a specific élite group is considered as "norm makers" or as models for emulation' (Kachru, 1985:17). Jenkins (1996) maintained that teaching RP to foreign learners of English is inappropriate for several reasons: "it is spoken by a tiny minority of English users (around 3% of the British population), which means that learners are unlikely to encounter people who speak that variety. It is not necessarily the easiest variety for foreigners to learn and understand, and its social origins in the speech of those educated in public schools are nowadays irrelevant". In her later work (2000:17) she further argues that:

> *... there are, in any case, sound social-psychological reasons for not pushing learners of English to attempt to approximate an L1 accent too closely, but any alternative must, above all, be capable of promoting mutual intelligibility.*

Strevens'(1992:40) advises the learner to learn educated /educational English; to choose the one that will be most useful (British English/American English) both being equally good, or to use their localised form of English. We agree with Kachru (1992a:68) that "non-native users ought to develop an identity with the local model of English without feeling that it is a 'deficient' model". This is because the term 'model' has in some instances been related to national and cultural identity, to such an extent that some non-native speakers have expressed their misgivings about adopting a native English

model, for fear of being alienated, uprooted or assimilated. (Rwandan learners of English are likely to follow the East African Model of English, largely owing to recent linguistic changes that were explained in Chapter 1 of this work. The intelligibility of that accent could be an interesting subject for further research).

The need for successful international communication motivates non-native speakers to learn English according to one of the most widely known models, whereas the need for preserving identity and cultural values motivates the promotion of local, national and regional accents. African linguists and novelists such as the Nigerian Chinua Achebé, the Kenyan Ngugi Wa Thiong'o and others have found that their ideas and identity could be well expressed through African accents of English, which should be recognized in the same way as any other form of accent. They rightly find no reason to speak like a native-English speaker to make themselves heard, but nonetheless reckon that standard English should be maintained to ease international communication.

While fully aware of the current criticisms levelled against RP, the writer believes that it would be greatly beneficial for foreign learners to follow it as a model, for the very reason that it is acceptable and understandable world wide. The regional native English accents that could be used as alternative models have not thus far been fully implemented in teaching materials that could be readily used abroad as RP has been. It is also relevant to point out that native speakers (NSs) and non-native speakers (NNSs) may see the issue of 'model' rather differently. While for example NSs find RP irrelevant today, the Rwandan subjects investigated in this work showed high preference for it and GA to other models (see Table 2.4). In the meantime, the writer maintains that non-native local models remain the obvious substitutes, though they can be disadvantageous in the way they restrict intelligibility and comprehension to internal uses within a given community or geographical area only. One of the reasons seems to be that non-native models may be loaded with phonological interference from local mother tongues which can

impede successful communication with other speakers and listeners. Gimson (2001:299-300) explains:

> *It is in the spoken form of transmission that phonetic and phonological interference from indigenous languages may erect a formidable barrier for listeners from communities where English is a native language. If the interference is such that no attempt is made to do other than use the sound system and prosody of the indigenous language, however effective this may be within the country concerned, communication with native English speakers may break down.*

Tiffen (1968:102) warned against the practice of speaking the target language any how by saying "if it (English) were to develop in so distorted a fashion that it became incomprehensible to the rest of the English speaking world and indeed to speakers of English from other African countries, this would...defeat the main purpose for which the costly language programme has been undertaken". In teaching English to non-native learners, the bottom line remains that any standard model should focus on intelligibility, acceptability and comprehension of pronunciation for other speakers.

We strongly echo Bansal's (1990:230) view that:

> *it is desirable to establish certain minimum standards of mutual intelligibility among the various dialects of English spoken around the world... This will lead to more efficient communication and better understanding among people who speak English as the first language or as a second language.*

Finally, it would be extremely useful if a single international model of pronunciation could be implemented. At the moment however, this is still difficult to envisage for two reasons. Firstly, there are many existing varieties of English world wide with no linguistic institution to regulate and harmonize them all. Secondly, there is the problem of the lack of appropriate materials and trained teachers to implement them. Overall, the judgements about which 'models' to follow while teaching English abroad remain highly subjective and need further research. In Prator's (1964) view, the question of which model of pronunciation to promote, including an international model remains unanswered. "Should the model be Received Pronunciation, because of its 'greater prestige'? Should it be General American, because of

its 'wider use'? Is it conceivable that an international pronunciation could be developed, aimed at wide intelligibility but unlike any existing model?"(p.76).

2.10 Conclusion

The chapter has tried to present an overview of the many factors involved in learning a second language, focussing particularly on matters affecting pronunciation. It has been necessary to distinguish between first language acquisition and second language acquisition and learning. It has been necessary also to look briefly at teaching methods and the role each method allows for pronunciation. The chapter has emphasized throughout the impact of mother tongue phonology on the quality of second language pronunciation, chiefly in terms of transfer and interference.

It has been acknowledged that transfer can not only be negative (interference) but positive also (approximation); it has also been acknowledged that other factors beside transfer are involved in the process of developing an intelligible, if not always necessarily, an accurate pronunciation.

Contrastive Analysis – or, possibly, more accurately, Comparative Analysis - has been shown to offer detailed relevant information. The strong version of the CA Hypothesis is not adequate, but CA has been modified and refined, particularly in the form of Eckman's MDH, which draws on the implications of language universals.

Error Analysis was presented as a reaction to the strong CAH, but whereas it was originally formulated to account for errors without reference to the mother tongue, it too has been modified; applied linguists have incorporated the weak version of CAH as one of the explanatory factors in accounting for the occurrence of errors.

The usual distinction between errors, mistakes and lapses has been maintained, errors indicating systematic deviations from L2. Such errors nevertheless have their value in indicating the current form of the learners' competence in the second language, a competence that is neither identical to

their mother tongue nor to the target language. It is an interlanguage - an intermediate language - but a language nonetheless that learners use to generate and interpret discourse. It is a feature of interlanguage that it develops in the direction of the target language.

The precise form of an interlanguage depends on the factors that have been presented in this chapter: the differences between the target language and the learners' own language(s), universal features of phonology, learners' strategies in communication, developmental processes, and also socio-psychological factors such as exposure to the target language, the quality of the language model, the teacher and the teaching situation, personality, attitude, aptitude and age.

The level of the interlanguage will directly affect their intelligibility in speaking the target language and their comprehension of native speakers' discourse. Intelligibility and comprehension are fully discussed in Chapter Three and lay the main foundation for the present piece of research.

As has been stated throughout Chapter Two, phonological competence has to be seen in terms of both production (i.e. intelligibility) and perception (i.e. comprehension). Phonological interlanguage encompasses not just production and perception of vowels and consonants, but it also encompasses what is called phrase phonology and sentence phonology involving simplification processes like assimilation, elision, epenthesis and liaison and systems of strong and weak forms in rhythm and system of intonation. There will be an attempt to produce a full description of Kinyarwanda word phonology with a comparison with English in Chapter Four, with some outline notes on simplifications and rhythm.

The comparisons between the two languages provide relevant information to the design of the instruments to investigate both the productive aspect of the Rwandan learners' phonological interlanguage (Chapter 5) and the receptive aspect (Chapter 6). The methodologies for both aspects are described in these chapters.

CHAPTER THREE
INTELLIGIBILITY AND COMPREHENSION

3.1 Introduction

This chapter aims to describe, define and explain intelligibility and comprehension of the target English segmental and suprasegmental features, achieved by Rwandan learners of English. At the same time, it attempts to look into factors thought to affect intelligibility and comprehension with reference to linguistic competence and other factors. Finally it will attempt to explain how testing intelligibility should be understood as well as its pedagogical implications for the teaching of the pronunciation of English. Intelligibility has been mostly looked at from the productive side involving either NNSs among themselves or NNSs being listened to by NSs of English. In view of the international status of English today, including its speakers as either first, second or foreign speakers, there is an evident awareness and interest to know the extent to which NNSs can also understand NSs. It is believed that such an investigation could generate significant pedagogical implications for more effective teaching and learning of the pronunciation of English.

Though intelligibility encompasses both spoken and written forms of a language, we have chosen to deal specifically with the former. The present study on phonological productive and receptive abilities of Rwandan learners of English has not been dealt with before in this manner. The subjects in this investigation are not engaged in face to face interaction but speak and listen to native English speakers through the medium of taped recordings. The insights from some researchers, phoneticians and language teachers have to a certain extent contributed to the understanding of the vast concept of 'intelligibility' (Tench 1981, Daborn 1990, Fujii 1992, Ahn 1997, Jenkins 1996, 1997, 2000 and Gimson 2001).

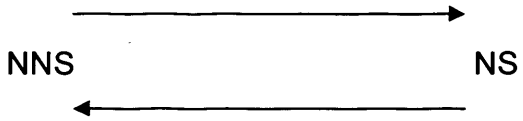
A few more have looked into the intelligibility of different L2 accents of English from only the native speaker (NS) listener point of view, such as Nelson (1982), Bansal (1990) and Kachru (1992b) on the intelligibility of Indian English; Voss (1984) on the speech perception by German students, Lanham (1990), on the intelligibility of South African Black English; Ufomata (1990) and Tiffen (1974, 1992) on the intelligibility of Nigerian English.

The writer has drawn from their findings and insights, with a new understanding, input and approach of his own, with regard to learners from a different linguistic background from those cited above. The present writer's approach to intelligibility and comprehension differs from what has been done previously in that it tests both productive and perceptive sides of interaction at the same time. He believes that it is necessary that on the one hand Rwandan speakers' competence of English should enable them to be intelligible to both NS and other NNS from different linguistic backgrounds. On the other hand, they should be able to easily understand other NNS and NSs. Bansal (1990) maintained that as language is primarily a means of communication the basic requirement for every speaker of English is to be at least intelligible to the people with whom they wish to communicate in English. This is the goal at which the teaching implications of this work should aim. Even though there is more to intelligibility than just phonological skills, such as conventional lexico-grammatical competence, the present work has opted to focus mainly on phonology (pronunciation skills), as we assume that pronunciation is one of the greatest facilitators or barriers to successful communication.

For intelligibility to be easily achieved, there is need for sufficient linguistic and communicative competence. For successful productive and perceptive communication to occur, accuracy of words and forms is not always necessary though desirable and extremely useful. Communication should be perceived as a two-way process, involving active participation of a speaker (producer) and a listener (receiver) who interchange roles during a speech act. Intelligibility

represents the extent to which the speaker's utterance is actually perceived and understood by the listener. We shall use the word comprehension throughout this chapter to refer to the extent of how much of what a native English speaker says the non-native learner understands. In a connected utterance, the more words a listener is able to process accurately from a speaker, the more intelligible the latter is.

In a visual graphic way, intelligibility and comprehension could be represented and explained through the following schematic diagram.



The diagram indicates that NNS (non-native speakers) and NS (native speakers) are speaking and listening to each other. As in any ordinary interaction, participants interchange roles by taking turns to speak and to listen. In order for actual communication to be successful, NNS need to have acquired a good standard of lexical, grammatical and phonological competence. The arrows used in the diagram above indicate who initiates communication (NNS) and to whom it is directed (NS) and vice versa. Let us now turn to attempted definitions of intelligibility proper.

3.2 Definitions

There is thus far no common consensus among linguists and researchers in their attempt to define the term 'intelligibility', whether from a speaker's or a listener's point of view. It is a very subjective matter and in that sense different people give it different interpretations or terms such as comprehensibility, interpretability, perception, understanding, though they basically mean the same thing, i.e. the successful understanding between speaker and listener. To start with, a comprehensive definition of intelligibility from the Language Dictionary of Applied Linguistics (1985:144) reads as follows:

> *Intelligibility is the degree to which a message can be understood. Studies of speech perception have found that the intelligibility of speech is due to various factors including accent and intonation, the listener's ability to predict parts of the message, the location of pauses in the utterance, the grammatical complexity of sentences, and the speed with which utterances are produced.*

In the present work, we shall use 'intelligibility' to refer to NNS being listened to and assessed by NS, while the term 'comprehension' will be used to measure the understanding by NNS of what is said by NS. The understanding that has been attributed to intelligibility in the past as a one-way process in which non-native speakers strive to make themselves understood to native speakers whose prerogative it was to decide what is intelligible and what is not (Bamgbose 1998:10), represents only one side of communication. In the light of the international dimension attributed to English today, both phonological production and perception need to be emphasized in learning so as to facilitate easier communication between all users of English from different L1 backgrounds. Communication is an active interaction in which participants play respective roles as speaker and listener. Fujii (1992) maintains that in intelligibility the focus can be on either the speaker-learner or on the listener. When the focus is on the speaker-learner, it is in terms of communicative needs and how close the learner's interlanguage is to the target language. On the other hand, when the focus is on the listener, it is on how much of the message is understood. In that sense, intelligibility is hearer-based; it is a judgement made by the listener.

The question of knowing who owns the language and hence has the right to pass judgement on what is right or wrong is differently interpreted today, in view of the fact that English has become the property of whoever uses it. The international dimension of English has been explained by researchers such as Strevens 1980, Nelson 1982, Kachru 1992b, and Jenkins 2000. Brumfit (1995), cited in Jenkins (2000:7) maintains:

> *Not only has 'English' become an international language in the last half century, but scholarship about English has also become international: the ownership of an interest in English has become international. We are no longer a language community which is associated with a national community or even with a family of nations such as the Commonwealth aspired to be. We are an international community.*

Intelligibility and comprehension should be understood as an answer to this two-fold question. On the one hand, has the listener (NS or NNS) understood the utterance made by the NNS (speaker); and on the other hand, has the NNS (listener) understood the message as uttered by the Native English Speaker? Kenworthy (1987) defines intelligibility as being understood by a listener at a given time and in a given situation. Intelligibility presupposes participants, and has as much to do with the listener as with the speaker (p.13-14). Nelson (1982) maintained that intelligibility presumes participants, people who may not be from the same speech community, or even speakers of the same variety. The extent to which they share characteristics of cultural background, as well as the extent to which their languages share phonological and grammatical features, will determine the degree to which they find one another "intelligible"(p.59).

Jenkins (2000:71) uses the terms 'successful conveying' and 'receiving' of the message, to mean 'understanding' as stated above. Canale (1980) defines successful communication on the basis of actual outcomes of the interaction between the speaker and the listener (i.e. did the speaker get what he wanted?) by giving an example of a NNS trying to find where the train station was, and said "*how to go station*" and was given directions to the train station. This is evidence that accuracy is not absolute in intelligibility study, as long as the listener can get the message across.

The perceptive side of communication "comprehension" has not received the same amount of coverage in research in comparison with productive intelligibility. It is however this dimension which contributes something new and

complementary to the whole understanding of the problem(s) found in communication, particularly in contexts where English is a second or a foreign language. It would indeed be erroneous and simplistic to take it for granted that because a NS is able to understand what a NNS tries to say, it follows that the latter will necessarily be able to successfully understand the former. Accommodation, tolerance and reference to the context of speech are the tools more often used by NS in order to understand NNS than the reverse.

Jenkins (1996) rightly says that English is taught to EFL students for the purpose of helping them understand other speakers as well as being understood by NS. The first part of her statement is not sufficiently emphasised and given as much weight as the second by some people, allegedly saying that NNS do not always have opportunities to interact with NS. However, the ever growing interest in learning and teaching English either as a second or foreign language for communication is clear evidence of the fact that English has become an instrument for international communication. Therefore, looking at communication as a one way process in which NNS address NS or as an interaction among either NS or NNS themselves would be to limit its scope.

For Ikegushi (1997:14), intelligibility is the extent to which a speaker's message is actually understood by the listener. Tench (2001) in a comment about pronunciation standards and intelligibility, (email 15th June) says that "though NNS need not speak with a NS accent, and will rarely attain it, his/her accent has got to be good enough to achieve 'comfortable intelligibility". He further maintains however that it is the message that counts and it is the message that the speakers concentrate on, not the closeness of their accent to RP or GA.

Byrne (1976:10) had maintained earlier that intelligibility includes oral fluency which he defines as the ability to express oneself intelligibly, reasonably accurately and without undue hesitation (otherwise communication may break down because the listener loses interest and gets impatient). He further explains

that, in order to be able to communicate effectively, learners need an adequate mastery of grammar and vocabulary, as well as phonology, and that over-learning in any of these areas will serve no purpose if it excessively slows down progress in the others.

There is every indication here of allowing us to deduce that intelligibility is synonymous with comprehension from a perceptive point of view, as they both deal with word, sound, sentence recognition and the understanding of their meaning through pronunciation. For Catford (1950:8) "speech is said to be intelligible if the hearer understands, i.e. if his response is appropriate to the linguistic forms of the utterances; that is to say, if it is in accordance with the semantic habits of the speech community whose language is being used". He goes on to say that intelligibility can only be used for utterances that are both intelligible and effective. An utterance may be intelligible, yet ineffective in the sense that the hearer's response is not what the speaker intended. It logically follows from this quotation that wrong selection and use of words, and appropriate sounds, as well as other phonological patterns, may result in faulty identification and wrong interpretation on the part of the other interlocutor.

Two basic requirements to be fulfilled in order for a speaker to attain that level of intelligibility are discussed by Lyons (1968:42). For an utterance to be intelligible:

a. It must be comprehensible i.e. to be fully understood by the hearer, provided that the meaning perceived by the hearer is more or less the meaning intended by the speaker.
b. It has to be acceptable i.e. an utterance that has been or might be produced by a native speaker in some appropriate context as belonging to the language in question.

These two criteria we believe, reinforce the meaning attached to both communicative and linguistic aspects of the language, and complement each other as do competence and performance.

Acceptability is a highly subjective concept, which is hard to define. The best explanation thus far is offered by Gimson (1989:316; 2001:302, 313), who sheds light on the issue of what an acceptable utterance is with reference to three parallel types of levels of performance in relation to intelligibility, namely: (1) high acceptability, (2) minimum general intelligibility, and (3) restricted intelligibility which will be explained in due course in 3.2.4.

High acceptability, which might be the targeted aim for foreign learners and teachers, whose work requires them to deal constantly with native speakers is defined as:

> *A level of attainment in production which is as readily intelligible as that of a native RP speaker and which is not immediately identifiable as foreign, and as a level of receptive ability which allows the foreign listener to understand without difficulty all varieties and style of RP.*

Though extremely difficult to attain and practically irrelevant for most foreign learners, it is nevertheless desirable that teachers be encouraged as far as possible to work towards such competence, as it would ease communication. In order for this to come about, help is neede from either native speaker teachers or skilled and phonetically trained NNS teachers to teach correct pronunciation.

The definition of 'intelligibility' has been improved and made more specific in terms of who should be intelligible to whom in more recent studies. In a world of wider communication today, NNS from different L1 need not only maintain intelligibility among themselves but also with native English speakers.

According to Bamgbose (1998) intelligibility is a complex of factors, comprising recognising an expression, knowing its meaning, and knowing what that meaning signifies in the socio-cultural context. He uses intelligibility as a blanket to cover a range of speaker and listener factors, arguing that in communication between a speaker and a listener both contribute to the 'speech act and its interpretation' (Jenkins 2000:69-70).

Smith and Nelson (1985) suggest that understanding is not speaker or listener centred but is interactional between speaker and listener. According to Smith, 'understanding' should be divided into three categories: (1) Intelligibility for word/utterance recognition; (2) Comprehensibility: word/utterance meaning (locutionary force); (3) Interpretability: meaning behind word/ utterance (illocutionary force). Nelson has used the term 'interpretability' to replace 'intelligibility' to mean 'apprehension' of the message in the sense intended by the speaker.

James (1998:212) defines 'comprehensibility' as a cover term to refer to all aspects of the accessibility of the context, as opposed to the form of utterances. He uses the term 'intelligibility' to refer to the accessibility of the basic, literal meaning, the propositional context encoded in an utterance.

Lanham (1990), in a study of intelligibility of 'errorful English spoken by second or foreign language users' as reported in Jenkins (2000:70) and Ramsaran (1990:243), makes a distinction between 'intelligibility' and 'comprehensibility', by relating the former to the effect of errors on the recognition of linguistic form, and the latter to 'the communicative effect of error ... the consequence of error on the comprehensibility of contextualized discourse'.

Though it is believed that 'forms of a language' are not always of great relevance in spoken communication in comparison to 'meaning', according to Brown (1995:232-3), 'adequate communication is regularly achieved, despite the pervasive under-specification of meanings of utterances. This is because the sheer amount of shared background information enables interlocutors to establish a 'structure of beliefs'. We nevertheless uphold that for foreign learners of English, both forms and meaning should go hand in hand in order to facilitate both effortless intelligibility and easy comprehension.

That seems to be the reason why in foreign language learning contexts, much emphasis is put on teaching grammar and vocabulary, as a way of ensuring that learners are sufficiently equipped to express what they intend. At the same time, it is unfortunately noted that the teaching of pronunciation has suffered much and has been neglected in comparison with the teaching of syntax and lexis. This has created a situation such that learners are able to recognise words and understand sentences in written forms, but dramatically fail to perceive them phonologically and understand what is said. The analysis of data collected in chapter six was aimed at investigating such claims.

Jenkins (2000) has devoted much work on the intelligibility concept in inter-language talk (ILT) between NNS. In her recent work she has remarkably attempted to explain intelligibility in relation to English as not only a second, or foreign language, but most particularly as an international language (EIL). She (ibid:78) shares the same view with Smith and Nelson (1985) about the concept of intelligibility, but maintains that intelligibility concerns the production and recognition of the formal properties of words and utterances, and in particular, the ability to produce and receive phonological forms. She regards the latter as a prerequisite (though not a guarantee) of ILT success at the locutionary and illocutionary level.

Two other studies have strongly upheld the role played by phonological forms in intelligibility of NNS. According to Bansal (1990) and Ufomata (1990), phonological forms and phonetic features from different local L1, either in Indian or Nigerian English respectively, often get in the way of intelligibility in English. Bansal mentions the lack of clear articulation, accent on the wrong syllable of a word, and vowel or consonant substitution, elision of syllables, lack of aspiration in / p, t, k / at the beginning of accented syllables, as difficulties to the intelligibility of Indian speakers of English. As for Ufomata (1990), the intelligibility of Nigerians in spoken English is hindered by the lack of the use of weak forms and

vowel elision in an unstressed position. The syllable timed rhythm of Nigerian languages exhibits a great divergence from native speakers' accents.

James (1998) cites another well known study on the intelligibility of the Nigerian English as studied by Tiffen (1974,1992). The latter recorded 24 Nigerian speakers of English, 12 having Hausa as their L1, and 12 with Yoruba. The recordings were played to 240 British listeners and intelligibility ratings elicited. Four major causes of intelligibility reduction were identified, and their relative percentages calculated in the following order: faulty rhythm and stress accounted for 38%; mispronounced phonetic segments (33%); phonetic errors (20%), and lexico-grammatical errors (9%). The study interestingly found that 'distorted vowels' are more disruptive than mispronounced consonants and that the teaching should focus on the former.

Lanham (1990) investigated the intelligibility between SABE (South African Black English) and SAE (South African English (white)) listening to each other's recording. He found that SAE listeners had significant difficulty in understanding SABE, whereas SAE recordings were relatively well understood by both groups. He commented that in SABE as in many other Bantu languages, tone units are easily recognized mainly by pause breaks. For a reading style, they are in fact considerably more numerous than in SAE and their placement at disruptive points in the information flow undoubtedly contributes to incomprehensibility. He furthermore found that prominence is assigned where the unit concerned is not informing and the absence of prominence on information units which are crucially informing, create difficulties for the listener in 'making sense' of the information he is receiving. He finally assigned errors in English speech of SABE to the fact that in Bantu languages distinctions in stress are auditorily unprominent, and that there is no equivalent to the unstressed syllable in English, with loss of vowel quality distinction; stress, where perceived, is lexically assigned.

Our view is that both segmentals and supra-segmentals of English should receive effective teaching, in order to avoid non-native learners' constant deviant substitutions from their L1 and other languages they may speak.

3.2.1 Productive Intelligibility

In productive intelligibility we are mainly concerned with the pronunciation of NNS, whose intelligibility in reading words and sentences in English is to be listened to and assessed by a group of five native English speakers who wrote down what they heard. One major observation worth mentioning at this level, is that quite a considerable number of foreign learners of English learn it for years and acquire quite a substantial level of grammatical and lexical competence, but yet fail to pronounce it intelligibly enough.

Widdowson (1972) in Brumfit and Johnson (1979:117) expresses it as follows:

> *The problem is that students, and especially students in developing countries who have received several years of formal teaching, frequently remain deficient in the ability to actually use the language, and to understand its use, in normal communication, whether in spoken or written mode.*

Pronunciation is the area which displays considerable weaknesses which develop into inaccuracies and errors, because the quality of English sounds, stress and rhythm that foreign learners exhibit is often deviant from the norm that a native speaker is used to hearing or would at least expect to hear.

Schwartz (1980:138) argues that "foreign learners are faced with their imperfect command of the language of communication, as a result of which their conversations are often characterised by errors and problems of understanding". Productive skills are by definition related to speech and writing, both of which

involve a certain degree of noticeable physical efforts. Oral communication in particular involves a speaker and a listener.

In this work NNS were invited to read words and sentences the intelligibility of which was to be interpreted and evaluated by NS of English as judges. One major implication in the analysis of NNS productive intelligibility is to caution some learners who become extremely complacent about their own pronunciation, wrongly assuming that because they can speak some form of English they are automatically intelligible. In foreign teaching contexts, there is great need to keep a balance between the learners' lexical and grammatical competence and their phonological competence and performance. Intelligibility refers to the way in which NNS manage to control and utter the target language according to its norms, and in such a way as to be clearly and easily understood by a native speaker of the target language. In other words, NNS's level of intelligibility and acceptability to NS of English will largely depend upon their use of correct grammar, vocabulary and most particularly upon their pronunciation which shapes the way in which sounds, words and utterances are produced and heard.

In the case of Rwandan subjects, pronunciation skills have been either neglected or taught by unskilled teachers at the expense of other skills. For the learners, the level of poor performance has been aggravated by the fact that they learnt English in quite an artificial way and environment, which do not make the task of acquiring accurate pronunciation any easier.

3.2.2 Receptive Comprehension

Receptive comprehension involving NNS and NS has not received the same amount of attention in other studies as the productive side, as said earlier. In the present work, comprehension is mainly concerned with assessing the phonological perceptual competence of NNS listening to NS of English. Intelligibility and comprehension do not depend only on who the speaker is and

how he speaks, or what he talks about, but also and very meaningfully on who the listener is, and his proficiency in the language in which communication takes place.

Voss (1984:18) maintains that successful speech perception depends on three things: "an acoustic component, a linguistic component and a content component. Deficiencies in the acoustic component, as for example under condition of noise, can be compensated for by a good command of the language (linguistic component) and a reasonably accurate expectation of the content of the message (content component)". He goes on to say that the compensatory effect is not only lost but perception is made impossible if the quality of information provided by any of the three components falls below a certain threshold level. Receptive comprehension involves detection, recognition and reproduction of the content and forms of the speaker's message. In the present work, perceptive competence represents the NNS' ability to correctly decode, process and understand two native speakers. The latter were recorded reading a set of 40 isolated words and 10 single sentences to be listened to by a group of 60 and 30 Rwandan learners of English respectively.

The task involves active and quick listening, i.e. the recognition, discrimination, identification and accurate perception of the different composites of the message through pronunciation. The ability to interpret what is uttered successfully presupposes a certain degree of the mastery of lexical, syntactical and phonological features of the target language. It is often the case that NNS listen to other languages according to their own mother tongue filter. Flege (1987:48) acknowledges that it is commonly accepted that L2 learners "identify" L2 phones in terms of native language (L1) categories and, as a result, use articulatory patterns established during L1 acquisition to realise those L2 phones. That is, they can not make sense of the contrast 'short/ long' vowel in English words for example, if their L1 does not have it or at least does not use it as such. He later (1995) maintains that bilinguals tend to interpret sounds encountered in an L2

through the "grid" of their L1 phonology (p.237). Tiffen (1974:54) points out that from the listener's stand point, intelligibility failure can result at the physiological stage, that is, the stage of reception or hearing. He goes on to say that it is more probable however that intelligibility would break down at the psychological or perception stage, for it is here that the listener has to interpret the speech sounds he has heard and relate them to his own linguistic store. In addition, the listener at times has difficulty in interpretation due to a number of cultural differences between his and the speaker's background.

The relevance of pronunciation as a major factor in the study of intelligibility and comprehension appears in that a NS of English can say something a NNS knows well, for example in orthographic spelling such as / ðei / *'they'* perceived as *'day'*, but nonetheless fails to interpret because of pronunciation alone. The greatest difficulty NNSs grapple with in understanding NSs of English lies in their inability to quickly and naturally associate sounds and words with their pronunciation, to understand the use of various forms of simplifications as well as to understand whole utterances as having a global meaning.

An example from the test may, in anticipation, serve to illustrate the point. The investigated learners had considerable difficulty in recognising and clearly distinguishing *hot* from *hurt, heat, hut* or *hat*. The rate of failure among the Rwandan learners to understand ordinary words and simple sentences read by native English speakers, was clear evidence of the difficulty that pronunciation represents in communication, hence the importance, relevance and attention it deserves in teaching.

It should be noted that much tolerance on the NS's behalf of the NNS' deviant pronunciation can be a disservice to genuine learners in the long run, and may be a serious impediment to a genuine test of intelligibility and comprehension. In so far as it is possible, teachers should endeavour to help learners to achieve a high level of pronunciation, so as to make themselves understood with little effort

by other speakers and to easily understand the latter as well. The solution to the difficulties of receptive comprehension witnessed in foreign learners would be found by ensuring that they not only maintain high competence in their target language, but most importantly by acquainting them with the NS's pronunciation. Faced with the problem that there is almost no direct contact between NS and NNS in most foreign learning contexts, the use of recorded materials would be a valuable substitute for both teaching and testing.

The feedback from the tested subjects in this investigation is extremely relevant and has strong pedagogical significance with reference to the teaching of pronunciation. Most of the subjects informally admitted not having understood either isolated words or sentences, because it was the first time they had done such an exercise of listening to a recorded native speaker. Once the subjects were shown what the target tested words and sentences were, they themselves admitted that pronunciation alone was the major cause of the lack of understanding. The results from Chapter Six will hopefully provide sufficient evidence to substantiate such claims and to support the need of the use of recorded materials in teaching English.

3.2.3 Mutual Intelligibility

Bansal (1990) rightly says that "as language is primarily a means of communication, the basic requirement for every speaker of English is to be at least intelligible to the people with whom he wishes to communicate in English". Mutual intelligibility is in other instances called reciprocal intelligibility. In an ordinary spontaneous communication, participants take turns to talk, listen and respond. In other words, while one is speaking, the other is listening in order to be able to respond appropriately. There is an assumed higher level of intelligibility between either native speakers or non-native speakers of one common mother tongue interacting together than there is between native and non-native speakers of one particular language. To use one practical example for illustrative purposes, the level of mutual intelligibility between Americans, British,

Australians and Canadians would generally be expected to be higher than it would be between any of these and a non-native speaker of English. That level of mutual intelligibility is different in African contexts where English is used as either a second or foreign language and where the level of proficiency will largely depend upon the individual learner's level of education and the teachers' competence. In many non-native teaching contexts, teachers themselves need models to help them to improve their performance in English.

We could envisage four situations of mutual intelligibility, with particular interest and attention on the fourth with which we will be dealing in the present work:

1. NS ↔ NS
2. NNS ↔ NNS (same L1)
3. NNS ↔ NNS (different L1)
4. NS ↔ NNS.

First of all, we have already claimed that in most ideal situations there should not be any major problem of mutual intelligibility between two native speakers of one and the same language. Secondly, the relevance of (2) in this study helps to caution NNS (learners) against the assumption that, because they are mutually intelligible with their fellow countrymen and their teachers in the target language they are necessarily intelligible to other speakers of the target language from different L1, let alone with native English speakers.

We would even go further and acknowledge that not all NNS of English are mutually intelligible, unless they belong to the identical linguistic community sharing one common language. To the best of the writer's knowledge, no investigation has thus far been carried out about the intelligibility of Rwandan speakers of English with other African speakers, so it should not be taken for granted that a Rwandan speaker is necessarily intelligible and receptively able to understand other Africans such as Malawians, Zambians, Zimbabweans or Kenyans despite the fact that they all belong to the 'Bantu language family'. Such

a study would be worthwhile doing in the framework of interlanguage communication. One of the best examples to illustrate the impact of deviating from the norm in English–speaking Africa on mutual intelligibility was accounted for by Richardson (1964:194) regarding Zimbabwean speakers of English:

> *As English-speaking Africans in Northern Rhodesia appear to have much less difficulty in understanding each other than an Englishman has in understanding them, it would appear that a Northern Rhodesian standard English for Africans has arisen which differs in many ways from United Kingdom standard English. The fact that several varieties of African English are spoken throughout Africa is borne out by statements by Northern Rhodesian African students in London that while they can easily understand the English of East African students, the variety spoken by West Africans tends to be incomprehensible to them.*

Incidentally, the difficulty experienced by Rwandan learners of English in terms of producing and perceiving the vowels, some consonants and the rhythm of English are also observed in other African speakers of English for whom it is a second language (Daborn 1990, Ufomata 1990, Pongweni 1990). For example, Ufomata (1990) notes the lack of discrimination between /iː-ɪ/, /uː-ʊ/..; the use /ɪə/ as [i.a], /ɛə/ as[ɛ.a], monophthongization /eɪ / as [e]; /əʊ / as [o] , as well as the use of epenthetic vowels as characteristic to Nigerian English. Turning to the case of Rwandan learners of English, intelligibility would be impeded not only by the transfer of features from Kinyarwanda accent which obviously affects their pronunciation of English, but also we would think, by the fact that they use English as a foreign language, compared with, for example, Kenyans, Malawians, Zimbabweans who use it as a second language with all that that entails.

This view is strongly supported by Brown (1968) in Wells (1982) in an experiment done with Nigerian students, with particular reference to intelligibility of African listeners in English. He provides figures showing that Africans do not understand other Africans speaking English with anything like the reliability that holds between those whose first language is English, and that Africans tend to be

much less intelligible to English people (as represented by RP speakers) than English people are to Africans.

The results from the productive analysis of words and sentences in Chapter Five do not however support this claim, as most of the subjects were intelligible to NSs at the rate above 60%, compared to those in Chapter Six who failed to understand most of the words and sentences uttered by native English speakers at a rate much lower than 40%.

Some of the best examples used to illustrate mutual intelligibility (NNS-NNS) from different language background are found in Jenkins' (1996:36-37; 2000) work on inter-language talk (ILT), in which she looks into problems caused by poor pronunciation to communication. Her example of a Swiss-German interlocutor who failed to understand the realisation of *football match* as [ɸʊtəbɒl mætʃ] and *soccer club* as [sʌkɑ:klʌv] uttered by a Japanese speaker were intended to show how intelligibility problems can be caused by a faulty and distorted pronunciation. In another example, mispronunciation resulted in communication breakdown in picture identification when a Japanese speaker pronounced *red* as [led] and the Swiss German perceived it as [let].

A: I didn't understand the let car. What do you mean with this?
B: let cars? [Very slowly] Three red / led car.
A: Ah, red.
B: Red / red
A: Now I understand. I understand car to hire, to let.
Ah, red, yeah I see.

In this instance, communication failure resulted from the mismatch between Japanese and Swiss German phonological filters, in which the former produced [led] for *red*, and the Swiss German perceived it as [let].

The experiment showed that it was pronunciation features that contributed most to communication breakdown. This investigation has a few significant pedagogical implications. First, the teachers should train their students to be

accurate in their pronunciation. Second, the teachers should help learners to develop the ability to communicate correctly, appropriately and comprehensibly in the target language. Third, the learners' phonological competence should be high enough to allow them to understand other speakers, including native English speakers.

Swaan (2001:6) indirectly underlines the benefits of using a common standard model for higher mutual intelligibility between non-native speakers from different linguistic backgrounds by saying that:

> *if an Arab and a Chinese, a Russian and a Spaniard, or a Japanese and a German meet, they will almost certainly make themselves understood in one and the same language, one that connects the super central languages with one another and that therefore constitutes the pivot of the world language system. This 'hypercentral' language that holds the entire constellation together is, of course, English.*

Crystal (1997:137-8) contributes to the understanding of mutual intelligibility, from another angle. He proposes to expand mutual intelligibility to what he termed 'World Standard Spoken English' (WSSE), that he recommends foreign learners to consider. He indicates that people can use different levels in their 'new Englishes' or varieties, but that there should be this 'WSSE' which on national levels should be used when speaking to people who do not immediately belong to the same society or share the same norm of the new English variety.

This would in practice result in the possession of two registers of English to be used according to circumstances. He added that the good thing about it is the suggestion that in the future people would still have their dialects for use within their own-country but when the need came to communicate with people from other countries, speakers could slip into the use of WSSE. They have a dialect in which they can continue to express their national identity, and they have a dialect

that can guarantee international intelligibility when they need it. However enticing the goals of WSSE sound, they remain extremely theoretical.

Our main interest lies in the mutual intelligibility between NS and NNS through analysis of recorded readings tailored to that end. The assumption here is that pronunciation is predicted to be the major cause of intelligibility and comprehension failure. The pronunciation of a NS of English may sound extremely difficult for a NNS to understand and vice-versa. However, evidence has shown that native English speakers generally accommodate better than non-native speakers in finding out the intended meaning. It is the writer's contention that intelligibility and comprehension barriers would gradually disappear and the difficulty lessened were the NNS taught a pronunciation that is closer to the NS's standard.

The subjects investigated in this work have not, most of the time, been able to correctly produce and perceive the difference between long/short vowels. This has affected the choice and meaning of different words. Furthermore, the difficulty they had in handling various forms of simplifications and weak forms, which affect the rhythm within a connected speech, has further aggravated the level of failure of their perceptive comprehension.

In her interlanguage talk (ILT) study, Jenkins (1997) claims that a substantial amount of L1 phonological transfer and poor pronunciation of NNS are the basis of unintelligibility. Though we totally endorse her claim, it is also true to say that NSs of English are themselves not always understood by NNSs. The findings of the present investigation aim to demonstrate that NSs can be extremely difficult to understand, due to the NNSs' limited abilities in pronunciation that prevent them from successfully coping with various simplifications that affect the speed of delivery and correctly decoding the intended meaning. The fact that English has not been taught by NSs in Rwanda has been a disadvantage to the Rwandan learners as far as productive and receptive skills are concerned. Finally, for

greater chances of maintaining and developing international intelligibility and comprehension among different accents of English, it is necessary that learners of English as either second or foreign language be exposed and taught according to the existing standard varieties. According to Bansal (1990:230) it is desirable to establish certain minimum standards of mutual intelligibility among the various dialects of English spoken in the world. This will lead to more efficient communication and better understanding among people who speak English as the first language or as a second language.

3.2.4 Accuracy and Intelligibility

In intelligibility study, accuracy is not always necessary as long as the listener can get the speaker's message across. While identifying the difference between accuracy and intelligibility, Gimson (2001:298) distinguishes 3 types of performance targets for learners: (1) minimum general intelligibility, (2) high acceptability, and (3) restricted intelligibility.

3.2.4.1 Minimum General Intelligibility (MGI)

Minimum general intelligibility represents the lowest required level of achievement consistent with some degree of intelligibility proposed by Gimson (2001:298) at which most learners should aim, and which does not require complete accuracy in the target language. He defines it as: "one which possesses a set of distinctive elements which correspond in some measure to the inventory of the RP phonemic system and which is capable of conveying a message efficiently from a native English listener's standpoint, given that the context of the message is known and that the listener has had time to 'tune in' to the speaker's pronunciation".

Most foreign learners who perceive no apparent need or possibility of ever attaining the performance of a native speaker of English, should be satisfied with such a level of performance. Foreign learners should not aim at sounding native

as a goal even in teaching/learning, but, whenever it is feasible, it would be desirable to work towards the level beyond MGI.

Though pronunciation tests should aim at measuring intelligibility and comprehension rather than accuracy, the latter however greatly facilitates easy perception. In that respect, Tench (1997:35) maintains that "a learner's pronunciation must be 'accurate enough to be intelligible', but not necessarily identical to a native speaker's model". The lack of acquisition of accurate pronunciation can however be a serious problem to intelligibility and comprehension in English in non-native teaching situations owing to the fact that most teachers of English are non-native speakers who are not even well trained to be a good model for their students.

Both Gimson (2001) and Abercrombie (1963:37) agree on the meaning of the term of 'comfortable intelligibility'. Abercrombie defines it as the aim most foreign learners should have more than the 'perfection' he identifies with native speech model only. He reckons that the majority of foreign language users are interested in learning a foreign language as a means to an end, not as an object of study in itself. That is why he advises learners to develop intelligibility rather than pursuing perfection.

> *Most...language learners need no more than a comfortably intelligible pronunciation (and by "comfortably intelligible", I mean a pronunciation which can be understood with little or no conscious effort on the part of the listener).*
> *I believe that pronunciation teaching should not have a goal which must of necessity be normally an unrealised ideal, but a limited purpose which will be completely fulfilled: the attainment of intelligibility.*

Gimson concludes by cautioning the reader that such a form of pronunciation should not however be taken as a teaching target but rather as a minimum level of achievement consistent with some degree of intelligibility (p.313), and that severe problems of communication will be caused by any greater divergence from a natural model.

3.2.4.2 High Acceptability

High acceptability is explained by Gimson (2001:299) as a form of speech which the native listener may not identify as non-native, which conveys information as readily as would a native's and which arrives at this result through precision in the phonetic (allophonic) realization of phonemes and by confident handling of accentual and intonational patterns. He further says that this form of performance relates to many learners who, for academic reasons or because their work requires them to deal on equal terms with speakers in or from other regions of the world, wish to communicate easily without signalling too blatantly their regional origin.

3.2.4.3 Restricted Intelligibility

Gimson (2001: 299) uses this term to refer to a category of competence in pronunciation which seeks neither to imitate a natural model nor to have any international validity. It is the level he thinks is typical of a high proportion of speakers of English as a second language especially in Africa and India, who use it as a lingua franca within their own community and who neither need be like native speakers, nor have any aspiration to attain any sense of international intelligibility. Their accent is to a large extent affected by the interference of the sound systems and the prosody from different L1 and is widely used as the phonetic medium to convey the lexico-grammar of the L2.

In the light of the international status ascribed to English today and its spread amongst many NNSs, restricted intelligibility is not communicatively helpful. It is our view that learners of English as a foreign language should aim higher than this level. There is the need to train such learners phonologically so that they can interact successfully, intelligibly and comprehensibly with other speakers, whenever opportunities arise. This obviously implies a thorough training of the teachers of English.

In sum, intelligibility remains a highly contentious, complex and subjective issue. It means different things to different people and is interpreted differently. Gimson (2001:299) says for instance that considerable intelligibility can be achieved even though the pronunciation is seriously disformed. He uses an example of a speaker at a dinner table who asks for the *potatoes* by pronouncing [bəˈde: do:z] and who was perfectly understood, to show the role played by the context of speech on comprehension. However, where the context is not always helpful, a distorted pronunciation will make intelligibility difficult to attain. Foreign learners should not be carried away by such examples, but rather understand that intelligibility and comprehension in English go far beyond even what they can understand or achieve in classroom instruction. Futhermore, they go far beyond the simple recognition of individual words and isolated sounds, to embrace a whole range of features of connected speech characteristic of a NS's pronunciation of English. Though accuracy is not always necessary for intelligibility to be reached, it nonetheless facilitates easier communication.

3.3 Intelligibility and the 4 modes of Communication

The relevance of the 4 modes of communication in the present study is evidenced through the tests designed to analyse phonological competence of a group of foreign learners of English. There is an obvious relationship between listening, speaking, reading and writing, and the way in which they complement each other, and relate to intelligibility and comprehension. Though no in-depth consideration of each of these modes will be attempted, a brief survey of them is judged pertinent, with special focus on the direct relevance that listening and speaking have on intelligibility and comprehension. It has to be constantly remembered that the main goal pursued in teaching a language is to enable its learners to participate fully and comfortably in interactions of all kinds, both as competent speakers and listeners through the language being learnt. However, it is often and unfortunately observed that in foreign language teaching contexts, much emphasis is laid on reading and writing skills as the way of measuring

understanding and competence, at the expense of listening and speaking which should come first.

The importance attributed to listening and speaking as active skills derives not only from the fact that language is primarily spoken, but also that they are the first two skills all learners have to grapple with before any attempt to either read or write. Experience shows clearly that children learning a language spend many months listening before they even start babbling a few words. The teaching of a target language should therefore aim at enabling learners to speak in such a way as to eliminate aspects of their speech that appear to interfere with listeners' comprehension, and to listen comprehensibly and comfortably for easier communication with other speakers of the same target language.

3.3.1 Listening and Comprehension

Listening is an activity of constructing a message from what is heard in order to understand. In that sense, listening is always an active process. The relevance of listening lies in the fact that when a listener fails to understand what is uttered, communication breaks down. Kenworthy (1987:13) states that "the more words a listener is able to identify accurately when said by a particular speaker, the more intelligible that speaker is". The lack of understanding comes from the fact that though sounds might have been received, the listener has not succeeded in linking the sounds to the actually intended words. Many foreign learners of English find it extremely difficult to understand native speakers' pronunciation simply because of lack of accurate aural training in pronunciation. Our assumption in this study is that though the investigated subjects had a sufficient lexical and grammatical competence to understand the words and sentences that were tested, their comprehension was detrementally affected by their limited phonological listening competence.

It would not be wrong to state that many learners are only able to pronounce what they are contrastively able to listen to. O'Connor (1989) points to the importance of listening as key to the development of the essential contrasts in English by maintaining that students who cannot hear a particular English contrast have no chance of reproducing it. Until Japanese students can hear the contrast between 'light' and 'right', or Spanish students between 'boat' and 'vote', they have no chance of making the difference (p.9). The ability to listen affects the understanding of what is said, in other words, listening-understanding is measured by how much listeners are able to process and meaningfully understand. Rivers (1968:76) emphasises the importance of listening in saying that "learning a new language should begin with a prolonged period of listening to the target language, so that the learner becomes familiar with the sound before attempting to produce it". He further maintains that as the learner hears much of the foreign language spoken, he eventually acquires facility in recognising the crucial elements which determine the message.

On the grounds that the aim of learning a language is to communicate, there would be no point in being able to speak a language without being able to understand it at the same time. That 'ability' to speak a foreign language is questionable, as we are attempting to prove how foreign learners' speech is constantly marred by wrong pronunciation of sounds of the target language and features that affect their intelligibility. For Ikegushi (1997:13), "the more correctly students can distinguish the basic sound elements of English (through listening), the more likely they will correctly produce those sounds".

People are constantly listening as they are speaking. Listening is an active skill which involves language competence at all levels. It requires a quick and accurate recognition, reconstruction and discrimination of phonemes, sounds, vocabulary, grammar and pronunciation features altogether in order to make a meaning out of an utterance. Anderson (1988:7) claims that listening involves 'input', 'intake' and 'output'. By 'input information' the speaker goes through the

hearing-listening process which allows the listener to interpret it (i.e., intake), before reacting to the message initially sent (output).

Listening is directly related to receptive tests in that it seeks to measure how much and how well a NNS listener understands a native speaker. Such measurement is part of the purpose assigned to Chapter Six of this study. The relationship between pronunciation, intelligibility and listening lies in the fact that it is in perception that comprehension breaks down because it is here that the NNS listener has to interpret the speech sounds he has heard and relate them to his phonetic and phonological store. To use Anderson's and Lynch's (1988:6) terms, listening is not only receptive but it is also active in its activity of reconstructing and interpreting the speaker's utterance, it is both speech perception and interpretation.

> *The listener has a crucial part to play in the process by activating various types of knowledge, and by applying what he knows to what he hears and trying to understand what the speaker means.*

Pedagogically speaking, training foreign learners to listen to the way in which native speakers pronounce the target language is the best approach towards enhancing their accurate listening and correct speaking abilities. It is believed that we will do much to improve our speaking if only we will learn to hear correctly and that one of the ways to improve speaking is correct hearing. Broughton (1978:65) supports the same view and said "it is not possible to produce satisfactorily what one has not heard". The first step therefore in attempting to achieve oral fluency and accuracy is to consider the learner's ability to listen. Jennifer Wolfeld, cited by Judy Gilbert in an e-mail (11 June 2001) emphasises the relevance of practice for the improvement in intelligibility by saying that "to the extent that learners can sharpen their listening and production skills, they will be able to make the adjustments necessary to be intelligible in a variety of English language situations".

Underwood (1989:96) stresses the superiority and relevance of ear training over the mouth articulation by saying:

> *Not being able to see the speaker means that the learners must concentrate on what they hear, rather than perhaps guessing the meaning of what is said from the para-linguistic signals, such as nods, smiles ... otherwise called 'body language'.*

Listening without seeing the speaker prepares students even better for potential daily events whereby they must depend solely on the auditory channel for the reception and processing of information such as when they are on the telephone, listening to the radio, or to a tape recorder as in the case of our data collection.

The difficulty in listening becomes far more significant when foreign learners have to perceive whole utterances which often involve a combination of target connected speech features which they generally fail to master, such as correct recognition of contrasting vowels, assimilation and simplifications, the use of weak forms, stressed and unstressed syllables and intonation.
The relevance of the difference between native speakers and non-native speakers listening to each other deserves to be stressed here. Broughton (1978) points to the fact that native speakers of English can understand what is being said without hearing everything, because language provides the listener with more meaning signals than are strictly necessary for the purpose of understanding.

Conversely, it is to be noted that in order for many foreign learners of English to easily understand native speakers of English, the latter have to slow down their speed and pronounce almost every word distinctly, which sounds very unnatural to spontaneous native language flow. The difficulty for these learners seems to be that in an English utterance, neither are all the words necessarily important, nor are they therefore all pronounced for the meaning. Speaking of the Rwandan learners' situation, the slow pace of controlled pronunciation that Rwandan

learners have been exposed to by their non-native teachers through reading aloud exercises, has negatively affected the quality and the level of their listening ability to other speakers. Many Rwandan learners of English believe that listening-comprehension represents one of the greatest difficulties in learning English. This is because they can not control the speed of a native English speaker. In listening to a NS, while they are so busy working out the meaning of one part of what they hear, they miss the next part of the speech.

3.3.1.1 Functions of Listening

People listen for the purpose of understanding what is said. Listening has pedagogical implications for pronunciation teaching and its effects on the learners' production and comprehension of L2 sounds. We would uphold the claim that it is only when learners accurately perceive the sounds, stress, rhythm and intonation of another language, that they are more likely able to imitate them correctly and recognise them while listening to other speakers. Flege (1995) maintains that model in "speech learning model" (SLM) claims that without accurate perceptual targets to guide the sensorimotor learning of L2 sounds, production of L2 sounds will be inaccurate (p.238). Therefore, foreign learners need to develop listening for practical purposes of improving both their intelligibility and comprehension of other speakers.

3.3.1.2 Factors affecting Listening

Underwood (1989:16-19) mentions a few factors which the writer of the present work will use with reference to the specific group of learners under consideration.

1. *Lack of control over the speed at which speakers speak. They (the learners) are so busy working out the meaning of one part of what they hear that they miss the next part; or they simply ignore a whole chunk because they fail to sort it all out quickly enough.*

Most Rwandan learners are faced with this difficulty. The difficulty is aggravated, we would think, by the lack of aural training in pronunciation according to a target model. This claim was fully substantiated by the informal responses to the question asking the subjects to state the difficulty they had in the test. They admitted that they missed out a part or the whole of the utterance made by native speakers, because they are not used to their speed and pronunciation. Indeed a few made this very relevant comment about the NSs pronunciation: *barya amagambo* which literally means 'they eat up (chew) words'. We understand what they meant by that, because native English speakers give prominence only to those words that are important for information in a connected speech (content words) at the expense of functional words. Such difficulty was further corroborated by some of the Rwandan teachers who in the past had to take tests of English prior to being admitted to do teacher training either in the UK or the USA. They admitted that the extent of the difficulty they had with listening to recorded native speakers was far greater than with any of the remaining skills.

2. *Not being able to get things repeated. The difficulty associated with controlling the 'input' (what the speaker says) is that the listener is not always in a position to get the speaker to repeat an utterance.*

The subjects tested in this investigation had listened to tested words only once before writing anything. They did not have an opportunity to have either words or sentences repeated for better comprehension. One is left to only speculate that the repetition of words and sentences might have enhanced their level of comprehension. We are tempted to say however that the subjects' first impression and understanding of tested items represents their actual level of phonological competence. Whether this speculation is satisfactory to the reader, remains open to debate.

3. *The listener's limited vocabulary.*

Underwood maintains that for people listening to a foreign language, an unknown word can be like a suddenly dropped barrier causing them to stop and think about the meaning of the word, thus making them miss the next part of the speech. The tendency to stop and concentrate on the immediate problem often happens with learners who have been taught English in a method and system which have given more emphasis to accuracy than to fluency. The real problem for the subjects in this test was mainly pronunciation which has rendered even the most ordinary words extremely difficult to process and understand.

4. *Problem of interpretation - in the fact that students who are unfamiliar with the context of speech may have considerable difficulty in interpreting the words they hear, even if they can understand the surface meaning.*

In the reading of word lists, there was no available context, whereas with sentences, the difficulty was caused by the native speaker's speed of fluency with which the subjects could not cope even when the context and the content would have been sufficient to lead to better comprehension.

5. *Inability to concentrate.*

Underwood commented that concentration is tiring and requires sustained effort, because the foreign learner has to be alert all the time and understand almost everything. External factors which can significantly affect listening were also suggested such as the quality of machines used to play recorded materials, and rooms acoustically unsuitable for the use of the same materials. In relation to this factor, external noise is another no less significant element which disturbs learners' listening and comprehension. Incidentally, noise does not seem to cause the same extent of damage to listening and comprehension between two native speakers of the same language as it does between native and non-native speakers listening to each other. In the latter case, it is the mastery of the

language at all levels that positively or negatively affects the NNS' understanding of a NS even through noise. We shall take up the issue of the impact of noise in Chapter Five while describing the schools where data collection was carried out.

6. *Established learning habits.*

Traditionally teachers have aimed at teaching their students to understand everything in an English lesson, and have gone to considerable trouble to ensure that they do, by repeating and pronouncing words distinctly, by grading the language to suit their level, by speaking slowly and pausing frequently. Because of such practice, students are worried if they fail to understand a particular word or phrase when they are listening and become discouraged by their lack of success (Underwood, 1989:19).

The above comment correctly fits the subjects dealt with in our work. On the one hand, in their listening, they expect to be able to decipher almost every single word from the speaker and link words altogether in order to make sense of an utterance. On the other hand, we know that native speakers of English do not need to have every item stand out in order to reach a global understanding. Therefore, non-native learners should be trained to listen globally and according to a pronunciation model which is not necessarily their own, as the latter often leads them into making errors affecting their intelligibility and comprehension. Through listening activities, learners should learn to recognize what is said and how it is said, since it is how something is said that seems to affect the level of understanding of what is said. Aural training should be one of the top priorities in teaching English in non-native situations since it prepares learners to cope with potential encounters which would require them to understand native English speakers or other fluent speakers of English from totally different backgrounds.

3.3.2 Speaking, Intelligibility and Comprehension

Language is the main means by which human beings interact and communicate. The basic aim in teaching and learning a second language should therefore be to be able to speak it, to understand other speakers and to be understood too. Speaking obviously implies pronunciation, which in turn affects intelligibility and comprehension. Improved intelligibility and comprehension should therefore be the main goal of pronunciation teaching. Byrne (1976:9) provides the following definition:

> *The goal of teaching the productive skill of speaking will be oral fluency: the ability to express oneself intelligibly, reasonably accurately and without undue hesitation (otherwise communication may break down because the listener loses interest or gets impatient. Two complementary levels of training will therefore be required: practice in the manipulation of the fixed elements of the language (principally the use of grammatical patterns and lexical item) and the practice in the expression of personal meaning.*

Poor pronunciation represents a barrier not only to mutual intelligibility among non-native speakers as in interlanguage talk (ILT) which was given extensive coverage by Jenkins (1996, 2000), but equally and significantly to intelligibility of non-native speakers to native English speakers. It is also linked with 'foreignness' of accents which may have a number of undesirable consequences for non-native speakers as described by Flege (1995:233-4).

> *They may make non-natives difficult to understand, especially in non-ideal listening conditions. They may cause listeners to misjudge a non-native speaker's affective state, or provoke negative personal evaluations, either as the result of the extra effort a listener must expend in order to understand, or by evoking negative group stereotypes.*

Munro and Derwing (1995:287) maintain that the popularity of accent reduction programs may be supported by a general bias against foreign accentedness in

speech. Numerous studies have shown that native speaker (NS) listeners tend to downgrade non-native speakers (NNS) simply because of foreign accent.

Rwandan learners of English have been greatly disadvantaged as far as spoken English is concerned. Because English did not serve any clear internal communicative purpose, it had been given relatively little practical attention in the past, and was quantitatively and qualitatively less spoken in comparison with its other rival languages, Kinyarwanda, French and Kiswahili in the Rwanda community. The artificiality of classroom English teaching/learning in Rwanda was so strong and detrimental, that it impaired successful learning as we explained in Chapter One. Pronunciation, in particular, did not improve because of the lack of competent teachers as models, appropriate teaching materials and helpful linguistic environment.

The primacy of speech is of great importance to the language teacher and it should be a characteristic of modern teaching that greater emphasis is placed on speech (Wilkins, 1978:61). Allen (1980:26-27) argues that:

> *it is sound practice in language teaching to give first priority to the development of automatic speech habits, because speech is the primary medium in that it is older and more widespread than writing, and because children always learn to speak before they learn to write.*

Foreign learners should be trained according to standard models in order for them to be more intelligible to native English listeners and to understand them better. There is a relationship between intelligibility and speech model. A model provides a proficiency scale which may be used to ensure if a learner has attained proficiency according to any given norm. Since intelligibility was defined as the main goal of L2 speech, it follows that a speech model/performance target for L2 learners should be chosen in order to ensure that intelligibility to native speakers of English takes place. The term "model" for non-native speakers of

English was explained by Kachru (1992) in 2.13. When we speak of models, we have in mind native English teachers or skilfully trained non-native teachers.

3.3.3 Reading, Intelligibility and Comprehension

Reading is related to pronunciation as a productive skill. It was the strategy used in the present work to measure the subjects' intelligibility and comprehension of written words and sentences. While on the one hand a non-native speaker's deviant pronunciation may disturb the understanding of the native speaker who is listening, the native speaker's pronunciation on the other hand is often extremely difficult for the non-native speakers to understand. The way in which Rwandan learners have read designated words and sentences has shown the extent to which their pronunciation was significantly affected by phonological transfer from Kinyarwanda and French in particular. Foreign learners of English should be taught and trained to read according to the target language standards and for global comprehension that goes far beyond the careful reading and understanding of every individual word. Garrod (1986) in Anderson (1988:19) puts it clearly that:

> *In both reading and listening, processing has to take place sequentially, i.e., we sample one word at a time. But, in order to comprehend the message successfully, we have to analyse whole segments of the input, such as phrases, sentences and paragraphs.*

For pedagogical purposes reading aloud as opposed to silent reading remains one of the helpful strategies which allows the teacher in non-native contexts to pinpoint and correct the learners' mistakes of pronunciation wherever he considers it appropriate. It is, for example, in reading aloud that a range of segmental and prosodic errors caused by heavy reliance on orthography and the learners' mother tongue features come to the surface and can consequently be dealt with. In that respect, French is believed to affect the Rwandan learners' reading of English, particularly in the area of word stress placement.

3.3.4 Writing, intelligibility and Comprehension

Writing is a productive form of communication. It is intended to be read and understood. In the present work, the intelligibility of the Rwandan learners as perceived by native English speaker judges will be measured according to the amount of what they write down from what they heard. Likewise, the Rwandan learners' comprehension will be measured on the basis of what they accurately transcribe from what two native English speakers say on tape. We maintain that in a comprehension task learners can not write comprehensibly and meaningfully unless they are able to process and understand the speaker's pronunciation.

For general purposes, Broughton (1978:117) suggests that writing should be properly taught for its obvious advantages to students and that it must include all types of writing which they may need in their future life. Writing is related to listening in the way in which it gradually trains the learner how to take notes by making sense of what is uttered and heard, for example in a course, or in making a summary of what is said, and in many similar contexts.

In summary, we have attempted in this section to show the relevance of all the four modes of communication and their effect on intelligibility and comprehension. However, in view of the explanation given in 3.3.1 and 3.3.2, listening and speaking (pronunciation) stand out markedly vis-à-vis the other two skills as far as spoken intelligibility and comprehension are concerned. Our claim was strongly supported by the results drawn from answers to a question that asked the involved subjects how important they thought the four skills were with reference to communication: *Rank the four skills of English by order of their communicative importance to you on a scale of 1 (as the most important) to 4 (as the least).* The results were as follows:

Table 3.1 Ranking order : importance of the 4 skills

	Modes	Subjects	1st	2nd	3rd	4th
1	Speaking	50	26 i.e.52%	18 i.e.36%	5 i.e.10%	1 i.e.2%
2	Listening	50	19 i.e.38%	20 i.e.40%	4 i.e.8%	7 i.e.14%
3	Reading	50	3 i.e.6%	5 i.e.10%	30 i.e.60%	12 i.e.24%
4	Writing	50	2 i.e.4%	7 i.e.14%	11 i.e.22%	30 i.e.60%

These results clearly indicate that listening and speaking ranked as 1st and 2nd, at higher rates of 88% and 78% respectively, compared with the remaining two skills. Such ranking is pedagogically significant as it tells the teacher where the main focus should be given in teaching. At the same time these two skills seem to represent the most problematic area in the teaching/learning of the target language for most foreign learners and Rwandan subjects in particular.

3.4 Factors affecting Intelligibility and Comprehension

Intelligibility may be affected by linguistic and non-linguistic factors such as socio-psychological, environmental and other factors, but the former ones are generally more significant. Intelligibility and comprehension are first and foremost affected by the learners' degree of command of the target language (competence) at the lexical, syntactical and phonological levels. Competence needs to be demonstrated through actual performance in order to be successfully functional. Secondly, it is affected by who the speaker is and how he/she speaks i.e. accent, pronunciation and speed of delivery. Some speakers are faster than others, and generally, the faster a speaker is the more difficult to understand he becomes. Intelligibility and comprehension also greatly depend upon what the speaker talks about (topic) and the degree of familiarity that the listener possesses not only with the topic, but also with the speaker's accent. Some speakers, whether native or non-native are easier to understand than others. Kenworthy (1987) finds that listeners will tend to find what is said difficult to follow, if for example a learner's speech is full of self-corrections, hesitations, and grammatical restructurings (p.14). Finally much depends on the attitude of the listeners, i.e. their

preparedness, motivation and interest in listening. For Voss (1984:35-37) "the nature of the material to be listened to, the conditions of the listening activity, the difficulty of controlling the input which is incidentally unrepeatable, have effect on the speech perception".

3.4.1 Linguistic Factors

Successful intelligibility of non-native speakers of English fundamentally depends on the learner's competence in English, i.e. mastery of lexical, syntactical, discourse, contextual and phonological features. Most particularly, the learners' level of proficiency in pronunciation facilitates comprehension or makes it difficult for listeners (interlocutors). Most non-native learners of English experience a significant level of difficulty in perception (hearing) that affects even their lexical and syntactical competence. Tench (1981:18) maintains that intelligibility and communicative success depend on a range of linguistic and communicative competence i.e. the speaker's and listener's ability at all levels of the language.

> *Intelligibility rests on abilities at all levels of the language. Intelligibility would be impaired, for instance, if the wrong word was chosen or if some feature of grammar was unrecognisable. It would obviously also be impaired if a word was mispronounced or if a sentence was uttered with odd rhythm and intonation patterns.*

Competence and accuracy correspond in great measure to a high degree of correct realisation and use of words, forms and sounds pertaining to a target language, in almost the same manner as they are used by its native speakers. Non-native learners often have the problem in differentiating English phonemes and sounds from one another, such as being able to contrastively produce or perceive /iː / from /ɪ / or / p / from / b / in contrastive words. The intelligibility and comprehensibility failure get worse when it comes to the application of rhythmic patterns on isolated words and words in a connected speech. Daborn (1990:123) finds that errors in timing of vowels will disturb stress and rhythm patterns and thus disturb intelligibility. While making a common comment about typical features of Malawian speakers of English and most African speakers of 'Bantu

languages', she found that "limited range of contrastive vowels, the lack of lengthening in stressed syllables, the lack of reduction in unstressed position, the lack of use of schwa, and the addition of epenthetic vowels disturb the rhythm of English, thus the function that rhythm fulfils in English".

Gimson (2001) identifies accuracy to a set of distinctive elements which correspond in some measure to the inventory of the RP phonemic system. With that in mind, very few foreign learners achieve complete accuracy of English sounds. What foreign learners are reasonably expected to achieve is a sufficient competence and performance of the target language in content, forms and sounds that would allow them to speak intelligibly and to understand other speakers successfully as well.

3.4.1.1 The Role of Vocabulary

The extent of the knowledge of vocabulary affects the non-native speaker's intelligibility and comprehension. The best types of test often used to gauge the foreign learners' competence in lexis and grammar are multiple choice questions in examinations of English. A learner may fail to choose the right word which conforms best with the context in a group of four possible answers, such as in:

(1) I will never --------- them to take the child away from me.

a. admit c. allow

b. tolerate d. let

(2) We were ---------- for half an hour in the traffic and so we arrived late

a. kept off c. held up

b. broken down d. put back

Choosing an answer other than (c) would evidently create a wrong meaning, though intelligibility may be easily recovered by the context and/or general expectation of the native English listener.

The interest of the present work with regard to 'lexis' lies in the effect that pronunciation has on the intelligibility and comprehension of words. We assume

on the one hand that the mispronunciation of words by non-native learners can confuse a listener. For example, a Rwandan learner may create misunderstanding problems to a listener by saying [hil] for both / hɪl / 'hill' or /hi:l / 'heal'. On the other hand the pronunciation of native English speakers may create even greater comprehension problems for non-native listeners who have not yet accurately mastered the features of English segmentals and suprasegmentals.. The experiment carried out by Voss (1984:165) on a group of 72 German students listening to recorded tapes supports our view. In listening to the utterance *had poured out*, 21 out of 72 subjects, i.e.29% had difficulty in correctly identifying either of the three words, of whom 12 misinterpreted *poured* as *pored, porred, pourred, pured, pawled, pought, boiled, report, prepared.* This suggests therefore that it is pronunciation that is a more serious threat to intelligibility and comprehension in the sense in which it affects lexis.

3.4.1.2 The Role of Grammar

Standard grammar matters a great deal for the maintenance of higher intelligibility. That is the reason why non-native learners should be taught to use and conform to standard grammar. However, the wrong order of words and of tenses in a sentence does not necessarily impair intelligibility all the time. Native English listeners may often recover the intended meaning despite the learners' distorted use of grammar. Written tests are not generally expected to use wrong grammar since they are worked out prior to the reading by non-native learners.

No matter how correct the choice of words and the use of grammar might be, pronunciation remains the most crucial factor that often affects the intelligibility and comprehension of non-native speakers of English, which is why it should be properly taught and practised. Most errors of grammar result from incomplete learning of the target language as well as the easy generalization that learners make and transfer from their L1 into English. The effect of wrong perception of grammar on non-native speakers' comprehension can again be supported by Voss's (1984:150) experiment with German university students in their

interpretation of one utterance *the dress is dark suits*. He found that 20 out of 72 instances, i.e.28% failed to correctly perceive either of the five words of the utterance, of which 15 failed to perceive the verbal tense *is* in interpretations such as *the dresses dark suits* or *the dress he stocks suits*. Pronunciation is by far the more serious difficulty to most non-native speakers of English than are vocabulary or grammar.

3.4.1.3 Pronunciation Teaching and Intelligibility

The aim of the teaching of pronunciation is to enable the second language learners to acquire and develop a comfortable pronunciation which will allow them to be understood by other speakers in a variety of contexts and to understand them too. Kenworthy (1987:13) maintains that "the goal of an English teacher should not be a native-like pronunciation. He should rather make sure that the students' speech is understood by others, in other words, that it is intelligible". Pronunciation matters a great deal in learning a target language and in interacting with other speakers, in view of the fact that learners may be lexico-grammatically competent but fail to use this competence successfully in spoken interactions. The teaching of pronunciation involves the development of production skills and processing skills. This gives the teaching of pronunciation to second language learners its 'raison-d'être'. We have already maintained that in order to achieve successful intelligibility and comprehensibility, foreign learners should acquire sufficient lexico-grammar and phonological competence which help them to speak the language as naturally as possible.

The pedagogical implication about pronunciation are that learners should be taught to speak the target language by conforming to its rules. Though the most important issue in intelligibility is that interlocutors get to understand one another no matter how they speak, compliance with the standard forms of pronunciation would nonetheless improve the non-native speakers' efficiency in communication. We agree with Gimson (2001:313) who maintains that severe

problems of communication will be caused by any greater divergence from a natural model. Pronunciation may ease communication and reduce the level of ambiguity and misunderstandings often caused by linguistic interferences, distortions and deviations from different sources. The relevance of pronunciation is strengthened by Abercrombie (1956) cited in Brown (1991:87):

> *It is not possible for practical purposes to teach a foreign language to any type of learner, for any purpose by any methods, without giving some attention to pronunciation.*

He equally maintains that our pronunciation goal is to aim at something close enough to native-like pronunciation which is comfortably intelligible. In Brown's (1991:85) view, intelligibility is a primary consideration in the setting of realistic and realisable pronunciation goals, which should be local goals taking into account the pronunciation problems of the specific group of learners. However, we would like to take this statement slightly differently and state that foreign learners should aim at something higher than 'local', in view of the fact that intelligibility among non-native speakers from the same linguistic background is no guarantee whatsoever of intelligibility with other speakers.

One of the best ways to help non-native speakers to understand other speakers of the same target language is to develop its pronunciation, hence the importance and priority of teaching and learning it correctly. Gimson (2001:296) says:

> *Thus, unless a learner expects to deal with English only in its written forms, there is no escape from the acquisition of at least the rudimentary elements of English pronunciation.*

He dismisses perfection in pronunciation as a necessity, except for professional reasons, and recommended that many learners rather acquire a comfortably intelligible pronunciation. Tench (1997) suggests that a learner's pronunciation must be accurate enough to be intelligible, but not necessarily identical to a native speaker model. The subjects dealt with in this work can neither attain a

native speaker's performance, nor hardly ever engage in direct communication with native speakers on a daily basis. However, with the spread of English around the world, and the unpredictable political instability which often forces people out of their homelands, culture and language, non-native speakers should be trained to speak it and understand it correctly and appropriately without necessarily aiming at perfection.

As already mentioned in (2.9.8), Gimson (2001:299) maintains that the pronunciation of foreign and second language learners is often affected by previous linguistic features with which they come to learn, and which affect the way in which they learn and perform in English:

> *In the spoken form of transmission, interference from indigenous languages may erect a formidable barrier for listeners from other areas where English is spoken. If the interference is such that no attempt is made to do other than use the sound system and prosody of the indigenous language, however effective this may be within the country concerned, communication with native English speakers and with speakers from other countries may break down completely without recourse to written communication.*

With regard to the Rwandan learners of English, it is the level of mismatch between English and Kinyarwanda phonological features as well as phonological interference that account a great deal for their difficulty in the perception and production of the target language features.

In the teaching of pronunciation, Westermann and Ward (1990:5) emphasise the importance of putting a particular focus on the training of a good ear for the target language.

> *A good linguistic ear means the power to discriminate between sounds, the power to hear even small differences, to call up at will sounds previously heard, to compare sounds mentally. The untrained student of a new language hears in terms of his mother tongue, but if he has a good ear he can soon learn to compare the new sounds he hears with those with which he is already familiar and to note similarities and differences. If he is to make any success of*

speaking a language well, he must have his ear trained to recognise the new sounds.

Beebe (1987) believes that it is pronunciation that affects what we communicate and how well we communicate it, and that it should therefore be taught seriously to adults and children. Tench (1981:18) mentions pronunciation as one important aspect of the language which affects understanding.

> *... it (intelligibility) would obviously also be impaired if a word was mispronounced or if a sentence was uttered with odd rhythm and intonation patterns.*

He further maintains that pronunciation is not an optional extra for the language learner, any more than grammar, vocabulary or any other aspect of language is. If a learner's general aim is to talk intelligibly to others in another language, reasonable pronunciation is important.

Pronunciation is systematic and therefore can be taught and learnt. It is special in a certain way and differs from grammar and vocabulary in the sense that it cannot be memorised to the same extent as these other two. It is part of natural spoken language which is only acquired and improved through much practice and use. It should be noted that much of the breakdown in communication between native speakers and non-native speakers comes from the fact that the pronunciation of the former is naturally acquired. It means that the realisation of English speech is quickly articulated with a variety of simplifications with which most of the foreign learners are not familiar. This seems to be one of the causes of the difficulty that NNSs have in understanding native English speakers. Deviant forms of pronunciation by foreign learners are obviously bound to occur. These forms make their intelligibility difficult to the native listeners, because they are not conforming to the norms to which the latter are used. Dickerson (1975:401) explains it plainly.

> *When we listen to foreign students speaking English, we are likely to hear a number of pronunciation errors. If we listen carefully for a*

particular consonant or vowel, we may notice that the students produce a wide variety of sounds, each intended to approximate the same target sound in English.

The analysis of data in Chapters Five and Six will attempt to show that deviant forms from segmentals and supra-segmentals of English, may affect the degree of intelligibility and comprehension achieved by Rwandan learners of English. The mastery of sounds and forms of English by foreign learners as closely as possible to the performance of the native speaker of English is an aim teachers should consider. Fries'(1945:3) contribution to the understanding of the priority attributed to the mastery of sounds is quite unambiguous.

In learning a new language then, the chief problem is not at first that of learning vocabulary items, it is first the mastery of the sound system, to understand the stream of speech, to learn the distinctive sound features and to approximate their production.

The obvious impact of wrong pronunciation on the listener's understanding is explained by Wilkins (1972) according to whom "imperfect utterance disturbs the hearer and the inability to master a phonetic distinction leads to misinterpretation and the ensuing communication actually becomes more difficult".

Many foreign learners know words and can write them, but they fail either to pronounce them correctly or to perceive them accurately. Intelligibility and comprehensibility are concerned with both the receiving and the understanding of the message. Rivers (1981) upholds the idea that the use of correct sounds eases understanding and that "often, a foreigner has great difficulty in speaking understandably not because of his lack of knowledge of the language, but because the sounds he produces sound peculiar to English speakers".

Something should be said about the role played by 'context' in relation to intelligibility and comprehensibility. It is true that a wrong pronunciation of a word in an utterance may not impede complete meaning, because there are other clues and the context of speech which help to recover the intended meaning.

However, context should not always be used as a pretext to justify or condone deviant pronunciation by non-native speakers. A wrong pronunciation of one word in a sentence can be totally confusing for a listener. One concrete example may help to explain this. An advanced Rwandan speaker of English enquiring about a friend's telephone number asked a native speaker : *Do you know Joan's telephone number* ? pronouncing *Joan* (a girl's name) as *John* (a boy's name). The lack of correct realisation of the contrastive / əʊ /- / ɒ / in these two names made it difficult for the native speaker to sort out who it was until further clarification was provided. The reason for such pronunciation seems to be that the Kinyarwanda language system does not have /əʊ-ɒ / sound contrast, so that learners from that background fail to make a clear distinction between *Joan/John, boat/bought, road/rod*, which they realise with the same Kinyarwanda vowel quality / o /. Tench (1981) uses another example of contrast between *collar* vs *colour* to show how in some cases even context ambiguity cannot be always compensated through the foreign learner's pronunciation, in saying /kɒlə(r)/-/kʌlə(r) / *of your shirt* and using one for another (p.18).

Rwandan learners as most non-native speakers, have problems with English fricative consonants /θ, ð / known universally to be troublesome because they do not occur in many other languages and therefore are extremely resistant to remedial practice. It is the teachers' task to help learners who use deviant forms of pronunciation to realise these to gradually align their pronunciation with the correct native forms. Kenworthy (1987:17) uses a clear example to demonstrate how the substitution of one phoneme by another can create confusion and miscommunication, for those learners who use / θ / for / s / by saying that there is a huge difference between *my friend is sick* and *my friend is thick*. Such deviations are expected to be further substantiated by the results from the analysis of data in Chapter Five and Six.

One further point that needs to be emphasised is that wrong word and sentence stress affect the rhythm and misleads a listener in recognising the words

altogether, even if the vowels and consonants were correctly used. The tendency to pronounce every single word, stressed and unstressed alike, even when not necessary in English, is evidence of transfer from particular languages into English. Pronouncing /ˈkʌmftəbl / and /ˈkɒmplɪkeɪt / with a wrong stress placement as / komforuˈtebole / and /kompuliˈkete / even though they cannot be directly mistaken for anything else, sound unnatural to native English speakers. It shows the subjects' strong reliance on French in stressing words in their pronunciation of English, as demonstrated in the data analysis in Chapter Five (see word-list). Similar deviations were however also noticed in Nigerian speakers of English without any French background. Ufomata (1990) reports the wrong stress placement of Nigerians on words like *maˈdam, triˈbalism, mainˈtenance*...to suggest that such deviations from English are related to the syllable timed rhythm of some African languages.

For the sake of maintaining higher intelligibility and developing sufficient comprehension of other speakers of English, pronunciation needs to be accurately taught to second language learners of English in accordance with the widely known models. Kenworthy (1987:13) points out that:

> *When we set intelligibility as our teaching aim, it appears that we are aiming for something "close enough". Although the L2 learner does not make exactly the same sound or use the exact feature of linkage or stress, it is possible for the listener to match the sound heard with the sound a native speaker would use without too much difficulty. So, what matters is 'counts of sameness'.*

For Tench (1981:19), the degree of intelligibility that any learner should aim for depends to a large extent on who their expected audience is and on their listener's threshold of intelligibility and tolerance. He explains the listener's threshold of intelligibility from a classroom context. That is, the teacher may have a low threshold of intelligibility because he knows typical mistakes a particular learner is bound to make and perhaps too because of his experience of teaching many other people, he (the teacher) can often make out what the learner is trying

to say. In other words, the learner does not have to reach a very high level for him to cross the teacher's low threshold of intelligibility.

The other level is a high threshold intelligibility found with listeners who have little experience of dealing with foreign learners and who consequently may have a high threshold of intelligibility. In this case the learner is expected to reach a high standard in order to cross it. On the whole, if a person can understand a speaker with little or no conscious effort, then he has achieved the comfortably intelligible pronunciation suggested by Abercrombie. Fujii (1992:8) claims that intelligibility is hearer-based, and that there are two factors to account for, i.e the listener's threshold of intelligibility and the listener's tolerance in order to have comfortable communication with non-native speakers.

> *if on the one hand a listener is very familiar with a non-native speaker's English, he/she will be able to understand the utterance of the non-native speaker with exotic pronunciation, rhythm and intonation and the proposition with a partial knowledge of the vocabulary and syntax of the target language. On the other hand, if a listener is not familiar with a non-native speaker of English, he/she will feel frustrated and irritated.*

The Rwandan learners' pronunciation of English is the result of an inefficient teaching system of English which has failed to give due weight to the teaching of pronunciation as a separate yet integrated part of the language as a whole. The main reason seems to be the fact that the teachers themselves were ill-taught and therefore unprepared to teach the phonology and phonetics of English. The role played by a trained teacher (model) in that area of the language is crucial to the learner's success in the target language competence and performance.

The relationship between Kinyarwanda and Kiswahili is also going to affect the Rwandan learners' pronunciation of English. It is in particular very likely that many Rwandan learners will speak English with an East African accent, because it is the nearest they can get access to. This particular accent is itself influenced

by the vowel system of many native local accents as researched and described in Wells' (1982:127) standard lexical sets. The proposed table (next) compares RP, which is the model we support for foreign learners to follow thus far, with East African pronunciation of English vowels which are reproduced by Sharman (1989:64-65). The 4th column is the writer's own interpretation of how Kinyarwanda vowels would be pronounced in comparison with either Kiswahili or English RP.

Table 3.2 Comparison between RP, EAE (East African English) and Kinyarwanda vowels

Key words	RP	EAE	Kinya
Kit	ɪ	i	i
Dress	ɛ	ɛ	e
Trap	æ	a	a
Lot	ɒ	ɒ,ɔ	o
Strut	ʌ	ʌ	a
Foot	ʊ	ʊ	u
Bath	ɑː	a	a
Cloth	ɒ	ɒ,ɔ	o
Nurse	ɜː	e,a	a,e
Fleece	iː	i	i
Face	eɪ	e	e
Palm	ɑː	ɑ	a
Thought	ɔː	ɔ,o	o
Goat	əʊ	oʊ,ɔ	o
Goose	uː	u	u
Price	ɑɪ	ɑi	a.i
Choice	ɔɪ	ɔi	o.i
Mouth	ɑʊ	ɑu	a.u
Near	ɪə	ɪə	i.a
Square	ɛə	eə,ɛə	e.a
Start	ɑː	a,ɑ	a
North	ɔː	ɔ	o
Force	ɔː	ɔ	o
Cure	ʊə	ʊə	u.a
Happy	ɪ	i	i
Letter	ə	ɑ	a,e
Comma	ə	ɑ	a

It emerges from this table that the contrast /ɪ /-/ iː / in English is represented by one vowel sound [i] in both Kinyarwanda and East African English. This will explain why the learners of English from such a background do not show any perceived auditory difference between *ship, sick, live* and *sheep, seek*, and *leave.* Words containing such a contrast are numerous in English, hence the need to teach it properly, because a distortion or deviation in vowel pronunciation may suffice to confuse a listener. For example, the case of an East African or Rwandan learner pronouncing / bɜːd / as [badi, bedi]; / wɜːk / as [waki, weki, woki] and /nɜːs / as [nasi, nesi] is evidence of failure in producing the vowel / ɜː / correctly.

The influence of Kinyarwarwanda vowels on subsequent learnt languages is evidenced in the way in which its speakers deal with the English vowel [ɜː] which occurs in French as [œ] as in [bœr] 'butter', [œr] 'hour'. Most Kinyarwanda speakers substitute French [œ] with Kinyarwanda [e], to such an extent that the contrast between *peur* 'fear' and *père* 'father' is lost. Also, the lack of distinction between / əʊ /-/ ɔː / as in *low* and *law* by Rwandan learners of English is yet a further evidence of the difficulty these vowels represent in their pronunciation of English, and will likely cause some degree of unintelligibility and incomprehension.

Similar lack of vowel distinction may however be generalised among African speakers of English from a Bantu background. For example, Pongweni (1990) explained the difficulty that Shona speakers have with English vowels by saying that the Shona vowel [i] accounted for English vowels [i]-[ɪ]; [e] for [e] [æ] [ɜː]; [ɑ] for [ʌ][ɑː][ə]; [o] for [ɒ][ɔː][əʊ]; [u] for [ʊ][uː]. Bamgbose (1982) acknowledged similar problems among many Nigerian speakers of English.

All the examples we have given seem to converge into one major pedagogical implication. It is that of the importance and relevance of the teaching of correct forms of English which would contribute to improved intelligibility and

comprehensibility of non-native learners. The teaching of pronunciation is meant to help learners to speak the target language as correctly and understandably as possible according to the native speakers' standard. We reckon nonetheless that this goal has been often unattained in non-native teaching situations, mainly due to evident problems such as the lack of competently trained teachers, poor exposure to the target language for practice, and the dominance of other languages over the target language.

For any improvement in English in non-native contexts to occur, it is therefore relevant that teachers themselves are trained in the phonology and phonetics of English, so as to enable them to help their own students more efficiently. They should be trained to teach them to turn classroom language into communicative language as if it were in real life contexts.

There is need for learners to be taught according to a native model which is likely to help them to understand both other non-native speakers and native speakers comfortably and to be understood without necessarily sounding native-like. In the light of the growing role of English as an international language serving more non-native speakers than native speakers (Crystal 1997, Jenkins 2000), there is a great need to look for ways and materials to improve the teaching of pronunciation as a key factor to facilitate communication with other speakers of English world wide.

3.4.2 Non Linguistic Factors

3.4.2.1 The Speaker and Listener

The outcome of an interaction is generally affected by who the speaker and the listener are. If the speaker is a native speaker, a non-native listener has to be extremely attentive at all levels of the language and most particularly to pronunciation. Native speakers are often perceived by non-native speakers as being extremely quick in their speech, because of the inconsistency in English

between pronunciation and orthography. That is what the sentence reading task in Chapters Five and Six will try to explore. We presume that most of the sentences from chapter six would have been understood better had the reading been slower, since they contain no particularly difficult words beyond the learners' lexical competence. The inability to successfully process and understand on behalf of the NNS results from a lack of aural discrimination teaching and poor aural training. As we saw earlier, it is incorrect pronunciation that represents the threat to intelligibility and comprehension of foreign learners of English. Kenworthy (1987) confirms that "if the foreign speaker substitutes one sound of feature of pronunciation for another, and the result is that the listener hears a different word or phrase from the one the speaker was aiming to say, we say that the foreigner's speech is unintelligible" (p.13).

The descriptive and comparative analysis between Kinyarwanda and English in Chapter Four explains in great detail the cause of this lack of complete and accurate realisation of English features, most of which are new to a Rwandan learner of English. However, as Tench (1981) says, not all mispronunciations lead necessarily to a loss of intelligibility. He explains that although a word may be mispronounced, there may be enough clues in the linguistic context and in the situation to compensate. If someone says 'I sink so' without there being any reference to 'sinking' in the conversation up to that point, or in the situation, then we would not hesitate to interpret it as meaning 'I think so'.

The subjects investigated in this study are used to a word by word pronunciation strategy, which is evidence that they are not taught according to any native English model. The way in which they read or speak therefore is a direct reflection of the way in which they listen. Their reading and speech display the use of strong forms on almost every word, habits that are deeply engraved in their pronunciation and have become difficult to change. This may affect the learners' intelligibility in the light of Gimson's (2001) view that "if easy intelligibility is to be achieved, it is extremely important to give words their correct accentual

pattern and characteristic rhythm". Furthermore, the results we obtained from receptive sentence analysis seem to contradict Kenworthy's (1987:14) statement that "more often than not, when we feel a speaker is speaking too fast, it is not the speed that is causing difficulties, but the fact that we cannot seem to pick out the most important parts, the crucial words, from the less important ones".

It is true that in listening to the native pronunciation of English, the foreign learner does not seem to have enough time to listen and piece together different parts of a sentence. Therefore, speed of delivery is a significant factor that causes failure in most non-native listeners' comprehension of native English speakers.

3.4.2.2 Familiarity with the Speaker's Accent

A listener's familiarity with the speaker's accent and pronunciation facilitates or obstructs intelligibility. Gass and Varonis (1984) maintain that familiarity with the topic, the non-native speaker's speech, a particular accent and a particular speaker, all have an effect on intelligibility.

The first encounter between people from different linguistic backgrounds, either as NNS-NNS or NS-NNS, is always challenging and requires adaptation. As contact and interaction proceed, the interactors find that they get acquainted to one another's accent and voice, which makes communication much easier. There is a greater probability that intelligibility would be eased if a native speaker of English was familiar with either a second or foreign learner's speech patterns which are a reflection of their mother tongues. That is the case for example of native English speakers (British/American) who have taught in Africa and have become used to African language sounds. They can easily, and better, understand African pronunciation of English than their counterparts who have not.

Bokamba (1992) speaking about Nigerian English and African English in general comments that sentences reflect known characteristics of a group of African

languages, and these are not easy to detect. In certain cases, however, the embedding of an African language structure into English is accomplished with such sophistication that it becomes difficult, if not altogether impossible to detect it unless one is familiar with the speaker's native language. Kenworthy (1987) gives a similar example, while speaking of a German learner's pronunciation of English. If a native speaker of English knows that German learners often substitute /v/ for /w/, he will readily understand what is meant by, for instance, *'I vant to buy that vatch'*, meaning *'I want to buy that watch'*. She finds that people find listening to the English of their fellow countrymen easier than otherwise. She comments that French speakers of English will find other French speakers of English easier to understand than the English or Spanish speakers. But the familiarity we are concerned with is that between native speakers and non-native speakers of English.

Perren's (1956) comments about African pronunciation of English, quoted in Sharman (1989:78) are relevant here. He maintains that the variability of vowel length, as well as their quality may affect intelligibility and the most important factor arises from an attempt to pronounce English in open syllables.

> *The unnaturalness of African pronunciation of English to English ears is often more due to the pronunciation of words in open syllables than to other factors, such as the wrong sound or wrong intonation.*

These few comments have highlighted, we hope, how familiarity with non-native speakers' pronunciation affects the level of the listener's understanding. That is why pronunciation needs to be taught and learnt accurately so that learners will not have to be always accommodated while interacting. In practical terms, this implies a rethinking of the teaching strategies and the teachers' training to meet the learners' needs for improved intelligibility and comprehension.

3.4.2.3 Familiarity with the Topic and Context

The knowledge of the topic may often help to easily understand what could be lost otherwise. In Smith's experiment on intelligibility among different non-native varieties, as read in Ahn (1997:55), it was found that being familiar with the topic and the speech variety affected the subjects' perception of how well they had understood, and that language proficiency influenced intelligibility, comprehensibility and interpretability. In his view, the greater the familiarity a non-native speaker has with a variety of English, the more likely he/she will understand and be understood by members of that speech community.

Topic and context may represent a shared knowledge which interlocutors have between themselves. Littlewood (1981), while commenting on the fact that communication is a two sided process, maintains that as people speak, they are constantly estimating the hearer's knowledge and assumption in order to select language that will be interpreted in accordance with their intended meaning. He uses an example of a hostess inviting her guests to come to the table by saying *ready* ? to explain the effect of shared knowledge between the speaker and the listener. The word '*ready*' in this context refers to some knowledge the guests have that some food was being prepared for them. Had they not known the hostess has prepared something to eat, the word 'ready' would be meaningless. Otherwise she would have to use more elaborate language and polite forms of invitation like: *would you like to come and have something to eat?.*

The nature of data of our investigation did not provide any context, particularly with the word lists. Generally speaking, a high rate of words and sentences were missed or misunderstood, not because the learners did not know them (competence), but simply because they could not identify them because of their pronunciation.

But it should also be said that words that learners do not often encounter and use much in their interaction may cause intelligibility and comprehension problems. For example, the learners we tested may have little experience of the use of *stump, bug, ridge, hamper, bowl* in their ordinary speech, which explains why the rate of failure of comprehension of these words was high.

Familiarity with the topic plays much in favour of the native speakers of the target language listening to non-native speakers, due to their ability to anticipate and understand beforehand what the foreign learner may be attempting to express.

3.4.2.4 Attitudes towards the Speaker

Attitude is a very subjective issue, which can be defined more generally to include interest and motivation of the learner. The degree of the learners' interest in the speaker, i.e. whether they like him/her or not and what he/she says may contribute to how much they understand. However attitude alone without competence is likely to do little in helping non-native learners to make progress in learning a target language and being successful in communication. Though Rwandan learners have a high and positive attitude towards English and its speakers (Chapter 2), its pronunciation remains the major obstacle to their level of intelligibility and comprehension. More about attitude and its effect on success in language learning is explained in section 2.9.4.2 of this work.

3.4.2.5 Physical Fatigue

Another important factor no less common in affecting communication, though much less talked about, is physical tiredness. While learning, concentration for comprehension largely depends on the degree of physical and mental alertness of the brain which affects the whole body, and the extent of what the brain can process. Therefore, fatigue can seriously affect a learner's listening, retention and performance and so is pedagogically significant. This factor however was not controlled for in our study as having affected neither the learners nor the judges

in performing their tasks. This limitation will be acknowledged and explained in Chapter 7.

3.4.2.6 External Noise

The impact of noise is often overlooked, despite its considerable negative effect on the level of intelligibility and comprehensibility. Noise disturbs listening, concentration and thus understanding. The damage caused by noise is more serious when non-native speakers are listening to native speakers whose accent and pronunciation can be a great barrier to the level of comprehension of the former. Noise aggravates the problem of listening and comprehension further for non-native learners of the target language who often are not proficient in its phonology.

According to Tiffen (1974:53), noise may be regarded as any form of disturbance or interference which helps to obscure the intelligibility of a message sent by a speaker. Lane (1963) found that under conditions of noise, the intelligibility loss in foreign accented speech is 55 percent to native speakers compared with 63 percent loss when non-native speakers are at the receiving end (James 1998:213). Voss (1984:17) states that deficiency in the acoustic component (noise) can affect the learner's perception level. With reference to our study, noise may have affected the quality of the recorded data for both the speakers and listeners, especially for the subjects in Hope International School and Kabiria School. Hope International school is located opposite Wilson airport and on one of the busiest roads in the outskirts of Nairobi. In Kabiria School, the noise came from neighbouring classes. The classrooms have such a poor structure and acoustic condition that students from one classroom can easily follow what is going on in neighbouring classrooms. It therefore can be assumed that in addition to the learners' limited pronunciation skills, noise may have affected their level of comprehension of what was read. The limitation to use control groups as a way of assessing the impact of noise on either the subjects or the native speaker judges will be accounted for in Chapter 7.

3.5 Foreign Accent and Intelligibility

With regard to pronunciation, it is believed that if L2 acquisition took place after puberty, there will be a marked transfer of accent and intonation from the learners' L1 into L2 generally called' foreign accent'. Moreover, in case L1 and L2 are very different, a heavier accent would be expected on the basis that there is more to be mastered than if the languages were similar (Major 1987). In foreign language contexts and particularly where learners have been exposed to more than one language and non standard accent of English, the accent they acquire and develop affects to a great extent the level of their intelligibility and comprehension in the target language.

According to Flege (1995:234), foreign accent can be explained in terms of neurological maturation that might reduce neural plasticity (Penfield 1965, Lenneberg 1967), leading to a diminished ability to add or modify sensorimotor programs for producing sounds in an L2. He maintains that there are however some other reasons that have been advanced towards explaining foreign accent such as inaccurate perception of sounds in an L2; inadequate phonetic input; insufficient motivation; psychological reasons for learners wanting to retain their own accent; and the establishment of incorrect habits in early stages of L2 learning.

We have already explained the linguistic complexity of Rwanda, where English was learnt and taught against a background of Kinyarwanda, French and Kiswahili. There is a commonly held view that foreign accent is due to the interference of the learner's first language. This is true for non-native subjects learning a target language as it is for native English speakers learning other languages who sound as though they are producing their native language when speaking another language. For example, European missionaries going to work in Africa learn African languages well, but still speak them with their own native languages accent. This has led us to argue that there is an evident and

consistent transfer of Kinyarwanda and French phonological features into English, following the theory that interference will be more conspicuous where the learners' L1 phonological system markedly differs from the target language. Such a transfer is manifest in both the segmentals and supra-segmentals of English, as we shall describe in Chapter Four.

Tiffen (1968:103) finds that most common faults of African speakers of English are due to the lack of distinction between long/short vowels; excessive nasalization and faulty intonation and stress. He most particularly emphasises that communication often breaks down, not so much from distorted vowels or diphthongs, but because of divergent stress and rhythm patterns caused by interference from the first language. The influence of transfer on interlanguage phonology has been acknowledged by Ioup (1984) and corroborated by Jenkins (2000:120) by stating that language transfer process in all its complexity plays a crucial role in interlanguage phonology.

However, a foreign accent may not necessarily obstruct intelligibility, if Gimson's (2001) type of performance target of minimum general intelligibility is taken into account. In their experiment on Mandarin speakers of English, Munro and Derwing (1995) find that although strength of foreign accent is correlated with perceived comprehensibility and intelligibility, a strong foreign accent does not necessarily result in reduced intelligibility or comprehensibility of L2 speech (Leather 1999:305). For example, despite the obvious traces of their mother tongue(s) in their speech, many educated African speakers of English are highly intelligible in English and do not have any major problem understanding native English speakers.

While totally acknowledging the value of the above claim, we nevertheless maintain that foreign learners of English would stand better chances of reaching higher intelligibility and comprehension either among themselves as NNSs from different mother tongues or with NS of the target language, if they were trained

according to commonly recognised models of pronunciation as described in 2.9.8. The importance and relevance of following a particular model of pronunciation has been explained in Chapter Two (2.12).

Though a foreign accent may not necessarily obstruct intelligibility, it may however cause undesirable effects for its users. Flege (1995:233) mentions a few, such as (1) making non-natives difficult to understand; (2) causing listeners to misjudge a non-native speaker's affective state; (3) or provoking negative personal evaluations, either as the result of the extra effort a listener must expend in order to understand, or by evoking negative group stereotypes. On the one hand we agree that a native-like accent is not necessary for intelligibility in cases where English is used for international purposes (Jenkins, 2000:207). On the other hand, the lack of use of phonological features pertaining to English models may be associated with the negative or the low status of the non-native speaker. Not only that, it may also contribute to reinforcing negative image and attitude from native speakers. In Jenkins (2000:198) it has been reported that in the USA, there have been examples which illustrate that candidates for jobs whose accent was not standard, were denied employment.

Furthermore, failure by non-native speakers to understand what a native speaker says, creates a psychological negative complex of low achievement. The mastery and correct use of native model features of pronunciation by non-native speakers help to lessen the level of misunderstandings, as well as helping them to perceive the native speakers' pronunciation easily. Contrary to the belief held by some that speaking like a native speaker, which is nonetheless idealistic, contributes to the non-native speaker's loss of identity, the writer would argue that many non-native learners would find it rather as a matter of personal satisfaction, pride and confidence that makes them feel they can speak without fear of being ridiculed or sidelined. For this reason, the belief that many features of the native models are irrelevant to non-native speakers, can be challenged for pedagogical purposes in the light of what I have just pointed out, particularly

today when English has become more international than any other language for communicative purposes. The issue of using a target language correctly and preserving a speaker's identity at the same time is an interesting topic that needs further research.

3.6 Testing Intelligibility

A pronunciation test should measure intelligibility rather than accuracy as stated earlier in 3.2.4. Flege (1984) maintains that "intelligibility" is a test of the existence of a categorical distinction. The consistent production of a distinction between words in the L2 containing the contrast of interest: "ray" versus "lay", that is recognizable to native speakers constitutes important evidence that an L2 learner possesses knowledge of a categorical distinction. Brown (1994:252) defines testing as a method of measuring a person's ability or knowledge in a given area. In measuring ability in language learning, there is a need to understand who the testees are and their linguistic background which may determine their general ability in a language test. In spoken language, performance and proficiency represent knowledge and competence that affect intelligibility in the target language.

Testing is pedagogically important as it informs the teacher about the learners' progress in learning, as well as revealing particular problems that the teaching should seek to address. Assessing learners' oral skills i.e. their productive and receptive performance is an extremely complex and highly subjective exercise. It could be said that what intelligibility represents for one person might be unintelligible for another. Munro and Derwing (1995:289) define intelligibility as the extent to which a speaker's message is actually understood by a listener, but maintain that there is no universally accepted way of assessing it. That seems also to be why it is equally subjective to set a speech target/model by which it should be measured.

However, an oral test can imply some degree of objectivity, in as much as it represents either the learners' actual achievement in comparison with the expected target norms or the extent of their comprehension of the message uttered by a speaker. Testing involves recognition and competence at different levels of the language, from the phoneme to the word and the sentence.

A test of the intelligibility and comprehension of the phonological competence and performance of a group of Rwandan learners of English was undertaken through recorded data in Chapter Five and Six. Gimson (2001:319) sets criteria for a test of intelligibility in the following terms:

> *A real assessment must be based on the intelligibility and acceptability of learners' performance, in a situation of free discourse with a native speaker, when many of the so-called 'errors' not being perceived by the native listener may be regarded as trivial and ignored.*

This statement however sounds idealistic in view of the fact that in foreign contexts interaction between non-native speakers of English is higher than that between these and native English speakers. That seems in a way to explain why we have resorted to the most obvious alternative way of testing the learners involved in this investigation, i.e. by reading aloud and by listening to recorded tapes as a way of measuring their intelligibility and comprehension.

The data from Chapter Five and Six consisted of the reading aloud and the listening of words and sentences by both the non-native speakers and native speakers. Productively, learners were given isolated words and sentences to read aloud which we thought contained pronunciation problems which were likely to affect their intelligibility. These include the lack of discrimination between long and short vowels, consonants and consonant clusters, stress, connected speech features including assimilation, weak forms and diverse forms of simplifications peculiar to English that often affect its rhythm.

Though foreign learners may be understood by native speakers, despite their deviant pronunciation, since accommodation and contexts give the listener clues to intended meaning, it does not automatically follow that the same learners will be able to understand a native English speaker reading either isolated words or sentences aloud.

In applying this to our investigation, the subjects were required to write down as much as they could of what they heard from a native speaker reading aloud words and sentences. It is with receptive skills that 'memory span' plays a significant role. In perceptive testing whether with groups of individual words or with sentences, the ability of the listener to retain what he/she has heard is of crucial importance as it helps to reconstruct and then reproduce the speaker's message. Most of the time, the level of retention is affected by the familiarity to the speaker's pronunciation and the speed of delivery more than by the lexico-grammar competence itself.

We shall endeavour to demonstrate that the suprasegmentals represent a significant difficulty to the foreign learners' comprehension when listening to native English speakers, particularly in cases where there are marked differences between rhythm, stress-timing and word-sentence accent of English and the learner's L1. Moreover, connected speech features such as simplifications, contraction, assimilation, elision and linking words, as well as correct stress placement that are natural in native speech, are believed to be an area of considerable pronunciation difficulty for many foreign learners, and affect their intelligibility and comprehension in English. It is hoped that the results of the tests we have used give sufficient evidence that the investigated learners' most serious problems of intelligibility and comprehension come from phonological (pronunciation) sources.

The norm to measure intelligibility in our study follows Gimson's (1989) suggested list of segmental inventory of English for minimum general intelligibility.

RP	MGI	RP	MGI
iː	as RP	eɪ	→[eː]
I	as RP	əʊ	→[oː]
e	→[ɛ]	aɪ	as RP
æ	→[a]	aʊ	as RP
aː	→/aː / or / aːr /*	ɔɪ	as RP
ɒ	as RP	ɪə	→/iːə /or /iːr /*
ʊ	as RP	eə	→ /eɪr /*
u	as RP	ʊə	→ /uːə /or / uːr /*
ʌ	→ / ə /		
ɜː	→ /ɜːr /*	* when orthographic<r> follows the vowel.	
ə	as RP		
ŋ	→ [ŋg]		
l	always clear	word stress	as RP
r	→ [ɾ]	rhythm	as RP
l̩, n̩	→ / əl / /ən /	intonation	as RP
t, d	→ [t , d]	assimilation	ignored
		elision	ignored

Table 3.2 Gimson's minimum general intelligibility(MGI)
(based on Tench,1997)

In spoken communication, linguistic competence and performance of foreign learners is only classroom limited and tested. In that sense, it goes only half-way towards fulfilling the actual functions that a language is communicatively purported to carry out. Ideally, and contrary to classroom controlled and artificial

contexts, daily interactions would seem to represent the actual test of intelligibility and comprehension. Intelligibility and comprehension are successfully achieved to the extent non-native speakers are able to make themselves understood by using correct English forms on the one hand, and to the extent they understand and respond appropriately to the speaker's utterance on the other. Tiffen (1974:30) finds that in intelligibility testing, the ability of the listener to retain what he has heard is of crucial importance. In most comprehension tests, failure to comprehend is marked by gaps, empty space, and incomplete interpretations by the non-native listeners. It is hoped that the analysis of the data of receptive testing will corroborate the above comment.

Although interaction between non-native speakers and native English speakers in foreign contexts does not occur on a daily basis, it is nonetheless a rewarding exercise to train non-native learners to such potential encounters as spoken English is increasingly heard in a variety of contexts world wide today.

3.7 Conclusion

This chapter aimed at explaining the concept, the nature and the forms of intelligibility. Communication was explained as a two-way process involving productive and receptive skills. The relationship between intelligibility and the four language skills was explained with specific focus on the primacy of the spoken skills and their direct effect on communication. We also attempted to look into the extent to which linguistic and non linguistic factors affect intelligibility. We finally considered the relevance of testing intelligibility with a view to emphasize its pedagogical implications in terms of diagnosing, grading, evaluating and treating the learners' errors that impede their intelligibility and comprehension. The study of the issue of intelligibility has raised significant pedagogical implications. While teaching English, the teacher should always ensure that the learners' receptive abilities are accurately developed, which is the basis of strengthening their phonological productive competence and that they are quite regularly tested on that basis.

Productively, a teacher can devise activities that represent true life situations and train students to perform, while he monitors their pronunciation and offers help and correction where needed. Receptively, a strategy greatly advocated towards developing the learners' perceptual competence is to acquaint them with other speakers' accents (NS) as well as other non-native speakers from different L1, by regular use of recorded tapes in places where native speakers are not available to serve as models. Recorded materials train learners' ears to discriminate sounds and to get used to rhythm, stress, intonation and diverse simplification forms for which English is notorious. Teachers can also do a great deal to improve the learners' receptive competence by using frequent dictation exercises, which are thought to be an effective way of increasing the learners' receptive skills, retention and comprehension. Indeed, people only meaningfully write what they can make sense of, or perceive.

The phonological productive and perceptive competence of Rwandan learners in English is hindered by deviant forms of pronunciation most of which come from marked differences between Kinyarwanda and English phonological systems, which is the subject of the next chapter.

Chapter Four

Kinyarwanda and English Contrastive Phonology

4.0 Introduction

The present chapter has drawn insights from studies on the Kinyarwanda language by Rwandan linguists, teachers as well as other researchers, native as well as non-native, including Overdulve (1975), Kimenyi (1979, 1980), Kayoboke (1980), Hyman (1980), Cox & Gakuba (1980), Jacob (1983), Furere & Rialland (1985), Friebel (1986), Rutayisire (1986) and Ruzindana (1990). Our approach to English segmentals and supra- segmentals was mostly inspired by Roach (2000) and Gimson (2001). While much has been written about Kinyarwanda syntax and morphology, its phonology has not received the same amount of research. A descriptive comparative overview of the phonological sounds and features of Kinyarwanda and English, is believed to be one way of reliably pinpointing the areas of difficulty for the Rwandan learners of English.

The main aim of this chapter is present a contrastive analysis of the phonological systems of Kinyarwanda and English, in order to find out points of differences and similarities and to identify those English sounds and features that are most difficult for Rwandan learners of English.

Within the framework of the contrastive analysis hypothesis, it is predicted that the learners' mother tongue plays a considerable part in interfering with the sounds of the target language being acquired. By comparing the learners' mother tongue and the target language, it is believed that we can predict the errors that are more likely to occur in the use of the target language. We are therefore in a position to maintain that a mismatch in quantity and in quality between Kinyarwanda and English phonological systems in terms of vowels, consonants, stress and rhythm will account a great deal for the difficulty that learners from a linguistically complex background (Chapter 1) encounter with while learning English.

In addition to the obvious influence of Kinyarwanda, the influence of French and Kiswahili in the learners' interlanguage in English can not be

underestimated, since these languages are used more considerably than English.

4.1 The orthography of Kinyarwanda

4.1.1 Kinyarwanda alphabet

It is relevant and appropriate to introduce the orthography in as much as it strongly affects the Rwandan speakers' pronunciation of subsequent languages and of English in particular. Kinyarwanda is a written as well as a spoken language. The first written texts in Kinyarwanda are believed to be the translation of the Bible and other related texts by the missionaries. One of the earliest known publications about Kinyarwanda, *Worterbuch Deutsch-Kinya-rwanda* by Dufays, goes back to 1912 according to Kimenyi (1978). Kinyarwanda orthography follows the Roman alphabet. Kinyarwanda orthography is basically phonemic, that is, each letter represents only one sound in all contexts. Kinyarwanda uses five oral vowels / i, e, a, o, u / which can be either shortened or lengthened with different levels of tones. Tone and vowel length do not appear in the actual written representation of words and sentences. Rwandan learners of English will tend to pronounce the vowels represented in the spelling of a word according to the orthographic symbols of Kinyarwanda which are quite phonetic in the representation of vowels. Kinyarwanda speakers are encouraged to master the correspondence between spelling and pronunciation of English, since they are often led into errors of pronunciation by relying on orthography. The consistency of Kinyarwanda vowels appears in the fact that for example the letters <o,e,a> always represent [o],[e], [a] in comparison with English in which the letter <o> can have different values in pronunciation as in *come* [ʌ], *comb* [əʊ], *comic* [ɒ] or *compassion* [ə]. Kinyarwanda also uses a set of 25 consonant phonemes, out of which a combination of at least 64 consonant clusters can be made (Ruzindana 1990). Kinyarwanda vowels and consonants appear in the following table. In the description of Kinyarwanda system, we shall use / / for phonemes, [ ] for phonetic realisation, { } for underlying morphological structures, and < > for spelling forms.

Table 4.1 Kinyarwanda Vowels and Consonants

	Letter	Phonemic value	Allophonic value	Examples
1	a	/ a / / ɑ : /	[a] [aa] [ɑ:]	/ gutaka / < gutaka > 'call for help' / gutaaka / < gutaka > ' to decorate'
2	b	/ β /	[β] [b]	/ abana / < abana > 'children' / mbona / < mbona > 'I see '
3	C	/ tʃ /	[tʃ]	/ gutʃana / < gucana > 'to lit a fire '
4	cy	/ c / ~ / tɕ /	[c] [tɕ]	/ gucuura / < gucyura > 'take home'
5	d	/ d /	[d]	/ kudoda / < kudoda > 'to sew '
6	e	/ e / / e: /	[e] [ee] [e:]	/ guhera / < guhera > 'to grind ' / guheera / <guhera> 'to start from '
7	f	/ f /	[f]	/ ifaranga / < ifaranga> 'a coin '
8	g	/ g /	[g]	/ amaguru / < amaguru> 'legs'
9	h	/ h /	[h]	/ hano / < hano > 'here '
10	i	/ i / / i: /	[i] [ii] [i :]	/ gusiba / < gusiba > 'to erase ' / gusiiba / < gusiba > 'to be absent '
11	J	/ ʒ /	[ʒ]	/ iʒuru / < ijuru > 'heaven' , 'sky'
12	Jy	/ ɟ / ~ / ʑ /	[ɟ] ~ [ʑ]	/ kuɟa / < kujya > ' to go to '
13	k	/ k /	[k^h]	/ gukura / < gukura > ' to grow '
14	l	/ r /	[l]	/ kurira / < kurira > ' to cry'
15	m	/ m /	[m]	/ mama / <mama > ' mother'
16	n	/ n /	[n]	/ inanasi / < inanasi > 'pine apple'
17	ny	/ ɲ /	[ɲ]	/ iɲaɲa / < inyanya > ' tomatoes '
18	O	/ o / / o : /	[o] [oo] [o :]	/ isoko / < isoko > ' market' / isooko / < isoko > ' fountain '
19	p	/ p /	/ p^h /	/ umupira / < umupira > 'a ball'
20	pf	/ pf /	[pf]	/ amapfa / < amapfa > ' famine '

21	r	/ r /	[r]	/ kurora / < kurora > ' to see '
22	s	/ s /	[s]	/ gusasa / < gusasa > ' prepare bed'
23	sh	/ ʃ /	[ʃ]	/ iʃami / < ishami > ' a branch '
24	shy	/ ç /	[ç]	/ içamba / < ishyamba > ' forest '
25	t	/ t /	[t]	/ gutata / < gutata > ' to spy '
26	ts	/ ts /	[ts]	/ umusatsi / < umusatsi > ' hair '
27	u	/ u / / u: /	[u] [uu] [u:]	/ gukura / < gukura > ' to grow ' / gukuura / < gukura > ' to take from '
28	v	/ v /	[v]	/ ivi / < ivi > ' knee '
29	w	/ w /	[w]	/ wowe / < wowe > ' you'
30	y	/ j /	[j]	/ jampaje / < yampaye > ' he gave me '
31	z	/ z /	[z]	/ izuru / < izuru > ' nose'

4.1.2 A note on morphology of Kinyarwanda

Kinyarwanda is characterised among other things by a complex nominal class system and agglutinative verbal system (Kimenyi 1978), as well as lexical tone, like many other Bantu languages such as Kiswahili and Kirundi. There are 16 noun markers in Kinyarwanda, each having its own prefix and preprefix (Jacob,1983; Rutayisire, 1986; Ruzindana, 1990). The noun markers include prefixes to noun stems, and apply to noun modifiers of either verbs, adjectives, relatives and numerals (see examples 1-4). The word structure is intended to help the reader to understand some of the principles behind the spelling of words in terms of how, for example, prefixes and pre-prefixes are affected by assimilation and dissimilation. The noun-markers in Kinyarwanda are represented as follows:

Class	Noun-Adjective prefix	Verb- Subject prefix	Verb-Object prefix
1	-mu-	a-	-mu-
2	-ba-	Ba-	-ba-
3	-mu-	u-	-wu-
4	-mi-	i-	-yi-
5	- (-ri)	ri-	-ri-
6	-ma-	a-	-ya-
7	-ki-	ki-	-ki-
8	-bi-	bi-	-bi-
9	-n-	i-	-yi-
10	-n-	zi-	-zi
11	-ru-	ru-	-ru-
12	-ka-	ka-	-ka-
13	-tu-	tu-	-tu-
14	-bu-	Bu-	-bu-
15	-ku-	ku-	-ku-
16	-ha-	Ha-	-ha-

Each noun in Kinyarwanda is generally made of a preprefix, a prefix and a stem.

e.g. Class 1 (sing) u – mu – gore ' a woman '

(plur) a – ba - gore ' women '

There is always a relationship between the preprefix (a vowel) and the vowel of the prefix. Kinyarwanda vowels can appear as preprefix with the exception of / e / and / o /. Verbs in Kinyarwanda always take the prefix of the subject

and the infix of the complement wherever present, as well as there is agreement between adjective, infixes, verbal forms and demonstratives, as the following examples show.

1. Sing. (1st class): u mu gore mu nini a raseka nda mu bona
   a woman big is laughing I her see
2. Plur. (2nd class) : a ba gore ba nini ba raseka nda ba bona
   women big are laughing I them see
3. Sing. (3rd class) : u mu gati wa njye mu nini u ri he?
   loaf of bread my big is where
4. Plur. (4th class) : I mi gati ya njye mi nini i ri he ?
   loaves of bread my big are where

Also , verbs agglutinate into one word on the basis of the number of objects they contain. (object infixes are underlined).

e.g. nda - mu - bona 'I see him/ her'
I him/her see

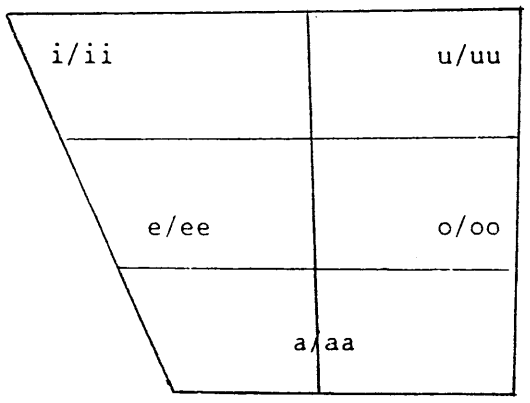
nda - ki - mu- gu - hera 'I give it to him/her for you'
I it him/her you give for

nda - ki - ha - mu – gu – hera 'I give it to him for you there'
I it there him/her you give for

4.2 Kinyarwanda vowel system

Vowels are sounds in which there is no obstruction to the flow of air as it passes from the larynx to the lips (Roach 2000:10). A vowel is described in terms of the shape of the tongue, the position of the tongue, the shape of the lips, duration and muscular tensions. Vowels are normally voiced, i.e. they involve some vibration of the vocal folds during production.

Kinyawanda has a set of 5 short vowels / i, e, a, o, u /, (two front,two back round, one low) which can be all lengthened (:) / iː, eː, aː, oː, uː / (or doubled /ii, ee, aa, oo, uu /). Length is the only phonetic difference existing between long and short vovels for lexical and syntactical functions. There is preference in Kinyarwanda studies however to use double vowels instead of IPA length mark (:) because of the advantage of easy notations it represents in cases where length is to be combined with tone. e.g. / îi /, /éè /,...Double vowels are two identical vowels in succession which are pronounced as a long vowel equal in length to two vowels of normal length. Apart from tone, Kinyarwanda double vowels can be used as a satisfactory substitution for the English long vowels. Kinyarwanda vowels are displayed and explained below:



According to Jacob (1983:5), each vowel has 6 tonal possibilities as follows: /a / short vowel with low tone; /á / short vowel with high tone; /aa / long vowel with 2 low tones; /áa / long vowel with high tone followed by low tone; /aá / long vowel with low tone followed by high tone; /áá / long vowel with 2 high tones.

4.2.1 / i / : front, high, close unrounded vowel.

The front of the tongue is raised high toward the hard palate and the lips are spread. It can occur in initial, medial and final word position.

e.g. / imiti / [imit^{h}i] < imiti> 'medicine'

/ gukina / ~ [guɕina] <gukina> 'to play '

/ amazi / < amazi > 'water'

4.2.2 / e / : front, close-mid, unrounded vowel.

The front of the tongue is raised between the close-mid and open-mid positions. The lips are loosely spread and are slightly wider apart than for / i /. It occurs in any word position, except in noun initial position, though it occurs in other words, such as imperative verbal forms whose stem initial vowel is / e /.

e.g. / emera / < emera > 'agree, believe, trust'
/ ihene / <ihene> 'a goat '
/ guseka / < guseka > 'to laugh '

4.2.3 / a /: central- open vowel.

Its production involves wide separation of the jaws and the lips neutrally open. The tongue remains in a fully open position. It occurs in initial, medial and final word position.

e.g. / aβana / <abana> 'children'
/ gukata / <gukata> 'to cut'

4.2.4 / o / : back, close-mid, rounded vowel.

It is comparable to /e / as far as the tongue height is concerned. Its production involves the back of the tongue raised midway towards the soft palate. The lips are completely rounded. It occurs in all word-positions, though rarely as a noun pre prefix. It occurs initially in only imperative verbal forms, and a few other words such as negatives as in the following examples:

e.g. / oza / < oza > 'clean with water ' (imperative 2nd p.s)
/ oja / < oya > 'no'
/ amasomo / <amasomo> 'lessons'
/ kongera / <kongera> 'to increase, to repeat '

4.2.5 / u /: back, high, rounded vowel.

Its production involves closer rounded lips than for the production of / o /. The tongue is raised to a high position towards the soft palate. It occurs in word initial, medial and final position.

e.g. / ukuguru / <ukuguru> 'a leg '
/ amakuru / <amakuru> 'news '

It is important also to mention that the combination of the above short vowels with quantity and tone complicates the Kinyarwanda system. Vowel length has a lexical and syntactical role in differentiating words or tenses in verbs. It is also often the only contrastive feature between words that are otherwise segmentally identical. The following description supported by examples will illustrate the point.

4.2.6 / ii / ~ / i: /: front, close, unrounded long vowel.

It is similar in description to its counterpart short vowel (4.2.1), except for the presence of the new feature of extra duration.

e.g. /guʃiima/ <gushima> 'to congratulate' vs /guʃima / <gushima > 'to scratch'

/gusiiβa / < gusiba > ' to be absent ' vs / gusiβa / < gusiba > 'to erase '

4.2.7 / ee /~/ eː /: front, close-mid, unrounded vowel.

It is similar to / e / apart from length.

e.g. /kureeka / <kureka> 'to collect rain water' vs /kureka / <kureka> 'to abandon'

/ iteeme / <iteme> 'it curdles' vs / iteme / < iteme > 'a bridge'

4.2.8 / aa / ~/ a: /: central, open, long vowel.

It is similar to / a / except for length.

e.g. / gutaaka / <gutaka> 'to decorate' vs / gutaka / <gutaka> 'to scream'

/umusaambi/ <umusambi> 'heron' vs / umusambi / <umusambi> 'a mat'

4.2.9 / oo / ~ / o: /: back, close-mid, rounded long vowel.

It is similar to /o / apart from length.

e.g. / gutooha / <gutoha> 'to become very green' vs / gutoha / <gutoha > 'to be wet'

/ isooko / <isoko> 'a fountain' vs / isoko / <isoko> 'a market'

4.2.10 / uu / ~/ uː / back, close, rounded long vowel.

It differs from / u / only in length.

e.g. /gukuura / <gukura> 'to take from' vs /gukura / <gukura> 'to grow'

/kuvuura / <kuvura> 'to cure' vs /kuvura / <kuvura> 'to become creamy'

These lexical examples above represent only a limited sample of the contrastive use of short and long vowels in Kinyarwanda. Tone contributes a great deal to this contrast, both in nouns and syntactical forms. The following section is an attempt to explain a few cases of length in the vowels of Kinyarwanda.

4.3 Kinyarwanda long vowel rules in syntax

There exists a set of complex rules about the use of long vowels and tone. Apart from syntactical and lexical cases, the use of long vowels occurring in deliberate slow speech articulated with emphasis on particular item does not have any contrastive function. The following rules for long vowels in syntax are based largely on Jacob (1983); Cox & Gakuba (1980); Friebel (1986); Overdulve (1967) and Kimenyi (1979).

4.3.1 Vowel quantity in verbs is time – action informative. It contributes to eliminating any lexical ambiguity. The infinitive verb / ku-genda / 'to go' can take the following conjugated forms

1. /βaɟiije / <bagiye> 'they are going' (now or in near future)
2. /βaaɟííje/<bagiye> 'they went' (past
3. /βáaɟĩije / <bagiye> 'had they gone'
4. /βàɟĩije / <bagiye> 'wish they would go'/ those who went '
5. /βáɟiije / <bagiye> 'in case they go '

4.3.2 A vowel gets lengthened in the initial or medial position of a morpheme preceded by another morpheme that ends with a vowel.

e.g. {mu-iisoma } / mwiisoma / <mwisoma> 'do not read'
{u-i-vuga } / wiivuga / < wivuga> 'do not talk'
{iki-aha } / icaaha / < icyaha> 'a sin'
{aβa-ana } /aβaana / < abana > 'children '

4.3.3 Vowels are lengthened if they occur before nasal clusters.

e.g. {umu-untu } / umuunhu / <umuntu> 'a person'

{imi-insi } / imiinsi / <iminsi> 'days'
{ku-aaŋga } / kwaanga / <kwanga> 'to dislike, refuse'
{umu-aanda } / umwaanda / <umwanda> 'dirt'

4.3.4 A vowel is always lengthened if it occurs in front of the morpheme-n- 'me' representing the nominal case (infix) preceding *–m-*; in verbal negative particle after the first person singular *si-* 'I don't' and *nti-* in the remaining cases, or is followed by / b, h, f, p, v /.

e.g. {βa-ra-n-βona } / βaraambona / <barambona> 'they see me'

{βa-za-n-saβa } /βazaansaβa / < bazansaba> 'they will ask me'
{si-n- mes-a } / siimesa / <simesa> 'I do not wash clothes'
{si-n-faʃ-a } / siimfaʃa / <simfasha> 'I do not help'

In case the negative particle *nti-* is followed by a vowel, the / i / of the negative particle is not represented , but the vowel after / i / is lengthened if the following syllable has a high tone.

e.g. {nti-ukora } / nhuukora / <ntukora> 'you do(will) not work'
{nti-akina } / nhaakina / < ntakina> 'he/she does(will) not play'

4.3.5 A vowel carrying a high tone is lengthened if it is preceded by one of the following morphemes*:* *na-* 'with, by, also' ; *nka* 'like' ; *-a* 'of'. The deleted vowel is replaced by an apostrophe in the spelling of Kinyarwanda.

e.g. {na-isuka } / n'iisuka / < n'isuka> ' with a hoe '
{nka-inka } / ŋh'iiŋha / < nk'inka> ' like a cow '
{u-a-umuaana } /w'uumŋaana / < w'umwana> ' of the child'
{yi-a-ameeza } / j'aameeza / < y'ameza> ' of the table'

4.3.6 Initial vowels of demonstratives are also lengthened after the preposition *kuri* 'on' and *muri* ' in ' and after the presentative *–ngo* ' here'

e.g. {kuri iki ikitaβo } / kur'iiki gitaβo / < kur'iki gitabo > 'on this book'
{muri uru urugo } / mur'uuru rugo/ <mur'uru rugo> 'in this household'
{ngo iki ikitaβo } / ŋg'iiki gitaβo / <ng'iki gitabo> 'here is the book' .

4.3.7 The vowel / u / of the locative prepositions *ku* 'on' and *mu* ' in ' is lengthened in front of nouns that belong to class 9 and 10.

e.g. {ku inteβe } / kuunheβe / <ku ntebe> 'on the chair'

{mu inda } /muunda / <mu nda> 'in the stomach'

{ku inzu } / kuunzu / <ku nzu> 'on the house'

4.3.8 The initial vowel of words that appear after copular- like verbs such as – *ri-* 'be' ; *ni-* 'it is' ; *si-* 'it is not' ; *hari-* 'there is' is lengthened.

e.g. {n-ri umgalimu } /nd'uumwalimu / <nd'umwalimu> 'I am a teacher'

{βa-ri aha } / βar'aaha / <bar'aha> 'they are here'

{ni umugaβo } / n'uumugaβo / <n'umugabo> 'it is a man'

{si-amata } / s'aamata / < s'amata> 'it is not milk'

{hari amahwa } / har'aamahwa / <har'amahwa> 'there are thorns'.

However, the change of tone (high) on the vowel immediately following *ni-* causes a change in meaning in some words only.

e.g. {núumugaβo } / numugaβo / <n'umugabo> ' with the man/ even the man'

4.3.9 With the negative marker / *nha* / 'there is not' , the last vowel gets lengthened , causing the deletion of the initial vowel of the following word.

e.g. {nta-amahoro } / nhaa mahoro / <nta mahoro> ' there is no peace'

{nta-zo } / nhaa zo / <ntazo> 'there are none' (+ words of class 10).

{nta-cyo naguze } / nhaaco / <ntacyo> 'I did not buy any ' (e.g. a book)

4.3.10 Vowels that end the verb stem are lengthened before the perfective aspect marker – *ye* and the passive morpheme *–w-.*

e.g. /na-wu-riije / <nawuriye> 'I have eaten it' (e.g. bread)

/βa-haaje / <bahaye> 'they have given'

/tu-vuuje / < tuvuye> 'we have come from'

/wa-riiwe / < wariwe> 'it has been eaten ' (e.g. rice)

4.3.11 The vowel / o / of the verb stem *–bon-* 'see' is lengthened also before the *–ye* morpheme.

e.g. {βa-βoon-ye } /βaβooɲe / < babonye> 'they saw '

{tu-aβoon-ye } /tkwaβooɲe } <twabonye> 'we saw '

4.3.12 The vocative case requires lengthening, and deletes the initial vowel and the last syllable.

e.g. /umukooβwa / - /umukoobga / → / mukoo / <muko> 'you girl'

{umu-aana } / umwaana / → /mŋaa / <mwa> 'you child'

4.3.13 The vowel of the infinitive marker *ku- / gu-* gets lengthened when there is no noun or pronoun preceding the verb in a relative clause, with the meaning of *the one who..*+ verb.

e.g. {u-uβona } /uβona / <ubona> 'the one who will see' (infin: kubona)

{u-ukora } / ukora / <ukora> 'the one who works' (infin: gukora)

But verbal stems starting with vowels have them lengthened also to express the same meaning as above.

e.g. {u-iiβa } / uwiiβa / < uwiba> 'he who steals'

{u-aaka } / uwaaka / <uwaka > 'he who asks'

4.3.14 The initial vowel of a noun following the demonstrative pronoun with *–a* , causes the lengthening of the latter. Such forms are used to refer to a shared knowledge between the speaker and the listener.

Demonstratives in Kinyarwanda work in agreement with the 16 different class-nouns (see 4.1.2) as in:

e.g. 1st class: {wa-umwana } / waa mgaana / < wa mwana > 'that child'

(you know the one I am talking about)

7th class: {cya-igitaβo } / caa gitaβo / <cya gitabo> 'that book '

11th class: {rwa-ururaβo } / rgwaa ruraβo / <rwa rurabo> 'that flower'

16th class: { ha-ahantu } / haa hanhu / <ha hantu> 'that place '

4.3.15 Long vowels are used in question words to express '*which one*'? translated by the invariable particle '*he'* being added to the nominal pronoun. The rule of – '*he'* applies to most of the noun classes of Kinyarwanda.

e.g. 2nd class singular / uwuuhe / <uwuhe> 'which one'

plural / aβaahe / <abahe> 'which ones'

7th class singular / ikiihe / <ikihe> 'which one' e.g. book

plural / iβiihe / <ibihe> 'which ones'

Concerning the use of *'-he'*, Overdulve (1975:217) explains that the presence or absence of a noun next to these small question words is significant. In his view, it affects the tone either on the pre-tone or post-tone. He argues that the particle '*-he*' after a noun, requires the pre-tone to appear on the prefix while '*-he*' before the noun requires the post-tone to fall on the prefix.

e.g. /uwuúhe mwana / becomes / umwana wúuhe / 'which child'

/ijiíhe nzu / becomes / inzu jíihe / 'which house'

4.3.16 Some stems of nouns, verbs and adverbs require the final vowel of the preceding morpheme to become long. *-zi* 'know'*; -zi* 'water' *; -za* 'come' *; -so* 'eye' *; - he* 'which, where'

e.g. / muuzi / < muzi > 'you know '
/ amaazi / < amazi > 'water'
/ tuuza / < tuza > 'we come'
/ amaaso / <amaso > 'eyes'
/ aβaahe / < abahe > 'who'?; 'Which ones'?

4.3.17 Long vowels are used in the main verb to express a simple condition by the use of '*ni + verb'* – imperfected relative subordinate having a hypothetical future meaning.

e.g. { nii-n- βona } / niimbona / <nimbona > 'if I happen to have...'

{ni-u-ʃaaka akazi } /nuuʃaka akazi / <nushaka kazi> 'if you want a job'

{ni-a-kunda } / naakuunda / < nakunda > 'if he/she wants, likes..'

In addition to these rules, there are nuances peculiar to Kinyarwanda language which require the use of even greater length of vowels than any of those we have explored so far. The following are used as paralanguage forms

to express different emotional feelings of astonishment, surprise, suffering or exclamation. e.g. Yeeee / weeee; Yooo/Yuuu; Yaaaa

4.4 Distinctive features of Kinyarwanda vowels

1. Kinyarwanda vowels do not have any significant regional or dialectal variations as consonants do.

2. Any short vowel can occur in any word initial, medial and final positions apart from / e / and / o / which rarely occur in noun initial positions as pre-prefixes but do appear in imperative verbal forms and few other words.
e.g. *oya* 'no'; *ese* 'by the way'; *ongera* 'do it again'; *emera* 'accept or agree'.

3. Kinyarwanda, like many other Bantu languages has open syllables only, that is , all syllables must end in a vowel.

4. Each Kinyarwanda vowel has six possible tonal types
e.g. a/ á/ aa / áa / aá / áá

5. The particle '*-a*' generally shows possession and takes the agreement of the noun that is possessed.
Because the preprefix is a vowel or ends with a vowel, certain changes occur in the prefix in correlation with different noun classes.

Class. 1 u + a = wa as in / umwana wa Yohani / 'John's child'
4 i + a = ya → / imilima ya Yohani / 'John's fields'
7 ki + a = cya → / ikirayi cya Maria / 'Mary's potato'
8 bi + a = bya → / ibitabo bya Petero / 'Peter's books'
6 a + a = ya → / amata ya Ana / 'Anne's Milk'
11 ru + a = rwa → / ururabo rwa Anita / 'Anita's flower'
14 bu + a = bwa → / uburiri bwa Petero / 'Peter's bed'

6. In actual Kinyarwanda orthography, no two vowels follow each other word internally in principle. They do however come in contact either inside the same word (underlying form representation) e.g. { βa-izera }→/ βizera / 'they trust' or at the word boundary. The morphophonological contact between two vowels results in elision of one of them, in coalescence, or in insertion of a semi vowel consonant, generally u →/w / and i→ / y /.

e.g. { umu-aana } / umwaana / <umwana> 'a child'
{ ku-iiga } / kwiga / <kwiga> 'to study'.
{ imi-enda } / imjenda / < imyenda> 'clothes'or 'debt'
/afite imodoka eshatu/ <afit'imodok'eʃatu > 'he owns three cars'

7. All infinitive verbs in Kinyarwanda end in / a / while imperative and subjunctive marker is / a / and / e / respectively.

e.g. / kugura / <kugura>'to buy'
/ gura / <gura> 'buy' (imper. 2nd p.s.)
/ ugure / <ugure> 'that you buy' (imper./subj.)
/ gusasa / <gusasa> 'to make a bed'
/ sasa / <sasa> 'make the bed' (imper. 2nd p.s.)
/ musase / <usase> 'that you make a bed' (imper./subj/)

8. Front vowels / i / and / e / contribute to phonetic change of Kinyarwanda velars / k / and / g /. They are thus realised as palatals / c, ɟ / as in [ke] becoming [ce] and [ki] as [ci] ; [ge] as [ɟe] and [gi] as [ɟi].

e.g. [k+i] → [ci] in / iciiβo / <ikibo> 'basket container'
[k+e] → [ce] or [ke] in / aceeβo / <akebo> 'a small basket container'
[g+e] → [ɟe] as in / kuɟeenda / <kugenda> 'to walk, to go'
[g+i] → [ɟi] as in / iɟi / < igi > ' an egg '

9. The occurrence of short vowels is far greater than that of long vowels in Kinyarwanda.

10. Length of vowels (like tone) is not orthographically marked in Kinyarwanda.

11. A long vowel never orthographically appears in word final position except for emphatic purposes, as in for example < aratakaa > 'he/she went on screaming..' Also, vowels in final syllables of isolated words are weakened so that they sound 'whispered'. This is particularly true for / i / and/ e / to such an extent that they are confused for each other.

12. Kinyarwanda long vowels get shortened, particularly in imperative forms of verbs whose stems start with a vowel.

e.g. {ku-ooga } / koga / < koga > 'to swim' → / oga / < oga > 'wash yourself'

{ku-umvira } /kumvira / <kumvira> 'to obey' → / umvira / <umvira> 'obey'

{ ku-iiga } / kwiga / <kwiga> 'to study' → / iga / <iga> 'study'

Incidentally, the orthography of Kinyarwanda does not allow '*kw-*' form before /o /or / *u /,* but these vowels get lengthened instead as in / kooza / < koza > 'to wash'.

13. Vowels get shortened after nasal clusters and the morpheme –n- 'me'.

e.g. / in-zu / < inzu > 'a house' ; / ŋgurira / < ngurira > 'buy me'; /nzanira / < nzanira > 'bring me..'

Furthermore, if the penultimate vowel has a low tone, it is shortened in a vocative form. e.g. / aβaʒuura / < abajura > 'thieves' becomes / βáʒu / < baju > 'you thieves..'

14. Monosyllable words consisting of a vowel standing on its own are extremely rare, except for locative purposes . e.g. i Kigali ' at Kigali ' (Ruzindana 1990:106)

After this brief review of some of the major characteristics of Kinyarwanda vowels, the following points will attempt to explain cases whereby vowels may come into contact with each other, as briefly referred to in 4.4.(6).

As stated by Kimenyi (1979:11-30), Cox and Gakuba (1980) vowels in Kinyarwanda have a potentiality to come in contact with one another by undergoing different changes. The contact between vowels results in gliding,

deletion, shortening, coalescence and harmony, of which we shall give a few illustrative examples.

15. Vowel gliding consists of making one of the vowels a semi vowel or a glide, generally <y > or < w>. As a rule, when front vowel / i / and / e / are immediately followed by another vowel, they become <y> , while back vowels / o / and / u / become <w>. This process excludes the low vowel / a /.

e.g. { umu-eenda } / umweenda / < umwenda > 'a dress'
{ ku-ambara } / kwambaara / < kwambara > 'to dress'
{ umu-ooβo } / umwooβo / < umwobo > 'a hole'
{ imi-aaka } / imjaaka / < imyaka > 'years' or 'harvest'
{ kuri-a } / kurja / < kurya > 'to eat'
{ guse-a } / gusca / < gusya > 'to grind'

It should however be mentioned that some speakers realise / w / as / g / after some consonants so that both / umwaana / and / umgaana / are heard.

16. Vowel deletion

There are two cases of vowel deletion, i.e. either preceding or following vowel deletion. First, / u / preceding / o / and / u / of the verbal stem, gets deleted at the expense of the following vowel as in:

e.g. { ku-ooga } / kooga / <koga> 'to swim', 'to wash oneself '
{ ku-uumva } / kuumva / <kumva> 'to listen, to feel, to taste'

/ e / and / a / are deleted when they are followed by another vowel within word or at word boundary as in:

{ a-za-eemer-a } / azeemera / <azemera> 'he/she will accept' (infinitive : kwemera).

{ ba-ra-uumva } / baruumva / <barumva> 'they are listening'

{ muhe amata } / muh'aamata / <muh'amata> 'give him/her milk'

Second, a vowel gets deleted whenever a vocative form is used, and after demonstrative and locative prepositions *ku* 'on ' , *mu* ' in '. (See also 4.3.7)

e.g. / aβaana / <abana> becomes <baana> 'children'
/ iriya imodoka / <iriya modoka> 'that car'

However, some of the Kinyarwanda class nouns with / i / as a pre-prefix do not delete it after *mu* and *ku.*

e.g. { ku -iiʃuli } / ku iʃuli /<kwishuli> 'at school'

{ mu-iiduka } / mw iiduka / <mwiduka> 'in the shop'

Meinhof (1932) cited in Rutayisire (1986) maintained that many vowels in Kinyarwanda are very frequently weakened to such a degree that they are no longer voiced but only whispered, and such change often affects a final vowel and leads to its disappearance before a word beginning with another vowel. Particularly in spontaneous speech, vowels get elided or deleted at the end of each word boundary and are represented by an apostrophe (') in written forms. e.g. /umugaβo afite amafaranga / <umugab'afit'amafaranga> 'the man has money'.

/afite imodoka eʃatu / <afit'imodok'eshatu> 'he/she has three cars'

Also, vowel deletion does not affect the tones carried by the deleted vowels, the latter are rather transferred onto the remaining vowel.

e.g. / umugore akuunda umwaana / < umugor'ákund'umwana > 'the woman loves the child'

17. Vowel coalescence

Vowel coalescence consists of a merger of two vowels into a different one from the original two in contact. The most common case is the merger of low central vowel / a / and front high vowel / i / into a long [e] in words whose stem is either a noun, an adjective or even some particular verbs.

e.g. { ama-iinyo } / ameɲo / <amenyo> 'teeth'

{ ma-iiza } / méézа / <meza> 'beautiful'

{ ha-ijuru } / heeʒuru / <hejuru> 'on top of'

{ guha-iisha } / guheeʃa / <guhesha> 'to cause to give'

But, the rule does not always apply before all verb stems as illustrated in:

{ara-iiβaβaza } /ariiβaβaza / <aribabaza> 'he/she is making him/herself suffer'

or in { aza-iiβa } / aziiβa / <aziba> 'he/she will steal'

18. Vowel harmony

Vowel harmony consists of assimilating one vowel to the next. Kimenyi (1978:25) notes that there is vowel harmony when some vowels change their degree of aperture under the influence of the proximity of certain other vowels.

When the vowel of the stem following / i / or / u / is a mid vowel / e / or /o /, / i / or / ii / becomes / e / or / ee /, and / u / becomes / o / when the vowel of the stem is / o /. This rule affects:

a) the / i / of the applicative suffix *–ir-* 'for somebody'

e.g. { ku-βon-ir-a } / kuβonera / <kubonera> 'to see for.'

b) the instrumental suffix *–iish-* 'with'

e.g. { ku-reeβ-iisha } / kureeβeeʃa / <kurebesha> 'to see with'.

c) the neutral suffix *–ik-*

e.g. { ku-βón-ik-a } / kuβoneka / <kuboneka> 'to be seen'

{ gu-tém-ika } / gutemeka / <gutemeka> 'to be easy to cut'

{ gu-tém-iiʃ-a } /gutemeeʃa / <gutemesha> 'to cut with'

d) the reversive suffix *–ur*

e.g. { gu-kos-ur-a } / gukosora / <gukosora> 'to correct'

e) the intransitive suffix *–uk-*

e.g. { gu-kos-uk-a } / gukosoka / <gukosoka> 'to be corrected'

In conclusion, this section has attempted to describe the phonology of the Kinyarwanda vowel system in order to compare and contrast it with that of English. It was shown that Kinyarwanda has 5 short vowels / i, e, a, o, u /, and 5 corresponding long vowels. We attempted to show that tone and quantity play a significant role as lexical and syntactical morphemes, which distinguish words and syntactical forms that are identical in other instances. The comparison between Kinyarwand and English systems is believed to help us predict difficulties that the speakers of Kinyarwanda will have in using English productively and receptively and the direction of errors likely to occur.

4.5 The vowel system of English

The description of the vowel phonemes of English is extremely important, as it can be predicted that most of those that have no equivalent in Kinyarwanda sound system would be difficult for Rwandan learners of English. The English language uses two main categories of vowels, i.e. the pure and the complex vowels. The pure vowels are those, which are constant, and the complex or "gliding" vowels are the ones which are made of a movement or glide from one vowel to another (Roach 2000:21).

The pure vowels consist of 7 short / ɪ, ɛ, æ, ʌ, ɒ ,ʊ, ə / and 5 long ones / /iː, ɑː. ɔː, ɜː, uː /. The complex vowels consist of 8 diphthongs / /eɪ, ɑɪ, ɔɪ, əʊ, ɑʊ, ɪə, ɛə, ʊə / and 5 triphthongs /eɪə, aɪə, ɔɪə ,əʊə, aʊə/.

The description and examples we shall use are mostly inspired by O'Connor (1980), Gimson (1989, 2001) and Roach (2000).The following chart displays the English vowel system (Jones 1997:viii-ix).

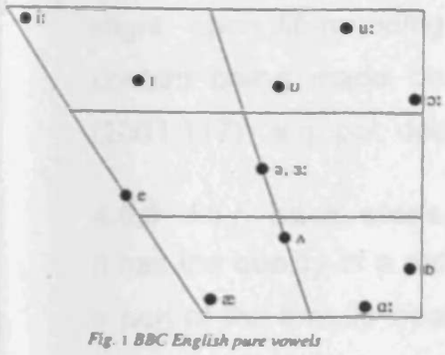


Fig. 1 BBC English pure vowels

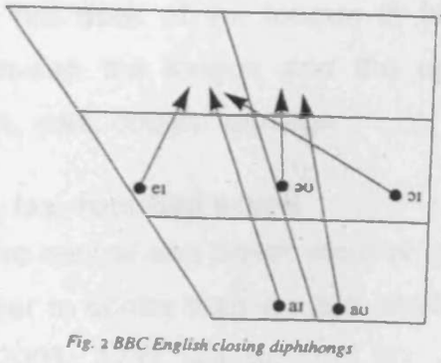


Fig. 2 BBC English closing diphthongs

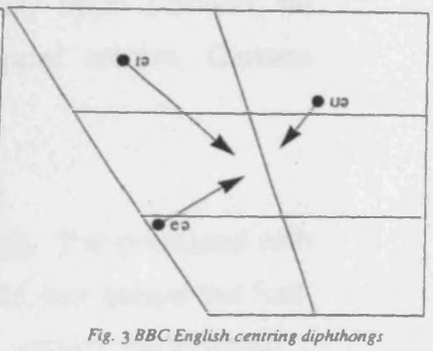


Fig. 3 BBC English centring diphthongs

The short vowels

4.5.1 / ɪ /: front, close, lax and unrounded

It is produced with a part of the tongue brought nearer to the centre than to the front, raised just above the close mid position. The lips are loosely spread and the tongue is lax. e.g. sit, rich, fill, village

4.5.2 / ɛ / : front, open-mid, lax, unrounded

It is short front vowel between cardinal vowel [e] and [ɛ]. In its production, the lips are slightly spread and are slightly wider apart than for / ɪ /, the tongue becoming more tense than in the realisation of / ɪ /. e.g. bed, went, head, ten, many

4.5.3 / æ /: front, open, lax, unrounded vowel

It is a front vowel of the quality between cardinal [ɛ] and [a] but nearer to [ɛ] than to [a]. In its production, the mouth is slightly more open than in the realisation of [ɛ]. The front of the tongue is raised just below the open-mid position. The lips are slightly spread. e.g. lamp, sat, bad, lack, hat

4.5.4 / ʌ /: central, open-mid, lax, unrounded vowel.

It is a short vowel of the quality of centralised and slightly raised cardinal [a]. It is articulated with a considerable separation of the jaws and with the lips neutrally open; the centre of the tongue is raised just above the fully open position... Gimson (2001:113). e.g. luck, love, country, done, blood, does.

4.5.5 /ɒ / : back, open, lax, rounded vowel

The vowel / ɒ / is not quite fully back, it is articulated with wide open jaws and slight, open lip-rounding the back of the tongue in fully open position; no contact being made between the tongue and the upper molars. Gimson (2001:117). e.g. pot, dock, was, cough, sausage

4.5.6 / ʊ / back, close, lax, rounded vowel

It has the quality of a more central and closer cardinal [o]. it is produced with a part of the tongue nearer to centre than to back raised just above the half-close position. Gimson (2001 : 121). e.g. put, pull, full, woman, book, could.

4.5.7 / ə /: central, close-mid, lax, unrounded vowel

The vowel / ə / is produced with almost the same characteristics as / ɜː / apart from the fact that the muscles of the tongue are more lax during its production. It has the quality of a central vowel with "neutral" lip position, having in non-final position a tongue raising between open-mid and close-mid. e.g. alone, fatigue, affect, suppose

/ ə / is normal in common unaccented (weak) forms of such words as: *a, an, the, to, for, but, and, from, was..*,(Gimson 2001 :127).

This vowel replaces most of the other vowels when they appear in unstressed syllables. e.g. gentlemen, woman, mother

When / ə / is adjacent to velar consonants / k, g / and / ŋ /, the tongue position is a little more raised and retracted. e.g. long ago / lɒŋ əgəʊ /

In final position, the tongue is so lowered that / ə / is articulated either in the open-mid position or in the most open region of the central area.

e.g. mother, doctor, over,

Wells (1990) explains that the vowels / ə, i, u / are always weak and the unstressed syllables are all weak-vowelled as in *allow* [əˈlaʊ], *happy* [ˈhæpi], *situation* [sitʃuˈeɪʃən]. He further maintains that even in RP and other kinds of English that maintain the distinction between weak / i / and / ə /, many words may be heard with either pronunciation.

Long vowels

4.5.8 / iː /: front, close, tense, unrounded vowel

This vowel is near to cardinal vowel [i]. In its production, the front of the tongue is raised to a height slightly below and behind the front close position; the lips are spread; the tongue is tense, with the side rims making a firm contact with the upper molars.

e.g. tree, be, leaf, piece, seize, key, machine, people

The vowel / iː / is often noticeably diphthongized, especially in final position Gimson (2001 : 105).

4.5.9 / ɑː /: back, open, unrounded vowel

It is produced in the region of the cardinal vowel [ɑ]; its quality is nearer to [ɑ] than to [a]. It is articulated with a considerable separation of the jaws and the lips are neutrally open, with part of the tongue between the centre and the back is in the fully open position. Gimson (2001 :114).

e.g. pass, part, heart, clerk, half, laugh

4.5.10 / ɔː / :back, open-mid, tense, rounded vowel

It is articulated with medium lip-rounding; the back of the tongue is raised between the open-mid and close-mid position, no contact being made between the tongue and the upper molars. The quality lies between the cardinal [ɔ] and cardinal [o] Gimson (2001 : 119).

e.g. born, court, short, sport, caught, board, talk

4.5.11 / uː /: back, close, tense, rounded vowel

It is lower and more central than the cardinal [u]. It is realised with the raising of the tongue relaxed from the closest position and the lips moderately rounded. e.g. food, move, group, rude, chew, blue, juice, shoe

4.5.12 / ɜː / central, mid, unrounded vowel

It is articulated with the centre of the tongue raised between close-mid and open-mid, no firm contact being made between the tongue and upper molars; the lips are neutrally spread. It does not have any similarity of quality with any of the peripheral cardinal vowels (Gimson 2001:125).

e.g. bird, her, pearl, turn, nurse, world, work, word.

Diphthongal glides

Diphthongs are sounds which consist of a movement or glide from one vowel to another within one syllable (Roach 2000:21). The gliding vowels are those which form a glide within one syllable. They consist of a first element (the starting point) and a second element (the point in the direction of which the glide is made) Gimson (2001:129). They are all categorized as "falling" because most of the length and stress associated with the glide is concentrated on the first element, except for / ɪə /,/ ʊə / in unstressed syllables. The RP diphthongs have as their first element sounds in the general region of [ɪ, e, a, ə, ʊ] and their second element / ɪ, ə / or / ʊ /. The English 8 diphthongs are generally classified as 'centring' or 'closing', depending on whether they end in / ə /, / ɪ / or / ʊ /. Diphthongs are referred to as 'wide' in

terms of the extent of movement involved in their production from open to close position such as in / aɪ /; and 'narrow' if the same movement is shorter as in / eɪ /.

4.5.13 / eɪ / falling closing narrow diphthong

The front of the tongue glides from a position slightly more open than for cardinal [e], to approximately the position of English vowel /ɪ /. In its production the lips are spread and the muscles of the tongue begin 'tense' and then relax. e.g. late, great, day. waist, eight

4.5.14 / aɪ / falling closing wide diphthong

Its articulation begins from an open / ɑ / moving towards close / ɪ /. The lips change from a neutral to a loosely spread position. The glide is much more extensive than that of /eɪ / in terms of the distance, and the closing movement of the lower jaw is obvious. e.g. time, nice, high, lie, climb, cry.

4.5.15 / ɔɪ / falling closing wide diphthong

It begins with the back of the tongue approximately in the position of English vowel /ɔ /; then the front of the tongue is raised to approximately the position of English vowel /ɪ /. The lips begin rounded and then are spread. The muscles of the tongue begin tense and then relax.
e.g. boy, voice, noise, choice, soil

4.5.16 / əʊ / falling closing narrow diphthong

It starts with the centre of the tongue approximately in the position of English vowel / ə /; the back of the tongue is raised to approximately the position of English / ʊ /. The lips begin neutral and are then rounded. The muscles of the tongue begin tense and then relax. e.g. home, know, road, soul

4.5.17 / aʊ / falling closing wide diphthong

It starts at a point between the back and the front open position, slightly more fronted than the position for / ɑː /. The glide requires much more extensive movement of the tongue than that used for /əʊ / and is systematically opposed to the front glide of / aɪ /. The lips change from a neutrally open to a weakly rounded position. e.g. house, town, sound, shout

4.5.18 / ɪə / falling or rising centring narrow diphthong

It begins with the front of the tongue approximately in the position of English vowel / ɪ /. The centre of the tongue is lowered to approximately the position of English vowel / ə /. The lips are spread. The muscles of the tongue are lax. It is a falling diphthong in accented syllables and rising in unaccented ones.
e.g. dear, here, fierce, idea, fear, museum

4.5.19 / ɛə / falling centring narrow diphthong

It begins with the front of the tongue slightly closer than cardinal [ɛ]; then the centre of the tongue is raised to approximately the position of English vowel /ə /. The lips are spread. The muscles of the tongue are lax throughout. / ɛə / is often simplified to / ɛː /. e.g. care, chair, wear, air

4.5.20 / ʊə / : falling or rising centring narrow diphthong

It begins with the back of the tongue approximately in the position of English vowel / ʊ /. The centre of the tongue is lowered to approximately the position of English vowel / ə /. The lips are spread. The muscles of the tongue are lax throughout. It is falling in accented syllables, rising in unaccented ones. / ʊə / is often monophthongized to / ɔː / in British English.
e.g. poor, tour, cure, security, endure

4.5.21 English diphthongs + / ə /

Though our study did not attempt to test English triphthongs, they nonethless can be predicted to cause some difficulty to the Rwandan learners of English, on the grounds that the Kinyarwanda phonological system does not have them. They can be difficult to pronounce and to recognize. The triphthongs are glides like diphthongs apart from the fact that they are made of three vowels. "A triphthong is a glide from one vowel to another and then to a third, all produced rapidly and without interruption" Roach (2000:24). English uses five triphthongs made of the five closing diphthongs /eɪ, aɪ, ɔɪ, əʊ, aʊ / with /ə / added at the end, resulting in /eɪə, aɪə, ɔɪə, əʊə, aʊə /. He maintains that the second element of the triphthong is often weak and hardly heard in rapid pronunciation, and the resulting sound is difficult to distinguish from some of the diphthongs and long vowels.

There is today a great tendency in RP and regional dialectal rapid speech to omit either the [ɪ] or [u] element, especially when /ə / is not felt as a separate morpheme. Gimson (2001 : 139). Both Roach and Gimson pointed to the difficulty triphthongs may cause to foreign learners in that in present day English the extent of the vowel movement is very small, except in very careful pronunciation. Only examples of triphthongs will be given accompanied by their current reductions:

/eɪə / as in *player* → [eːə] → [ɛː]

/aɪə / as in *fire* → [aːə] → [aː]

/ɔɪə / as in *employer* → [ɔːə] → [ɔː]

/əʊə / as in *slower* → [əː] or [ɜː]

/aʊə / as in *power* → [aːə] → [aː]

Such reductions would represent a difficulty to learners of English who syllabicize some of the English phonemes. Furthermore, they may cause further confusion and loss of comprehension to learners who, at some stage, may not be able to easily distinguish between two different words sounding the same such as *fire* and *far*, *tower* and *tar*, according to the above

reduction scheme. Faced with sounds they are not familiar with, Kinyarwanda speakers of English generally tend to substitute vowels by semi-vowels of the type / j / and / w /. Gimson (2001:141-42) pointed to pedagogical implications for the teacher of English to non-native speakers in saying that foreign learners should be aware of the tendency to reduction of vowel sequences, in order that they may understand colloquial English. They will observe that such reduced forms are normal among many educated speakers. Foreign learners should therefore avoid the extreme forms of reduction,e.g. [aː] and [ɑː] for [aɪə] and [aʊə], and [ɜː] for [əʊə]. But the levelling to [aːə], [ɑːə], [eːə] and [ɔːə],.. may be taken to be current and permissible. Certainly, such productions are preferable to sequences containing an exaggerated [ɪ] or [ʊ] element, i.e. [j] or [w], giving [ajə], [awə],[əwə], [ejə], [ɔjə].

Overall, it would therefore be beneficial to acquaint second language learners with different forms of vowel reductions, so as to make their perceptual and processing competence stronger.

4.6 Predictions of difficulties

A comparison of the systems of Kinyarwanda and English was undertaken to view similarities and differences between the two. The underlying assumption is that a contrastive analysis between the two languages is able to reveal phonological productive and receptive problems faced by Rwandan learners of English. On the basis of that comparison, the following observations and predictions can be therefore made.

The Rwandan learners will have difficulty with English vowels which have no equivalent phonemes in Kinyarwanda. Kinyarwanda lacks the quality difference of short / long contrast of English vowels. The English long vowels /iː, ɑː, uː, ɔː / are closer to Kinyarwanda/ i,a,u,o / than the short ones are. However, they are not identical, since for example, the Kinyarwanda /i / and / u / are either long or short, whereas the English / iː / and / uː / are always long. The difficulty lies in the fact that differences of length in English are tied to differences of quality (tongue position). The English vowels

/ɪ,ɛ, æ, ɒ, ʊ, ɜː, ʌ, eɪ,ɑɪ, ʊə,əʊ, ɪə,ɛə / in addition to the three weak vowels / i, ə,u / and the five triphthongs, have no equivalent in Kinyarwanda. These can be predicted to be problematic to the Rwanda learners of English and have significant teaching implications.

The difficulty represented by the lack of correct discrimination between short and long vowels of English and the inequality between the vowels of English and African languages were reported by other researchers such as Tiffen (1974) and Bangbose (1990) for Nigerians, Rutayisire (1986) and Ruzindana(1990) for Rwandans, and Pongweni (1990) for Zimbabweans. Wells (1982:637) pointed out that with reference to vowels, the absence of the distinction between / iː / and / ɪ / as in pairs such as *beat-bit*, and *leave-live* is one of the most characteristic features of African English. This view was largely shared by Pongweni (1990) who commented that Zimbabwean learners of English go through their primary, secondary, and tertiary education hearing and pronouncing the monoph- thongs and diphthongs of English as vowels corresponding to the five vowels of their mother tongue. He furthermore found that most learners tend to telescope the twelve monophthongs of English into vowel qualities roughly corresponding to the 5 vowels of the mother tongue, and to equally and systematically insert glides if not semi-vowels between the elements of English diphthongs and triphthongs, thereby reducing the simple complex syllable nuclei to simple disyllabic sequences comparable to the structure found in L1.

Roach (2000:21) reckons that one of the most common pronunciation mistakes that result in a learner of English having a foreign accent is the production of pure vowels where a diphthong should be pronounced.

4.6.1 / ɪ / We predict that English / ɪ / and / iː / will take the direction of the Kinyarwanda / i /, though different from the two, i.e. it is more front and close than / ɪ / and shorter than / iː /. In Kinyarwanda there is no separate vowel phoneme similar in quality to English / ɪ /. For that reason, a difficulty in

distinguishing *sin* and *seen* ; *bin* and *been* is likely to occur in the subjects' production and perception of words containing these phonemes.

4.6.2 **/ ɛ /** We predict that Rwandan learners will tend to substitute Kinyarwanda / e / in all circumstances, and thus fail to distinguish English / ɛ / from / eɪ /. This may result in misunderstandings if subjects confuse for example *test* and *taste* ; *pen* and *pain* productively and perceptually.

4.6.3 **/ æ, ɑː /** We predict that Rwandan subjects will have difficulty with these, because they have only one vowel / a / to represent them. That leads them into difficulty of failing to make correct discrimination between /æ / and /ɑː / or / ʌ /. Such difficulty will be evidenced in either correctly producing or perceiving *hat, heart* and *hut,* for example.

4.6.4 **/ ɒ /** We predict that there will be tendency among the subjects to either produce or perceive the Kinyarwanda / o / in most cases where English / ɒ / is used.

Orthography seems to aggravate the subjects' difficulty in distinguishing English / ɒ / from / ɔː /, /ɑː / and / əʊ /. The lack of such contrast in English is likely to lead to confusing, for example, *shot* and *short*, *cot* and *coat*, or even *lodge* and *large.*

4.6.5 **/ ʊ /** We predict that / ʊ / and /uː / will take the direction of the Kinyarwanda / u / though being different from either. Rwandan learners are likely to make errors by failing to distinguish between English / ʊ / and /uː /, which leads to difficulty of disambiguating for instance *full* from *fool*, or *pull* from *pool.*

4.6.6 **/ ʌ /** We predict a considerable level of difficulty with regard to this vowel. The Rwandan subjects will most often tend to produce and perceive it as Kinyarwanda / ɑ / or / o / and will confuse it with either English /æ, ɑː, ɜː, ɒ/. On that basis, the confusion between words such hot, hat, hurt, heart or even march and much for each other is very likely to happen.

4.6.7 /ɜː/ We predict that Rwanda learners will tend to substitute Kinyarwanda / ɑ /, / e /, or / o / in most cases where English / ɜː / is clearly distinguished from either / ʌ,ɛ,ɑː / *or* /ɔː /.

e.g. nurse will be realised as [nasi] or [nesi] (typical East African)

word → as [wodi] , [wedi] or[wadi]

worse → as [wosi] , [wesi] or [wasi]

4.6.8 / **eɪ** / Since there are no diphthongs in Kinyarwanda, we predict that there will be difficulties with all of them but especially in distinguishing English /eɪ / from /e/, and / əʊ / from / ɔː /. The learners will either monophthongize them or will introduce semi-vowels [e.ji] and [a.wu]. The substitution of /e / for / eɪ / is likely to cause some degree of unintelligibility if for example words like *taste, late, saint, sale*, are said or perceived as *test, let, sent, sell* respectively (see 4.6.2).

The use of semi- vowels reflecting the interference of Kinyarwanda is strongly felt in Kiswahili speech of Rwandan speakers. For example, a Kiswahili word such as *bei* 'price' will be produced as [ibeji] < ibeyi>.

4.6.9 / aɪ / We predict that this phoneme is likely to be syllabicized by introducing the semi-vowel [j] in [ɑ.i] so that words like *eyes* will be realised as [ajize]; *tribe* → [tarajiβe] and *tie* → [taji]. Kinyarwanda speakers pronounce Kiswahili /ɑɪ / in a word like *laini* 'soft' as [lajini].

4.6.10 / ɔɪ / We predict that / ɔɪ / will be pronounced as [o.i] with the presence of the semi-vowel [j] just as in 4.6.8 and 4.6.9.

4.6.11 / **əʊ** / We predict a great tendency among these learners to produce Kinyarwanda / o / for English / əʊ /, and will also have great difficulty in distinguishing it from either / ɔː / or / ɒ /. Such deviation will cause the loss of contrast between words such as *coast, coal, robe* and *cost, call, rob* (see 4.6.4). As in the case of / eɪ /, the same subjects may tend to produce / əʊ /

as two distinct syllables by introducing the semi-vowel [w] in word final position,so that for example / wɪndəʊ / will be realised as [windowu], and /nəʊ / as [nowu]. We unfortunately have no relevant examples of transfer of Kinyarwanda / w / for this particular case , since there is no Kiswahili word with < ou > to represent / əʊ /.

4.6.12 / aʊ / We predict the introduction of the semi-vowel [w] between two vowels, so that for example *house* and *loud* will be realised as [hawuze] and [lawude]. Such substitution may affect the subjects' level of intelligibility.

4.6.13 /ʊə / This phoneme is likely going to take the direction of the Kinyarwanda monophthongised / u / on the one hand, or, on the other hand, Rwandan learners are likely to introduce the semi-vowel [w] between [u.a] thus making it two separate syllable

e.g. *pure* will be realised as [pijuwa]
tour → as [tuwa]
poor → as [puwa]
sure → as [ʃuwa]

The realisation of / ʊə / is gradually falling out of the pronunciation of native English speakers. In many instances it is realised as /ɔː / as in /ʃɔː / or / pɔː / by native English speakers today (Roach 2000; O'Connor 1980:87; Gimson 2001:82). It can be extremely confusing for most foreign learners to know which words are pronounced with / ɔː /, / ɒ / and / ʊə /. The substitution of the glide by a full semi-vowel [w] by Rwandan learners is also evidenced in their pronunciation of Kiswahili. For example, Kiswahili words *kuvua* 'put off clothes' and *ninaumwa* 'I am sick' are realised as [kuvuwa] and →[ninawumwa] respectively.

4.6.14 / ɪə / We predict that the production of / ɪə / will be affected by the introduction of the semi-vowel [j] between the two vowels, just as in the case of / ɔɪ /, /aɪ / and / eɪ /. For example, the word 'jeer' will be realised as [ʒijɑ].

Kinyarwanda speakers are likely to pronounce Kiswahili diphthong [i.a] by introduc introducing a full semi-vowel [j] as in *mia* 'hundred' as → [mija]

4.6.15 / ɛə / This phoneme will take the direction of the Kinyarwanda [e.ja] (2 syllables) for the same reasons as for / ɪə, ɔɪ, ɑɪ /.

e.g. *care* → [keja] (East African)

[kere] (Kinyarwanda)

share →[ʃeja] (East African)

[ʃere] (Kinyarwanda)

Kinyarwanda speakers of Kiswahili replace the glide by a full semi-vowel [j] as they do in English, so that Kiswahili *kuendelea* ' to continue' is realised as [kwendeleja].

4.7 Kinyarwanda consonants

Kinyarwanda phonological system uses 25 consonants phonemes as compared to 24 of English.

Table 4.4 The consonants of Kinyarwanda

	Bilab.	Lab. Dental	Dental	Alveolar	Post Alveolar	Palatal	Velar	Glottal
Plosive	p		t d			c ɟ	k g	
Fricative	β	f v		s z	ʃ ʒ	ɕ		h
Affric		pf		ts	tʃ			
Nasal	m			n		ɲ		
Approx.	w			r (ɾ)		j		

Kinyarwanda consonant phonemes are characterised by the following main features:

1. In Kinyarwanda, consonants never occur in word final position.
2. Most of the Kinyarwanda consonants occur in syllable initial and medial position
3. Any consonant can occur before any vowel in any word initial and medial position.
4. Vowels determine syllable boundaries, going from left to right.

e.g. u-mu-ga-bo 'a man'
gu-ki-na 'to play'
i-gi-ta-nda 'a bed'

5. Consonantal dissimilation is a significant feature in Kinyarwanda. With reference to Dahl's law in Kinyarwanda as in other Bantu languages, there is a voice dissimilation rule that prevents voiceless consonants from occurring in sequence before other voiceless consonants. It accounts for the different phonetic realization of the phoneme *ku-* 'to' which is realised as either *ku-* or *gu-* (Kimenyi 1979:65). e.g. <kubona> 'to see' ; <gukora> ' to work'
Most words seem to display a successive alternation of voiceless and voiced consonants, particularly at the pre-stem level.

e.g. / a – ka – βa ti / <akabati> 'cupboard'
(vl) (vd) (vl)

/ i – gi – ta βo / <igitabo> 'a book'
(vd) (vl)(vd)

Whenever a word or verb stem begins with a voiceless consonant / p, t, k, f, s, tʃ, h /, the classifier or nominal prefix is realised as voiced / g /

e.g. { i-ki-hugu } / igihugu / <igihugu> 'a nation'
{ i-ki-faransa } / igifaransa /<igifaransa> 'French language'
{ i-ki-tʃuma } / igitʃuma / <igicuma> 'a gourd'

In particular with verbs, the phonological representation of the morpheme infinitive markers *gu-/ ku-* + verb stem, depends on whether or not the following consonant of the verb stem is voiceless or voiced:

vd – vl / gukunda / 'to like, to love'
/ gusoma / 'to read, to drink, to kiss'
/ gukata / 'to cut'
vl – vd / kuβona / 'to see'
/ kugenda / 'to walk, to go'

However, exceptions happen in cases where voiceless infinitive markers are followed by other voiceless negative particles such as:*-ta-; -ti-*.

e.g. / kutisunga / < kutisunga> 'not to rely on'

/ kutaβona / < kutabona> 'not to see, watch, notice'

/ kutiʃiima / < kutishima > 'not to be happy'

In other instances, negatives – *ta* -, - *da* – alternate before either voiced or voiceless: i.e. in case the stem of the verb starts with a voiceless, the negative particle – *ta* – changes into – *da* – as in the following:

e.g. / ku – ta + vd / as in < kutabona > 'not to see'

(inf) (neg)

/ ku – da + vl / as in < kudakunda > 'not to like'

Incidentally, though a Bantu language, Kiswahili does not operate Dahl's law, as it is common practice in that language to use successive voiceless consonants within a word as in the following cases:

e.g. / kitabu / 'book'

/ kupenda / 'to like'

/ kukata / 'to cut' and / kukataa / 'to refuse'

/ kusikiliza / 'to listen'

6. Voiceless consonants trigger assimilation of nasals to the place of articulation of the following consonant (Kimenyi 1979:35). Two processes take place, i.e a nasal devoicing and the change of the consonant to h (aspiration).

e.g. { in-papuro } / imhapuro / <impapuro > 'paper'

{ in-tambge } / inhaambwe / < intambwe> 'step'

{in-kima } / iŋhima / < inkima > 'monkey'

Let us now turn to the description of Kinyarwanda consonants proper.

Plosives : Plosive consonants are formed by a complete closure of theair passage with the soft palate raised, then compressing the air and suddenly opening the passage, so that the air escapes making an explosive sound. All stop sounds possess the same characteristic, i.e. degree of aspiration, pressure of air, and release.

4.7.1 / p / voiceless bilabial plosive.

Kinyarwanda plosive / p / is formed by a complete closure of the air passage, with the soft palate being raised and compressing the air, and suddenly releasing it so that it escapes making an explosive sound. It is always aspirated before vowels in any word position.

e.g. [ip^{h}asi] / ipasi / <ipasi > 'iron' (n)

[urup^{h}ap^{h}uro] / urupapuro / <urupapuro> 'a piece of paper'

[guk^{h}op^{h}a] / gukopa / < gukopa > 'to give a loan'

4.7.2 / t / voiceless dental plosive

The tip and the rims of the tongue produce the plosive articulating against the upper teeth ridge before the release with an explosive sound; the soft palate remains raised. It occurs in word initial, medial position, and shares the same characteristics of aspiration with / p /.

e.g. [t^{h}a ngira] / taŋgira / < tangira > 'start' (imperat. 2nd p.s.)

[amat^{h}ara] / amatara / <amatara > 'lamps'

[amat^{h}a] / amata / < amata > 'milk'

4.7.3 / d / voiced dental plosive

It shares the same characteristics as / t / except it involves the vibration of the vocal folds. It can appear in any initial and mid-word position.

e.g. [dat^{h}a] / data / < data > 'my father'

[k^{h}udoda] / kudoda / < kudoda > 'to sow'

4.7.4 / k / voiceless velar plosive

Its production involves a contact of the back of the tongue with the soft palate, and momentarily blocks the air in the mouth completely, before the explosive release. The tip of the tongue folds behind the lower teeth. Like / p / and / t /, it is aspirated in any position.

e.g. [k^{h}araβa] / karaβa / < karaba > 'wash yourself' (imperative 2nd p.s)

[uk^{h}uβok^{h}o] / ukuβoko / < ukuboko > 'an arm'

The realisation of / k / before front vowels / i / and / e / changes into palatal /c /. For example [βat^{h}ece] / βatece / <bateke > 'let them cook'

However, / k / belonging to morphemes such as *–ka-* the narrative and consecutive tense marker or *–raka-* the hortative tense marker, never gets palatalised before the front vowels (Kimenyi 1980 :41).

e.g. { ak a-iitso } / akiitso / <akitso > 'a full stop', not < acyitso>

{ aka-eenda } / akeenda / < akenda > 'a small piece of cloth'

not <acyenda>

{ ara-ka-eza } / arakeeza / < arakeza > 'may he/she be fruitful'.

{ inkiŋgo } / inciiŋgo / < inkingo > 'vaccination '

4.7.5 / g / voiced velar plosive

It is produced in the same way as / k /, except that the tension is weaker. It occurs in syllable initial and medial-word position.

e.g. [garuk^{h}a] / garuka / < garuka > 'come back' (imperative 2nd p.s.)

[iβigori] / Iβigori / < ibigori > 'maize / corn'

[ik^{h} irago] / icirago / < ikirago > 'a mat'

Like / k /, /g / becomes palatalised / ɟ / before front vowels /i / and / e /

e.g. / βavu ɟ e / < bavuge > 'they should say'

/ iɟi / < igi > 'an egg'

At this point, let me say that there have been ongoing discussions and disagreement between Rwandan linguists in terms of the use of / g / or / w / after / β /. While both / g / and / w / are used in consonant clusters, the latter however is predominant in actual orthography of Kinyarwanda. The use of /w / for / g / or vice-versa has nothing to do with either regional or generational factors.

e.g. /i kaβgayi - i kaβwayi / < i Kabwayi > 'at Kabwayi' (famous religious place in Rwanda)

{uβu-aato } / uβgaato /- / uβwaato / < ubwato > 'ship'

{uβu-ooβa } / uβgooβa / - / uβwooβa / <ubwoba > 'fear' (n)

4.7.6 / c / voiceless palatal plosive

Its production involves a contact of the front of the tongue and the hard palate, blocking the stream of air in the mouth momentarily, before a strong plosive air release. It occurs in initial and medial word position.

e.g. / ciŋga / <kinga> 'close' imperative, 2nd p.s. (infin. : gukinga)

/ a βacene / <abakene> 'the poor'; / uβuci / <ubuki> 'honey'

The phonemic difference between / k / and / c / can occasionally generate semantic and lexical differences through tone, which only can disambiguate the context, as in the following examples:

/ ici / <iki> 'this', 'what' and / ícі / <icyi> ~ <iki> 'summer'

Furthermore, when the vowel / i / appears in front of a verbal or nominal stem starting with another vowel, it becomes / j / <y> i.e. vowel gliding. In the following examples / k + j / becomes / c / <cy>

{iki-uuma } / ikjuuma /~ / icuuma / <icyuma> 'knife'

{iki-aaji } / ikjaaji / ~ / icaaji / <icyayi> 'tea'

{iki-oondo } / ikjoondo / ~ / icoondo / <icyondo> 'mud'

Two Kinyarwanda dialects (Goyi and Kiga) (see Chap.1) substitute / tʃ, ntʃ / in instances where other speakers use / kj, nkj / as in:

/ ikjuuma / <icyuma> 'a knife' → as / itʃuuma /

/ kunkjuça / <kunshyushya> 'to warm me' → as / kuntʃuʃa /

4.7.7 /ɟ / voiced palatal plosive

It is lenis and voiced and involves some contact between the front of the tongue and the hard palate. It represents a palatalised form of velar /g / and occurs in initial,medial word position.

e.g. / ɟaana / <jyana> 'take away' (imperative 2nd p.s.)

/ uruɟeendo / < urugendo> 'a trip'

/ uruɟo / <urujyo> 'broken pot'

The dialects referred to in 4.7.6 substitute / ɟ / by / ʒ /, so that / kuɟa / ' to go ' is realised as / kuʒa /.

Fricatives : Fricatives are consonants with the characteristic that when they are produced, air escapes through a small passage and makes a hissing sound (Roach 2000:48). Kinyarwanda has seven fricatives compared with English that has nine.

4.7.8 / β / voiced bilabial fricative

It has a very soft sound with the lips barely touching unless it is preceded by a nasal which makes it quite hard. This phoneme has two allophones [b] and [β] which occur in complementary distribution. The former usually occurs immediately after a nasal and before velar consonant / g /. The latter comes in other contexts such as when preceding a vowel or a palatal consonant. Kinyarwanda [β] occurs between vowels and in all word position and alternates with voiced stop / b /.

e.g. [βuhoro] <buhoro> 'slowly'

[kureβa] <kureba> 'to see'

[kureebga] < kurebwa > ' to be seen '

[kuumbona] <kumbona> 'to see me'

[urambaβaza] <urambabaza> 'you make me suffer'

The nasal / n / before [b] is realised as / m / according to the rule of nasal assimilation to the place of articulation of the following consonant:

e.g. { in- ba βa zi } [imba βazi] <imbabazi> 'mercy'

4.7.9 / f / voiceless labio-dental fricative

It is produced by pressing the lower lip against the upper teeth and allowing the air to force its way between them. The soft palate is raised and the glottis is left open. It occurs in initial, medial word positions.

e.g. [fuŋguura] / fungura / <fungura> 'open' (imperative 2nd p.s.)

[amafaraŋga] / amafaranga / <amafaranga> 'money'

[iŋgufu] / ingufu / <ingufu> 'strength'

4.7.10 / v / voiced-dental fricative

It is formed like / f / but is lenis and involves less constriction than that involved in the production of the latter.

The vocal folds are made to vibrate. Like / f /, it occurs in initial and medial word positions.

e.g. / vuga vuβa / <vuga vuba> 'speak quickly'(imper. 2nd p.s)
/umuvumo / <umuvumo> 'a curse'
/ umurava / <umurava> 'dedication to work'

4.7.11 / s / voiceless alveolar fricative

Its production involves the tip and the blade of the tongue being held in close proximity to the alveolar ridge, to make firm contact with the upper side teeth. The air escapes by a narrow groove in the centre of the tongue, causing some degree of friction between the tongue and the alveolar ridge. It occurs in initial and medial word positions.

e.g. / senga / < senga > 'pray' (imperative 2nd p.s.)
/ umusoro / < umusoro > 'tax' (n)
/ amaso / <amaso> 'eyes'
/ amasasu / <amasasu> 'bullets'

4.7.12 / z / voiced alveolar fricative

It is produced like / s /, except it involves the vibration of the vocal folds. It occurs in word initial and medial positions.

e.g. / zana / < zana > 'bring' (imperative, 2 nd p.s.)
/ uβuzima / < ubuzima> 'life, health'
/ akazi / < akazi > 'work, job'

4.7.13 / ʃ / Voiceless post-alveolar fricative

The production of Kinyarwanda / ʃ / involves a partial closure of the mouth, and voiceless friction caused by the air being channelled by the blade of the tongue raised behind the alveolar ridge and the front of the hard palate. The sides of the tongue are in contact with the upper side teeth. The tongue is held farther back in the mouth and the groove of the tongue is wider than when making the / s / and / z /. The lip position (spread or rounding) depends on the following vowel. It occurs in word initial and medial position.

e.g. / ʃimira / <shimira> 'thank' (imperative, 2nd p.s.)

/ muʃiki / <mushiki> 'sister of '; / iʃuʃo / <ishusho> 'picture'

4.7.14 / ʒ / voiced post-alveolar fricative

It is produced like / ʃ / except that the tension is weaker. It occurs in initial and medial word position.

e.g. / ʒuguɲa / <jugunya> 'throw away'

/ ikiʒumba / <ikijumba> 'a sweet potato'

/ uβuʒa / <ubuja> 'bondage'

4.7.15 / ç / voiceless palatal fricative

Its production involves a slight contact of the front of the tongue raised toward the hard palate, with the sides of the tongue towards the upper teeth in a more spread way than in the realisation of the grooved / ʃ /. The tip of the tongue remains fixed behind the lower teeth and allows a passage of air out in a sibilant (hissing) way. Like most Kinyarwanda consonants, / ç / occurs in initial and medial syllable word positions.

e.g. / çira / <shyira> 'put' (imperative, 2nd p.s.)

/ iβiçimbo / <ibishyimbo> 'beans'

/ kuβeça / < kubeshya > 'to lie'

One particular regional dialect (Kiga) (see 4.7.6) replaces / ç / by / ʃ / regularly as in / iβiʃimbo / for / iβi çimbo / <ibishyimbo> 'beans' and / kuβeʃa / for / kuβeça / < kubeshya > 'to lie'.

This substitution can create lexical confusion from time to time as in the realisation of / kuruʃa / 'to do better than..' for / kuruça / < kurushya> ' to make it harder for..'

4.7.16 / h / voiceless glottal fricative

Its production involves an expulsion of air from the lungs with considerable pressure causing some friction at the vocal cords. It appears in word initial and medial position.

e.g. / haguruka / <haguruka> 'stand up' (imperative 2nd p.s.)

/ amahoro / <amahoro> 'peace'

/ umuheha / <umuheha> 'a straw'

Affricates: An affricate sound is a combination of plosive and fricative with the same articulator. The sound involves a blockage in the mouth as for the plosive, but the air is then released not with an explosion, but more slowly with a short friction caused by slow release of the articulator.

4.7.17 / pf / voiceless labio-dental affricate

Its production involves the lower lip firmly articulating against the upper teeth, as in the production of / f /. There is a momentary complete closure, before a slow release. It occurs in initial, medial word position as in the following examples. e.g. / pfundika / <pfundika> 'tie up' (imperative 2nd p.s.)

/ umupfumu / <umupfumu> 'a sorcerer'

/ amapfa / <amapfa> 'famine'

4.7.18 / ts / voiceless alveolar affricate.

The tip and rims of the tongue strongly articulate against the alveolar ridge momentarily before air is released with considerable degree of friction. It occurs in word initial and medial positions.

e.g. / tsinda / < tsinda > 'score' (imperative 2nd p.s.)

/ umutsima / < umutsima> 'paste' (food)

/ umusatsi / <umusatsi> 'hair'

4.7.19 / tʃ / Voiceless post alveolar affricate

It is realised as a sequence of the plosive / t / and the fricative / ʃ /and shares their individual characteristics. It involves a complete closure and blockage of air in the mouth between the tip, blade and rims of the tongue and the upper alveolar ridge and side teeth. The blockage of air is followed by a slowrelease accompanied by some friction, caused by the raising of the front of the tongue toward the hard palate.It occurs in initial and medial word positions.

e.g. / tʃetʃeka / <ceceka> 'be quiet' (imperative 2nd p.s.)

/ igitʃuku / <igicuku> 'night'

/ umutʃo / <umuco> 'custom, culture'

Nasals : Kinyarwanda uses three nasals / m, n, ɲ /. There exists also an allophone [ŋ] of / n / which appears in consonant clusters only before / g / or /k /. Nasals are articulated like stops, but during their formation, the soft palate is lowered allowing air to pass through the nose, while there is a complete closure in the mouth (Roach 2000:58).

4.7.20 / m / voiced bilabial nasal

In its production, the passage of air through the mouth is blocked by closing the lips as for the production of / b / or / p /. The vocal folds vibrate during its production. Its occurs in word initial and medial positions.

e.g. / muraho / <muraho> 'how are you?' (plural)
/ muremure / <muremure> 'tall' (+words of class1&3- see 4.1.2)
/ imirimo / <imirimo> 'jobs'

4.7.21 / n / voiced alveolar nasal

During its production, the blade of the tongue is raised to touch the upper teeth ridge as for the / d / and / t / position with the soft palate lowered, so as to allow the air pass through the nose. It occurs in any syllable word positions except final.

e.g. / none / <none> 'today'
/ umunaniro / <umunaniro> 'weariness'
/ imikino / <imikino> 'games'

/ n / is realised as [ŋ] before velar consonants / k /, / g / and palatal /ʃ / are always added to nasal / n /.

e.g. [iŋkoko] / inkoko / <inkoko> 'chicken'
[iŋgweßa] / ingweβa <ingweba> 'donkey'
[waŋʃe] / wange / <wange> 'mine '

4.7.22 / ɲ / voiced palatal nasal

It involves a momentary blockage of air in the nasal cavity by the contact of the front of the tongue articulating against the soft palate and then releasing the air through the nose. The soft palate remains lowered. It is orthographic-

ally represented as <ny>. It is similar in pronunciation to French / ɲ / <gn> as in *agneau* 'lamb'. It occurs in initial and medial syllable word position.

e.g. / ɲ ereka / <nyereka> 'show me' (imperative 2nd p.s.)

/ uruɲaɲa / <urunyanya> 'a tomato'; / umuɲu / <umunyu> 'salt'

Approximants

4.7.23 / r / voiced alveolar approximant

Roach (2000: 62) maintains that an approximant is an articulation in which the articulators approach each other but do not get sufficiently close to each other to produce a ''complete'' consonant such as a plosive, nasal or fricative. Kinyarwanda / r / is realised by its speakers either as the alveolar flap / ɾ / or as an alveolar continuant / ɹ /. In its production, the tongue just flips against the roof of the mouth. It is often confused with [l] by Kinyarwanda speakers of either French, Kiswahili or English. The use of [r] and [l] has always been controversial among Rwandan speakers of Kinyarwanda. As Overdulve (1975 : 95) notes, there exist a [l +v+r] sequence in Kinyarwanda words, and when they both appear in the same word, the conventional order puts [l] first and [r] last. Such view was also supported by Kimenyi (1979) and Friebel (1986). Moreover [l] occurs only before front vowel / i / and in a sequence of [l] and [r], whereas [r] occurs before any of the five vowels.

e.g. [umuliro] / umuriro / <umuliro> 'fire'

[kulirimba] / kuririmba / <kulirimba> 'to sing'

While a sequence of two [r]s is acceptable as in words like [umuriro] or [kuririmba], that of two successive [l]s is not. Kinyarwanda / r / occurs in syllable initial and medial word position as in the following examples.

e.g. / rekura / <rekura> 'do not hold fast' (imperative)

/ ußurere / <uburere> 'up bringing'

4.7.24 / j / voiced palatal approximant

Its production involves the front of the tongue being raised towards the hard palate with the rims articulating against the upper side teeth. It generally involves no friction, apart from where it is preceded by / t / or / p / as in /gutjaza / 'to sharpen'. From the phonetic point of view the articulation of / j / is

practically the same as that of a front close vowel such as / iː / but is very short. The lips are neutral or spread, but they may be rounded in case the following vowel requires lip rounding. It occurs in initial and medial syllable word position.

e.g. / jaʒe / <yaje> 'he/she has come'

/ umujaga / <umuyaga> 'the wind'

/ umgeejo / <umweyo> 'broom'

The contact of / i / of the noun prefix with either / e /, / o /, / a / and / u / produces / j / as in: { imi-eenda } / imjeenda / <imyenda > 'clothes'

{imi-aaka } / imjaaka / <imyaka > 'years', 'crops'

{ ibi-oondo } / ibjoondo / < ibyondo > 'mud'

{ iki-uuma } / ikjuuma / < icyuma > 'knife'

4.7.25 / w / voiced bilabial approximant

Its production involves the back of the tongue raised towards the back of the roof of the mouth, as in the position of back vowel. The lips are rounded and protruded before the back vowels / u / and / o /, and open up widely spread before front and central vowels / i /, / e / and / a / respectively. The soft palate remains raised during the whole production process. It occurs in initial and medial syllable word position with any of the five short vowels.

e.g. / waramutse / <waramutse> 'good morning to you'

/ iwawe / <iwawe> 'at your house'

/ ikawa / <ikawa> 'coffee'

It is often used in Kinyarwanda verbal suffixes < wa > to designate a perfected or passive action. e.g. / gukuβita / <gukubita> 'to beat up' vs

/ gukuβitwa / <gukubitwa> 'to be beaten up'

/ jafaʃe / <yafashe> 'he/she/it has taken' vs

/ jafaʃkwe / <yafashwe> 'he/she/it was taken'

4.8 Kinyarwanda Consonant Clusters

The Kinyarwanda language has 64 consonant clusters, including regional variations (Kimenyi 1979:3-7; Ruzindana 1990). This number may however be subject to variation, depending on whether or not it is formal or informal

Kinyarwanda being used. Kinyarwanda as any other language has its peculiar way of sequencing consonants together in clusters. The most frequent range of possibilities of consonants clustering together is either two or three consonants in initial, medial word position and, rarely, four consecutive consonants.

There are generally three major types of consonant clusters: those which combine two successive consonants (C1+C2); those used with semi-vowel 'w' or 'j' (C+w) or (C + j); and those involving nasals (N+C). The following six combination possibilities can occur with Kinyarwanda consonants as noted by Rutayisire (1986:29-34). Illustrative examples will be given at the end of each table of consonant clusters.

First, C1.C2 (+w) whereby C1 may be any consonant and C2 is either a voiced or voiceless velar depending on whether c1 is voiced or voiceless. e.g. / t k w /, / dgw /

Second, C1.C2. (+j) whereby C1 may be any consonant and C2 is either voiced or voiceless palatal depending on whether or not C1 is voiced or voiceless. e.g. / tcj / or / tʃj /, / d / or / d j /

Third, NC whereby (N) is a nasal consonant and (C) is any other consonant. e.g. / mf /, / nh /, / ng /

Fourth, NC1.C2 (+w) in which one (C) is replaced by the consonant clusters of the type (1). e.g. / ntkw /, / ndgw /

Fifth, NC1.C2 (+j) in which one (C) is replaced by the consonant clusters of the type (2) e.g. / ntc / or / ntʃj /; / nd / or / nd j /

Sixth, there are some other rare combinations in Kinyarwanda regardless of the word position, such as / mbɟwa / or / mbʒjwa /.

4.8.1 C1.C2 (w): velarised clusters

	Bilab.	Lab. Dental	Dental	Alveolar	Post Alveolar	Palatal	Velar	Glottal
Plosive	pk		Tkw dgw				kw gw	
Fricat.	βg	fk vg		skw zgw	ʃkw ʒgw	ɕkw		hw
Affric.				tskw	tʃkw			
Approx.				rgw				

Plosives

(1) Bilabial heads : / gukopka / <gukopwa> 'to be given a loan'

/ jakopkwe / <yakopwe> 'he/she was given a loan'

(2) Dental heads: / umutkware / <umutware> 'chief' (tribal)

/ kudodgwa / <kudodwa> 'to be sewn'

(3) Velar heads: / ukwemera / <ukwemera> 'belief'

/ umugwegwe / <umugwegwe> 'sisal'

Fricatives

(4) Bilabial head: / uβgenge / < ubwenge > 'intelligence'

/ uruβga / < urubwa > 'slander'

(5) Labio dental heads: / igufka / <igufwa> 'bone'. (N.B. < fka > is extremely rare, but is heard in some speakers).

/ guhovga / <guhovga> 'of bees visiting hives'

(6) Alveolar heads: / umuskwa / <umuswa> 'ant, not very intelligent'

/ guhozgwa / <guhozwa> 'to be comforted'

(7) Post alveolar heads: / umuʃkwi / <umushwi> 'a chick'

/ inʒaʒgwa / <injajwa> 'a slanderer'

(8) Palatal heads: / umgi ɕkwa / <umwishywa> 'nephew'

/ koo ɕkwa / <koshywa> 'to be tempted'

NB: Regional dialectal variations (Goyi and Kiga) replace / ɕkw / by /ʃkw /.

(9) Glottal heads: / amahwa / <amahwa> 'thorns'

/ imhuhwe / <impuhwe> 'mercy, pity'

Affricates

(10) Alveolar heads: / kotskwa / <kotswa> 'to be roasted, burnt'

(11) Post-alveolar heads: / kwitʃkwa / <kwicwa> 'to be killed'

/ ngo tʃkwe / <ngo cwe> 'in complete silence'

Approximants

(12) Alveolar head: / urgwaagwa / <urwagwa> 'banana beer'

/ urgwego / <urwego> 'ladder'

4.8.2 C1.C2 (+y): Palatalised clusters

	Bilab	Lab. dent	Dent	Alveol	Post- alveol	Palat.
Plos	pc		tc			
Fric	βʝ	vʝ		sc		c ʝ
Nas	mɲ				nɲ	
Tap					rʝ	

Plosives

(1) bilabial heads: /gupcipciɲ ura / or / gupkjipjiɲura / 'to wash thouroughly'

(2) dental heads: / itcazo /-/itjazo/ <ityazo> 'grinding stone'

Fricatives

(3) Bilabial head: / uruβjaro / <urubyaro > 'offsprings', or / uruβʒjaro /

(4) Lab. dental heads: / zahovʝe / <zahovye> 'the bees have visited the hives'

(5) alveolar head: / gusca / <gusya> 'to grind'

or / guskja /

(6) velar heads: / icaansi / <icyansi> 'milk (wooden) pot'

/ ku ʝaana / <kujyana> 'to go with'

Nasals

(7) bilabial head: / imɲejo / <imyeyo> 'brooms'

(8) post alveolar head: / kunɲeega / <kunnyega> 'to denigrate' (rare use)

Approximant

(8) Post alveolar head : / kurdjaama / <kuryama> 'to go to bed'

/ iβirdjo / <ibiryo> 'food'

4.8.3 N + C: Prenasalised clusters (begin as nasal and finish either as a plosive, a fricative or an affricate.

	Bilab	Lab dent	Dent	Alveol.	Post alveol	Palat.	Velar	Glottal
Plos	mh mb		nh nd				nk ng	
Fric.		mf mv		ns nz	nʃ nʒ	nɕ		
Affr.		mpf		nts	ntʃ			

Nasal / m / is a result of the change realised with / n / as a prefix in some noun classes, when it is directly followed by a stem starting with a labial or a labio-dental.

e.g. { i-n + buto } / imbuto / <imbuto> 'fruits, seeds'

{ i-n + pfura } / impfura / <impfura> 'noble' or 'first born'

There is also the assimilation of / h / (aspiration) in the devoicing of the nasal in the clusters / n / + [p^h]., / n / + [t^h], / n / + [k^h], followed by the deletion of the plosive resulting into / n / + aspiration as in : /mh /, / nh /, and [ŋh].

Plosives

(1) bilabial heads: [imhamba] / impamba / <impamba> 'provision/food'

[imboga] / imboga / <imboga> 'vegetables'

(2) dental heads: [inhare] / intare / <intare> 'lion'

[indoβo] / indoβo / <indobo> 'bucket'

(3) velar heads: [iŋhuβa] / inkuβa / <inkuba > 'a thunder'

[iŋgoma] / ingoma / <ingoma> 'a drum'

Fricatives

(4) labio dental heads: / imfaʃaɲo / <imfashanyo> 'assistance'

/ imvura / <imvura> 'rain'

(5) alveolar heads: / nseeŋga / <nsenga> 'I pray'

/ inzozi / < inzozi > 'dreams'

(6) post-alveolar heads: [inʃut^{h}i] ~ [intʃut^{h}i] / in ʃuti / <inshuti> 'friends'

[harakoonʒe] / harakonʒe / <harakonje> 'it is cold'

(7) palatal heads: [inɕuɕu] / inɕuɕu / < inshyushyu> 'fresh milk'

Affricates

(8) labio dental head: / impfura / <impfura> 'noble, first born'

(9) alveolar head: / intsiinzi / < insinzi> 'victory'

(10) post alveolar head: [intʃuro] / intʃuro / <inshuro> 'a number of times'

4.8.4 N.C1.C2 (+W): Velarised pre-nasalised clusters

	Bilab.	Labio-dental	Dental	Alveolar	Post-alveol.	Palatal	Velar
Plos	mhŋ/mbg		nhŋw/ndgw				ŋhw/ŋgw
Fric.		nvg		nskw/nzgw	nʃkw/nʒgw		
Nas.	mŋ			nŋw			

Plosives

(1) bilabial heads: / imhŋemhŋe / <impwempwe> 'chest hair'

/ imbga / <imbwa> 'a dog'

(2) dental heads: / inhŋwaro / <intwaro> 'weapon(s)'

/ indgwaara / <indwara> 'disease'

(3) velar heads: / iŋhwaano / <inkwano> 'dowry'

/ iŋgwa / <ingwa> 'chalk'

Fricatives

(1) labio-dental head: / kunvga / ~ / kunvgwa / <kumvwa> 'to be listened to'

(2) alveolar heads: / kons-tskwa / ~/ konskwa / <konswa> 'to be breast fed'

/ arakuunzgwe / <arakunzwe> 'he/she is loved'

(3) post alveolar heads: / amatʃanʃkwe / <amacancwe> 'spit '(noun). Notice that < amacandwe > is also found as a free variation

/ inʒgwiri / <injwiri> 'kinky hair'

/ gukunʒgwa / <gukunjwa> 'to be folded'

Nasals

(7) bilabial head: / umŋaanda / <umwanda> 'dirt'

(8) alveolar head: / umunŋwa / <umunwa> 'mouth'

(9) velar head: / kuɲwa/ ~ / kuŋwa / < kunywa > 'to drink '

4.8.5 The palatalised prenasalised clusters

	Bilab	Lab dent	Dent	Alveol.	Post alveol	Palat.	Velar
Plos	mpɕ/mbʝ		nhɲ ndʝ				nhj nʝ
Fric				nsc			

Plosives

(1) bilabial heads: / impɕiko / <impyiko> 'kidney'

/ imbʝino / <imbyino> 'song / dance'

(2) dental heads: / inhɲoza / <intyoza> 'a good speaker'(rare occurrence)

/ indʝaadʝa / <indyarya> 'malicious', 'flatterer'

(3) velar heads: / inhjuro / <incyuro> 'a blame'

/ iŋʝo / <injyo> 'broken pots'

NB: / nʒ / is a northern regional (Kiga, Rera, Goyi) variation of / ŋʝ /.

4.8.6 N. C1 C2 . j.w

This consonant cluster occurs very rarely in Kinyarwanda and wherever it appears, it refers to the passive form of a very few verbs with / mbʝ /.

e.g. / kureembʝwa / <kurembywa> 'to be stricken by a disease '

/ guhoombʝwa / <guhombywa> 'to be brought to bankruptcy'

4.9 The Consonant System of English

English has twenty four consonants phonemes (Roach 2000 : 65, Gimson 2001 :149). In describing the English consonants, we intend to identity their similarities and differences from Kinyarwanda ones. Such description will help

to tentatively predict the Rwandan learners' potential problems for their intelligibility and comprehension.

Table 4.5 : The consonants of English

	Bilab	Lab dent	Dent	Alveol.	Post alveol	Palat.	Velar	Labio-velar	Glottal
Plosive	p b			t d			k g		
Fricative		f v	θ ð	s z	ʃ ʒ				h
Affricate					tʃ dʒ				
Nasal	M			n			ŋ		
Lateral				l					
Approx.					r	j		w	

Plosives

4.9.1 / p / voiceless bilabial stop

It is similar to Kinyarwanda /p/ in manner and place of articulation , except that English / p / has three allophones [p^h], [ʔp] and [p] which are differentiated by the degree of aspiration, pressure and release. [p^h] occurs in the initial position in strongly stressed syllables and in final position, e.g. [p^hɪn]. Unaspirated English [p] occurs after word initial and medial / s / such as in [spi:k], [spɪn]. Glottal reinforcement occurs with /p, t, k, tʃ/ in final position or before another consonant.

e.g. captain→ [k^hæʔpt^hɪn]

actor →[æʔktə]

catch → [k^hæʔtʃ]

/ p / occurs in initial, medial and final word position.

4.9.2 / b / voiced bilabial stop

It is formed like English / p / except the pressure is weaker in its production and the vocal folds are made to vibrate. It occurs in word initial, medial and final position.

e.g. *back, bean, rubber, cabinet, rib*

/ b / gets devoiced [b̥] when it occurs in word final position as in *tube, robe, cab.*

An unreleased [bˀ] appears before another consonant as in *object* .

4.9.3 / t / voiceless alveolar stop

It is formed and pronounced as the Kinyarwanda / t /, but it is alveolar (see 4.7.2). As / p /, it has three allophones [t^h] [ʔt] and [t]. It occurs in all word positions: initial (+ aspiration) in strongly stressed syllable, medial and final as in *take, tall, attack, pot, front.*

English glottal reinforcement [ʔt] occurs before a consonant or finally before a pause. Gimson (2001 :164) explains that some RP speakers replace word or morpheme final / t / by [ʔ] when a consonant follows, no oral closure being made, e.g. *football* → [fʊʔbɔːl]

The unreleased [ʔtˀ] occurs before another consonant, such as in *heart break, hot dog, great joke.*

4.9.4 / d / voiced alveolar stop

It is produced like English / t / apart from the fact that the tension is weaker and the vocal folds are made to vibrate. It occurs in word initial, medial and final word position, e.g. *date, dear, leader, garden, road.*

A devoiced [d̥] occurs in English word final position or before a voiceless consonant such as in: *road, hard, bed time, bad pain.*

4.9.5 / k / voiceless velar stop

It is formed like Kinyarwanda / k / (see 4.7.4). It is fully aspirated [k^h] as its counterpart plosives [p^h] and [t^h]. Contrary to Kinyarwanda, English / k / has three allophones [k^h], [ʔk] and [k]. It can be preceded by / s / as in *skin, scar.* It occurs in any word initial such as in *car, clean, come* at the beginning of a strongly stressed syllable as in *'become, occasion'* as well as in syllable final position. e.g.: *rock, leak, think*

The unreleased [ʔkˀ] occurs when it immediately precedes another consonant, such as in *factor, doctor.*

4.9.6 / g / voiced velar stop

It is produced in almost the same way as English / k / except that tension is weaker and the vocal folds are made to vibrate. It is similar to Kinyarwanda /g/ described in 4.7.5. However, English / g / has the possibility of getting devoiced [g̊] in word final position, e.g. *dog, plug, leg, vague.* It occurs in all word positions as in *girl, forget, begin, big.*

Fricatives

4.9.7 / f / voiceless labio-dental fricative

It is formed by the lower lip coming in contact with the upper teeth. It shares the same characteristics as Kinyarwanda / f / (see 4.7.9). It can appear in any word initial, medial and final position. e.g. *fine, defend, differ, leaf, cough*

4.9.8 / v / voiced labio-dental fricative

It is more lenis than / f / and its production involves the vibration of the vocal folds. It is similar to Kinyarwanda / v / (see 4.7.10) and occurs in word initial and medial position. e.g. *vine, cover, give, love, leave*

4.9.9 / θ / voiceless dental fricative

It is made with the tongue tip in contact with the inner surface of the upper teeth, or with the tongue tip between the upper and lower incisors. As the air stream passes through the mouth over the surface of the tongue, there is friction formed at the dental region. It occurs in all word positions such as in: e.g. *thumb, father, method, mouth.* / θ / has no equivalent in Kinyarwanda.

4.9.10 / ð / voiced inter dental fricative

It shares the same characteristics with its voiceless counterpart / θ / but it is lenis and involves the vibration of the vocal folds. It occurs in all word positions, as in *there, southern, loathe.*

Like / θ /, there is no counterpart of / ð / in the Kinyarwanda consonant system.

4.9.11 / s / voiceless alveolar fricative

It has the same place of articulation as / t / and / d /. It is formed like Kinyarwanda / s / in its place and manner of production (see 4.7.11). It occurs in initial, medial and final word position.

e.g. *soap, cease, sister, pass, peace*

4.9.12 / z / voiced alveolar fricative

It is formed like English / s /, except it is lenis and voiced. It is similar to Kinyarwanda / z / and occurs in all word positions. (see 4.7.12).

e.g. *zeal, hesitate, business, noise, prise*

4.9.13 / ʃ / voiceless post-alveolar fricative

It is similar to its Kinyarwanda counterpart / ʃ / (see 4.7.13). It occurs in initial, medial and final word position. e.g. *sheet, show, mission*

4.9.14 /ʒ / voiced post-alveolar fricative

It is formed like /ʃ /, except that the tension involved in its production is weaker, and the vocal folds are made to vibrate. It is similar to Kinyarwanda /ʒ / (see 4.7.14). The distribution of / ʒ / is much limited as compared with /ʃ /. Roach (2000 : 52) notes that very few English words begin with / ʒ / (most of them have come into the language comparatively recently from French) and not many end with this consonant. e.g. *genre, rouge, beige, prestige*. It occurs medially in words like *measure, usual, occasion, pleasure*.

4.9.15 / h / voiceless glottal fricative

The English fricative / h / is formed like its Kinyarwanda counterpart / h/ (4.7.16). It occurs in word initial and medial position. e.g. *house, heat, behave, alcohol*. The fact that it is not pronounced initially in words like *hour, honest, honour, heir, exhibit* (Gimson 1994 : 174) can be a problem to foreign learners of English. All English native speakers omit the / h / in unstressed pronunciation of the words *her, him, his* and auxiliary *have, has, had*. (Roach 2000 : 52-53).

Affricates

4.9.16 / tʃ / voiceless post-alveolar affricate

It shares the features of a sequence of plosive and fricative. It is similar to Kinyarwanda / tʃ/ (4.7.19). English / tʃ / is strongly aspirated in front of a stressed vowel and weakly aspirated in front of a weak vowel.

e.g. *kitchen, mixture.* It occurs in all word initial, medial and final position in words like *child, cheese, teacher, nature, catch, rich.*

4.9.17 / dʒ / voiced post-alveolar affricate

Its production is similar to that of English / tʃ /, except that the tension is weaker and the vocal folds are made to vibrate. It occurs in any word initial, medial and final position, such as in *juice, joke, suggest, region, village.*

In final position, a devoiced [dʒ] occurs as in *judge, large, change.* The English consonant / dʒ / has no Kinyarwanda counterpart.

Nasals

4.9.18 / m / voiced bilabial nasal

It is similar to Kinyarwanda / m / (see 4.7.20). It occurs in all words position in English. e.g. *make, hammer, famine, game.*

4.9.19 / n / voiced alveolar nasal

It is formed like Kinyarwanda / n / (see 4.7.21). It occurs in word initial, medial and final positions. e.g. *nurse, number, dinner, many, mean*

4.9.20 / ŋ / voiced velar nasal

In its production, a closure is formed in the mouth between the back of the tongue and the velum as for the position of / k , g /; the soft palate is lowered , adding the resonance of the nasal cavity to that of the pharynx. It can only operate in word medial and final position in English.

e.g. ŋ + g *finger, hunger*

ŋ + k *sink, conquer, monkey*

ŋ # *sing*

Lateral

4.9.21 / l / voiced alveolar lateral

The soft palate is raised, the tip of the tongue is in contact with the upper teeth ridge, the sides of the tongue are lowered allowing the air to escape on both sides of the tongue. It has no Kinyarwanda counterpart.

English has 2 major allophones, i.e. clear [l] and dark [ɫ]. For clear [l], the front of the tongue is raised towards the hard palate to give a front vowel resonance. It occurs initially, intervocally and before / j / as in the following words: *like, lovely, value, colour, million*. For the dark [ɫ], the back of the tongue is raised towards the soft palate to give a back vowel resonance. It occurs before any consonant except / j / and also it occurs finally and when it is syllabic. e.g. *milk, child, kill, full, help*

The lateral / l / is syllabicised / l̩ / at the end of a word when it follow another consonant , such as in *bottle, couple.*

Approximants: /r/, /j/, /w/

4.9.22 / r / voiced post alveolar approximant (see 4.7.23)

During its production, the tip of the tongue approaches the alveolar area in approximately the way it would for a t̲ or d̲, but never actually makes contact with the back of the teeth ridge (Roach 2000:62). It has different allophones, one being the voiced post-alveolar frictionless approximant / ɹ /. It occurs at the beginning of a word before a vowel or before a stressed syllable as in *red* [ɹɛd] ; between two vowels as in the word *very* [vɛɹi] and after most consonants such as in *frost* [fɹɒst].

It becomes devoiced [ɹ̥] after voiceless plosives / p, t, k / as in *price, try, cream, press, oppress, across* (Gimson 2001:206; Roach 2000:63). In intervocalic position, [ɹ] is sometimes replaced by a tap [ɾ] In its production, the tip of the tongue makes a slight tap on the alveolar ridge, while the rims make light contact with the upper molars. The tap usually also occurs after / θ / and / ð / as in [ɾ] *three* [θɾi:], *brethren* [bɹɛðɾən]. Post vocalic [r] is maintained in English R P as a linking form, when the following word begin with a vowel: e.g. *a pair of* / ə pɛər əv / ; *idea of* / ɑɪdiər əv /

4.9.23 / j / voiced palatal approximant

It is similar to Kinyarwanda / j / (see 4.7.24). It occurs in initial and medial word positions, such as in the following *yellow, yawn, year, familiar, beyond, view, nephew.*

4.9.24 / w / voiced labial velar approximant

It is formed and produced as Kinyarwanda / w / (see 4.7.25).

e.g. *wear, away, write, white, wet*

English / w / as well as / j / sound is slightly devoiced after aspirated / p, t, k / as in *twin, queen, pure.*

4.10 English consonant clusters

English syllable structure uses combinations of consonants that are not necessarily found in other languages. The English consonants clusters can be classified according to their possibility of appearance in either initial or final word position. English allows initial clusters of either two or three consonants and two, three or four in final word position. With reference to the CA theory, the English consonant clusters, which do not exist in the learners' LI system, are likely to cause a certain level of difficulty of acquisition and use. Before we consider each category (i.e. initial and final clusters), let us present the syllable structure of English. According to Roach (2000:71) the structure of the English syllable is as follows: *(pre-initial) (initial) (post initial) vowel (pre-final) (post-final) (post final).*

This shows that English allows closed as well as open syllables, i.e. syllables ending in consonants and syllables ending in vowels. As the following table will also show, a vowel can be counted as an independent minimum syllable (Roach : ibid.70).

Table 4.6 Structure of consonant clusters of English.

V	I	/ aɪ /	CVCCC	tempt	/ tempt /
CV	She	/ ʃi: /	CVCCCC	texts	/ teksts /
VC	Up	/ ʌp /	CCVCC	stops	/ stɒps /
CVC	Can	/ kæn /	CCVCCC	twelfth	/ twelfθ /
CCV	Blue	/ blu: /	CCVCCCC	glimpsed	/ glɪmpst /
CCVC	Twin	/ twi:n /	CCCV	spew	/ spju: /
VCC	Apt	/ æpt /	CCCVC	street	/ stri:t /
CVCC	Milk	/ mɪlk /	CCCVCC	splits	/ splɪts /
VCCC	Acts	/ ækts /	CCCVCCC	splints	/ splɪnts /

4.10.1. Consonant clusters in initial position

According to Tench (1981:64) there are two types of initial consonant clusters in English: a primary set of clusters and a secondary set that combine only with / j / before the vowels / u:, ʊ, ʊə /. Gimson (1989:154) says that when / l, r, w, j / follow / p, t, k / in such positions, the aspiration is manifested in the devoicing of / l, r, w, j / as in *please, pray* and *try.* (see chart below). We have re-arranged Tench's initial table into the following three sets of consonant clusters in the charts below.

First, there is a group of two consonant clusters made up with different consonants (initial), followed by approximants / l, r, w, j / as (post initial).

		/ p /	/ t /	/ k /	/ b /	/ d /	/ g /	/ f /	/ v /	/ θ /	/ s /	/ z /	/ ʃ /	/ h /	/ m /	/ n /	/ l /
	/ l /	play	-	clean	blue	-	Glove	fly	-	-	Slow	-	-	-	-	-	-
Prim	/ r /	pray	try	cry	brave	drink	great	free	-	three	-	-	shrink	-	-	-	-
	/ w /		twin	quick		dwell	gwam		-	thwart	swim	-	-	-	-	-	-
Sec																	
	/j/	pure	tune	cure	beauty	dune	argue	few	view	enthuse	Sue	presume	-	hue	mute	new	lute

Second, there is a set of two consonant clusters made of / s / as a pre-initial and followed by a certain set of consonants (initial) as follows:

	/ p /	/ t /	/ k /	/ f /	/ m /	/ n /
/s/	spin	stay	sky	sphere	small	snail

Third, there are three consonant clusters made of / s / (pre-initial), followed by / p. t, k / (initial, plus approximants / l, r, w, j / as (post-initial).

			/ s /	
		/ p /	/ t /	/ k /
Primary	/ l /	splendid	-	sclerosis
	/ r /	spray	strike	scratch
	/ w /	---	---	square
Secondary	/ j /	spew	stew	skew

4.10.2 Consonants clusters in final position

The number of consonant clusters allowed in final position is far higher than that of those in initial position. We do not however intend to present them all here. There are three types of consonant cluster allowed in final position, i.e. those made of two, three and four consonants. According to Tench (1981 : 65) the final consonant cluster possibilities are as follows:

lp	lt		ltʃ	lk	lpt	-	-	lkt
lb	ld		ldʒ	-	-	-	-	-
lf	lθ	ls	lʃ	-	-	-	-	-
lv	-	-	-	-	-	-	-	-
lm	lm	-	-	-	-	-	-	-
mp	nt	-	ntʃ	ŋk	mpt	mps	ŋks	ŋkt
-	nd	-	ndʒ	-	-	-	-	-
mf	nθ	ns	-	-	-	nst	-	-
-	-	nz	-	-	-	-	-	-
ps	ts, ds	-	-	ks	-	-	-	kst
pt	-	-	-	kt	-	-	-	-
sp	st	-	-	sk	-	-	-	-

He further maintains that the structurally complex clusters duplicate and extend the simple clusters. Plural and possessive morphemes yield clusters with /-s, -z /; past tense morphemes yield clusters with /-t, -d / and derivation morphemes yield clusters with / θ /, as in *health, wealth, filth*. With such extensions, there are two, three and even four consonant clusters as the examples to come will show. Gimson (2001:243) confirms that indeed final

four consonant clusters occur only rarely as the result of the suffixation of / t / or / s / morpheme to three consonant clusters in final position.

/-lpts / sculpts	/- ŋkts / instincts
/-lkts / mulcts	/- ŋkst / jinxed
/-mpts / prompts	/ -ksts / texts
/-mpts / glimpsed	/-lf θs / twelfths
/-ntθs / thousandths	/-ksθs / sixths

It is particularly this last category of clusters, which give the most productive and perceptive difficulty to Rwandan learners of English since none of these clusters occurs in the Kinyarwanda system. More details and examples about English consonant clusters can be found in Gimson (2001:240-243).

4.11 Prediction of difficulties

The comparison between the Kinyarwanda and English consonant phonemes is thought to be effective in helping to find areas of difficulty and the direction of error that a Rwandan learner of English is likely to encounter. According to the CA hypothesis, target consonants which do not exist in a learner's sound system, in the present case / θ, ð, dʒ, l, ŋ / and consonant clusters in word initial and final position that are more marked will be difficult to either produce or perceive.

1. We predict that Rwandan learners will have difficulty with the use of / θ / and / ð / in all positions, since these phonemes are unaccounted for in the Kinyarwanda system. These learners will tend to substitute them by the nearest phonological forms from Kinyarwanda, such as / t, d, f, v, s, z /. The substitution of these by Kinyarwanda / f /, / v / and / d / was confirmed by Rutayisire (1986:95) who found that the learners he investigated pronounced *thief* as [fi:fu], *mother* as [mada], [mava] and *with* as [wifu]. Gimson (2001:183) provides a list of minimal pairs to support the extent to which the lack of contrast between some of these phonemes may affect understanding:

/ θ / vs / ð / as in *thigh / thy*

/ θ / vs / s / as in *thick / sick; mouth / mouse*

/ θ /vs / t / as in *thick / tick; thought / taught; three / tree*

/ ð / vs / z / as in *breathe / breeze*

/ ð / vs / d / as in *though / dough*

2. Though the Rwandan learners have / p,b /, / t,d /, / k,g /, / s,z /, / ʃ, ʒ / in their phonological system, the lack of distinction particularly in final position can create significant difficulty to the extent of affecting the learner's intelligibility and comprehension. A few examples may explain the difficulty resulting from the loss of voiceless / voiced distinction, such as in : *pick – pig ; wrote – road ; rope – robe ; think – thing ; rice –rise*.

3. It can be predicted that / h / will cause some difficulty to Rwandan learners though it is similar in both languages, because they pronounce it prominently in single words or in connected utterances where native English speakers do not. While / h / is not normally heard for instance in words such as *hour, honest, honour, heir, exhaust*, *exhibit, shepherd*, these learners tend to articulate it strongly, presumably being misled by orthography. The knowledge that these subjects have of French in which / h / is not articulated in some words such as *heure, honeur, homme, humeur* 'hour, honour, man, mood ' respectively, does not necessarily help to get it right in English. Most importantly, while the / h / is elided in *he, him*, *her, his, have, had* when such words occur in weakly accented non-initial position and in connected utterances, (Gimson 2001:192), it is likely to be pronounced in its strong forms by these learners. We believe that the lack of use of weak forms of / h / can be greatly detrimental to the learners' ability to listen to fluent English speakers.

4. It can be predicted that the uniformity of distribution of the English / b / may be difficult for the Rwandan subjects, due to the intrusion of the / β / from Kinyarwanda, which uses [b] and [β] as allophones in complementary distribution (see 4.7.8).

5. The fact that velar consonants / k, g / change into palatals / c, ɟ / particularly when they occur before front vowels / i, e / in Kinyarwanda, makes us predict that Rwandan learners will tend to palatalise the English velars when they appear before front vowels as they do in Kinyarwanda.

6. Since there is no affricate / dʒ / in Kinyarwanda, we predict that there may well be difficulty in distinguishing English / dʒ / from / ʒ / or / tʃ /. Also the learners' use of French / ʒ / in French words *jus*, *juge* for English *juice*, *judge* may lead them in errors of pronunciation.

7. Since there is no / ŋ / , we predict that there may well be difficulty in distinguishing / ŋ / from / ŋk /. They will tend to realise it as / ŋg / to which they usually add a vowel as evidence of transfer from Kinyarwanda. Communication problems are likely to occur where there is lack of contrast between / ŋ / and / n / or / ŋk /. Gimson (2001) gives examples of the effect of such lack of clear distinction in nasals in the following pairs of words *sing-sin; hanged – hand; gong – gone; thing – think;* and *rang – rank* (p.198).

8. English uses one lateral phoneme / l / in form of two allophones, clear / l / and dark /ɬ / whose nearest equivalent in Kinyarwanda is the alveolar approximant /r / (see 4.7.23). Since there is no phonemic / l / in Kinyarwanda, it can therefore be predicted that there will be difficulty in distinguishing / l / from /r / particularly in word initial position. The direction of the deviation is likely to be / r /.

9. It can be predicted that the Rwandan learners will have difficulty in realising correctly the coalescence of / j / when it is immediately preceded by other consonants such as / t, d, s, z / as in *tune ,duty, assume, presume,* which are often heard as / tʃ, dʒ, ʃ, ʒ / because such consonant combinations do not occur in Kinyarwanda. Tench's (2003:23) examples of coalescence of /j / in *we'll meet you* / mi:tʃ-ə / *there*; *we'll need* you / ni:dʒ ə / *there*; *did you*

/dɪdʒ ə/ *go* may be extremely difficult for non-native speakers of English to understand. Similar examples of coalescence in rapid pronunciation of *not yet, would you, this year*, were given by Gimson (2001:212).

10. The consonant clusters of English that do not occur in the Kinyarwanda system such as / pr, pl, br, tr, str, st, sp, skr, spr, .../ in initial position (see 4.10.1) are likely to cause difficulty .

11. All single consonants in word final position can be predicted to cause difficulty, on the basis that there is is no final consonants in Kinyarwanda system.

12. We predict that complex consonant clusters of English in word final position (see 4.10.2) that are more marked will be difficult for these learners on the basis they do not occur in their first language. On theone hand, they will tend to add vowels in a sequence of consonants (epenthesis) in order to break difficult sound combinations into simple CV patterns which are considered to be the most natural and universal syllable type in language (Tarone 1987). On the other hand, they will tend to add vowels at the end of consonants and consonant clusters in final position (paragoge). This may result in spreading the conson- ant cluster over more than one syllable and thus disturb the rhythm of an English utterance.

4.12 Kinyarwanda word prosody

Kinyarwanda has two major phonemic tones, a high (H) and a low (L), which phonetically have the possibility of combining into four tones: L (LL),H L, H (HH), LH. The high tone is marked with an acute accent (´), while the low tone is marked (`) or remains un-marked. According to Jacob (1983:5) Kinyarwanda high tone should not be compared with 'accent' in European languages which lay more emphasis on the intensity of vowels rather than their pitch. There are combinations occurring word internally with long vowels

which allow HH, LL, HL, LH to occur. (Overdulve 1975:327; Kimenyi 1979:307-17; Jacob 1983; Furere & Rialland 1985:113; Friebel 1986).
The high frequency of low tone in Kinyarwanda means that only the high tone and complex tones need to be marked, thus / umugaβo / can be interpreted as / ùmùgàbò / 'a man'. Tones in Kinyarwanda are never marked in actual orthography. Examples of the use of tones:

H / ßarakóra / 'they are working'
L / turakina / 'we are playing'
HL / umúsáaza / 'an old man'
HH / íkááhwa / 'coffee'
LH / umusaámbì / 'a crowned crane'
LL / umusaambì / 'mat'

However, tones can be more complex than these, as combinations of three or more tones in one word may occur. It is the number of syllables in a word that determines the number of tones it carries. According to Furere and Rialland (1985:141-44), tone in monosyllabic, disyllabic and trisyllabic word-stems determines that of the prefix and pre-prefix of the same word. Here are some examples for illustrative purposes.

1. Monosyllabic words

Stem (L) : prefix and pre-prefix (L) as in :

-fù →ìfù ' flour'
-fù→àgàfù 'small quantity of flour'

Stem (H) : prefix (H) and pre-prefix (L)

-fí→ ífí ' fish '
-fí→ àgáfí ' small fish '

2. Disyllabic words

Stem (LL) : prefix and pre-prefix (LL)

- ʒòsì →ìʒòsì ' neck '

Stem (HL) : prefix (H) and pre-prefix (L)

-sónì → ísónì ' shame '
-bókò →ùkúbókò ' arm '

Stem (HH) : prefix and pre-prefix (LL)

- bábá → ìbábá ' feather '

- góré → ùmùgóré ' woman '

3. Trisyllabic words

Stem (LLL) : prefix (L) and pre-prefix (L)

-yòbòrò → ùmùyòbòrò 'canal '

Stem (HLL) : prefix (H) and pre-prefix (L)

- zúùrù →ízúùrù ' nose '

-zúùrù → àmázúùrù ' noses '

Stem (HHL) : prefix (L) and pre-prefix (L)

- táábì → ìtáábi ' tobacco '

Stem (HHH) : prefix (H) and pre-prefix (H)

- tééká →ítééká ' law '

Word stems of more than three syllables are rare. They are treated according to whether the stem has low tone , or has even or uneven number of high tones.

Stem with low tone : prefix (L) and pre-prefix (L)

- gèendèrèrò → ùmùgèendèrèrò ' alley '

Stem with uneven number of high tones : prefix (H) and pre-prefix(L)

- tsîinsííno →àgátsîinsííno ' heel '

Stem with even number of low tones : both prefix and pre-prefix (L)

- kóróròombyà → ùmùkóróròombyà ' rain-bow '

The issue of tone and its application in Kinyarwanda words has been the subject of controversies between different Rwandan linguists, teachers and other researchers, to such an extent that no single version is unanimously agreed upon. The following examples are an illustration of differences in accent marking in Kinyarwanda and the list is far from being complete.

	Kagame (1960)	Overdulve (1975)	Kimenyi (1976)	Kayoboke (1980)	Furere & Rialland(1985)
Woman	umugöre/ré	umugoré	-	umugorê / umugõré	ùmùgóré
My mother	mâmá	máámá	mááma / maamá	maamá	-
Fish	Ifí	ifi´	`ifi	-	´ifi´
Tree	Igïti	igiti´	igiti´	ikitî / igĭti	`igi´ti´
Tobacco	Itàbi	itáabi	itàábi´ / itàâßi	akabâ:bi	i`tàábi

(Furere and Rialland 1985 :166)

In Kinyarwanda, tone as well as vowel length is phonemic. It often serves to differentiate lexical meaning in orthographically identical words and verbal forms. e.g. (L) / iki / 'this one'
(H) / íkí / 'summer' or 'what '
(HH) / gukúúra / 'to remove'
(LL) / gukura / 'to grow'
(LL) / guhera / 'to grind'
(LH) / guhéra / 'to delay in coming'
(HL) / gúhéèra / 'to start by' or 'to give for..'

4.13 English word prosody

Gimson (2001:221) maintained that the accentual pattern of English words is fixed, in the sense that the main accent always falls on a particular syllable of any given word; but free, in the sense that the main accent is not tied to any particular situation in the chain of syllables constituting a word. He further maintained that "although many longer words contain primary accented syllables, secondary accented syllables, and prominent syllables based on vowel quality alone, it is the position of the primary accent which contributes most to a word's accentual pattern" (p.224). Roach (2000:100) argues that incorrect stress placement is a major cause of intelligibility problems for foreign learners, and is therefore a subject that needs to be treated very seriously.

According to Wells (2000:741), "a stressed syllable is one that carries a rhythmic beat. It is marked by greater loudness than unstressed syllables, and often by pitch prominence, or great duration, or more clearly defined vowel qualities". Both Wells (ibid.) and Roach (2000: 96) identify 3 degrees of stress:

Primary Stress (ˈ): When a word is said in isolation, this is where the nuclear tone (=sentence accent) goes. A word has only one primary stress.
e.g. / ˈəʊpən /, / pə ˈteɪtəʊ /, / rɪ ˈsiːv /

Secondary stress (ˌ) is weaker than primary stress but stronger than that of the first syllable such as in ˌfəʊtəˈgræfik. In a word or phrase that potentially has more than one stress, this symbol (ˌ) marks the place of a stress other than the primary one. If this syllable is before the primary stress, it may also bear an accent.
Roach also mentions a tertiary level of stress (unstressed) (˛) in polysyllabic words which is regarded as being the absence of any recognisable amount of prominence. e.g. in the word ˈˌindi˛visiˈbility , the tertiary stress before 'vis' is weaker than the two others, while the rest of the word syllables remain un-stressed.
He (2000:109) further points out that stress on a final –stressed compound tends to move to a preceding syllable if the following word begins with a strongly stressed syllable. For example, *bad-ˈtempered* becomes *a ˈbad-tempered ˈteacher* ; *heavy- ˈhanded* becomes *a ˈheavy- handed ˈsentence.*

Wells (ibid.) further says that if the primary stress is located on the third or later syllable of a word, then there must also be a secondary stress on one or other of the first two syllables. Thus, *ˌorganiˈsation* has the same stress pattern as *ˌExeter ˈstation,* and *asˌsociˈation* has the same stress pattern as *aˌnother ˈnation.*

Tench (1981) suggested that one of the problems faced by English learners is the shift of stress from one syllable to another in many derived words as in the following examples:

ˈpolitics	poˈlitical	poliˈtician
ˈphotograph	phoˈtography	photoˈgraphic

Word stress contrast in nouns, verbs and adjectives with identical orthography represents another no less significant problem for foreign learners of English, who often find it difficulty to know where to stress. Roach (ibid.:110) notes: "if a pair of prefix – plus – stem words exists, both members of which are spelt identically, one of which is a verb and the other of which is either a noun or an adjective, then the stress is placed on the second syllable of the verb but on the first syllable of the noun or adjective".

e.g. 'conduct (noun) - con'duct (v)
'protest (noun) - pro'test (v)
'content (noun) - con'tent (adj)
'perfect (adj) - per'fect (v)

Gimson (2001:226-234); Roach (2000); Tench (1981, 2002) give a comprehensive list of examples, illustrating the way in which accent shifts from nouns to verbs and to adjectives. Gimson also offers advice to learners of English on the strategy of stress placement on English words.

a. accent on the final syllable of the root preceding suffixes

-ity	uni'versity	-igible	'negligible
-ion	abo'lition	-ify	'terrify
-ian	ma'gician	-able	'capable
-ic	dra'matic		
-ible	inc'redible	- ish (v)	'publish

b. accent on the penultimate syllable of the root in verbs of three syllables or more, ending in *–ate*, but accent on the *–ate* in disyllables,

e.g. 'penetrate
neg'otiate but cre'ate, dict'ate, trans'late.

c. accent on the first syllable of the suffix *–ation*,

e.g. nationali'zation
pressuri'zation
privati'sation

The relevance of correct stress was well explained by Kenworthy (1987:18):

> *if the learner does not stress one syllable more than another or stresses the wrong syllables, it may be very difficult for the listener to identify the word. There is a great deal of evidence that native speakers rely very much on the stress pattern of words when they are listening. Experiments have demonstrated that often when a*

native speaker mishears a word, it is because the foreigner has put the stress in the wrong place, not because he or she mispronounced the sound of the word.

In order to substantiate her claim, she gives two examples which may occur in the pronunciation of a foreign learner, who fails to put stress in the correct place, thus sounding un-English and unintelligible. The word *written,* stressed on the second syllable (underlined) sounds as *retain ; comfortable* stressed at the underlined syllables sounds like *'come for table'.*

4.14 Syllable timing and stress timing

4.14.1 Kinyarwanda

Kinyarwanda has a syllable-timed rhythm, i.e. the intensity given to every syllable is quite regular as opposed to that of English. The normative syllabic structure (CV) of Kinyarwanda seems to regulate the rhythm of Kinyarwanda speech whereby the amount of time needed in uttering a sentence is determined by the number of syllables it contains. That practice is transferred in subsequent spoken languages, that is, French, Kiswahili and English. In that respect, Kinyarwanda is similar to Kiswahili and French. With reference to French in particular, Ruzindana (1990) quoting Wioland (1979) writes:"comme la tendance du Français est de répartir de façon égale dans le temps chaque unité rhythmique, la vitesse d'élocution à l'intérieur de chaque unité est proportionnelle au nombre de syllabes qu'elle contient". However, contrary to Kinyarwanda , the French / ə / schwa-type vowel is elided in most unstressed positions as in '*je ne sais pas*' → / ʒə n sɛpa /.

In syllable-timed rhythm languages, all syllables whether stressed or unstressed tend to occur at regular time-intervals and the time between stressed syllables will be shorter or longer in proportion to the number of unstressed syllables (Roach 2000:109, Jenkins 2000:149, Gimson 2001:250). In the light of that, Rwandan subjects in the main will tend to articulate English according to the Kinyarwanda pattern in which every syllable in a word, whether strongly or weakly stressed, is likely to be stressed differently from the ones that are stressed by native English speakers. The tendency to

add extra vowels or even to reduce consonant clusters by inserting vowels, contributes to distorting the rhythm of an English utterance to some extent. A sentence like *He said he would've come* will be articulated by a Rwandan learner as *'hi 'se 'yi 'di 'hi 'wu'lu 'du 'ha 've 'ka 'mu*, whereas a native English speaker would only make prominent the content words *said* and *come*. This clearly shows that such learners use much longer time than necessary in their utterance. Such an articulation is also evidence of the effect that the grammar-translation method which gave priority to reading aloud to the detriment of pronunciation has had on these learners.

A Similar practice was moreover observed in other African speakers of English such as Nigerians (Hausa) in their articulation of: *'I 'am 'not 'given 'too 'much 'work 'to 'do* (Tiffen 1974, 1992:256). He said that instances of intelligibility failure were caused by the speaker stressing too many syllables in the utterance, resulting in a staccato like rhythm confusing to listeners. Daborn's (1990:134) investigation about Malawian speakers of English came to a similar conclusion that in their speech each word was given equal stress and separately articulated, which has a very jerky effect. These examples may confirm the impact of the learners' negative transfer from their mother tongue on their articulation of English. Ruzindana (1990:187-88) however stated that timing errors involving faulty stressing can be caused by factors other than interference from the mother tongue. He said that a factor often lost sight of is frequent exposure to written than spoken language. Because of variance between spelling and pronunciation in English, various types of errors occur in non-native speech irrespective of L1 phonological features.

Wells (1982:643-44) notes that "in African English as a whole it is very common for pronouns, auxiliary verbs, prepositions and so on to be stressed in running speech" with no use of weak forms. He found that the transfer of syllable timing into English is predictably accompanied by a lack of prominence of stressed syllables, an absence of weak forms and an avoidance of contractions. Such a view is confirmed by Lanham (1990) who said that in Bantu languages the distinctions in stress are auditorily

unprominent; there is no equivalent to the unstressed syllable in English with loss of vowel quality distinction; and stress, where perceived, is lexically assigned. The transfer of syllable timing habits into English by speakers of African languages background was asserted by Sharman (1989:75) who conducted research in the pronunciation of English by East African speakers of Kiswahili. His findings corroborate Wells' view regarding the transfer of syllable timing into English that is predictably accompanied by a lack of prominence of stressed syllables, an absence of weak forms and an avoidance of contractions.

The way in which individual sounds are put together in speech affects their delivery which often non-native listeners have great difficulty to understand. Jenkins (2000:72) said well that sounds change in different phonetic environments through the influence of neighbouring sounds. She further maintained that non-native speakers are not aware of the changes that can take place in a connected speech.

4.14.2 English

English has a stress-timed rhythm in contrast to Kinyarwanda. Roach (2000: 134-5) notes that the theory that English has stress-timed rhythm implies that stressed syllables will tend to occur at relatively regular intervals whether they are separated by unstressed syllables or not. He further says that the stress-timed rhythm states that the times from each stressed syllable to the next will tend to be the same, irrespective of the number of intervening unstressed syllables.

In English, the time needed for an utterance depends upon the number of stressed syllables, usually content (lexical) words (i.e. noun, adjective,adverb, verb, demonstrative pronoun), which are made to stand out, while other syllables remain relatively weak. For example, O'Connor (1980) shows that in the sentence *It was too expensive for them to buy* , the words *too, expensive*, and *buy* are stressed, whereas *was, for, them* and *to*, are articulated with the vowel / ə / in connected speech / wəz , fə , ðəm, tə / and are not therefore stressed compared to strong forms / wɒz , fɔ: , ðem , tu: /.

Foreign learners of English often use only strong forms in their speech and are still understood. A question may therefore arise as to whether or not it matters for these learners to learn the use of weak forms and practice them at all. The relevance of such a discussion lies in the fact that because communic -ation involves a speaker and listener, comprehension of the speech act therefore demands of the non-native speaker in particular to know what hap-pens to sounds in continuous speech so that they can associate what they hear with the language they already know. Roach's (2000:112) comments help to answer the above question. One is that most native speakers of English find an "all-strong-form"pronunciation unnatural and foreign-sounding, something that most learners would wish to avoid. The other and the most relevant is that speakers who are not familiar with the use of weak forms are likely to have difficullty understanding speakers who do use weak forms ; since practically all native speakers of British English use them, learners of the language need to learn about these weak forms to help them to under-stand what they hear. He (p.142) nonetheless believes that producing assim-ilation and elision is something which foreign learners do not need to learn to do, though it is important for them to be aware that when native speakers of English talk to each other, quite a number of phonemes that the foreigner might expect to hear are not actually pronounced.

As non-native speakers are not expected to interact with other non-native speakers only due to wider communication in English today, we believe therefore that they need to know how to use the forms that affect the comprehensibility of native English speakers and other more fluent speakers of English. O'Connor (1980) argues that English spoken with only strong forms sounds wrong. The use of weak forms is an essential part of English speech and you must learn to use the weak forms if you want your English to sound English (p.92). Underwood (1989:99) supports the idea of using authentic materials which incorporate the features of authentic speech from the earliest stages as a significant part of the students' listening experience. Kenworthy (2000:82) maintains that one characteristic of colloquial speech in English is that the speaker will use many weak syllables and consonant

modifications and deletions, and that there will be groups of words and phrases that will be pronounced very quickly. Gimson's (2001:255) advice to foreign learners is that they must learn the weak forms of function words and regard them as the regular pronunciation, using the strong forms only on those limited occasions where they are used for special emphasis or contrast.

There are at least 50 monosyllabic words in English (Wilkins 1972, Gimson 2001, Tench 2003). Roach (2000:113) defines grammatical or function items as words such as auxiliary verbs, prepositions, conjunctions, pronouns, determiners, modal verbs, contractions..."all of which are in certain circumstances pronounced in their strong forms but which are more frequently pronounced in their weak forms". It is the weak forms which represent a major source of difficulty for non-native speakers of English who are used to all strong forms only, to understand the speech of native English speakers. Teaching should therefore concentrate on those features of English which are not found in the learner's native language. Wilkins (1972:29) was right to say that if one is to teach speech then it is necessary that the model of speech one is aiming at should be the natural speech of native speakers of that language.

4.15 Prediction of difficulties

We predict that the features of English connected speech that are are not taught to Rwandan learners of English will be difficult to the extent of affecting their communication. With reference to the lack of use of weak forms, the prediction is that the unstressed grammatical items will not be destressed and this will affect the intelligibility of the longer utterances (see Sentence lists). Our description of English has shown that rhythm and thus the occurrence of reduced vowels in weak syllable as well as relatively long vowels in strong syllables determine the basic timing features of English. While the intensity given at every syllable is regular or syllable-timed in Kinyarwanda, it is irregular in English and will affect the level of comprehension of speakers of English from Kinyarwanda background.

On the basis of all those differences, it will be predicted that the characteristic rhythm of an English speech with its alternation of stressed and unstressed syllables and various forms of simplification in functional words will represent a great difficulty in comprehension of an English utterance by Rwandan learners.

4.16 Conclusion

The basic aim of this chapter was to give a detailed description of the phonological systems of Kinyarwanda and English, so as to identify their differences and similarities and to make predictions of the relative difficulties of the target English sounds and features for Rwandan learners of English. The underlying assumption is that such contrastive analysis can reveal phonological learning, listening and speaking problems Rwandan speakers of English will encounter. Within the framework of the CA hypothesis, the systematic comparison between the sound systems of Kinyarwanda and English was therefore essential and relevant towards explaining the origin of pronunciation difficulties, thus the direction of errors in the production and perception of English words and utterances. It is expected that similar sounds in the two languages will not cause any major difficulty, while those that are lacking in Kinyarwanda will.

In that respect, it was explained that the subjects' mother tongue constantly interferes with the acquisition and use of the sounds of the target language, though not alone. Furthermore, the comparison has demonstrated that Kinyarwanda differs from English in terms of the number, quality and contrast between vowels, consonants, syllable structures and word prosody. These differences have led us to predict specific difficulties as given in detail in 4.6 and 4.11.

The difficulty predicted about the use of stress is actually explained by the way it affects the weak forms and length of an English utterance. In that sense, we have explained the impact generated by the basic difference between English (stress timed) and Kinyarwanda (syllable timed) rhythm on the Rwandan learners' intelligibility and comprehension. We argued that non-

native learners of English would greatly benefit from the teaching and correct use of the characteristic features of English colloquial pronunciation, as these can seriously impair their perceptive abilities in English.

Although it was claimed in our study that L1 transfer can predict the area of difficulty, it can not provide a hierarchy of difficulty (and why or whether or not the resulting interlanguage systems behave according to the principles of natural languages). The notion of 'markedness universal' will therefore be adopted to predict certain degree or order of difficulty in English segmentals and suprasegmentals. All the above differences therefore bear serious pedagogical implications for the teaching of pronunciation. The writer believes that the teaching of phonetics is one of the ways to help non-native teachers to correct their own pronunciation and to gradually eliminate the pronunciation problems of their students. The predictions of difficulties for Rwandan learners of English made on the basis of the CA hypothesis between English and Kinyarwanda will provide considerable insight into the ensuing analysis of the spoken data to be carried out in the coming Chapter Five and Six. The results of the present analysis will determine whether or not the data conform to CA, Language Universals and Markedness Universals.

CHAPTER FIVE

A Study of the Phonology of Intelligibility

5.1 Purpose

The main purpose of this chapter is to analyse and grade the level of intelligibility of a group of Rwandan subjects' phonological performance in the judgement of British native listeners, through the reading aloud of isolated words and sentences. The material used contained potential phonological problems for these learners. It was the result of a contrastive analysis of the phonology of Kinyarwanda and English that was done in Chapter Four.

5.2 The scope of investigation

5.2.1 Subjects

The current analysis involves a quite varied population sample of 55 Rwandan subjects both in exile in Kenya and inside Rwanda. Five other subjects of the originally targeted number of 60 declined to be recorded for personal reasons. Those who were recorded had a quite varied experience of English, much depending on which school they used to attend in Rwanda before 1994, and the amount of English they were exposed to. The schools range from sciences, languages, medicine, economics, Teachers' training, etc. (See Chapter 1, Table 7 & 8). The number of hours allocated to English was determined on the basis of the relevance it had with the goals of each subject study.

The subjects' age range varies from 15 to 25 from four main schools: Hope, Windle, Kabiria and Inter-Lingual Teaching Centre. In this investigation, care was taken to involve both boys and girls, though there was no specific intent on the writer's behalf to analyse the relevance of the gender factor on the level of performance and intelligibility. The relevance of such a varied group of students was an attempt to show the extent to which they share common phonological difficulties in English, regardless of their different levels of education. The teachers selected the subjects in their respective schools, in accordance with the researcher's expressed request to choose a group with varied ability in English,

including the most able, the intermediate and the least able. Here is the make up of the four different groups.

5.2.1.1 Hope International School

Location: Langata, Nairobi District, Kenya

It is a university for refugees from the East and Central African region based in Kenya, many of whom were Rwandans and Burundians. The present test involved Rwandans only. The subjects were registered in the departments of Law, Education training, and Economics &Administration, at the time this investigation was carried out. Ten subjects including 8 men and 2 women aged 20 to 25 participated in the task.

5.2.1.2 Windle Charitable Trust – Training School

Location: Lavington, Nairobi District, Kenya

This is a private school, which offers intensive English courses to a variety of students from different educational backgrounds, intending to go on to study in English-speaking countries, such as U.K., U.S.A. or Anglophone Canada. Most of them had already finished their secondary school. Ten students, 9 men and 1 woman, aged 20 to 25 participated in this investigation.

5.2.1.3 Kabiria Secondary School (st Kizito)

Location: Dagoretti, Nairobi District, Kenya

A group of thirty subjects, aged 14 to 20, took part in this study. They represent three distinct levels of education. One set of 10 subjects, 7 men and 3 women, belong to form 2 (advanced beginners), another 10, 4 men and 6 women to form 4 (intermediate) and a further 10 including 5 men and 5 women to form 6, which is the final year of secondary school before entering university.

5.2.1.4 Inter-Lingual Teaching Centre

Location: Kigali, Rwanda

This is a private language-teaching centre, which offers evening courses in French, Kiswahili, and English to people who are not available to attend classes during the day. Five women from advanced level took part in this exercise. The reason for such a small number compared to the other groups is that another set of 5 students were regrettably unwilling to be recorded, though they agreed to take part in the receptive test. That explains the shift from the initial number of 60 subjects to the 55 who took part in the productive test. Such shift will be taken into account in the statistical analysis.

5.2.2 The judges

The question of who should judge how English is spoken and understood remains an area of huge controversy. Some researchers maintain that native speakers are not the sole judges of what intelligibility is, nor are they always more intelligible than non-native speakers. Jenkins (2000:6-7) reckons the international character of English for all its users, but at the same time agrees that native speakers have a say on how their language should be spoken in interaction either with other 'native speakers' (ENL), or even with 'non-native speakers' (EFL). For Kenworthy (1987:20), "the ideal judges are listeners who have not had any abnormal amount of exposure to non-native speech nor any previous contact with the speakers being assessed". In the present analysis, the judges were 5 native speakers of English from Southern England with an accent close to RP, undergraduate students at the University of Wales, Cardiff (1998). They did not have any previous specific preparation or training for this task. They did not have any exposure, let alone any knowledge of African languages in general, and of Kinyarwanda in particular. They were given a sheet of paper with information and instruction to follow during the whole task. They were also warned orally to expect unusual as well as common words. The judges were given the following instructions:

This exercise is meant to help evaluate the intelligibility of 55 subjects you are going to listen to, reading words and sentences. There are 10 subjects in group one and two, 30 in group 3 and 10 in group four. Each subject will read 17 words, plus 3 sentences.

1. Simply write down the word you hear in the space provided for each speaker.
2. If you are not sure of what the speaker says, either make a guess or mark it with a question mark (?), or write down more than one alternative. We advise you not to listen to any item more than twice. Write down the sentences you hear from each subject on a separate sheet of paper attached to each word list.

Try to rate your overall impression of the general level of performance (sentences) of each speaker on a 1 to 5 point scale by circling the number that represents your view. Your overall rate ranging from (1) very poor intelligibility, (2) poor, (3) fair, (4) good and (5) very good, will apply to each sentence in a set of three.

Attached to the instructions were two empty lists, one for 17-targeted words, and another to fill in with 3 sentences read by each subject (see Appendix 6).

5.3 Recording of data

The recordings took place from mid-July to early August 1998 in Kenya, among the refugee community who have been in exile there since 1994, and in Kigali (Rwanda). The researcher had to be first granted an authorization from the Kenyan government to conduct such fieldwork there. He was asked to give a report on his findings once the work was completed. He also had to request permission for recording from heads of the schools he had targeted, which he was granted. In Rwanda (Kigali), the headmaster of ILTC recorded the students, following the instructions dispatched by the researcher. Overall, two techniques which were used to collect all the relevant information to this work are the use of questionnaires to both students and teachers, and the use of recordings. We are currently concerned with the second technique in this chapter, the former one having been used only to substantiate some major claims made about language learning dealt with in Chapter Two.

Ten sets of 17 isolated words each and 23 sentences were prepared to measure the subjects' competence in producing distinctive phonological contrasts of English in order to determine their relative importance to intelligibility. Each subject was recorded reading a set of 17 words and 3 sentences. The target items were devised on the basis of the contrastive phonology between Kinyarwanda and English segmental and suprasegmental features. Words and sentences were selected on the premise they contained phonemes and features of an English connected speech predicted to cause intelligibility problems. In particular, it will be predicted that items that exist in English but are lacking in Kinyarwanda will be problematic to Rwandan learners of English and will affect their intelligibility (see 4.6; 4.11 & 4.15). We reckon that though testing intelligibility and comprehension with this kind of material is artificial since phonemes, words and sentences have been constructed in advance, it nonetheless represents a valid alternative way of measurement.

Before proper recordings started, the subjects were each given a couple of minutes to read through the list of words and sentences in order to get familiar with them. They were also asked to read aloud, and keep short pauses between each word. Unfortunately, the majority of them forgot to respect this instruction once they had embarked on reading. Because of that mishap in recording, the judges were allowed to replay any item they had not properly heard, in order to ensure better listening and fairer evaluation.

Three weaknesses about the recordings should be pointed out at this stage. The first is about the poor quality of the recordings, which was mainly due to unsuitable acoustic conditions beyond the researcher's control. This could have affected the judges' listening to the recordings and their grading. The second is that each sentence was not read by the same number of subjects. The last is the lack of use of spontaneous speech that represents free and natural fluency. It has been noticed that when learners know that they are being recorded, they feel

controlled and tend to modify their accent by hyper-correcting themselves. For example, on a number of occasions, some subjects asked the researcher to erase their first reading and record them a second time. They were not allowed it, as it would have distorted the whole purpose of the test.

Table 5.1 The word list

	Target Items	List 1	List 2	List 3	List 4	List 5	List 6	List 7	List 8	List 9	List 10
1	ɪ	ship	lid	bins	sit	hills	pitch	chicks	live	list	will
2	æ	cap	hat	match	stamp	batter	bag	bad	ham	fan	ankle
3	ʌ	hut	much	stump	butter	bug	bud	hum	fun	uncle	cup
4	ɒ	lost	cot	shot	clock	stock	gone	lodge	doll	pomp	rod
5	ʊ	pull	full	soot	wood	should	could	Pull	full	put	good
6	ɜ:	turn	work	word	shirt	girl	stir	search	surgeon	birth	bird
7	eɪ	taste	sale	raced	late	pain	shade	tail	paper	saint	age
8	əʊ	bone	coat	woke	bowl	coast	foe	load	robe	slope	coal
9	θ	thin	north	three	thank	theme	author	path	worth	truth	death
10	ð	breathe	then	bathe	clothe	with	?	this	these	southern	rather
11	dʒ	large	judge	ledger	ridge	major	agent	pigeon	pledge	jeer	jam
12	b#	robe	rib	cub	tribe	-	-	-	-	-	-
	d#	-	-	-	-	hard	food	rod	-	-	-
	g#	-	-	-	-	-	-	-	pig	bag	dog
13	v#	leave	save	dove	prove	-	-	-	-	-	-
	z#	-	-	-	-	prize	peas	buzz	cause	eyes	grows
14	nt	winter	-	-	-	-	enter	-	-	-	content
	mp	-	hamper	-	-	whimper	-	-	important	impact	-
	nk	-	-	blanket	conque r	-	-	linker	-	-	-
15	#pr	prayed	-	-	-	-	-	-	-	-	-
	#bl	-	blow	-	-	-	-	-	-	-	blow
	#tr	-	-	train	-	-	-	-	-	-	-
	#dr	-	-	-	drive	-	-	-	-	drive	-
	#gl	-	-	-	-	glow	-	-	-	-	-
	#sp	-	-	-	-	-	sport	-	-	-	-
	#sf	-	-	-	-	-	-	sphere	-	-	-
	#br	-	-	-	-	-	-	-	brief	-	-
16	Stress	criticize	brutalize	organize	clarify	realize	democra tize	disorgan ize	demoral- ize	summar- ize	econo mize
17	Stress	associate	negoci- ate	complic- ate	calcul ate	commu nicate	certific- ate	interest- ing	discrimin- ate	celebrate	cultiv- ate

5.4 Analysis procedure

The degree of intelligibility of each target item has been calculated on the basis of the number of matching forms in comparison with that of non-matching ones as interpreted by the native English judges. The greater the percentage allocated to successful attempts in the production of an item, the higher is the level of the intelligibility of a subject to a native English speaker. The subjects' rates of intelligibility were counted by using simple percentage frequencies comparing different degrees of realisation of each targeted item. Results allow the reader to see the extent of difficulty predicted about the subjects involved in this study, regardless of their levels of instruction. In our evaluation, the terms *matching* (M), *non-matching* (NM), *non-judgement* (NJ), *alternative matching* (AM) and (IR) *intelligibility rate* will be used and need to be explained at this point.

A judgement is said to be 'matching' (M) if the judge's recognition of a word matches the subject's intention. It is also counted as matching when the judge identified the targeted phoneme correctly in the learner's production but in a different word from the intended one (semi-correct).

e.g. / ɪ / in *sit* perceived in *pit* or *fit.*

A non-matching judgement (NM) happens where there is a complete mismatch between the judge's perception of the target phoneme and the learner's actual production, resulting in the perception of a contrasting word.

e.g. / ɪ / in *lid* perceived as / iː / in *lead* or *read*

/ æ / in *hat* perceived as / ɑː / in *heart* or/ ʌ/ in *hut.*

Whenever a judge fails to perceive an item and leaves a blank or marks it with a question mark (?), it is considered as a non-judgement (NJ).

Alternative matching (AM) refers to the situation whereby a native judge listener is uncertain of the subject's pronunciation of an item, and solves the doubt by writing down two possible answers including both a matching and a non

matching one. Such answers have been considered as 0.5% matching and 0.5% non-matching perceptions in the tables representing each targeted item.

e.g. / ɒ / in *dock* perceived as *dock / duck*

/ ɪ / in *lid* perceived as *lid / lead.*

Semi-correct and alternative forms will be calculated wherever necessary, but will not directly appear in the tables.

The total number of judgements will henceforth be expressed as 'TNJ' in our tables. The TNJ for each target item in the 4 schools varies from 25 to 30. This is due to the fact that only 5 subjects from ILTC (see 5.2.1.4) took part in the productive test, as compared to 10 who participated in the perceptual competence test. Five native speaker judges listened to each subject. The intelligibility rate (IR) represents the subjects' productive competence as judged by five judges. The following chart clarifies better how TNJ is worked out.

/ ɪ / in

	Hope	Windle	Kabiria	Kigali	TNJ
Ship (list 1)	5	5	15	0	25
Lid (list 2)	5	5	15	5	30

Let us now use another example to clarify the terms we have explained prior to starting our data analysis proper.

Phoneme	Item	TNJ	M	NM	NJ	IR%
/ ɪ /	Ship	25	ship(20) sip(2)	cheap	1	
		25	22	2	1	88
		100%	88	8	4	88

This example shows that out of 25 judgements (100%), the percentage of (M) forms (80%) encompasses that of correct forms (18) and alternative forms (2). The percentage of (NM) (20%) on its part includes 0.5% of alternative matching forms. The rate of (NJ) was 0%. Therefore the relative degree of intelligibility indicated by the total number of occurrences of the target phoneme / ɪ / is 80%.

The mean scores of intelligibility for each targeted phoneme will be calculated and presented in a table at the end of this section. The higher the percentage of non-matching and non-judgements taken together, the more serious and significant is the difficulty represented by a particular phoneme to the subjects' intelligibility.

5.5 Vowel Analysis

5.5.1 / ɪ / and its interlanguage variants

Table 5.2 / ɪ / and variants

	Target Item	TNJ	M	NM	NJ	I.R (%)
1	ship	25	22	2	1	88
2	lid	30	5	25	0	16.6
3	bins	30	17	12	1	56.6
4	sit	30	26	4	0	86.6
5	hills	30	20	10	0	66.6
6	chicks	25	13	11	1	52
7	pitch	25	12	13	0	48
8	live	25	9	16	0	36
9	list	30	21	7	2	70
10	will	25	3	20	2	12
		275	148	120	7	53.28

According to the judges' perceptions, it appears that the target phoneme /ɪ / proved to be relatively difficult for Rwandan subjects as there is no equivalent sound of it in Kinyarwanda. Though this vowel was constantly mispronounced, only few intelligibility failures occurred, in the light of a rate of 53.8%. This suggests that the subjects accurately produced the target phoneme / ɪ / only past over half of the time, compared to a rate of 46.1% of failure to convince the native judges. It is notewothy that 4 out 10 words did not reach 50%.

The most common and major deviation from the target vowel /ɪ / was /iː/ (33.4%), presumably pronounced as Kinyarwanda /i /. We have already predicted and explained the difficulty that Kinyarwanda speakers face in producing or perceiving the phonetic and phonological discrimination between English long and tense / iː / and short and lax / ɪ / (see 4.6.1).

The results from the above table equally show that broadly speaking, / ɪ / was more successfully perceived before voiceless consonants and consonant clusters than before voiced ones. That explains how *ship>sit>list>pitch* rated 88%, 86.6% 69.9% and 48% as compared to *live* (36%)>*lid* (16%)>*will* (12%) respectively.

The phoneme / ɪ / was covered by a variety of different variants as perceived by native judges according to the following chart.

Variants

/ ɪ /	ship	lid	bins	sit	hills	pitch	chicks	live	list	will	TN occur-rence/ 275	%
i:	sheep	lead 13 beat 6 bead read meat	beans 6 jeans	seat 3 seed	heals 2 heels	peach 6 beach 3 bead	cheeks 9 cheese 2	leave 13	least 4	we 10 wheel 7	92	33.4
ɛ	-	-	bench 2 bent 2 dense	-	held 2	-	-	-	rest 3	well 3	13	4.7
ɑ:	-	-	-	-	dance 2	-	-	-	-	-	2	0.72
æ	-	-	-	-	-	badge 2 patch	-	-	-	-	3	1.09
ɑɪ	-	-	-	-	-	-	-	life 3			3	1.09
eɪ	-	gate late date	-	-	-	-	-	-	-	-	3	1.09
ɪə	-	-	-	-	hears 2	-	-	-	-	-	2	0.72
ɜ:	-	-	-	-	hers	-	-	-	-	-	1	0.36
u:	soup	-	-	-	-	-	-	-	-	-	1	0.36
											120	43.6

The predicted lack of discrimination between / ɪ / and / i: / was substantiated here, whereby / i: / accounted for 33.4% out of a total rate of 43.6% of variants. Most of other variants were only minor.

In incidental data (non-target words), we have attempted to analyse how / i: / was achieved in the following words: *leave, breathe, three, theme, peace, these, brief.*

We came to notice that 111 out of 185 judgements, coincided with the vowel / iː / as compared to 74 cases of non-matching forms. This represents an intelligibility rate of 60% for / iː /. The different variants to / iː / in the above words were:

ɪ (30) ə (7) eə (2)

e (27) eɪ (3) ɜː (2).

What such results imply is that the articulation of / iː / by Rwandan subjects seemed to cause less problem of intelligibility than / ɪ / and sounded more convincing to the native speaker judges. This also suggests that English vowel /iː / is closer to Kinyarwanda / i / than English / ɪ /.

5.5.2 / æ / and its interlanguage variants

Table 5.3 / æ / and variants

	Target Item	TNJ	M	NM	NJ	I.R (%)
1	cap	25	7	17	1	28
2	hat	30	22	8	0	73.3
3	match	30	22	8	0	73.3
4	stamp	30	26	4	0	86.6
5	batter	30	0	30	0	0
6	bag	25	13	10	2	52
7	bad	25	18	6	1	72
8	ham	25	17	8	0	68
9	fan	30	7	23	0	23.3
10	ankle	25	14	11	0	56
		275	146	125	4	53.09

As the above table shows only just over half of the time were the subjects able to convince the native speaker judges of their correct production of /æ /. It is the high rate of non-matching combined with non judgement and the different variants to / æ / that best reflect the degree of difficulty caused by that phoneme as predicted in 4.6.3. In particular, the total failure (0%)by all the subjects in producing / æ / in *batter* led many to re-interpret the same word with different variants. With reference to phonetic environment, the results show that / æ / was better perceived (86.6%) before a consonant cluster / mp / than before any other

nasal or any other consonant for that matter. However, the smallness of the sample cannot realistically make the results be generalisable.

The subjects' performance of / æ / before nasal /m / in *ham* (68%) was much more convincing to the native speaker judges than that of *fan* (23.3%), presumably due to the high rate of potential confusion between /æ / and / ʌ / in the latter case than in the former one. The big discrepancy between the rate of production of *hat* (73.3%) and *batter* (0%) can only be speculatively explained on the grounds of the knowledge the subjects have of each of these two words. The intelligibility of 3 words did not reach 50%.i.e. *cap* (28%), *batter* (0%) and *fan* (23.3%).

The major variant to / æ / was / ʌ / (32%) in addition to other variants / ɑ:, e, ɜ: / as the following chart shows.

/ æ/	cap	hat	match	stamp	batter	Bag	bad	ham	fan	ankle	TN.oc. / 275	%
ʌ	cup 14 tub 2 cut	-	much 6	stump 4	but butter 15	bug 6 duck dug	but 3	-	fun 23	uncle 11	88	32
ɑ:	-	hard hearts heart	march 2	-	-	bark	-	harm 8	-	-	14	5
e	-	-	-	-	better 12	beg 3	bed 2	-	-	-	17	6
ɜ:	-	hurt 5	-	-	-	-	bird	-	-	-	6	2.18
											125	45.4

5.5.3 / ʌ / and its interlanguage variants

Table 5.4 / ʌ / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	hut	25	1	24	0	4
2	much	30	2	27	1	6.6
3	stump	30	3	27	0	10
4	butter	30	28	1	1	93.3
5	bug	30	9	21	0	30
6	bud	25	3	21	1	12
7	hum	25	0	25	0	0
8	fun	25	22	3	0	88
9	uncle	30	16	12	2	53.3
10	cup	25	19	2	4	76
		275	103	163	9	37.45

This suggests that approximately only a third of the time the subjects were able to convince the judges of the correct production of / ʌ / in the 10 target words. The difficulty was predicted in 4.6.6 and has been substantiated by the above results in some words more than in others. Notice that the intelligibility of 6 words did not reach 50%. The rate of non-matching forms combined with that of non-judgement accounted for (62.54%) which is much higher than that of matching forms (37.45%). The lack of correct discrimination between / ʌ / and / æ / has been noted and resulted in the confusion between *bug* and *bag*, *hum* and *ham*, *much* and *match*, *hut – hat –heart*, *stump* and *stamp*, *butter* and *batter*. Most of these contrasts are also found in 5.5.2

With reference to its phonetic environment, / ʌ / showed sharp contrasts before voiceless plosive / t / in *butter* (93.3%) in comparison to *hut* (4%), which is the opposite of the rates found in 5.5.2 between *hat* (73.3%) and *batter* (0%). Apart from the cases of *ankle* and *uncle,* wherever else, / æ / was marked lower than 50%, / ʌ / was marked higher than 50%. This leads to the conclusion that subjects simply produced the target words as the ones they are more familiar with. Nonetheless, while this explanation may be convincing for the contrast *butter/ batter,* it is very less so for minimal pairs *hut/hat.*

One of the most frequent deviations from the target norm was / æ / (45.45%). The other variants were / ɑ:, ɜ:, e, ʊ / as they appear in the following chart.

/ʌ/	hut	much	stump	butter	bug	bud	hum	fun	uncle	cup	TN oc. /275	%
/ æ /	hat 15	match 23	stamp 25	battery	bag 10 bank bad 4 back	bad 12 bat 3	ham 11	fan 5	ankle 7 anchor 4	cap 2 tap	125	45.45
ɑ:	hard 5	march 4	-	-	bark 3	bard	harm 6 hard 4	-	-	-	23	8.3
ɜ:	hurt 4	-	stir	-	birth	bird 5	-	-	-	-	11	4
e	-	-	stem	-	-	-	-	-	-	-	1	0.36
ʊ	-	-	-	-	book	-	-	-	-	-	1	0.36
əʊ	-	-	-	-	-	-	home 2	-	-	-	2	0.72
											163	59.27

It is significant that the major variants to / ʌ / were / æ / and / ɑ: / (53.75%) in a total of 59.25% of all the variants. This corroborates the lack of clear discrimination between the three. Incidentally, such vowel distinction does not occur in the subjects' mother tongue interference.

5.5.4 / ɒ / and its interlanguage variants

Table 5.5 / ɒ / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	lost	25	21	4	0	84
2	cot	30	14	13	3	46.6
3	shot	30	9	20	1	30
4	dock	30	11	17	2	36.6
5	stock	30	17	12	1	56.6
6	gone	25	23	2	0	92
7	lodge	25	17	8	0	68
8	doll	25	13	12	0	52
9	pomp	30	3	27	0	10
10	rod	25	15	10	0	60
		275	143	125	7	52

As the above table shows, native speaker judges had relative difficulty in perceiving / ɒ / produced by Rwandan subjects, as only slightly over half of the time (52%), the latter convinced the former in their reading. The difficulty in the production and confusion of / ɒ / and other closely related phonemes such as /ʌ/, / ɔ: / and / əʊ / which led to intelligibility failure in 4 out of 10 words was predicted in 4.6.4. The difficulty can be attributed to the fact that there is no equivalent sound in Kinyarwanda. In terms of phonetic environment, / ɒ / before a single nasal / n / was better performed in *gone* (92%) than in *pomp* (10%) as was the case in 5.5.3. Whereas / ʌ / in *fun* reached a high (88%) compared to *stump* (10%). It is the commonness of the words *gone, lost, lodge*...that seems to explain their higher rate as compared to that of *cot, dock, pomp,* though it does not necessarily explain the case of *rod* which is presumably as unfamiliar to the subjects as *dock* or *cot.*

The major deviant forms for / ɒ / were / ʌ, ɔ:, əʊ /, in addition to minor ones / eʊ, æ, ɑ:, ɜ:, i: /.

/ɒ/	lost	cot	shot	dock	stock	gone	lodge	doll	pomp	rod	TN.oc. / 275	%
ʌ	-	cut 7 cult	shut 6	duck 4 dunk 4	stuck	gun	rush	-	pump 18 bump 4 plum	-	48	17.4
ɔ:	-	-	short 5	-	stork 2 stalk 7	born	lord	ball 4 door 4	-	lord	25	9.09
əʊ	roast 3	coast coat 3 quote	-	oak	-	-	roach broach	bowl 3	-	road 9	23	8.36
ʊ	-	-	should 5	book	3	-	-	-	-	-	8	2.90
u:	-	-	shoot 3	-	-	-	-	-	-	-	3	1.09
æ	-	-	-	-	stamp	-	-	-	bank 2 pan	-	4	1.45
ɑ:	last	-	-	dark 5	stark	-	large 3	-	palm	-	11	4
ɜ:	-	-	shirt 2	-	-	-	-	burn	-	-	3	1.09
i:	-	-	-	-	-	-	breach	-	-	-	1	0.36
											126	45.8

The rate of 45.81% of deviant forms to target / ɒ / is taken to be evidence of the lack of discrimination in the subjects' production of it and other variants, particularly between / ʌ, ɔ:, əʊ /

Besides / ɒ /, our data presented 5 incidental cases in which / ɔ: / was used in *sport* ≥ *important* > *author* > *north* > *cause* (88%, 80%, 64%, 60%, 56% respectively). The analysis of / ɔ: / has helped us to prove the difficulty that Rwandan learners find in distinguishing it from its counterpart / ɒ / and even /əʊ /. It was found that out of 130 judgements (100%), 90 cases coincided with matching forms (69.23%). This shows the degree of ease that at least more than two-thirds of the time the native judges had while listening to Rwandan subjects attempting to produce / ɔ: /, against 40 cases (30.76%) of non-matching forms.

The different variants to / ɔ: / out of 36 non matching forms were:

ʌ (9), ɒ (8), ɑʊ (6), ə (5), əʊ (4), ɑ: (2), u: (2)

The successful rate in the perception of / ɔ: / (69.23%) compared to / ɒ /(52%) seems to validate the claim that the former is closer to Kinyarwanda / o / than /ɒ / and is thus less difficult for them.

5.5.5 / ʊ / and its interlanguage variants

Table 5.6 / ʊ / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	Pull	25	20	5	0	80
2	Full	30	11	18	1	36.6
3	Soot	30	9	21	0	29.9
4	Wood	30	23	6	1	76.6
5	Should	30	13	16	1	43.3
6	Could	25	9	12	4	36
7	Pull	25	13	12	0	52
8	Full	25	11	14	0	44
9	Put	30	28	2	0	93.3
10	Good	25	21	2	2	84
		275	158	108	9	57.45

According to the above table, the subjects showed some difficulty in discriminating between short / ʊ / and long / uː / in English as predicted in 4.6.5, to such an extent that only 158 out of 275 matching forms, i.e 57.48% were intelligibly convincing to the native speaker judges. All 117 non-matching forms and non-judgements did not obviously coincide with the target vowel. Such lack of vowel distinction by these subjects makes it difficult for them to disambiguate *full* from *fool*; *pull* from *pool* for example. With reference to phonetic environment, apart from three instances whereby / ʊ / after voiceless consonant / p / was rated 80%, 52% and 93.3%, it was more successfully perceived after voiced consonant / w / (76.6%) and / g / (84%) than after any other voiceless consonant in the remaining instances. While on the one hand, / ʊ / before voiced / d / in *good* (84%) and *wood* (76.6%) does not display a strong contrast in rate, it nonetheless shows a considerable gap in rate before voiced / l / in *pool* (80%) and *fool* (36.6%) as well as before voiceless / t / in *soot* (29.9%) and *put* (93.3%) on the other hand.

A certain inconsistency was noticed in the realisation of *pull* and *full* tested twice (intentionally), and yielded different results, i.e. (80%- 36.6%) and (52%-44%) respectively. The difficulty and confusion between long and short vowels / uː / and /ʊ / can be attributed to the learners' mother tongue interference, which does not have a similar vowel sound distinction as English. The most common deviation from the target vowel / ʊ / in the native speaker judges' perception was long vowel / uː /, which substantiates the confusion claimed above.

/ ʊ/	pull	full	soot	wood	should	could	pull	full	put	good	TN oc. /275	%
u:	pool 3 tool	fool 13 food	suit 13	boot 2	shoot 3 shoe	cooled 4 cool 2	pool 6	fool 9	-	pool	59	21.4
ɔ:	ball	-	sort 6	-	shawl 3 surely 2 shorten	-	pall 4	four	-	-	18	6.5
əʊ	-	-	-	owed wrote	show 3 should-er	cold 5	-	-	boat	goat	15	5
ɜ:	-	-	-	-	shirt	heard	-	fur 4	-	-	6	2.1
i:	-	feel	-	-	shield	-	-	-	-	-	2	0.72
ɑ:	-	-	-	-	-	-	part 2	-	-	-	2	0.72
eɪ	-	fail 3	sham ed 1	-	-	-	-	-	-	-	4	1.4
e	-	-	shed	-	-	-	-	-	-	-	1	0.36
ʌ	-	-	-	-	-	-	-	-	but	-	1	0.36
											108	39.27

The rate of 22.18% for variant / u: / alone, is sufficient evidence that confirms the lack of phonetic and phonological discrimination between long / u: / and short / ʊ / in RP English by these learners.

Incidental data proved that / u: / in 'prove' and 'food' reached a massive 94.54%, representing 52 matching forms against only 5.45% for 3 non-matching, out of 55 judgements. This was evidence that English / u: /, is closer to Kinyarwanda / u / and thus represents less difficulty than / ʊ / to Rwandan speakers of English.

5.5.6 / ɜ: / and its interlanguage variants

Table 5.7 / ɜ: / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	Turn	25	9	15	1	36
2	Work	30	4	22	4	13.3
3	Word	30	5	25	0	16.6
4	Shirt	30	9	21	0	30
5	Girl	30	17	7	6	56.6
6	Stir	25	1	21	3	4
7	Search	25	15	9	1	60
8	surgeon	25	16	6	3	64
9	Birth	30	11	19	-	36.6
10	Bird	25	5	20	-	20
		275	92	165	18	33.45

For the Rwandan subjects, mispronunciation of / ɜ: / has been one of the greatest causes of intelligibility failure. The above rate suggests that two-thirds of the time (66.54%) the native speaker judges had great difficulty in perceiving / ɜ: / in the ten words articulated by Rwandan subjects. The difficulty this vowel represents is evidenced in the low percentage rate of 92 matching forms out of 275, i.e. 33.45% including correct and semi-correct forms, as compared to that of 165 non-matching forms (66.54%). It was predicted that these subjects would have great difficulty in convincing the native speaker judges of their production of it. This English phoneme is one of the most troublesome for most foreign learners of English both to produce and perceive. Kinyarwanda does not have a similar vowel sound in quality, hence its difficulty to learners from that background (4.6.7). Also, as it appears from the chart below, the dominance of variants / ɑ: / and / ʌ / which Rwandan learners realise as Kinyarwanda / ɑ / shows obvious influence of the East African (Kenyan, Tanzanian and Ugandan) accent of English on Rwandan speakers of English, whereby / ɜ: / is realised as /ɑ / such as in *gal* for *girl*; *wak* for *work*; and *bad* for *bird.*

The confusion in the discrimination of / ɜ: / appears in the following chart of variants.

/ɜ: /	turn	work	word	shirt	girl	stir	search	surgeon	birth	bird	TN.oc. / 275	%
ɑ:	-	-	-	-	car 3 guard 2 gar bar	star 5 start	-	sergeant 4	bath 13	-	30	11
ʌ	done 4 dull	-	-	shut 9	-	-	touch 4 dutch	-	puff 3	but 8	20	11
ɒ	-	wok rock 2	what 6 wad 10	-	-	-	-	-	-	-	19	6.9
ɪ/i:	-	week	-	shit sheet 2 ship sit	-	still 7 steal 7	sit 2 sitch	-	-	-	23	8.3

	turn	work	word	shirt	girl	stir	search	surgeon	birth	bird	TN.oc/ 275	%
æ	pan tan 9	wack	-	sat	-	-	-	-	-	bad 10	22	8
ɔ:	-	walk 9	ward 2	-	-	-	-	-	-	-	11	4
ʊ	-	book 4	wood 2 would 2	shoul d 2	-	-	-	sugar	-	-	11	4
e	-	wreck 2	-	set 2 shed 2	-	-	-	seller	beth death 2	bed 2	12	4.3
əʊ	-	rope	wrote	-	-	-	-	-	-	-	2	0.72
eɪ	-	wake	-	-	-	stay	-	-	-	-	2	0.72
ɑɪ	-	-	wide 2-	-	-	-	circle	-	-	-	3	1.09
											165	60

5.5.7 / eɪ / and its interlanguage variants

Table 5.8 / eɪ / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	Taste	25	11	14	0	44
2	Sale	30	1	28	1	33
3	Raced	30	5	23	2	16.6
4	Late	30	20	10	0	66.6
5	Pain	30	13	17	0	43.3
6	Shade	25	5	19	1	20
7	Tail	25	18	7	0	72
8	Paper	25	15	7	3	60
9	Saint	30	4	25	1	13
10	Age	25	3	22	0	12
		275	95	172	8	34.54

The rate of 34.54% suggests that nearly two-thirds of the time native speaker judges had serious difficulty in understanding the subjects articulating /eɪ / convincingly in the ten words. In chapter four (4.6.8), we have explained that because Kinyarwanda does not have diphthongs, its speakers of English tend to either use double syllabification by introducing either one of the semi-vowels <y> and <w> or to monophthongize the diphthong as / e /, which was by far the major variant in the present case (51.63%). Other variants were / i:-ɪ, ɑɪ, ʊ, ʌ, ɜ:, æ /.

/ eɪ/	taste	sale	raced	late	pain	shade	tail	paper	saint	age	TN oc. / 275	%
e	test 14	sell 21	rest 7 dress (it) 3	let 7 letter met	pen 16	shed 15	tell 4	pepper 7	sent 17 scent 8	edge 15 ledge 2 hedge 3 etch 2	142	51.63
ɪ/iː	-	scene sill 2	wrist 9 list 5	-	pin	-	-	-	-	-	18	6.5
ɑɪ	-	-	-	-	-	-	tie tile tied	-	-	-	3	1.09
ʊ	-	-	-	-	-	should 2	-	-	-	-	2	0.72
ʌ	-	sun 3	-	-	-	shut	-	-	-	-	4	1.45
ɜː	-	save	-	learnt	-	shirt	-	-	-	-	3	1.09
											172	62.5

62.54% represents the rate of lack of clear discrimination between / eɪ / and the above variant forms, some of which were more predictable than others. The substitution of / eɪ / by / e / for example, will undoubtedly result in the loss of lexical distinction between *taste* and *test*, *pain* and *pen*, *tail* and *tell,* and hence cause intelligibility problems. According to the native speaker judges' perception, monophthong / e / (52%) was the most persistent deviation to diphthong / eɪ / made by the subjects. However, there was no single evidence of double syllabification noticed in the analysis of this phoneme.

5.5.8 / əʊ / and its interlanguage variants

Table 5.9 / əʊ / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	Bone	25	5	19	1	20
2	Coat	30	8	22	0	26.6
3	Woke	30	7	23	0	23.2
4	Bowl	30	20	10	0	66.6
5	Coast	30	2	27	1	6.6
6	Foe	25	2	20	3	8
7	Load	25	8	16	1	32
8	Robe	25	11	14	0	44
9	Slope	30	24	5	1	80
10	Coal	25	11	12	2	44
		275	98	168	9	35.63

The low rate of intelligibility (35.63%) is evidence that approximately two-thirds of the time, the native listener judges had great difficulty in understanding the attempts at an articulation of / əʊ / in the ten target words. Such a rate confirms the prediction made in 4.6.11. The successful perception of *slope* (80%) and *bowl* (66.6%) markedly stands out from the rest of other words, and most particularly from *coast* (6.6%) and *foe* (8%).

Though our attempt to attribute the subjects' rate of failure (92%) in the production of *foe* to their unfamiliarity with this word would remain legitimate, it would not however justify how the same subjects scored as high as 80% and 66.6% on *slope* and *bowl* which are not necessarily more familiar than either *bone* or *coat.*

Kinyarwanda has no such equivalent sound for English diphthong / əʊ /, hence the tendency of its speakers to monophthongize it as / o / in their pronunciation as already predicted and explained in 4.6.4 and 4.6.11.

The major variants to / əʊ / were / ɔː / (25%) and / ɒ / (18%). Other variants appear in the following chart.

əʊ	Bone	coat	woke	bowl	coast	foe	load	robe	slope	coal	TN oc. / 275	%
ɒ	von 2	cot 3 pot 2	rock	-	cost 24	fo	lot 4 rod	rod 4 rob 4	slop 3 slob	-	50	18
ɔː	ball 2 born 4	court 2 caught 2	walk 18	ball 5 born 2	caused 2 port	four 6 for 3 fall 2	lord 10	-	-	call 11	70	25
ʌ	bun 4	cut 7 cult	-	-	-	fun 2	-	rub 2 rubber	slug	-	18	6.5
ɜː	burn 7	-	work 2	-	-	fur 5	-	herb	-	curl	16	6
ʊ	-	put 2 could 2	book 2	-	-	full	-	-	-	-	5	1.8
ɑː	-	cart	-	Bar 3	-	-	large	-	-	-	5	1.8
eɪ	-	-	-	-	-	-	-	rape 2	-	-	2	0.72
											172	62.5

The rate of 18% and 25% attributed to / ɒ / and / ɔː / for / əʊ / confirm the high level of lack of discrimination that was claimed between these three phonemes.

A transcription of words containing target vowels read by one subject, as well as that of / ɪ / in target words read by 10 subjects (Hope) will appear in appendix 7.

5.5.9 Non-target vowels

Two other diphthongs / ɑɪ / and / ɪə / were not initially targeted but incidentally occurred in our data. It was found out that out of 145 judgements, / ɑɪ / in *tribe* (100%) ≥ *drive* (100%) > *prize* (93.3%) > *eyes* (66.6%) reached a high average rate of 89.97% of matching forms as compared to only 10.02% of non-matching forms. This is a strong evidence to show that native judges had little difficulty to understand the articulation of / ɑɪ / in the above words. Such high rate of success can presumably be attributed to the commonness and the familiarity subjects have of these words, as well as to the fact that the native judges could not mistake them for any other words. The low rates of *eyes* and *prize* in comparison to that of *tribe* and *drive* can be tentatively explained on the basis that there were higher potentialities of contrast in the first than in the last two.

Nevertheless, 3 cases of substitution occurred in which / ɑɪ / was perceived as either / eɪ / (7/12) i.e. 58.3% as in *praise, place, haze, ace, pace*; / ɪ / (3/12) i.e 25% as in *ears*; / e / (2/12) i.e 16.6% as in *bears* and *air.*

As for / ɪə / in *jeer* and *sphere,* there were 34 cases of matching forms out of 50 judgements, i.e. an intelligibility rate of 68%, as compared to 16 cases of non-matching forms (32%). This suggests that more than two-thirds of the time, native judges were convinced of the correct pronunciation of that phoneme by the same subjects. As in the previous case, there were 3 cases of vowel substitution whereby / ɪə / was perceived as either / eɪ / as in *jail* and *stay* or one case of **dure.*

Two more incidental cases involving / ɑː / and / ɛ / were also analysed.

First, out of 100 judgements, there were 64 cases coinciding with matching forms of / ɑ: /, (i.e. 64%) as compared to 36 cases of non-matching forms (36%) in *rather* (72%) ≥ *path* (72%) > *large* (68%) > *hard* (44%). The average rate (64%) of successful attempts shows that approximately two-thirds of the time native judges had little difficulty in understanding the Rwandan subjects' pronunciation of / ɑ: / in the four words above. Kinyarwanda / a / can satisfactorily stand as near equivalent to English long vowel / ɑ: /. There were 6 variants to / ɑ: / : / æ / (9/33) 27%; / ɜ: / (8/33) 24%; / ʌ / (6/33) 18%; / eɪ / (5/33) 15%; / e / (4/33) 12% ; / ɪ / (3/33) 11%.

Second, / ɛ / occurred in *content* (100%) ≥ *death* (100%) > *tenth* (96%) > *then* (90%) > *pledge* (44%) > *ledger* (23.3%) > *enter* (12%).

It appeared that out of 185 judgements, there were 122 cases of matching forms (65.94%), as compared to 63 cases of non-matching forms (34.05%), which means that nearly two-thirds of the time Rwandan subjects convinced the native judges of their successful pronunciation of /e /. Despite all that however, the wide range of variants to /e /, seems to indicate that there was some degree of lack of a clear discrimination of / e / and the following phonemes. / e / was perceived as:

/ eɪ / (17/58) 29.3% ; / ɪ / (16/58) 27.5%; / i: / (8/58) 13.7%; / ʌ / (4/58) 6.8%; / æ / (3/58) 5%; / ə / (2/58) 3.4%; / ɜ: / (1/58) 1.7%; / ɑ: / (1/58) 1.7%; / ɒ / (1/58) 1.7%

5.5.10 Summary

The average rate of success in convincing the native judges of the correct realisation of target vowels was only 44.67%. This clearly indicates that more than half of the time, the native speaker judges had difficulty in understanding these subjects. The major difficulty in the pronunciation among Rwandan learners of English seems to be the lack of discrimination between English vowels.They tend to substitute Kinyarwanda phonemes for both similar and dissimilar English ones. In other words, they are sufficiently successful where

they produce Kinyarwanda / i / for English / i: / for example, but if they produce it for English / ɪ / where there are minimal pairs, they are much less successful.

The difficulties predicted in Chapter four (4.6) were overall substantiated by the findings of the analysis of individual words, despite the fact that the percentage of some items was quite satisfactory. It was noticed for example that short vowels of English were not always more difficult (see Table 5.10) for these learners to produce than the long ones. The fact however that there have been many instances whereby the same learners failed to make the contrasts in quality and quantity between pairs of vowels has led to intelligibility failures and has strong teaching implications. Teachers should spend time on teaching distinctions between pairs of vowels which bring about contrast in meaning such as the distinction between *ship/sheep*, and the use of schwa /ə /. Though not all diphthongs seem to have presented a great barrier to intelligibility, it is suggested that the teaching should be directed towards gradually reducing the strong tendency of substituting diphthongs by pure vowels or syllabicizing them.
The following tables best summarize our findings from both target and incidental phonemes.

Table 5.10 Target phonemes –Intelligibility rate.

	TNJ	M	IR(%)	Variants(%)	NJ (%)
ɪ	275	148	53.81	43.63	2.54
æ	275	146	53.09	45.45	1.45
ʌ	275	103	37.45	59.17	3.17
ɒ	275	143	52	45.45	2.54
ʊ	275	158	57.45	39.27	3.27
ɜ:	275	92	33.45	60	6.54
eɪ	275	95	34.54	62.54	2.90
əʊ	275	98	35.63	61.09	3.27

This table shows that though some individual phonemes were perceived successfully above 50%, yet the average rate of successful intelligibility of the

words containing the targetted vowels to native listeners was as low as (44.67%). The difficulty correlated with the double markedness of / ʌ / and / ɜ: / has been clearly corroborated. The assumption that phonemes of English that do not occur in Kinyarwanda such as / eɪ / and / əʊ / would represent a difficulty has been also corroborated by the results above, though not supported by the results from / aɪ / and / ɪə /. The deciding factor remains the familiarity that learners have of a target word and the extent to which that word can be contrasted with others.

Incidental data

The results from table 5.11 clearly show that native listeners were convinced by the attempts of Rwandan subjects in producing these English phonemes with a rate of 73.34% of success.

Table 5.11: Incidental phonemes- Intelligibility rate

	TNJ	M	IR (%)	Variants (%)	NJ (%)
i:	185	111	60	38.37	1.62
e	185	122	65.94	31.35	2.70
ɔ:	130	90	69.23	27.69	3.07
ɑ:	100	64	64	33	3
u:	55	52	94.54	1.81	3.63
ɑɪ	145	133	91.72	8.27	0
ɪə	50	34	68	20	12

This suggests that English long vowels / i:, ɑ:, u:, ɔ: / are closer to Kinyarwanda vowels / i, ɑ, u, o / than the short ones and therefore cause less difficulty to the intelligibility of Rwandan subjects. It also justifies the decision not to include them as target items in the word lists.

Overall, the results seem to indicate that in accordance with the typological markedness of vowel phonemes, the most significant difficulty is found in the production of / ɜ: / (33.45%), followed by / eɪ /, / əʊ / and / ʌ /. The difficulty predicted about the short vowels / ɪ, æ, ɒ, ʊ / was not fully substantiated if we consider final averages, as their perception by the native listeners reached above

50%. They nonetheless displayed a wide range of variants that demonstrate the subjects' lack of correct discrimination between English vowels.

The prediction of the use of double syllabification for English diphthongs made in 4.6.8 was not supported in all cases. For example, while on the one hand / ɑɪ / and / ɪə / were successfully perceived by the native speaker judges, / eɪ / and / ɪə / proved extremely difficult on the other hand, judging by their low average rate of 35.08%. It could therefore be said that the predictions of difficulty made on the basis of the contrastive analysis between Kinyarwanda and English in terms of lack of vowel discrimination by Rwandan subjects have been fully corroborated by the findings of the present analysis.

5.6 Consonants and consonant clusters

5.6.1 / θ / voiceless dental fricative and its interlanguage variants

Table 5.12 / θ / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	Thin	25	8	17	0	32
2	North	30	16	13	1	53.3
3	Three	30	12	18	0	40
4	Thank	30	24	6	0	80
5	Theme	30	5	24	1	16.6
6	Author	25	8	16	1	32
7	Path	25	14	11	0	56
8	Worth	25	5	17	3	20
9	Tenth	30	24	6	0	80
10	Death	25	21	3	1	84
		275	137	131	7	49.81

The rate of 49.81% suggests that approximately half of the time, the native speaker judges were not successfully convinced of the subjects' production of / θ /. This therefore validates the claim of difficulty that was predicted in 4.11.1. This consonant has no equivalent in Kinyarwanda and it is one of the most difficult consonants for non-native learners of English to either produce or perceive. It is substituted by a wide range of variants such as /f /, / v /, / s / and /

d / by Kinyarwanda speakers of English. The persistent occurrence of / f / in particular, was evidenced for example in target words *three, author, tenth, death* which were perceived as *free / flee, offer, deaf* respectively.

With reference to phonetic environment, it seemed that on average, / θ / in final position was better achieved (54.21%) than in initial position (42.21%). In initial position, the discrepancy between the rate of 80% for *thank* and 16.6% for *theme* would be attributed to the higher degree of commonness of the former compared to the latter. The same explanation applies to the significant difference in the rate for final / θ / between *death* (84%) and *worth* (20%) or *author* (32%). Nonetheless, commonness does not seem to justify why the most assumed common word *three* was rated lower (40%) than *path* (56%) for example.

The variant forms to / θ / are as follows:

/θ/	thin	north	three	thank	Theme	author	path	worth	tenth	death	TN oc./ 275	%
f	fin 5	boff 2 off 2 puff 2 laugh 2 loaf 2	free 6 flee 2 fee frame	-	fame 3	offer 6	puff 6	wolf 8 wharf	deaf 3	deaf 2	53	19.27
ð	then 3	-	-	-	them 7 then 5 there	other 4	-	-	-	-	20	7.27
t	tin 4	-	tree 3	tank	ten 3 term 2 team 2	-	pat 3	wrote	tent 2	-	21	7.63
z	-	-	-	-	-	-	-	wars balls walls	-	-	3	1.09
d	din	-	drink 4 drip	-	den	order 5 under	-	-	-	-	13	4.72
s	sin	-	-	sank 2 sent	-	-	pass 2	horse 4	dance	-	11	4
p	paint	-	-	punk	-	-	-	-	-	-	2	0.72
V	-	love 2 move 2	-	-	-	-	-	-	-	-	4	1.45
b	bin	-	-	bank	-	-	-	-	-	-	2	0.72
k	keen	-	-	-	-	-	-	-	-	desk	2	0.72
											137	47.63

The above variants seem to confirm the validity of the predictions made about the transfer and substitution of Kinyarwanda phonemes / f, v, d, s, t / by the subjects while trying to realise English phoneme / θ /. It also shows the evident degree of confusion between it and its voiced counterpart / ð /. Some other variants were not predictable and were not very significant.

5.6.2 / ð / voiced dental fricative and its interlanguage variants

Table 5.13 / ð / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	breathe	25	8	17	0	32
2	Then	30	19	10	1	63.3
3	Bathe	30	6	21	3	20
4	Clothe	30	6	24	0	19.9
5	With	30	28	2	0	93.3
*6	laugh*	-	-	-	-	-
7	This	25	21	3	1	84
8	These	25	8	16	1	32
9	southern	30	17	9	4	56.6
10	Rather	25	16	7	2	64
		250	129	109	12	51.6

*'Laugh' erroneously appeared in place of *lather* in list 6, item 10, due to a typing error, and was therefore excludes from calculations.

The rate of 51.6% suggests that nearly half of the subjects had great difficulty in convincing the native speaker judges of their production of / ð / in the words above. The difficulty found with /ð / was predicted in 4.11.1. The fact that Kinyarwanda does not have this fricative phoneme in its system explains to some extent why Rwandan speakers of English often confuse it with / d / and other similar variants to those for / θ /, displayed in the chart below.

Furthermore, the confusion between / θ / and / ð / can be explained on the basis of the orthography of English, *'th'* standing for both phonemes.

With reference to phonetic environment, it appeared that / ð / was almost equally well perceived in medial position (60.3%) and initial position (59.76%), and better than in final position (41.3%). It can be speculated that the huge gap between

the high rate in the production of / ð / in *with* (93.3%) and the low rates of 19.9% and 20% for *cloth/ clothe* and *bathe* is explained on the basis of greater commonness of the former compared to the latter.

Nine variants to the production of / ð / were as follows:

/ ð/	breathe	then	bathe	clothe	with	this	these	southern	rather	TNoc /250	%
θ	breath 9	thin2	bath 11 birth 3 both	cloth 12 growth broth both	-	-	teeth 3 death 2	-	-	46	18.4
t	plate 4	ten 5	bate bait	-	wit	tease	tease 4 teeth 3	certain 2	letter 2	21	9.6
d	-	den 3	bed 2	-	-	-	desk days 3 death 2	sudden 5	-	14	6.4
v	lived believe	-	-	love3-	-	-	cheese 2	seven-	river-	7	2.8
s	-	-	bus 2-	loans2-		kiss2	-	-	-	6	2.4
z	-	-	-	close4	-	-	-	-		4	1.6
g	-	-			-	-	-	-	lager 4	4	1.6
f	brief2-	-	-		-	-	-	often-	-	3	1.2
tʃ		-	-	-	-	-	cheese2		-	2	0.8
k		-	-	-	weak-	-			-	1	0.4
dʒ		-	-		-	-	bridge			1	0.4
										109	44.8

The difficulty represented by / ð / is demonstrated through the high rate of 44.8% of variants in which the confusion between it and / θ / alone accounted for 18.4% as it major variant. Also, the prediction of variants / t, d, v, s, z, f / in substitution for / ð / has been substantiated though not to the expected extent. A few of its variants were not significant. The confusion between / θ / and /ð / is further corroborated by the similarity between most of their variants.

5.6.3 / dʒ / voiced palato alveolar affricate and its interlanguage variants

Table 5.14 / dʒ / and variants

	Target Item	TNJ	M	NM	NJ	I.R.(%)
1	Large	25	24	1	0	96
2	Judge	30	29	1	0	96.6
3	Ledger	30	18	11	1	59.9
4	Ridge	30	11	18	1	36.6
5	Major	30	20	10	0	66.6
6	Agent	25	21	2	2	84
7	pigeon	25	18	5	2	72
8	pledge	25	14	10	1	56
9	Jeer	30	16	12	2	53.3
10	Jam	25	24	0	1	96
		275	195	70	10	70.90

The average rate of 70.90% suggests that the native speaker judges had relatively little difficulty in understanding the subjects articulating / dʒ / in the target words. These results also contradict only in part the fact that though this phoneme does not exist in the mother tongue of the subjects (4.11.6), it was potentially going to cause trouble. There has been persistent occurrences of terminal devoicing problems as the target words *large, ridge, pledge*, and *jeer* were perceived by native speaker judges as *latch, reach/leech, beach* and *cheer* respectively.

The high rate in the performance of *large* (96%), *judge* (96.6%), *agent* (84%), *pigeon* (72%) and *jam* (96%), can presumably be attributable to the familiarity and commonness of these words to the subjects compared to those with a lower rate such as *ridge* (36.6%), *jeer* (53.3%), *pledge* (56%). / dʒ / was mistaken for a wide range of the following variants:

/dʒ/	large	judge	ledger	ridge	Major	agent	pigeon	pledge	jeer	jam	TN.0c./ 275	%
tʃ	latch	touch	lecture	leech 2 reach 5	-	-	beecham 2 teacher 3	beach 2	cheer 3	-	20	7.3
ʒ	-	-	leisure 2 pleasure 3	-	measure 8 pleasure	-	-	-	-	-	14	5
t	-	-	later 2	rate write right 2	-	attent	-	plate 6	-	-	13	4.72
d	-	-	leader 2	rid read 2	medal	-	-	-	dear 3 deer	-	10	3.6
z	-	-	-	leads 3 pregs	book	-	-	-	-	-	4	1.45
j	-	-	-	-	-	-	-	pray	year 3	-	4	1.45
g	-	-		-	-	again st	-	preg	gear 2	-	4	1.45
ð	-	-	rather	-	-		-			-	1	0.36
											70	25.45

The rate of 25.45% is evidence of the degree of confusion and lack of clear discrimination that subjects had between / dʒ / and the above variants of which /tʃ /, / ʒ /, / t / and / d / were the major ones. A transcription of ten words containing / dʒ / and read by 10 subjects (Hope) will appear in appendix 7.

5.6.4 /b# / voiced bilabial stop (final position) and its interlanguage variants

Table 5.15 / b# / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	Robe	25	8	16	1	32
2	Rib	30	5	24	1	16.66
3	Cub	30	21	9	0	70
4	Tribe	30	23	7	0	76.66
		115	57	56	2	49.56

This suggests that nearly half of the time, the subjects showed a relative degree of difficulty in producing the voiced bilabial stop / b / in word final position correctly to convince the native speaker judges listening to them. Moreover, 39 cases out of 115 judgements (33.91%) of consonant devoicing were noticed whereby the words *robe, rib, cub* and *tribe* were perceived for example as *rope, rip / leap, cup* and **tripe* respectively. In other words, voiced / b / in final position was articulated without due vibration characterising voiced phonemes. The following chart presents variants of / b# /.

/ b# /	Robe	rib	cub	Tribe	TN oc./115	%
p	rope 8	reap 8, leap 4 ripe 4, rape 3 weep rip	camp cup 6	tripe 3	39	33.91
v	love 5	leave	-	-	6	5.2
d	-	lead 2	card	tride try 2 dry	7	6.08
g	log- plug	-		-	2	1.73
w	row	-	-	-	1	0.86
m		-	come	-	1	0.86
					56	48.69

The rate of 48.69% confirms the confusion that the subjects had between final /b/ and its respective variants above as well as a high level of consonant devoicing of / b / as / p / according to the prediction made in 4.11.2.

5.6.5 / d# / voiced alveolar stop (final position) and its interlanguage variants

Table 5.16 / d# / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	hard	30	22	8	0	73.2
2	food	25	25	0	0	100
3	rod	25	18	4	3	72
		80	65	12	3	81.25

The above table shows that native judges did not have much difficulty in understanding the Rwandan subjects producing the final / d / intelligibly in the target words *hard, food, rod*, judging by the high average rate of 81.25%

Once again, the high rates of 100% and 73.2% attained in the respective perception of *food* and *hard* seem to be related to the commonness of the use of these words more than that of *rod.*

Final / d / generated 9 cases of terminal devoicing, whereby target words *hard* and *rod* were interpreted as *heart / hat / hurt* and *brought.*

There were only two minor variants (15%) to final / d# /, i.e. / t / (9/80) and / dʒ / (3/80), when *hard* was heard as *heart* (3), *hurt* (3), *hat* (2), *brought* and *rod* as *lodge* (3).

5.6.6 / g# / voiced velar stop (final position) and its interlanguage variants

Table 5.17 / g # / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	pig	25	13	12	0	52
2	bag	30	22	8	0	73.3
3	dog	25	15	8	2	60
		80	50	28	2	62.5

The average rate of 62.5% suggests that the voiced velar stop / g / in final position caused some degree of difficulty for native speaker judges listening to Rwandan subjects. The difficulty is explained by the fact at least one-third of the time the subjects failed to convince the native judges of their correct production of that phoneme in such ordinary words. There were 25 instances out of 80 judgements of loss of voicing in the realisation of final obstruent / g / whereby the judges heard / k / as the most persistent deviation to the target / g / (31.25%), when *pig, bag, dog*, were perceived as *peak/peek, back*, and *duck* respectively.

There were three variants to / g / as / k /(31.25%); /d /(2.5%); and /t / (1.25%) when *pig , bag, dog* were perceived as *peak* (5/80), *peek* (2), *pick* (2), *pike, beak*; *back* (5/80), *bad* (2), *bike*; *dock* (5/80) and *duck* (3).

5.6.7 / v# / voiced labio-dental fricative (final position) and its interlanguage variants

Table 5.18 / v # / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	leave	25	22	3	0	88
2	save	30	26	4	0	83.2
3	dove	30	19	11	0	63.3
4	prove	30	24	3	3	79.9
		115	91	21	3	79.13

This suggests that native speaker judges had little difficulty in understanding the four words containing / v / in word final position as articulated by the Rwandan subjects. Only about a fifth of the time (20.86%) have the latter failed to convince the native English listeners.

Despite such good rates, there was however evidence of confusion and lack of discrimination between / v / and / f, z, θ, g, d, s / as the target words *leave, save, dove, prove* were interpreted as *leaf, both, dog, lead, purse*, respectively as shown in the following chart. The lack of distinction between / v /, and / f / , / z /, / θ / in particular was significant judging by their rate of 13.77% out of a total of 18.26% of all deviants.

/v#/	leave	save	dove	prove	TN.oc. /115	%
f	leaf	safe 2 self 2	-	proof 2	7	6
z	-	-	doors 3 dose 2	-	5	4.3
θ	-	-	both 2 doth 2	-	4	3.47
g	league	-	dog 2	-	3	2.60
d	lead	-	-	-	1	0.86
s	-	-	-	purse	1	0.86
					21	18.26

5.6.8 /z#/ voiced alveolar fricative (final position) and its interlanguage variants

Table 5.19 / z# / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	prize	30	23	7	0	76.6
2	peas	25	14	10	1	56
3	buzz	25	12	13	0	48
4	cause	25	18	7	0	72
5	eyes	30	21	6	3	69.9
6	grows	25	20	5	0	80
		160	108	48	4	67.5

The rate of 67.5% suggests that slightly above two-thirds of the time, the subjects succeeded in being intelligibly heard by the native speaker judges while producing final voiced alveolar fricative /z / in the above words.

The substitution of / z / by / s / indicates a relative degree of poor articulation which resulted in terminal devoicing (23.1%), when *prize, peas, buzz, cause, eyes*, and *grows* were interpreted as *price/ place, peace, bus, course, ice* and *gross* respectively. Variants to /z#/ were / s> t> θ > v ≥ ʃ /.

/z#/	prize	peas	buzz	cause	eyes	grows	TN oc. /160	%
s	price 6 place	peace 7 place piece	bus 7 bats 4	course 2 coats	ice 3 ace 2 pace	gross	37	23.1
t	-	-	boost	coast 2 coast 2	-	-	5	3.1
θ	-	-	bath	-	-	growth 3	4	2.5
V	-	-	-	-	-	clove	1	0.62
ʃ	-	dish	-	-	-	-	1	0.62
							48	30

5.6.9 / nt / nasal consonant cluster (medial position) and its interlanguage variants

Table 5.20 / nt / and variants

	Target Item	TNJ	M	NM	NJ	I.R.(%)
1	winter	25	24	1	0	96
2	enter	25	19	3	3	76
3	content	25	25	0	0	100
		75	68	4	3	90.66

The high rate of 90.66% is evidence that the consonant cluster / nt / in word medial position was extremely well produced in three words read by Rwandan subjects to convince the native speaker judges. There were only seven cases (9.33%) of both non-matching and non-judgement forms. Despite this high rate of success, three minor variants to / nt / were noticed as / nd, t, ð / (5.33%) when *winter* was perceived with consonant simplification / t / in *meter, enter* as *under* (2/75) and *other.*

5.6.10 / mp / nasal consonant cluster and its interlanguage variants

Table 5.21 / mp / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	hamper	30	25	4	1	83.33
2	whimper	30	24	2	4	79.99
3	important	25	25	0	0	100
4	impact	30	30	0	0	100
		115	104	6	5	90.43

The results in the above table suggest that the native speaker judges had little difficulty in understanding the production of the consonant cluster / mp / in medial position in the four words above. The maximum rates (100%) in the production of *important* and *impact* could presumably be attributed to the commonness of these words in the subjects' lexicon in comparison to either *hamper* or *whimper.* There were 3 variants to / mp /, involving some level of simplification of /mp /- /m/ and substitution of / mp / - / nt / and / nd / in six occurrences out of 115, which were not very significant.

/mp /	hamper	whimper	important	impact	TN oc. /115	%
m	harm 2 hammer	-	-	-	3	2.60
nt	-	winter 2	-	-	2	1.73
nd	hand	-	-	-	1	0.86
					6	5.21

5.6.11 / ŋk / nasal consonant cluster (medial position) and its interlanguage variants

Table 5.22 / ŋk / and variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	blanket	30	30	0	0	100
2	conquer	30	20	10	0	66.66
3	linker	25	22	3	0	88
		85	72	13	0	84.70

The high rate of 84.70% suggests that native speaker judges had little difficulty in perceiving Rwandan subjects articulating nasal cluster/ nk / in medial position in three target words. The maximum rate (100%) in the perception of *blanket* seems to be related to its commonness in comparison to either *conquer* or *linker.* Incidentally, Kinyarwanda uses the word *ubulingiti* which sounds a direct borrowing from Kiswahili language *blanketi* which it presumably borrowed from the English word *blanket*. There were only 3 out of 25 instances of mother tongue transfer of / ŋg / for / ŋk / which resulted into the perception of the word *linker* as *linger.* Overall, there were three variants to / ŋk / in 13 occurrences out of 85 judgements as the next chart shows.

/nk/	blanket	conquer	linker	TN oc./85	%
k	-	cooker 5 book 4	-	9	10.58
ng	-	-	linger 3	3	3.52
tʃ	-	duch	-	1	1.17
				13	15.29

5.6.12 Initial consonant clusters

The difficulty predicted with English consonant clusters (cf.4.11.11) comes from the fact that English has a more complex syllable structure in comparison to Kinyarwanda, whose normal syllable pattern is CV, as it is the case for many Bantu Languages.

It is therefore assumed that the way in which English consonants cluster together either in initial, medial and final word position is to a great extent going to cause difficulty to learners of English whose L1 behaves differently.

In that respect, none of the consonant clusters tested here, i.e . /pr, bl, tr, dr, gl, sp, sf, br/ occurs in Kinyarwanda.

Table 5.23 / # pr-, bl-, tr-, dr-, gl-, sp-, sf-, br- / and IL variants

	Target Item	TNJ	M	NM	NJ	I.R. (%)
1	prayed	25	21	4	0	84
2	blow	30	25	5	0	83.33
3	train	30	20	10	0	66.66
4	drive	30	30	0	0	100
5	glow	30	8	18	4	26.66
6	sport	25	23	0	2	92
7	sphere	25	15	9	1	60
8	brief	25	19	6	0	76
9	drive	30	30	0	0	100
10	blow	25	20	5	0	80
		275	211	57	7	76.72

The rate of 76.72% suggests that native judges had little difficulty in understanding Rwandan subjects articulating initial consonant clusters in ten words. The intelligibility that the subjects have achieved depends much on the knowledge they have of the target words. The tendency to re-syllabicize words by inserting vowels between elements of some clusters as a way of getting around complex structures that subjects are not familiar with, was evidenced. This tendency is believed to be caused by the negative transfer from Kinyarwanda that affects the way in which they speak English, French or Kiswahili. In our analysis, only seven cases of vowel insertion have surfaced:

prayed was interpreted as *parade; blow* as *below* and *borrow* (2/30); *train* as *to rain; brief* as *believe (2/25)* and *sphere* as *severe.*

There were also only a few cases of consonant cluster simplification via a deletion of one consonant, such as when *blow* was perceived as either *low, law* or *allow,* the latter case suggesting a re-syllabification.

The deliberate repetition of the words *drive* (100%) and *blow* (83.3%- 80%) serves as evidence of a strong consistency the subjects had in producing them convincingly to the native judges. We would attribute success in perceiving most of the target words to their commonness in the subjects' lexicon, most particularly *drive, sport* and *prayed.* Here are the variants to initial consonant clusters:

5.6.12.1 / #pr / in *prayed* was perceived as

p+v	parade	1/25	4%
br	bread	1/25	4%
pl	played	1/25	4%
	plate	1/25	4%
		4/25	16%

There was one instance (4%) of re-syllabification through vowel insertion in the realisation of target word *prayed.* The remaining 12% are evidence of substitution by which the same word was perceived as *bread, played* and *plate.*

5.6.12.2 / #bl / in *blow* was perceived as

b+v	below	1/30	3.33%
	borrow	1/30	3.33%
	allow	1/30	3.33%
l	law	4/55	7.27%
	low	1/30	3.33%
c+r	draw	1/25	4%
	grow	1/25	4%
		10/55	28.58%

Three instances of re-syllabification were noticed through vowel insertion in the production of *blow* as *below* (3.33%), *borrow* (3.33%) and *allow* (3.33%). There

were five other instances of consonant cluster simplification through the dropping/ deletion of the initial consonant in / bl / as *blow* was perceived as *law* (7.27%) and *low* (3.33%). Also, three instances of the / l / being interpreted as /r / occurred in the perception of *blow* as *borrow*, *draw* and *grow*. The rest (6.66%) accounted for consonant clusters simplification / bl / - / l / via deletion of the initial consonant.

5.6.12.3 / #tr / in *train* was perceived as

str	strain	5/30	16.66%
kr	crime	2/30	6.66%
	cream	1/30	3.33%
dr	drain	1/30	3.33%
t+v	to rain	1/30	3.33%
		10/30	33.33%

In the judges' perception, one case of re-syllabification (3.33%) through vowel insertion emerged when one subject produced *train* as *to rain*. The rest (30%) was consonant substitution of / tr / by / str, kr, dr/.

5.6.12.4 / #dr / in *drive* was twice successfully produced at a maximum rate of 100% to convince the native speaker judges. No variant was noticed.

5.6.12.5 / #gl / in *glow* was perceived as

gr	grow	10/30	33.33%
	growl	2/30	6.66%
br	broke	1/30	3.33%
l	love	1/30	3.33%
	law	3/30	9.99%
g	go	1/30	3.33%
		18/30	60%

There were 13 cases of consonant substitution / gl / - / gr / and / br / out of 30 judgements, i.e. 43.33%, which seems to show that the distinction between / l / and / r / is a big problem. A further 5 cases of consonant cluster simplification

(16.6%) through the dropping of one consonant occurred in *love, law, go* for *glow.*

5.6.12.6 **/ #sp /** in *sport* did not apparently cause any significant difficulty of comprehension to the native speaker judges, in the light of the extremely high rate of 92% of its perception.

5.6.12.7 **/ #sf /** in sphere was perceived as

sw	swear	2/25	8%
sl	slayer	1/25	4%
sp	spear	1/25	4%
st	stay	1/25	4%
f	fair	1/25	4%
	fear	1/25	4%
ʃ	share	1/25	4%
s+v	severe	1/25	4%
		9/25	36%

Six instances out of 25 judgements (24%) of consonant cluster substitution occurred whereby / sf / was substituted by / sw, sl, sp, st, ʃ /. There were also two cases of consonant cluster simplification via deletion of one consonant in the realisation of sphere as *fair* and *fear* (8%). One further instance of vowel addition was noticed in the perception of it as *severe* (4%).
But overall, the consonant cluster / sf / was relatively well produced and perceived at a rate of 60% (Table 5.23).

5.6.12.8 **/ #br /** in *brief* was realised as

b+v	believe	2/25	8%
w	with	1/25	4%
r	reef	1/25	4%
	roof	1/25	4%
l	live	1/25	4%
		6/25	24%

Only two cases of re-syllabification through vowel insertion occurred in the realisation of *brief* as *believe*. Two other cases of consonant simplification via

deletion of the initial onsonant took place when *brief* was perceived as *reef* and *roof* (8%). There were also three cases of the / r / being interpreted as / l / in *believe, live,* for *brief*, which substantiate the difficulty predicted about the confusion between these two (4.11.9). The remaining two cases represent the consonant cluster being substituted by single consonants / w / and / l / in the realisation of *brief* as *with* and *live* (8%).

5.7 Other consonants and consonant clusters

Besides the target words, our data also included incidental cases of consonants in word initial and final position that we have looked into.

5.7.1 / p# / in *slope* > *ship* > *cup* > *cap* reached a high rate (90.47%) in 95 matching forms out of105 judgements, which suggests that only 9.52% of the 10 subjects failed to produce it convincingly in the evaluation of the native speaker judges. In nine non-matching forms, there were five cases of perceived consonant voicing whereby / p# / was interpreted as / b / in *cap* as *tub* (2), *cab; slope* as *slob;* and *cup* as *tub*. In four further cases, / p / was interpreted as / t / and / g / in the perception of *cap* as *cut* (3) and *slope* as *slug.*

5.7.2 / t# / in *sit* > *hat* ≥ *shirt* > *hut* ≥ *put* > *cot* > *shot* ≥ *coat* ≥ *soot* caused little difficulty to both the subjects and the judges, in the light of the extremely high rate of 92.24% representing 226 matching forms out of 245 judgements. The only major case of substitution occurred in consonant voicing when / t / was overwhelmingly interpreted as / d / in 16 out of 17 non-matching forms and by /p / in another one case.

5.7.3 / k# / in *woke* > *thank* > *stock* > *work* > *dock* was successfully perceived at a rate of 86% representing 129 matching forms out of 150 judgements. The major perceptual problem of / k / in target words was its voicing as / g / in 9 cases out of 20; the minor ones being / t / (5/20) ; / p / (3/20); / d / (1/20) and / l / (1/20).

5.7.4 / tʃ # / in *much* ≥ *match* > *pitch* was convincingly perceived at a high rate of 90.58% representing 77 matching forms out of 85 judgements, against only 8 non-matching forms of which two represent non-judgement. / tʃ # / was interpreted with consonant voicing when *pitch* was perceived as *badge* (3/6), while three other cases represent its perception as / s /, / ps / and / ʃ / in the interpretation of *pitch* as *pips; much* as *rush* and *match* as *mash* respectively.

5.7.5 / mp# / in *stamp* > *stump* > *pomp* was successfully produced at a rate of 90% representing 81 matching forms out of 90 judgements. Five cases of simplification and four of substitution emerged in its production. / mp# / was perceived as / m / when *stump* was interpreted as *stem* (2/9); *pomp* as *palm* and *plum*; and *pomp* as *pan*; as / nd / in the interpretation of *stump* as *stand.* It was also perceived as / mb / in the interpretation of *pomp* as *bomb* ; and as /nk / when *pomp* was perceived as *bank* (2/9).

5.7.6 / nz# / in *bins* was achieved with a rate of 63.33% representing 19 matching forms out of 30, against 33.33% (10 non-matching) and 3.33% of one non-judgement. There were four minor substitutions of / nz# / in 10 occurrences when bins was interpreted with / nʃ / in *bench* (2); / nt / in *bent* (2); / lz / in *bills* (4); / ns / in *bince* and *dense.*

5.7.7 / lz# / in *hills* was perceived at a rate of 53.33% in 16 matching forms out of 30, which suggests that only just over half of the time the subjects were able to convince the native speaker listeners. Eight cases of simplification were noticed when / lz / was perceived as / z / in *his* (4), *hears* (2), *hers*, and **fiz.* The problem with / l / was again manifest in three cases whereby *hills* was interpreted as *hears* (2) and *hers*. A further six cases of substitution surfaced whereby / lz / was interpreted as / ʃ / in *fish;* / ld / in *held* (2); / ns / in *dance* (2) and / nz / in *tins.* The last three cases seem to suggest a problem that Rwandan learners of

English have with the English suffix <s > often confused with / z / as predicted in 4.11.2.

5.7.8 / ks# / in *chicks* was successfully perceived at a high rate of 88% of 22 matching forms out of 25, against only 8% of 2 non-matching and only 4% of one non-judgement. The only variant to / ks / was the substitution of it as / z / in the interpretation of *chicks* as *cheese* (2).

5.7.9 / st # / in *coast* > *lost* > *taste* was perceived at a high rate of 93.75% in 75 matching forms against only 6.25% representing 5 non-matching forms. Two cases of 'paragoge' (i.e. addition of final vowel) occurred when *taste* was perceived as *tasty*' (2). A further 2 cases of substitution of / st / by / d / led to a lexical misinterpretation when *coast* was interpreted with the past tense form – *ed* of the verb *cause* as *caused* (2).

5.7.10 Initial / #st / in *stamp* ≥ *stump* > *stock* > *stir* was extremely well perceived in 108 interpretations of matching forms (93.91%) against only 6.08% of 7 non-judgements. There were no variant forms to it.

5.7.11 Initial / #sl / in *slope* was successfully perceived at a high rate of 96.66% of intelligibility in 29 matching forms, against only 3.33% for one non-judgement form. As in the previous case, there was no case of single variant to / sl /.

5.7.12 Summary

In summary, five processes have occurred in the realisation and interpretation of the consonants and consonant clusters thus far analysed.

1. Phonetic deviation through 'epenthesis' such as in 5.6.12/ 13/ 14/ 18/19 whereby *prayed* was interpreted as *parade*; *brief* as *believe*; *blow* as *below/ borrow*; - *train* as *to rain*; and *sphere* as *severe.*
2. Phonetic substitution for each phoneme has been shown in respective charts of different variants to the target phonemes such as for example in 5.6.18 whereby / sf / was interpreted as → [sp], [st], [sw]...

3. Consonant deletion / simplification, as in 5.6.13 whereby *blow* was interpreted as *low / law*, or as in *sphere* where / sf / was perceived as [f] as in *fear* (5.6.18).
4. Terminal devoicing / dʒ / as / tʃ / (5.6.3)

   /d / as / t /; / b/ as / p / ; / g / as / k /; / z / as / s /.
5. Voicing: / p / as / b /; / t / as / d / ; / k / as / g / ; / tj / as / dj / ; / st / as / zd / (See 5.7.2/ 3 /4 / 9).

The following table sums up the intelligibility rates of different consonants.

Table 5.24. Intelligibility rates of consonants

	Target Items	Variants (%)	NJ (%)	Intelligibility (%)
1	θ	43.63	2.54	49.81
2	ð	43.6	4.8	51.6
3	dʒ	25.45	3.63	70.90
4	b#	48.69	1.73	49.56
5	d#	15	3.75	81.25
6	g#	35	2.5	62.5
7	v#	18.26	2.60	79.13
8	z#	30	2.5	67.5
	Obstruents-average	32.95	3	64.03
9	nt	5.33	4	90.66
10	mp	5.21	4.34	90.43
11	nk	15.29	0	84.70
	Nasals-Average	8.61	2.78	88.59
12	#pr	16	0	84
13	#bl	16.66	0	83.33
14	#tr	33.33	0	66.66
15	#dr	0	0	100
16	#gl	60	13.33	26.66
17	#sp	0	8	92
18	#sf	36	4	60
19	#br	24	0	76
20	#dr	0	0	100
21	#bl	20	0	80
	C.Clusters-Average	20.59	2.53	76.86

The above results suggest that contrary to the writer's expectations, the single consonants were less well produced and interpreted (64.03% in comparison to initial consonant clusters (76.86%) and nasal clusters (88.59%), according to the native speaker judges' estimates. The difficulty represented by / θ / was more serious than that of / ð /. Overall, / θ, ð, b#, #gl / were less convincingly produced than other consonants.

Other non-target consonants occurring in both initial and final position showed the following results:

Table 5.25 Intelligibility rate – initial/ final consonants+ clusters

		TNJ	Variants (%)	NJ (%)	Intelligibility (%)
1	p#	105	8.57	5.71	90.47
2	t#	245	6.93	0.81	92.24
3	k#	150	13.33	0.66	86
4	tʃ#	85	7.05	2.35	90.58
5	mp#	90	10	0	90
6	nz#	30	33.33	3.33	63.33
7	lz#	30	46.66	0	53.33
8	ks#	25	8	4	88
9	st#	80	5	1.25	93.75
10	#st	115	0	4.3	93.91
11	#sl	30	0	3.33	96.66

The results from incidental data prove that despite evident cases of consonant voicing/devoicing, simplification and substitution, initial and final consonants tested here caused little threat to the intelligibility. Therefore, the difficulties predicted (4.11.2) about the consonants in final position and consonant clusters of English on the ground they do not exist in Kinyarwanda was not totally corroborated by the results of the present test. Nonetheless, the low rate of 63.33% and 55.33% for / nz# / and / lz# / is an indication of the learners' relatively less convincing production in comparison with the remaining consonant clusters. Finally, it was noted that the mispronunciation of consonants and consonant clusters led to fewer intelligibility failures than that of the vowels.

5.8 Word prosody

The following section was an attempt to measure the role played by stress placement and the cause of deviant stress, as well as its effect on intelligibility of Rwanda subjects through the reading of a set of 20 English words.

The selection included mostly words ending in – *ise*, and –*ate*, most of which are orthographically similar to French. The intention was to corroborate the degree of influence that French pronunciation has on the pronunciation of a list of target words by the subjects under investigation. The transfer of French stress in both English words and connected speech was substantiated by Kenworthy (1987:132-133) who said that explicit articulation of the sounds of the final syllable gives it 'prominence' or 'stress'. She further maintains that whereas English words tend to have a front-weighting, French words have a tendency for end-weighting.

5.8.1 Words + -ise

Table 5.26 - *ise* and IL variants

	Target item	TNJ	M	NM	NJ	I.R.(%)
1	criticise	25	25	0	0	100
2	brutalise	30	27	1	2	90
3	organise	30	30	0	0	100
4	realise	30	29	1	0	96.6
5	democratise	25	24	1	0	96
6	disorganise	25	25	0	0	100
7	demoralise	30	28	0	2	93.3
8	summarise	25	24	0	1	96
9	economise	20	20	0	0	100
		240	232	3	5	96.66

The results from the above table (96.66%) clearly show that the native speaker judges had very little difficulty in understanding the reading of the words, despite the deviant stress placement. This confirms what Lanham (1990) had stated concerning isolated words, that errors in accent did not have serious consequences on intelligibility.

The influence of French pronunciation on the production of these orthographically similar words to English can not be ruled out, due to the fact that the subjects who took part in this test learnt French before English. One word that represents the series of words ending in *-fy*, was also analysed. The word *clarify* was rated highly intelligible (80%) in 20 matching forms out of 25 judgements. The successful interpretation of these words is presumably attributable to the fact that the native judges could not possibly have mistaken them for any other potentially contrasting words.

Some deviations were noticed, which nonetheless were of no great consequence in the light of the smallness of their rates (4.61%). For example, *brutalise* was interpreted as *britalte* (1/30) 3.33% ; *clarify* as *to crafit* (2/25) 8% and *to profit* (1/25) 4%; *realise* as *relise* (1/25) i.e. 4%; and *democratise* as *democrate* (1/25) i.e. 4%.

5.8.2 Words + -ate

Table 5.27 : - *ate* and IL variants

	Target Item	TNJ	M	NM	NJ	I.R.(%)
1	associate	25	23	1	1	92
2	negociate	30	29	0	1	96.66
3	complicate	30	26	0	4	86.66
4	calculate	25	24	0	1	96
5	communicate	30	30	0	0	100
6	certificate	25	22	2	1	88
7	discriminate	30	29	0	1	96.66
8	celebrate	25	25	0	0	100
9	cultivate	20	18	2	0	90
		240	226	5	9	94.16

As in the preceding case, the rate of 94.16% is a clear evidence once again that the native judges did not have any major difficulty in correctly perceiving these target words either. Such a high rate can in part be explained on the grounds of the native judges' deliberate tolerance, which disregarded non-standard word stress placement as obstructing their understanding.

As in 5.8.1, the shift of stress in the above words by Rwandan subjects can be attributable to the influence of French pronunciation and the orthographic resemblance between the target words and French words. These subjects

consistently transfer the stress on the final long syllable from French word <*associer*> into the production of English word *associate.* However, we explained in chapter four (4.1.14) that the influence of French alone was not sufficient to explain such deviations.

The following intelligibility failures occurred when *associate* was perceived as *ask for ship* (4%); *certificate* as *silk cut* (4%) and *safeguard* (4%); *cultivate* as *create* (5%) and *deteriate* (5%).

The word *interesting* was added to the list and tested for its likely stress on -ˈ*rest*-. It was found that regardless of the deviant stress placement by the same subjects, it was successfully perceived by the native judges at a high rate of 84% in 21 matching forms out of 25, against 16% in 4 non-matching forms. This is because there was little likelihood of any potential contrast to it. It was nonetheless misperceived as *contesting* (2/25) i.e. 8%, *testing* (4%), and *a question* (4%). Thus in all cases, the subjects stressed the syllable -ˈ*rest*- without serious consequences of interpretation.

To conclude, it is interesting to note that though the subjects made wrong word stress, this led to little intelligibility failure. In the light of the high average rate of 94.14% attributed to the interpretation of the 20 target items, it may be strongly assumed that where the results conflict with the predictions, the deviations in pronunciation were given less importance by the native speaker listeners.

5.9 Sentence phonology

5.9.1 Purpose of the test

The idea underlying the use of sentences in this work is an attempt to measure the extent to which, the lack of features of English connected speech, such as the use of weak forms, and various forms of simplification by Rwandan subjects would affect their level of intelligibility to native speakers of English. The test was carried out on a group of 55 subjects, described in 5.2.1. Also, sentences were used on the ground that communication usually goes beyond the use and understanding of isolated words and sounds. The use of sentences is therefore

hoped to give a much broader view of the subjects' difficulty with English speech, and will bear serious pedagogical implications on the teaching of English to learners from such background. It will also give a better measurement of the concept of intelligibility/ comprehensibility than it would be possible if only one set of data alone were used.

Disruption of rhythmic patterns of English by Rwandan subjects, is strengthened by their persistent use of full quality vowels in unstressed syllables to such an extent that weak forms of various functional words may sound stressed.
The tendency among these subjects to either shorten stressed syllables or lengthen unstressed ones reflects the syllable timing of the rhythm of Kinyarwanda that they almost integrally transfer into English. Such transfer is thought to distort the rhythm of English speech and affect both the subjects' intelligibility and comprehensibility in English.

5.9.2 Materials

A set of 23 sentences was designed to measure the intelligibility of spoken sentences by a group of 60 subjects listened to by five native speaker judges. These sentences contain words and phrases that are potential cases for weak forms and different forms of simplifications. An overall impressionistic rate given by the judges will apply to each of a set of three sentences assigned to each learner. A transcription of 3 sentences read by one subject (Hope) will appear in appendix 8.
Though it can be argued that the use of strong forms of English may not necessarily obstruct intelligibility, they however may give a wrong impression of emphasis or contrast where none was intended. Here is the list of sentences devised to test productive intelligibility.

1. What do you want for your breakfast, bread and butter?
2. They have been living there for the last ten months.
3. I want you first to apologize before going to play.
4. They are always talking about good food.

5. The girls were playing in the garden when we arrived.
6. I will just drink a glass of water, she said.
7. Look at it, and if you think you like it, take it with you.
8. They didn't move in there until last September.
9. I saw him last month and we talked for about half an hour.
10. I was thirsty, that is why I asked them for something to drink.
11. They've bought this new car for ten thousand, but they don't like it.
12. The three men have been working at home for the whole day.
13. Come and sit down here, they said.
14. What do you think we should do this evening?
15. He thought about it for a long time, didn't he?
16. The boy received his prize from the teacher.
17. They asked him what he was thinking of.
18. He was running so fast that I couldn't catch him.
19. You should've come and seen us the other day.
20. The first train leaves at about ten, doesn't it?
21. He ran away without eating anything.
22. They must have taken the long road.
23. Nothing prevented them from going to demonstrate in the streets.

5.9.3 The native speaker judges

The judges (J1- J5) and their task have been described in detail in 5.2.2. As the tables will show, every subject was assigned three sentences to read. The average rate given by each judge, (i.e.x/5), applies to each of a set of three sentences. The final column of each table will represent the five judges' average impressionistic rate of intelligibility of every subject from each of the six-targeted groups in the four schools as described in 5.2.1.1/2/3/4.

5.9.4 Inter-group analysis

5.9.4.1 Group one: Hope International School (10 subjects).

Table 5.28 Intelligibility rate : Hope

Subj.	Sent.	TNJ	J1	J2	J3	J4	J5	X/5	I.R(%)
1	1-2-3	15	5	5	4	2	4	4	80
2	4-5-6	15	4	5	5	4	3	4.2	84
3	7-8-9	15	4	3	3	3	4	3.4	68
4	10-11-12	15	3	2	2	3	3	2.6	52
5	13-14-15	15	4	2	2	3	3	2.8	56
6	16-17-18	15	5	4	3	2	2	3.2	64
7	19-20-21	15	3	3	3	3	3	3	60
8	21-22-23	15	3	4	4	3	2	3.2	64
9	1-2-3	15	5	5	5	3	3	4.2	84
10	4-5-6	15	4	4	3	3	2	3.2	64

This suggests that the native speaker judges were slightly higher than two-thirds of the time convinced by the intelligible reading of the subjects. The deviations that occurred will be reconsidered in section 5.11.

5.9.4.2 Group Two: Windle School (10 subjects).

Table 5.29 : Intelligibility rate – Windle

Subj	Sent.	TNJ	J1	J2	J3	J4	J5	X/5	I.R (%)
1	1-2-3	15	5	5	5	5	3	4.6	92
2	4-5-6	15	3	3	4	4	3	3.4	68
3	7-8-9	15	3	3	3	2	1	2.4	48
4	10-11-12	15	4	4	3	3	1	3	60
5	13-14-15	15	3	3	5	3	3	3.4	68
6	16-17-18	15	4	4	4	3	2	3.4	68
7	19-20-21	15	2	2	2	2	1	1.8	36
8	17-20-22	15	3	3	4	3	1	2.8	56
9	5-9-14	15	4	3	4	4	3	3.6	72
10	-	-	-	-	-	-	-	-	-

The rate of 63.11% suggests that overall, the subjects reached a satisfactory level of intelligibility. Only two subjects (3, 7) did not reach 50% to convince the judges of their intelligibility. One mishap in the above table is that the subject (10)

was not heard and evaluated, probably from error in recording, which was taken into account in the calculations.

5.9.4.3 Group Three A: Kabiria school (10 subjects from form 2)

Table 5.30 Intelligibility rate – Kabiria Form 2

Subj	Sent.	TNJ	J1	J2	J3	J4	J5	X/5	I.R(%)
1	1-2-3	15	4	4	3	3	3	3.4	68
2	4-5-6	15	4	5	3	5	4	4.2	84
3	4-5-6	15	4	3	2	4	3	3.2	64
4	7-8-9	15	5	4	4	4	4	4.2	84
5	10-11-12	15	4	4	3	4	3	3.6	72
6	13-14-15	15	5	3	4	3	2	3.4	68
7	16-17-18	15	4	3	3	3	3	3.2	64
8	19-20-21	15	4	2	2	4	2	2.8	56
9	22-23-2	15	2.5	2	1	3	4	2.5	50
10	5-9-14	15	5	3	2	4	2	3.2	64

These results suggest that the native speaker judges were convinced by the intelligible pronunciation of these learners slightly past over two-thirds of the time, judging by the average rate of 67.4%.

5.9.4.4 Group Three B: Kabiria School (10 subjects from form 4)

Table 5.31 Intelligibility rate- Kabiria Form 4

Subj	Sent.	TNJ	J1	J2	J3	J4	J5	X/5	I.R (%)
1	1-2-3	15	4	4	3.5	3	3.5	3.6	72
2	4-5-6	15	4	3	3	4	2	3.2	64
3	4-5-6	15	4	2	2.5	2	1	2.3	46
4	7-8-9	15	2	2	1	2	2	1.8	36
5	10-11-12	15	3	5	4.5	2	3	3.5	70
6	13-14-15	15	3	1	1	1	1	1.4	28
7	16-17-18	15	2	2	1.5	2	1	1.7	34
8	19-20-21	15	3	3	3	3	2	2.8	56
9	22-23-2	15	3	2	2	2	4	2.6	52
10	5-9-14	15	5	4	3.5	3	2	3.5	70

This suggests that only past over half of the time the subjects were able to convince the native speaker judges of their intelligibility. Four subjects (3,4,6,7) failed to reach 50%. It came as a surprise to the researcher to notice that the subjects from intermediate did less well than the least advanced of all from form two. This seems to corroborate the claim that advanced subjects are not necessarily those who are the most intelligible.

5.9.4.5 Group Three C: Kabiria School (10 subjects from form 6)

Table 5.32 Intelligibility rate – Kabiria Form 6

Subj.	Sent.	TNJ	J1	J2	J3	J4	J5	X/5	I.R (%)
1	1-2-3	15	4	2	2	3	3	2.8	56
2	4-5-6	15	3	3	1.5	2	3	2.5	50
3	4-5-6	15	4	3	2.5	3	3	3.1	62
4	7-8-9	15	5	2	2.5	2.5	2	2.8	56
5	10-11-12	15	4	3	2.5	4	4	3.5	70
6	13-14-15	15	4	2	2.5	3	3	2.9	58
7	16-17-18	15	4	5	5	3	5	4.4	88
8	19-29-21	15	5	3	4.5	3	4	3.9	78
9	22-23-2	15	4	4	4	3	5	4	80
10	5-9-14	15	4	4	5	4	3	4	80

The rate of 67.8% suggests that the subjects were slightly above two-thirds of the time intelligible to the native speaker listeners while reading the target sentences.

5.9.4.6 Group Four: ILTC – Kigali (5 subjects)

Table 5.33 Intelligibility rate- ILTC

Subj	Sent.	TNJ	J1	J2	J3	J4	J5	X/5	I.R (%)
1	1-2-3	15	5	4	4	3	3	3.8	76
2	4-5-6	15	4	4	4	3	3	3.6	72
3	7-8-9	15	5	3	3.5	3	3	3.5	70
4	10-11-12	15	4	4	2.5	2.5	2	3	60
5	5-9-14	15	5	5	4.5	5	5	4.9	98

The subjects from this group have performed better to convince the native listeners who rated their intelligibility at 75.2%, the highest rate of all the 6 groups. The fact that only five subjects took part in the task and have read only half of the sentences might have played a role in such a high scoring. But this remains only a speculation.

5.10 Summary

The inter-group overall intelligibility rate of spoken sentences by a group of Rwandan subjects can be summarized in the following table.

Table 5.34 Inter- group intelligibility rate (IR)

Schools	Subj.	TNJ	Intelligibility (%)
Hope	10	150	67.6
Windle	9	135	63.11
Kabiria-Form2	10	150	67.4
Kabiria-Form 4	10	150	52.8
Kabiria-Form 6	10	150	67.8
ILTC-Kigali	5	75	75.2

The results from this table show that there was not a significant inter-group competence discrepancy, apart from Kabiria (form 4), who scored less than any other group. The writer's claim that the more advanced the subjects, the more intelligible they would be was not fully supported. Subjects from Kabiria – Form 2 did almost equally well as those from Hope and from form 6 with only a negligible margin difference of 0.2% and 0.4% respectively. It would be interesting to investigate why the subjects from ILTC did much better than those in any other group, despite the fact that they are not the most advanced of all. The above results are evidence that the subjects dealt with have the same pronunciation problems in English irrespective of their age and level of education.

5.11 Detailed Sentence Analysis

This section aims at measuring the phonological competence of a group of Rwandan subjects reading a set of 23 sentences, listened to by five British native speakers of English. These sentences were designed on the basis they contained potential use of weak forms and simplifications of all kinds that were claimed hardly appearing in the speech of these subjects. Also, lexical stressed forms will be considered in as much as they greatly contribute to the whole understanding of a speech form. Deviant forms in each sentence will appear in italics, whereas omission or lack of understanding will be shown by either empty space, dots (....) or a question mark. The mean score for each sentence will be calculated out of the average sum (x/5) of individual scores given by five native speaker judges. The interpretations we shall shortly look into are a faithful reproduction of what the judges heard and wrote down from the subjects' reading.

5.11.1 Sent. 1 What do you want for your breakfast, bread and butter?

Testing for the coalescence form of *what do you*; weak forms of *for*, *your*, *and.*
It was read by 7 subjects out of 55, with a mean score of 3.71 out of 5, (74.2%). This suggests that more than two-thirds of the subjects were able to convince the native speaker judges of their intelligible reading. Seven instances in which *butter* was heard as *bitter*, are presumably due to the subjects' inability to articulate English / ʌ / accurately as predicted in 4.6.6. However, there was no single evidence of / ɪ / being a variant of / ʌ / in 5.5.1. None of the targeted forms was judged unintelligible to the judges as there were no deviations written down by the judges.

5.11.2 Sent. 2 They have been living there for the last ten months.

Testing for potential production of the contracted form of *they have be*en; weak form of *for*; elision of final / t / between two consonants of *last* and *ten*.
Nine subjects read it with an average mean score of 3.65 out of 5, i.e.(73%). This suggests that more than two-thirds of the time, the native speaker judges had

little difficulty in understanding these subjects. All the target forms were successfully interpreted in their strong forms, apart from two cases one in which the listeners interpreted *we* for *they*, and another where there was total unintelligibility in the perception of *the last*. Only three deviations out of 45 judgements were noticed from all the groups, which is quite insignificant.

a.They have been *leaving* there for the last ten months.

b. *We* have been living there for the last ten months.

c. They have been living/*leaving* for (?) ten months.

The use of *leaving* for *living* is evidence of the subjects' lack of vowel discrimination between / iː / and / ɪ / and corroborates the findings in 5.5.1 and the predictions made in 4.6.1. The perceptions of the weak form of the personal pronoun *they* as *we* are misleading, as it changes the subject intended to carry out the action.

In (c), both the empty spaces and indeterminacy between *living/leaving*, show the difficulty the judges had to understand that particular subject.

5.11.3 Sent. 3 I want you first to apologize before going to play.

Testing for potential use of the weak form of / ɪ /; coalescence / t + j / of *want you*; elision of / t / between two consonants of *first* and *to*; and weak form of *to*.

Seven subjects read this sentence, at an average mean score of 3.71 out of 5. That suggests that 74.2% of the subjects were able to convince the native speaker judges of their intelligible reading of it.

Five deviations out of 35 judgements were noticed.

a) I *ought* you *fast* to apologize before going to play.

b) I *wrote to* you first to apologize before going to play.

c) I want you *for* to apologized before going to *pray*.

d) I *was the* first to apologize before going to play.

e) I *was your* first to apologize before going to play.

There was no difficulty in perceiving weak forms ɪ and *to*, though it does not necessarily mean that the subjects have used them as such. Interpretation (a) gives evidence of the confusion and lack of discrimination between / ɒ / and / ɔː / by one subject when *want* was interpreted as *ought*. This confirms the findings in 5.5.4. The same subject failed to discriminate between / ɜː / and / ɑː /, in articulating *first* as *fast,* which resulted into creating misunderstanding of the target sentence and corroborates the difficulty represented by / ɜː / as predicted in 4.6.7 and also demonstrated in 5.5.6.

The use of *wrote* for *want* in (b) is further evidence of the lack of clear distinction between / əʊ / and / ɒ / which was predicted in 4.6.9 and hence confirms findings in 5.5.4&8. Incidentally, there was no single reference to *writing* in the original sentence. The confusion in (c) between / ɔː / and / ɜː / in the interpretation of *for* for *first* was explained in 4.6.7, as well as the difficulty presented by / l / and / r / in initial consonant cluster / pl / and / pr / was confirmed in 5.6.12.

In interpretations (b), (d) and (e), the substitution of *wrote to, was the* and *was your* for *want you* by three subjects suggests that they were not able to produce the coalescence / t+j / (4.11.10) convincingly enough to persuade the native speaker judges.

5.11.4 Sent. 4 They are always talking about good food.

Testing for the production of weak forms of *they, are.*

It was read by 10 subjects, at an average mean score of 3.31 i.e. an intelligibility rate of 66.2%. The native speaker judges did not perceive any deviations from the reading of that sentence.

5.11.5 Sent. 5 The girls were playing in the garden when we arrived.

Testing for the use of weak forms of *the*, *were, we.*

It was read by 15 subjects at an average mean score of 3.51, that represents an intelligibility rate of 70.2%. All the potential weak forms were realised in their full forms and were successfully intelligible. The only six lexical deviations to it out of

75judgements were as follows. It was read by 15 learners, and was interpreted as follows.

a) The girls were *praying* in the garden when we *alived*.
b) The girls were *praying* in the garden when we *a rid*.
c) The girls were *praying* in the garden when we *left*.

The five cases of lack of distinction between / l / and / r / caused a misunderstanding problem in perceiving *playing* as *praying* and *arrived* as *alived* or *left*. Nonetheless, these misperceptions are insignificant, taking into account the fact that the remaining 72 other interpretations were intelligible. The difficulty and confusion presented by / l /and / r / was predicted in 4.11.9, and confirmed in the initial consonant cluster / # pr / (5.6.12).

5.11.6 Sent. 6 I'll just drink a glass of water, she said

Testing for the contraction of *I will* as *I'll*; elision of / t / between two consonants; weak forms of *a, of*.

It was read by 10 subjects, and was given an average mean score of 3.3 out of 5, which suggests that two-thirds of the time, the native speaker judges were convinced of their intelligible reading. Four cases of deviant forms were noticed, whereby the target sentence was interpreted as:

a) *We* just drank a glass of water, she said.
b) I'll just *drunk* a glass of water, she said.
c) I... just *drank* a glass of water, she said.
d) I'*ve* just *drunk* a glass of water, she said.

Only three subjects failed to convince the judges of either the full or the contracted form of *I will*. The four deviations above were produced with wrong verbal tense *drunk* and *drank* for *drink*. Overall, these deviations were not very significant to affect the level of the native speaker listeners' relatively comfortable intelligibility.

5.11.7 Sent. 7 Look at it, and if you think you like it, take it with you.

Testing for potential use of weak forms of *at, and, you.*

Six subjects read this sentence at an average mean score of 3.01 out of 5, which represents an intelligibility rate of 60.2%. All the target forms were well perceived by the native speaker judges. Imperative form *look at it* was heard as an affirmative one *I look at it* in five interpretations out of thirty. In another interpretation, the phrase *with you* was perceived as *to them* from one subject. Such misinterpretation obviously shifts the focus from the intended addressee to a completely different one.

5.11.8 Sent. 8 They didn't move in there, until last September

Testing for the weak form of *they*; elision of / t / between two consonants; articulation of final / t / of the negative form as a glottal stop [ʔ] before a consonant.

Six subjects read this sentence and reached an average mean score of 3.01 out of 5, i.e. 60.2% of intelligibility. Only two subjects failed to produce the target word *they*. A further two missed *n't* of the negative form *didn't*. The four deviations out of 30 intepretations that occurred are:

a) *I* didn't move in there until last September.
b) They didn't _____ in there until last September.
c) They did ... move in there until last September.
d) _____last September.

Interpretation (d) from one subject was incomplete for the native judges to understand, as the phrase *last September* alone was not sufficient enough for the recovery of the meaning intended in the original sentence. The omission of the main verb *move* is detrimental to intelligibility since it leaves an open door for any other non-intended verb.

5.11. 9 Sent. 9 I saw him last month and we talked for about half an hour.

Testing for the use of weak forms of *I, him, and, we, for, an*.

It was read by 11 subjects, at an average mean score of 3.38, which represents an intelligibility rate of 67.6%. Almost all the potential cases of target forms

retained their full forms and were well understood by the native speaker judges. The only three deviations that occurred were:

a) *They* saw him last month and we talked for about half an hour.

b) I saw him last month, and *he* talked for about half an hour.

c) He so humourless man and we talked for about half an hour.

The substitution of weak forms of '*ɪ*' by *they* in (a), *he* for *we* in (b), shifted the focus from the intended subject to a different one altogether. However, these deviations are slightly negligible, taken into account how well the subjects did on other forms, such as the correct production of content words. The intelligibility of one subject (c) was partly ruined by lexical and grammatical inaccuracy of the first part *he so humour less man*, that makes very little sense.

5.11.10 Sent. 10 I was thirsty, that is why I asked them something to drink.

Testing for potential use of weak forms of *I, was, them, to*; contracted form of *that is* as *that's*.

Six subjects read it at an average mean score of 3.2 out of 5 (64%). This suggests that the native speaker judges had relatively little difficulty in understanding these subjects. The target forms were produced in their full forms and posed little intelligibility problem to the judges, in the light of the only three deviant interpretations out of 30 that have occurred.

a) I was *thirn/thirst*, that is why I *ask you then ?* something to drink.

b) I was I *thirst*, _____ I *ask* them something to drink.

c) I was *thirst* that is why I asked them something to drink.

The indeterminacy between *thirn/thirst* by the native speaker judges shows a lack of distinct pronunciation of *thirsty* by one subject. The same subject mistook *them* for *then* and failed to articulate the past tense marker- *ed* on the verb *ask*. The three instances in which *thirsty* was interpreted as *thirst* can be taken as purely orthographic errors. Though there was complete lack of contraction of the form *that is*, it was nonetheless well understood in its full form, and was missed by only one subject (b).

5.11.11 Sent. 11 They've bought this new car for ten thousand, but they don't like it.

Testing for the potential use of weak form of *they, but* ; contracted form of *they have* ; articulation of / t / as a glottal stop [ʔ] before a consonant.

Six subjects read it at an average mean score of 3.2, representing an intelligibility rate of 64%. Most of the target forms were well perceived in their full forms. Only four deviations in 30 interpretations were noticed, which are negligible.

a) ɪ have bought this new car for ten thousand, but they don't like it.

b) They've *boot* this new car for ten thousand, but they don't like it.

c) ɪ have ø this new car for ten thousand, but they don't like it

d)They've _____ this new car for ten thousand, _____.

The weak form of *they* mistaken for ' I ' by subjects (a) and (c) shifts the focus from the people who bought the car to a completely different one. The meaning in (b) can easily be recovered with reference to the whole context of the sentence, as people are more likely to *buy a car* than to *boot a car.* The use of *boot* for *bought* indicates the confusion that one subject had between / uː / and / əʊ / which was quite unexpected in view of 5.5.8. In both interpretations (c) and (d), the omission of the main verb *bought* has impeded the native speaker judges'comprehension. Misinterpretation (d) was the most detrimental to intelligibility due to the omission of the main verb and the last part of the sentence.

5.11.12 Sent. 12 The three men have been working at home for the whole day.

Testing for potential use of unstressed form of' *the*; contraction of *have been*; weak forms of *at, for.*

Six subjects read this sentence at an impressionistic mean score of 3.2, representing an intelligibility rate of 64%. Overall, the target forms were well understood in their full forms, despite only 3 cases of omission of *have been, at, for* in the interpretation of one subject. The deviant interpretations occurred as follows:

a) The three mean have been *walking at* to home for the *holiday.*

b) The three men have been working at home for the *holiday.*

c) The three men _____ home _____.

d) The *free* men have been *walking* at home for the whole day.

e) The *free* men have been *walking* at home for the whole day.(2)

In interpretation (a) (d) and (e), the use of *walking* for *working* is evidence of the lack of discrimination by 3 subjects between / ɔ: / and / ɜ:/ which also corroborates the findings in 5.5.6. Incorrect stress placement by 2 subjects caused unintelligibility of the phrase *whole day* to be perceived as *holiday.* Intelligibility was completely lost in interpretation (c) whereby one subject omitted the verbal part *have been working* and the phrase *for the whole day.* The substitution of *free* for *three* by 2 subjects corroborates the difficulty predicted in 4.11.1 about the substitution of / f / for English consonant /θ / by subjects from Kinyarwanda background.

5.11.13 Sent. 13 Come and sit down here, they said.

Testing for potential use of weak forms of *and* and *they.*

Five subjects read it at an impressionistic mean score of 2.7 out of 5. That represents an intelligibility rate of (54%), despite the fact that there was not any deviation perceived by the judges. This seems to tell us that native speaker judges can understand the intended message from NNSs and yet give them a relatively low rate.

5.11.14 Sent. 14 What do you think we should do this evening?

Testing for potential coalescence */ d+j /* of *what do you*; weak forms of *should, this*; elision of */ d /* of *should* between two consonants.

Ten subjects read it at an average mean score of 3.38, i.e. an intelligibility rate of 67.6%. Most of the target forms were successfully interpreted in their full forms by the native speaker judges. The only three deviant interpretations that occurred were: a) What do you think _____ do this evening?

b)_____ we should *we* do this evening?

c) What do you think we *shall* do this evening?

Intelligibility was more seriously affected by the omission of *should* in interpretation (a), *what do you think* in (b), and the substitution of *should* by *shall* in (c).

5.11.15 Sent. 15 He thought about it for a long time, didn't he?

Testing for potential use of weak forms of *he, for, a*; contracted form of the tag-question *didn't he*.

Five subjects read it at a impressionistic mean score of 2.78, i.e. an intelligibility rate of 55.6%. The target forms retained their full forms and were perceived without major difficulty by the native judges. However, two detrimental lexical deviations to intelligibility were noticed in the judges' perceptions.

a) He *taught* about it for a long time did not he?
b) He *talked* about it for a long time, did not he?

The substitution of / t / in *taught* and *talked* for / θ / in *thought*, greatly contributed to the distortion of the intended meaning in the target sentence. Such lack of distinction between the two is a further evidence of the difficulty that was predicted in 4.11.1 and corroborated by the findings in 5.6.1.

5.11.16 Sent. 16 The boy received his prize from the teacher.

Testing for potential use of weak forms of *the, his, from.*

Five subjects read it at an impressionistic mean score of 3.18, which represents an intelligibility rate of 63.6%. The target forms kept their full forms and caused no intelligibility problem. The judges did not notice any single deviation. However, as in 5.11.13, the lack of deviation does not necessarily imply a 100% rate by the native speaker listener.

5.11.17 Sent. 17 They asked him what he was thinking of.

Testing for potential use of weak forms of *they, him, he, was,* elision of / t / between two consonants.

Six subjects read it at an impressionistic mean score of 3.12, i.e. an intelligibility rate of 62.4%. Overall, the target forms were well understood in their full forms, though two subjects seemed to omit *him, he, was* and another substituted *he* by *you*, according to the following interpretations.

a) They asked him what he was *ticking* of.
b) They asked _____ thinking of.
c) They asked _____ _____.
d) They asked him what *you was* thinking of.

Interpretation (a) showed evidence of the consistent lack of correct distinction between English /θ/ and /t/, as already referred to in 5.11.15. The incompleteness of interpretations (b) and (c) shows that it was quite difficult for the native speaker listeners to make any sense of what was attempted. Though minor, the substitution of *you* for *he* in (d) shows a confusion regarding the person who was thinking, as well as the grammatical inconsistency between *you* and *was.* In the original sentence *him* and *he* relate to the same person, whereas that relationship is lost in interpretation (d).

5.11. 18 Sent. 18 He was running so fast that I couldn't catch him.

Testing for potential use of weak forms of *he, was, I, him* ; elision of / t / between two consonants; contracted negative form + elision of / t /.

Five subjects read it at an impressionistic mean score of 3.18 i.e a rate of intelligibility of (63.6%). Most of the target forms maintained their full forms and were relatively well understood. The only three deviations that occurred were:

a) *I* was running so fast that I couldn't catch him.
b) He was _____ *coach* him.
c) He was running so fast, *they* couldn't catch him.

In (a) and (c), the accurate interpretation of the target sentence was obstructed by the substitution of personal pronouns '*ɪ*' for *he* and *they* for '*ɪ*', that caused confusion in terms of the subjects of the verbs *run* and *catch*. Despite the successful interpretation of three of the target forms, interpretation (b) was extremely unintelligible, due both to its incompleteness and the unpredicted

confusion between / æ / and / əʊ / that caused the verb *catch* to be interpreted as *coach*.

5.11.19 Sent. 19 You should have come and seen us the other day.

Testing for potential use of weak forms of *you, us, the, and;* contracted form of *should have.*

Five subjects read it at an impressionistic mean score of 2.86, i.e. an intelligibility rate of 57.2%. 2 subjects failed to produce *you* , 3 *us*; 2 *the*; and 2 more *d've.* The following deviations were observed.

a) You should..... come and *see* us the other day.
b) You should have come and *see* _____ *over there.*
c) You should have come and seen ____ the other day.
d) _____ other day.
e) *He shouldn't* have come and seen us the other day.

In (a), the misinterpretation was caused by the omission of the contracted auxiliary verb *have* which has automatically affected the tense of *see.* It has also made the interpretation to sound like an invitation where none was actually meant. The perception of *over there* for *the other day* in interpretation (b) gives evidence of the lack of clear discrimination by one subject between / ð / and / v / on the one hand, and the confusion between / d / and / ð / on the other.

Such confusion was predicted in 4.11.1 and confirmed by the findings in 5.6.2. Accurate intelligibility in (b) was impeded by the wrong tense on *see*, the omission of *us*, and the substitution of *over there* for *the other day.* Intelligibility in (c) is hindered by the omission of *us* which excludes any other alternative object. Because of its incompleteness, intelligibility in interpretation (d) was lost beyond recovery. The use of *he* for *you*, and the negative form *n't* in interpretation (e) convey a totally opposite meaning to that contained in the original sentence.

5.11.20 Sent. 20 The first train leaves at about ten doesn't it?

Testing for potential production of weak forms of *the, at*; elision of / t / between two consonants; tag-question *doesn't it.*

Most of the target forms were rendered in their full forms and caused no problem of intelligibility to the native speaker judges. Six subjects read it at an impressionistic mean score of 2.96, i.e. an intelligibility rate of 59.2%. The only deviant interpretations heard by the judges were:

a) The *fest*..... at ten. ----------.
b) The _____ train leaves at about ten, doesn't it?
c) The first train *arrives* at about ten, does not it?
d) The *fast* train leaves at about ten, does not it?

Interpretation (a) is structurally incomplete, ungrammatical and lexically unintelligible. The use of *fest* for *first* is evidence of the difficulty one subject had in discriminating between / ɜ: / and / ɛ / as already seen in 5.5.6. It was explained in 4.6.7 that subjects from Kinyarwanda and Kiswahili background tended to replace / ɜ: / by a variety of vowels, including / ɛ / and / ɑ /. The omission of *first* in (b) does not affect the level of intelligibility to the same extent as the other three interpretations. Though intelligible, interpretation (c) conveys a totally opposite meaning to that which is contained in the target sentence by the use of two mutually exclusive verbs *arrives* and *leaves*. Interpretation (d) was intelligible but not accurate, as it deviates from the meaning of the original sentence. This is due to the confusion between / ɜ: / and / ɑ: / that resulted in interpreting *first* train as *fast* train. The lack of distinction between the two phonemes reinforces the explanation given in interpretation (a).

5.11.21 Sent. 21 He ran away without eating anything.

Testing for potential use of the weak form of *he.*

Six subjects read the sentence at an impressionistic mean score of 2.9, i.e. an intelligibility rate of 58%. Three deviations out of 30 interpretations occurred in which the weak form of *he* was perceived as ɪ and a further two cases whereby it was omitted.

a) ..... *doesn't it* ran away without eating anything.

b) *I* ran away without eating anything.(3)

c) .... r*un* away without eating anything.

In interpretation (c), the omission of a subject pronoun and the change of the tense of the main verb have distorted the original meaning from an affirmative to an imperative form.

5.11.22 Sent. 22 They must have taken the long road.

Testing for the weak forms of *they, have, the.*

Five subjects read it at an impressionistic mean score of 3.2, which represents an intelligibility rate of 64%. All the target forms retained their full forms and were well understood by the native speaker judges. The only three deviations out of 25 interpretations that occurred were of a lexical nature.

a) They must have taken the *wrong* road.

b) They must have taken the long *load.*

c) They must have *took* the *longer* road.

In (a) and (b), the fact that *long* was heard as *wrong* and *road* as *load*, corroborates the difficulty predicted in 4.11.9 concerning the lack of clear distinction between / l / and / r / among Rwandan subjects in general and by these two in particular. Intelligibility of (c) was not as significantly affected compared with the previous two interpretations, but demonstrated grammatical weakness by one subject in using *took* for *taken* and one case of paragoge whereby *long* was interpreted as *longer.*

5.11.23 Sent. 23 Nothing prevented them from going to demonstrate in the streets.

Testing for potential production of weak forms of *them, from, to, the.*

Four subjects read it at an impressionistic mean score of 3.12, representing an intelligibility rate of 62.4%. Of the target forms, 3 subjects failed to produce *them*; 2 *to* and a further 2 *the* , as the following interpretations show.

a) Nothing *can* _____ from going to the _____.

b) Nothing *could* prevent them from going _____ *district.*

c) Nothing _____ from going to demonstrate in the streets.

d) Nothing ??? from going ?????????????? in the streets.

Despite the recognition of two of the target forms, interpretation (a) remains significantly unintelligible, due to the omission of key content words *prevent, demonstrate,* and *streets*. In (b), the lack of discrimination between / ð / and / d / corroborates the findings in 5.6.2 in accordance with the predictions made in 4.11.1. Syllable timing by the same subject resulted into unintelligibility, when the native speaker judges perceived the phrase *in the streets* as *district.* The omission of the main verb *prevented* was crucial to the loss of intelligibility in interpretation (c), whereas in (d), the question marks are evidence of the native speaker judges' difficulty to recover what was said.

5.12 Conclusion

The following table sums up the intelligibility rate of each sentence and shows the number of subjects who read which sentence. We shall use (sent.) for sentence; (subj) for subjects; (TNJ) for total number of judgements; (K.F) for Kabiria Forms 2-4-6; (TAMS) for total average mean score; (IR) for intelligibility rate in percentage.

Table 5.35 Sentence intelligibility rate

Sent.	Subj.	TNJ	Hope	Windle	K.F.2	K.F.4	K.F.6	ILTC	TAMS	IR%
1	7	35	4.1	4.6	3.4	3.6	2.8	3.8	3.71	74.2
2	9	45	4.1	4.6	2.95	3.1	3.4	3.8	3.65	73
3	7	3.5	4.1	4.6	3.4	3.6	2.8	3.8	3.71	74.2
4	10	50	3.7	3.4	3.7	2.7	2.8	3.6	3.31	66.2
5	15	75	3.7	3.5	3.5	3	3.2	4.2	3.51	70.2
6	10	50	3.7	3.4	3.7	2.7	2.7	3.6	3.3	66
7	6	30	3.4	2.4	4.2	1.8	2.8	3.5	3.01	60.2
8	6	30	3.4	2.4	4.2	1.8	2.8	3.5	3.01	60.2
9	11	55	3.4	3	3.7	2.6	3.4	4.2	3.38	67.6
10	6	30	2.6	3	3.6	3.5	3.5	3	3.2	64
11	6	30	2.6	3	3.6	3.5	3.5	3	3.2	64
12	6	30	2.6	3	3.6	3.5	3.5	3	3.2	64

Sent	Subj.	TNJ	Hope	Windle	K.F.2	K.F.4	K.F.6	ILTC	TAMS	IR%
13	5	25	2.8	3.4	3.4	1.4	2.5	-	2.7	54
14	10	50	2.8	3.5	3.3	2.4	3.4	4.9	3.38	67.6
15	5	25	2.8	3.4	3.4	1.4	2.9	-	2.78	55.6
16	5	25	3.2	3.4	3.2	1.7	4.4	-	3.18	63.6
17	6	30	3.2	3.1	3.2	1.7	4.4	-	3.12	62.4
18	5	25	3.2	3.4	3.2	1.7	4.4	-	3.18	63.6
19	5	25	3	1.8	2.8	2.8	3.9	-	2.86	57.2
20	6	30	3	2.3	2.8	2.8	3.9	-	2.96	59.2
21	6	30	3.2	1.8	2.8	2.8	3.9	-	2.9	58
22	5	25	3.2	2.8	2.5	2.6	4	-	3.02	60.4
23	4	20	3.4	-	2.5	2.6	4	-	3.12	62.4

The impressionistic mean scores with respective intelligibility rates ascribed to each sentence as in the above table, suggest that the lack of use of weak forms and other various forms of simplifications of English speech by the subjects under investigation, was not a serious cause to intelligibility failure. The lack of use of English speech features is presumably due to the fact that these subjects tend to pronounce every single word, whether stressed or not, as it appears in its written form. The syllable timed rhythm of Kinyarwanda, French and Kiswahili as well as the lack of proper teaching of features of English connected speech and lack of constant exposure to native speakers' speech have affected their pronunciation skills.

Intelligibility was not measured in terms of the production of weak forms and features of connected speech only, but also in the interpretation of content (lexical) words, which have highlighted the subjects' phonological competence in the pronunciation of various English phonemes.

Though the writer strongly endorses Jenkins' (1996:18) claim that "the failure to produce weak forms represents rather more of a threat to intelligibility for native listeners whose ears are used to them", the results of the present analysis have not supported the extent of unintelligibility we had anticipated from the non-use of the features of an English connected speech. They rather seem to suggest that native speaker listeners can successfully interpret non-native learners' foreign accent. Therefore, the degree of intelligibility achieved by the subjects in the

present test, is attributable to the fact that presumably the deviations in pronunciation were given less importance by the native speaker judges. That may explain why the rate of intelligibility of sentences was much higher than that individual phonemes.

Overall, the results of this analysis confirm some of the major findings from the word-list, and the predictions made in 4.6, 4.11 and 4.15 about the difficulties caused by English vowels, consonants and features of connected speech. The analysis of sentences showed that not all the deviations in pronunciation are crucial to intelligibility. In other words, each speech sound does not need to be perfectly produced in order to be understood. With regard to the effect of incorrect word stress placement on intelligibility in both isolated words and sentences, the results (95.41%) in 5.3.3.1-2 seem to suggest that deviant stress did not obstruct intelligibility.

One major observation in the analysis of sentences is related to the subjective nature of the impressionistic rating of the subjects' intelligibility. It would normally be expected that the higher the number of deviations a sentence has, the lower the rate it is given. Some results from the present analysis proved the opposite. For example, sentences 3, 12,17,20,23 had more instances of deviations but were nonetheless impressionistically rated more intelligible, i.e. 74.2%, 62%, 62.4%, 59.2%, 62.4% respectively, than sentences 13 (54%), 15 (55.6%) and 21 (54%) which had fewer or no deviations. This could be explained by what Bansal (1990) called 'acceptability' when he says"even if a speaker is perfectly intelligible, it is possible that his speech is not acceptable to the listeners because it is marked by regional or idiosyncratic features which sound unusual to them".

With the benefit of hindsight, the analysis of sentences showed two limitations that deserve mention at this juncture. The first concerns the design of the sentences. During the analysis process, the writer became increasingly aware of

the fact that the purpose of this analysis could have been well achieved by using fewer sentences. However, at the time the data analysis process was under way, there was no further opportunity of making new recordings of the same subjects.

The second has to do with the unevenness and lack of uniformity in the distribution of the sentences, in terms of the number of subjects who read which sentence. For example, there is no plausible reason as to why sentences 4 and 5 were read by 10 and 15 subjects compared to 6 and 7 subjects only who read sentences 7 and 1.

Having said that, being satisfied with the relatively good results from the productive competence test alone would be going only half way towards understanding the relationship between intelligibility and comprehension as defined in Chapter Three of this work. That is why in the light of the definition of communication as a two way process involving productive and perceptive abilities, perceptual competence of the same subjects will be analysed. In that respect, the interlanguage phonology research and language teaching/learning should aim at improving both speech production and perception competence.

The writer contends that the neglect that perceptive competence has suffered from in English non-native teaching contexts may be one of the major causes to explain the extent of difficulties non-native speakers have to easily understand native English speakers. Gimson (2001:291) advises foreign learners about the relevance of the use of features of English speech in saying that "the foreign learner must observe the rules concerning weak forms, should cultivate the correct variation of word rhythmic patterns according to the context, and should make a proper use of liaison forms". He further suggests that the foreign learner must know of the existence of these forms, for otherwise he will find it difficult to understand much of ordinary colloquial English.

Pedagogical implications from the present analysis point to the fact that not teaching and training non-native learners to produce features of connected speech such as weak forms and various forms of simplification would be doing them a disservice as it would have a detrimental impact on their perceptual competence in the target language. The fact that native speakers can and do understand non-native speakers despite their deviations in pronunciation does not imply that the reverse is true. It is in that perspective that in Chapter Six, the writer undertook to measure the perceptual phonological competence of a group of subjects listening to recorded material read by two British native English speakers.

CHAPTER SIX

A Study of the Phonology of Comprehension

6.1 Purpose

The present chapter is an attempt to measure the actual perceptual phonological competence in English, of the group of Rwandan subjects listening to recordings of lists of isolated words and sentences articulated by 2 British native speakers of English. The material used was designed to contain potential phonological problems to the same learners, and was the result of a contrastive analysis (CA) of the phonology of Kinyarwanda and English that was done in Chapter Four. It was predicted that the difficulty that Rwandan learners of English have to successfully perceive the phonological contrast between minimal pairs containing / ɪ / and / iː /or / /ʊ / and / uː / for example, will affect their intelligibility. Sentences were tested on the grounds that they contain weak forms and different forms of simplification that these subjects have problems with.

Tench (2001:258) notes: "efficient interpretation of an utterance heard depends on the hearer's level of competence in syntax, lexis, discourse, pragmatics of the language (and culture, and situational context) involved, and the amount of exposure to, and experience in that language. But it also depends on the hearer's level of phonological competence, not just of productive competence (saying) but also of processing competence (understanding)".

In Chapter Three, we explained that communication should be understood as a two way process involving a speaker and a listener. The fact that the perceptual dimension of communication has not received the same amount of attention as the productive side in many researches, has in a way prompted the writer to investigate the perceptual competence skills of the same subjects investigated in Chapter 5. The assumption here is the fact that native English listeners have no major difficulty in understanding non-native speakers is no guarantee that the latter would necessarily and easily understand native speakers of English.

The teaching of English in non-native contexts should ensure that learners learn not only to speak English intelligibly, but also develop skills to listen and process other speakers' utterances accurately. There seems to be a strong relationship between the way in which NNS of English learn and speak it and the way they listen and comprehend it when spoken by other speakers who do not necessarily share the same lingistic background.

My approach to intelligibility diverges from Jenkins' (1997, 2000) insightful work on intelligibility in inter-language talk (ILT) involving NNS from different L1 interacting among themselves, in that the present work aims at looking at the extent to which Rwandan subjects were able to accurately process and interpret words and sentences read by two native speakers of English. The reasons for such an approach are twofold.

First, due to the fact that today English has become more and more international, there are more opportunities for a great number of NNS to listen to live native speakers, for example through BBC, Voice of America, films, sports, tourism, music and radio in English and the proliferation of international organizations.

Secondly, it is because we believe that non-native speakers from the same linguistic background generally tend to be mutually intelligible in the target language. Therefore, getting closer to a native speaker standard, does not represent any threat for a NNS to be understandable to other non-native speakers of the same linguistic background. It rather enhances the prospects of higher understanding with NS and with proficient NNS from totally different linguistic backgrounds.

In the particular case of the Rwandan learners of English, the neglect of pronunciation, and the lack of the teaching of discrimination of the segmentals and suprasegmentals has detrimentally affected their level of perceptual competence. Moreover, the syllabic features of Kinyarwanda rhythm coupled with the lack of centralized reduced vowel (schwa-type) and the non-occurrence of closed syllables contribute to making the perceptual skills of the same learners extremely weak.

Gimson (2001) maintained that what is more important than the development of production skills in either elision or assimilation is the cultivation of the ability to receive and decode the highly elided and assimilated speech produced by native English speakers... the foreign students must therefore spend a considerable amount of time listening to normal colloquial English in order to acquire skill in identifying information points in an utterance (making full use of all contextual and syntactic cues and probabilities), when apparently crucial sounds are absent or when the isolate form of a word has become greatly changed in context, e.g. / ʃwɪ / is a frequent telescoped form of / ʃəlwɪ / (shall we) (p.306).

Pedagogical implications therefore point to the fact that not training foreign learners to produce and perceive connected speech features, would be to put them in a position of disadvantage, which exposes them to potential difficulty in understanding NS whenever such opportunities arise. This analysis therefore is expected to point to remedial work in respect to the teaching of pronunciation.

6.2 Methodology

6.2.1 Subjects

The present analysis involves 60 subjects from the same schools already referred to in 5.2.1. The shift in number from 55 to 60 is explained by the fact that there are 10 subjects from ITC-Kigali (see 5.2.1.4), who took part in receptive test involving a word list, as opposed to only 5 who participated in the productive test and agreed to be recorded. Only 30 subjects from Kabiria school (form 2,4,6) took part in the sentence perception test. The reason for the reduced number of subjects comes from the fact that the sentences were recorded and played at a much later stage compared to the word list test. Moreover, these learners were more available and accessible for this later exercise, in comparison to those from other groups who had thus far participated.

In order to allow them relatively comfortable listening, they listened to the recordings in three separate groups according to the forms they belong to. Also, in addition to the instructions given by native speakers who read words

and sentences, the writer took the liberty of inviting the learners to listen carefully first without writing anything and to start writing only on the replay of the tape.

6.2.2 Materials

To start with the word-list, the task comprises a set of 40 unrelated English words including one made-up, read by one native speaker. The words were selected on the basis of the contrastive phonology between Kinyarwanda and English (Chap.4), and on the assumption that they contain problematic areas of RP vowels, consonants and consonant clusters. With reference to the CAH, we have explained in Chapter 4, that English vowels and consonants which are lacking in the Kinyarwanda system, represent a major phonological problem and are likely to cause considerable difficulty in the subjects' productive and receptive competence.

At the sentence level, a initial set of 15 sentences were read by another native speaker of English and played to a group of 30 subjects. However, in the course of the analysis, the writer reduced the number to only ten, due to his realization that the remaining five tested almost the same features as the ten that were maintained. The sentences included the use of target features of native connected speech, including rhythm, weak forms and different forms of simplifications, thought to be difficult to the subjects to produce and to perceive. The reader of the sentences was careful enough in leaving a reasonable pause between each sentence to allow the subjects the time to process and write down what they thought they heard. In order to obtain control on the comprehensibility of the speaker's accent, the writer had the recording of the sentences listened to by another native English speaker with a slightly different accent.

The analysis therefore aims at showing the perceptual difficulty that learners from a linguistic background described in Chapter One have in processing both words and sentences they otherwise know in written forms, being read by British native speakers. Despite their disadvantages and limitations in comparison with live speech, recordings were used by the researcher as the

second best solution to test perceptual phonological competence of the subjects described in 6.2.1.

6.2.3 Analysis Procedure

The words and sentences that the learners heard and wrote down were faithfully transcribed, analyzed and statistically presented in tables by the writer. The 40 dictated words will be analyzed individually in each school, by using tables of percentages of interlanguage variants and deviation forms that will have occurred in the subjects' perception of the words.

The terms 'matching' (M) will be used to represent accurate identification of a word, but not of specific segments. Non-matching (NM) will stand for all semi-correct and deviant forms to the dictated word, whereas non-response (NR) will represent the subjects' abstention or non-attempt. (*) will be used throughout to indicate an interpretation of a word that does not exist in English.

The degree of comprehension for each of the interpretations to each dictated word or sentence will be written at the end of each interpretation. Once all the interpretations have been rated, an explanatory comment will follow. To use Voss's (1984:42) terminology, "by comparing various listeners' versions of the same auditory text with each other (= listeners' output) and also against a standardised version (= listeners' input), it is possible to locate precisely all deviations from the model and thus to determine common areas of perception difficulties which can be analysed".

The level of phonological perceptive comprehension of the Rwandan learners will be measured in terms of how well they have accurately perceived a dictated word or sentence. The greater percentage of successful perception of an item is, the higher the learners' level of receptive ability and processing competence.

6.3 WORD PHONOLOGY

Table 6.1 List of dictated words.

1. lead	21. fool
2. strange	22. bird
3. let	23. shared
4. youth	24. bought
5. thing	25. dare
6. reap	26. zay
7. flee	27. hut
8. breathe	28. rice
9. debt	29. text
10. shade	30. dock
11. pull	31. heart
12. bud	32. hut
13. spot	33. hot
14. dark	34. hurt
15. chip	35. hat
16. walk	36. luck
17. barn	37. lock
18. think	38. lark
19. tank	39. lack
20. heel/heal	40. luck

6.3.1 Subjects' perception: HOPE

Table 6.2: Accuracy rate- HOPE

	Word	Subj	M	NM	NR
1	lead	10	5	read 2, lived 2, lid	0
2	strange	10	8	chain	1
3	let	10	2	large 2, later, late, *lach, *luch, *luk	1
4	youth	10	9	use	0
5	thing	10	2	think 4, sing 3	1
6	reap	10	4	rip 2, lip, ripe, read	1
7	flee	10	4	three 4,fled	1
8	breathe	10	0	believe2,bread,bribe,breeze,*breve,*brize,*brith	2
9	debt	10	1	dutch 3,dot, that, *dirtch	3
10	shade	10	1	change 5, shared, *chean	2
11	pull	10	0	poor 2, pot 2, threw, Paul	4
12	bud	10	0	bad 5, but 3, bird 2	0
13	spot	10	4	sport 6	0
14	dark	10	7	jug 2, duck	0
15	chip	10	0	cheap 5, shape 2, check, *chep	1
16	walk	10	5	work 4,*wop	0
17	barn	10	2	burn 2, bump, bum, bar, bound	2
18	think	10	5	sink 5	0

	Word	Subj	M	NM	NR
19	tank	10	8	thank, take	0
20	heel	10	4	hear 4,here 2	0
21	fool	10	2	full 4, four 2,foul, folk	0
22	bird	10	5	bad 4,but	0
23	shared	10	0	shade 4,shirt 2,shed 2, shamed	1
24	bought	10	1	boat 8, *bod	0
25	dare	10	1	there 5, dear	3
26	*zay	10	1	they 2, zinc, zeel, *zea, *zin	3
27	hut	10	1	heart 8 hat	0
28	rice	10	9	race	0
29	text	10	10		0
30	dock	10	1	dog 6, dark 2, duck	0
31	heart	10	6	hurt 2, have, heard	0
32	hut	10	1	heart 3,hurt, hat	4
33	hot	10	7	hut 2, hurt	0
34	hurt	10	2	heart 5, hate 2, head	0
35	hat	10	2	hurt 3, heart 2, hot, hate, hut	0
36	luck	10	5	lack 3, lock 2	0
37	lock	10	6	luck 3	1
38	lark	10	0	luck 4, lack 3, look	2
39	lack	10	3	luck 7	0
40	luck	10	4	lack 3, *lac 2	1

6.3.2 Subjects' perception: Windle

Table 6.3: Accuracy rate –Windle

	Word	Subj	M	NM	NR
1	lead	10	9	lid	0
2	strange	10	7	chain 2, *steing	0
3	let	10	5	late 4	1
4	youth	10	8	us, use	0
5	thing	10	1	sing 6, think 2	1
6	reap	10	3	rip 2, leap 2, read, *wippy	1
7	flee	10	5	free 2, three, tree	1
8	breathe	10	0	breath 4, bleed, *brease, *blaise, *brith	2
9	debt	10	1	date 2, dirt, that, dance, judge, *duch	2
10	shade	10	2	change 3, chain, shared	2
11	pull	10	0	pool 3, poor 2, paw, pole, *pome	2
12	bud	10	0	bad 4, bird 2, but 2, third	1
13	spot	10	3	sport 7	0
14	dark	10	5	jug 2, dug, dock	1
15	chip	10	0	cheap 6, sheep, check, *chet, *chep	0
16	walk	10	3	work 5, woke, rope	0
17	barn	10	1	burn 2, bound, bum, bath, bang, bar	2

	Word	Subj	M	NM	NR
18	think	10	3	sink 5, sing 2	0
19	tank	10	6	tack 2, talk 2	0
20	heel	10	3	hill 4, here, hero,*hiyo	0
21	fool	10	2	full 4, four 2, foul, food	0
22	bird	10	8	bad 2	0
23	shared	10	0	shed 3, shade 2, *sheld	4
24	bought	10	1	boat 5, boot 2, *botte	1
25	dare	10	2	dead 2, there, girl, death	3
26	*zay	10	0	zeal 3, Zaire 2, zink, zinc	3
27	hut	10	2	heart 4, hat 2, hurt 2	0
28	rice	10	8	rise 2	0
29	text	10	9	test	0
30	dock	10	1	dog 4, dark 3, duck	1
31	heart	10	1	heard 3, hut 2, hard 2, hurt, hat	0
32	hut	10	2	heart 4, hurt 3	1
33	hot	10	6	heart 2, hut 2	0
34	hurt	10	4	head 2, hut 2, hot	1
35	hat	10	4	hut 4, hurt, heart	0
36	luck	10	5	lock 2, lack 2	1
37	lock	10	8	luck, look	0
38	lark	10	2	lack 3, look 2, like, *loack	1
39	lack	10	4	luck 2, lock 2, lake 2	0
40	luck	10	2	lack 4, lock 2, lake, *lac	0

6.3.3 Subjects' perception: KABIRIA (form 2)

Table 6.4: Accuracy rate- Kabiria F2

	Word	Subj	M	NM	NR
1	lead	10	5	read 2, red, lived, *lide	0
2	strange	10	4	*strenge 2, *strench, *strich	2
3	let	10	3	late 3, pet 2, lunch, *lach	0
4	youth	10	2	use 4, us, *yacht	2
5	thing	10	0	sing 4, think 4, sink, thank	0
6	reap	10	0	read 5, ride 2, lip 2, lick	0
7	flee	10	1	three 5, tree 2	2
8	breathe	10	0	breath 3, bread 3, treat, *pread	2
9	debt	10	0	*dutch 3, *duch 2, date, *jeck, teach, thanks	1
10	shade	10	1	shamed 5, change 2, chained, shide	0
11	pull	10	0	prove 2, told 2, pot, pound, *po	3
12	bud	10	0	bad 4, bird, that, mad, bard	2
13	spot	10	0	sport 10	0
14	dark	10	0	duck 3, dog 2, dock, *jumb	3
15	chip	10	0	check 5, cheap 2, change, *cheak	1
16	walk	10	0	work 6, word 2	2

	Word	Subj	M	NM	NR
17	barn	10	0	burn 4, bomb 2, bank, bad, born	1
18	think	10	1	sink 3, sick 4	2
19	tank	10	4	thank 3, take 2, think	0
20	heel	10	0	hear 4, hill 3, him 2, *hiyo	0
21	fool	10	3	full 3, four 2, food	1
22	bird	10	7	bed 3	0
23	shared	10	0	shamed 2, shade 2, shirt 2, checked, change, *sheld, *cher	0
24	bought	10	1	boat 4, boots, books, board, *botte, *bot	0
25	dare	10	0	there 6, death 2, they	1
26	*zay	10	4	*zen 2	4
27	hut	10	0	heart 3, hurt 2, hate, hat, halt, hand	1
28	rice	10	7	rise 2	1
29	text	10	9	test	0
30	dock	10	0	dog 5, duck 2, talk 2, dot	0
31	heart	10	0	hurt 3, had 2, hug, hard	3
32	hut	10	0	hurt 4, hat 3, heart 2	1
33	hot	10	2	hate 3, hat 2, hurt	2
34	hurt	10	2	hard 2, hands, heard	4
35	hat	10	2	heart 3, hurt 3, halt	1
36	luck	10	7	look 2, lock	0
37	lock	10	5	look 3, luck, rock	0
38	lark	10	0	look 5, luck 3, lack 2	0
39	lack	10	4	leg 2, luck 2, lake	1
40	luck	10	2	look 2, lock 2, lack 2, *lac	1

6.3.4 Subjects' perception: KABIRIA (form 4)

Table 6.5: Accuracy rate – Kabiria .F4

	Word	Subj	M	NM	NR
1	lead	10	3	read 2, lid 2, leaved, lived, *leed	0
2	strange	10	6	*stread 2, speak, street	0
3	let	10	6	late 2, rich, rent	0
4	youth	10	5	use 2, yours, young	1
5	thing	10	3	think 4, sing 3	0
6	reap	10	1	read 6, rip, write, written	0
7	flee	10	1	free 2, three 2, drink, try, tree	2
8	breathe	10	0	bring 2, breath 2, breed, believe, *brize, *dreep	2
9	debt	10	0	death 2, dance 2, date 2, dent, *duch, &duth	1
10	shade	10	0	change 5, shamed 3, shared	1
11	pull	10	0	pool 6, two	3
12	bud	10	0	bad 2, bat 2, bed, bird, third	3
13	spot	10	1	sport 9	0
14	dark	10	2	jug 3, drunk, dog, * Jacque, *jumb, duck	0
15	chip	10	0	cheap 2, check 3, ship 2, shift 2, *chep	0

	Word	Subj	M	NM	NR
16	walk	10	2	work 6, lock, smoke	0
17	barn	10	0	burn 2, ban, bump	6
18	think	10	6	sing 3	1
19	tank	10	2	thank 8	0
20	heel	10	3	hill 2, hear 2, him 2, he	0
21	fool	10	0	full 3, four 3, for 2,	2
22	bird	10	3	bed 3, dead, bad	2
23	shared	10	1	shed 3, shade 2, shamed, shirt	2
24	bought	10	0	boat 5, board, build, body	2
25	dare	10	0	there 3, girl 2, they, Jane	3
26	*zay	10	1	*zele 2,zinc 2, they 2, zebra, *ze	1
27	hut	10	0	heart 3, hurt 3, hat, hate, help	1
28	rice	10	8	rise 2	0
29	text	10	10		0
30	dock	10	4	dog 2, dark 2, dot, duck	0
31	heart	10	2	hard 4, had 2, hurt	1
32	hut	10	1	hat 4, hurt 2, had, hot	1
33	hot	10	2	hat 2, halt 2, head, heart	2
34	hurt	10	1	hat 2, head 2, heart, hard, hot	2
35	hat	10	5	heart 2, hurt 2, hard	0
36	luck	10	5	lock 2, look 2, lake	0
37	lock	10	5	lack 3, *rok, *larck	0
38	lark	10	0	luck 3, rack 2, *lac	4
39	lack	10	3	lake 3, luck 2, luke	1
40	luck	10	2	lack 3, lake 2, *lac	2

6.3.5 Subjects' perception: KABIRIA (form 6)

Table 6.6: Accuracy rate – Kabiria.F 6

	Word	Subj	M	NM	NR
1	lead	10	6	read 4	0
2	strange	10	6	*strenge, *streach, set, street	0
3	let	10	3	late 5, large, rate	0
4	youth	10	1	use 7, you, your	0
5	thing	10	0	think 5, sing 5	0
6	reap	10	2	read 7, rip	0
7	flee	10	0	three 4, free 2, tree 2	2
8	breathe	10	1	plead 2, three 2, drink	4
9	debt	10	0	dead 3, date 2, that, desk, dutch	2
10	shade	10	0	change 4, shame 3	3
11	pull	10	0	poor 2, pool 2, pour, Paul, pole, pot	2
12	bud	10	0	bad 8, bag, but	0
13	spot	10	3	sport 7	0
14	dark	10	2	drunk 4, drug 2, jug, junk	0

	Word	Subj	M	NM	NR
15	chip	10	0	cheap 3, check 4, sheep	2
16	walk	10	1	work 4, word, woke, *wock	2
17	barn	10	0	burn 3, bang 2, bag, bar	3
18	think	10	2	sink 4, seek 2, sick, sing	0
19	tank	10	3	thank 6	1
20	heel	10	1	hear 6, hill 2, him	0
21	fool	10	2	four 4, full 3, food	0
22	bird	10	7	bed 3	0
23	shared	10	0	shed 3, shamed 2, shade 2, sheared, *sheld	1
24	bought	10	0	boat 6, bod 2, board	1
25	dare	10	1	ten, Jane,	7
26	*zay	10	2	they 2, zink, *zinc	4
27	hut	10	0	heart 4, hurt 4, hart, head	0
28	rice	10	9	*rince	0
29	text	10	10		0
30	dock	10	0	dog 5, dark 4, don't	0
31	heart	10	3	hat 3, hard 2, had 2	0
32	hut	10	2	hat 4, heart, hurt	2
33	hot	10	4	hat 2, heart 2, hurt	1
34	hurt	10	2	heard 2, hate 2, had, heart	2
35	hat	10	1	hard 2, heart 2, hut, *hort	3
36	luck	10	6	look, lack,*lac	1
37	lock	10	2	luck 4, rock 2	2
38	lark	10	0	luck 4, lack 2, lock, *lac, * leake	1
39	lack	10	0	lake 2, black, link, * ruck	5
40	luck	10	3	lack 3, lake	3

6.3.6 Subjects' perception: ILTC –Kigali

Table 6.7: Accuracy rate- ILTC

	Word	Subj	M	NM	NR
1	lead	10	3	read 4, lid 2, live	0
2	strange	10	8	stage	1
3	let	10	0	late 4, led 3, red, leg	1
4	youth	10	6	use 2, you	1
5	thing	10	1	think 5, sing 3, thank	0
6	reap	10	1	read 4, rip 3, weep	1
7	flee	10	3	three 4, free 3	0
8	breathe	10	0	breath 4, brief 4, bring, *brize	0
9	debt	10	1	date 4, dead 2,	3
10	shade	10	1	shed 4, chaired, change, chair, shame	1
11	pull	10	0	poor 4, pool 4	2
12	bud	10	0	bad 2, bird 2, bed, boat, that, third	2
13	spot	10	2	sport 8	0
14	dark	10	3	duck 2, dug 2, drunk, dock, jug	0

	Word	Subj	M	NM	NR
15	chip	10	0	cheap 5, check 3, sheep, *Chaip	0
16	walk	10	2	work 8	0
17	barn	10	0	burn 4, ban 2, bun, born, bound	1
18	think	10	5	sink3, thick 2	0
19	tank	10	6	thank 4	0
20	heel	10	4	hill 3, hear 3	0
21	fool	10	2	full 5, four, for	1
22	bird	10	8	bed 2	0
23	shared	10	0	shed 4, shirt 2, checked, *shanged	2
24	bought	10	1	boat 6, board, build, * bot	0
25	dare	10	0	there 4, tell 2	4
26	*zay	10	2	they 6	2
27	hut	10	1	heart 4, hurt 4, hot	0
28	rice	10	6	rise 3, *riz	0
29	text	10	10		0
30	dock	10	0	duck 3, dark 3, dog 2, dot 2	0
31	heart	10	1	hurt 3, hat 3, hut 2	1
32	hut	10	0	hot 3, hurt 3, heart 2, hat	1
33	hot	10	4	heart 3, hut 2, hat	0
34	hurt	10	1	heart 3, hot 2, hard, heard, hut	1
35	hat	10	5	hut, heart, hurt, hot, hard	0
36	luck	10	4	lock 2, lack 2, like	1
37	lock	10	2	luck 3, rock 2, lack, look	1
38	lark	10	0	like 3, luck 3, lack 2, look, lock	0
39	lack	10	2	lock 3, like 2, luke	2
40	luck	10	1	lack 6, lock	2

6.4 Summary of word comprehension rate (CR)

Table 6. 8 Inter-group comprehension rate

Word	T.N/60	Hope %	Windle %	K.form2 %	K.form4 %	K.form6 %	ILTC %	CR %
1 lead	31	50	90	50	30	60	30	51.6
2 strange	39	80	70	40	60	60	80	65
3 let	19	20	50	30	60	30	0	31.6
4 youth	31	90	80	20	50	10	60	51.6
5 thing	7	20	10	0	30	0	10	11.6
6 reap	11	40	30	0	10	20	10	18.3
7 flee	14	40	50	10	10	0	30	23.3
8 breathe	1	0	0	0	0	1	0	1.6
9 debt	3	10	10	0	0	0	10	5
10 shade	5	10	20	10	0	0	10	8.3
11 pull	0	0	0	0	0	0	0	0
12 bud	0	0	0	0	0	0	0	0
13 spot	13	40	30	0	10	30	20	21.6

Word	T.N/60	Hope	Windle	K.form2	K.form4	K.form6	ILTC	CR%
14 dark	19	70	50	0	20	20	30	31.6
15 chip	0	0	0	0	0	0	0	0
16 walk	13	50	30	0	20	10	20	21.6
17 barn	3	20	10	0	0	0	0	5
18 think	22	50	30	10	60	20	50	36.6
19 tank	29	80	60	40	20	30	60	48.3
20 heel	14	40	30	0	20	10	40	23.3
21 fool	11	20	20	30	0	20	20	18.3
22 bird	40	50	80	70	30	70	80	63.3
23 shared	1	0	0	0	1	0	0	1.6
24 bought	4	10	10	10	0	0	10	6.6
25 dare	4	10	20	0	0	10	0	6.6
26 zay	10	10	0	40	10	20	20	16.6
27 hut	4	10	20	0	0	0	10	6.6
28 rice	47	90	80	70	80	90	60	78.3
29 text	58	100	90	90	100	100	100	96.6
30 dock	6	10	10	0	40	0	0	10
31 heart	13	60	10	0	20	30	10	21.6
32 hut	6	10	20	0	10	20	0	10
33 hot	25	70	60	20	20	40	40	41.6
34 hurt	12	20	40	20	10	20	10	20
35 hat	19	20	40	20	50	10	50	31.6
36 luck	32	50	50	70	50	60	40	53.3
37 lock	28	60	80	50	50	20	20	46.6
38 lark	2	0	20	0	0	0	0	3.3
39 lack	16	30	40	40	30	0	20	26.6
40 luck	14	40	20	20	20	30	10	23.3

The results from the above tables show that the subjects reached an overall low rate of 26.08% in their perception of 40 words read by a British native speaker. This suggests that more than two-thirds of the time, these subjects were not able to perceive the intended items accurately. Out of the 40 words, only seven (1, 2, 4, 22, 28, 29, 36) were perceived at a rate above 50%. These figures corroborate the claim we made about the lack of perceptive discrimination of the phonemes of English by these subjects and confirm the predictions made in Chapter Four.

6.5 Word list analysis

6.5.1 lead / li:d / [li:d]

This word was selected to test the perception of

i) the discrimination of / l / and / r / before a close front vowel (cf.4.11.9)

ii) the discrimination between / i: / and / ɪ / (cf.4.6.1)

iii) the final consonant / d / (cf.4.11.2).

It was interpreted correctly by 31 subjects (51.6%)

The main deviations were as follows:

i) /l / as / r / read (14), red 15/60 25%

This indicates that 25% of the subjects have difficulty in distinguishing between / l / and / r / before the vowel / iː /

ii) / iː / as / ɪ / lid (6), lived (5), live (2), 13/60 21.6%

10% of the subjects misperceived *lead* as *lid*, suggesting that even though they heard the vowel / iː / they were not able to distinguish between it and /ɪ /. This lack of discrimination is confirmed by the 4 instances of *lived* ; the 2 instances of *live* are assumed to represent / lɪv / rather than /lɑɪv /, and thus similarly confirms this lack of discrimination. One instance of *leaved* is also taken to be evidence of the confusion between / iː / and / ɪ / representing the past tense of *live*. The case of **lide* is taken to represent /lɪd / as a spelling unduly influenced by French spelling, as a word of that spelling does not exist in English. Altogether, the rate of 21.6% seems to indicate that over one fifth of the subjects appeared unable to perceive a distinction between /iː / and /ɪ /.

iii) / d# / as /v /

The final consonant / d / was extremely well perceived, although 7 subjects heard it as / v /. If they did not know the word *lid*, they re-interpreted the word they heard as the more familiar *live/ lived.* No one perceived the final consonant as a consonant plus paragoge; there was no instance of interpreting *lead* as *leader*, despite the fact that Kinyarwanda speakers tend to add final vowels in their pronunciation of other languages.

6.5.2 strange / streɪndʒ / [streɪndʒ]

This word was selected to test the perception of

i) the initial cluster /str- / (see 4.11.11)

ii) the final cluster / -ndʒ / (see 4.11.6)

It was interpreted correctly by 39 subjects (65%)

The main deviations were as follows:

i) / str-/ as	/ tʃ /	chain (3)	3/60	5%
	/st- /	stage, *steing	2/60	3.3%
	/ sp- /	speak	1/60	1.6%
	/ s- /	set	1/60	1.6%

This suggests that although complex consonant clusters may pose a few problems in production (cf.5.7.10), there was no evident major problem in perceiving / str- /. 90% of the subjects perceived it correctly, including those who perceived it in deviant words from the dictated one, such as in *street* (2), * *strenge* (3), * *stread* (2), **strench*, * *stritch*, and * *streach.*

The 2 cases of * *strenge* in particular, are taken to represent / streɪndʒ / as a spelling unduly influenced by Kinyarwanda spelling, since a word of that spelling does not exist in English. They also validate the claim made about the lack of discrimination between / eɪ /and /e / by these subjects (cf.4.6.8)

ii) / -ndʒ / as	/ t /	street(2), set	3/60	5%
	/ n /	chain (3)	3/60	5%
	/ -d /	stread (2)	2/60	3.3%
	/-ntʃ /	* strench (2)	2/60	3.3%
	/-tʃ /	* streach, *stritch	2/60	3.3%
	/-k /	speak	1/60	1.6%
	/-ŋ /	* steing	1/60	1.6%
	/-dʒ /	stage	1/60	1.6%

There was a slight degree of confusion between final /dʒ / and / tʃ /, and of non- perception of the / n /, but overall, there was little problem in identifying this final cluster. Attempted variants to final /ndʒ / accounted for 25%. There was no evidence of paragoge, as no one interpreted the word as *stranger.*

6.5.3 let / let / [let]

This word was selected to test the perception of

i) the discrimination of initial consonant / l / and / r / before a front vowel (see.6.5.1)

ii) the discrimination between / e / and / eɪ / (cf. 4.6.8)

iii) the final consonant / -t / (cf. 4.11.2).

It was interpreted correctly by only 19 subjects (31.6 %).

The main deviations were as follows:

i) / l / as / r /	rate, red, rent, rich	4/60	6.6%
/p /	pet (2)	2/60	3.3%

The number of subjects who failed to distinguish between / l / and / r / seems to confirm the difficulty these two phonemes represent, as already predicted in 4.11.8-9, though at a lower rate than before the close vowels / iː, ɪ /.

ii) / e / as / eɪ /	late (19), later, rate	21/60	35%

This suggests that 35% of the subjects were not able to distinguish between /e / and / eɪ /

iii) / t / as	/ tʃ /	*lach (2), *luch, rich	4/60	6.6%
	/ d /	led (3), red	4/60	6.6%
	/-dʒ /	large (3)	3/60	5%
	/ g /	leg	1/60	1.6%
	/ k /	*luk	1/60	1.6%
	/-ntʃ /	lunch	1/60	1.6%
	/-nt /	rent	1/60	1.6%
	/-tə /	later	1/60	1.6%

26.6% of the subjects had a few problems with final consonant / t /. The confusion between / t /, / d /, / tʃ / and / -dʒ / in particular was comparatively high. The addition of / n / in *lunch* and *rent*, was unexpected and seems to suggest that subjects reinterpreted the word they heard as more familiar ones. The substitution of / t / by / d / was quite predictable (cf. 4.11.2). Only one instance of final consonant was perceived with paragoge, when *late* was interpreted as *later,* which is not very significant.

6.5.4 youth / juːθ / [juːθ]

This word was selected to test perception of the discrimination of final / θ / and / s / (cf. 4.11.1). This word was interpreted correctly by 31 subjects (51.6%).This validates the prediction of the difficulty made about this consonant in a way as almost half of the subjects got it wrong. The main deviations were as follows:

/ θ / as / z /~ /s /	use (17), us (2) , yours	20/60	33.3%
/ - /	you (2), your	3/60	5%
/ŋ /	young	1/60	1.6%
/ t /	yacht	1/60	1.6%

This suggests that 25 out of 60 subjects were not able to distinguish between / θ / and the consonants above. The major difficulty was the confusion of it with / s-z / (33.3%). It should nonetheless be noted that there was no way to tell from the spelling whether the interpretation of *use* by 17 subjects was /ju:z / or / ju:s /. In case / s / was substituted to / θ / in *use*, it would account for 28.3% which is still very significant. The interpretations *you* and *your* are evidence of both the lack of distinction between vowels / u: / and / ɔ: / by three subjects as well as poor perception of final consonant / θ /. One subject confused that phoneme with / t / in misperceiving *youth* as *yacht*.

6.5.5 thing / θɪŋ / [θɪŋ]

This word was selected to test perception of

i) the discrimination of initial / θ / (cf. 4.11.1).

ii) the discrimination between /-ŋ / and / n / (4.11.7)

It was interpreted correctly by only 7 subjects (11.6%). The difficulty posed by phoneme / θ / was also corroborated in the productive test (5.6.1) though not to the same extent as in the present case. The major variations were as follows:

i) / θ / as / s / sing (24), sink 25/60 41.6%

This suggests that 41.6% of the subjects were not able to distinguish between initial / θ / and / s /.

ii) / -ŋ / as / ŋk / think (24), tank (2), sink 27/60

45% of the subjects were not able to distinguish between these two. There was no evidence of a n/ŋ problem.

6.5.6 reap / ri:p / [ri:p^{h}]

This word was selected to test perception of

i) the discrimination of / r / and / l / before close front vowel (cf.4.11.8-9).

ii) the discrimination between / iː / and / ɪ / (see 4.5.1)

iii) the perception of final consonant / p / (see 4.11.2)

It was interpreted correctly by 11 subjects (18.3%). The main deviations were as follows:

i) / r / as / l /	lip (3), leap (2), lick		6/60	10%
/ w /	weep , *wippy		2/60	3.3%

This suggests that 10% of the subjects were not able to distinguish between /l / and / r / before the vowel / iː /. A rate of (25%) of lack of discrimination between the same consonants was noticed in 6.5.1. This indicates a greater difficulty in perceiving / l / from / r / before / iː /.

ii) / iː / as / ɪ /	rip (9), lip (3), lick, written, *wippy		15/60	25%
/ aɪ /	ride(2), write, ripe		4/60	6.6%

This suggests that 25% of the subjects failed to distinguish between / iː / and / ɪ /. The misperception of *reap* with / aɪ / was quite unexpected. The case of *ripe* in particular, could be taken as a spelling unduly influenced by Kinyarwanda spelling with 'paragoge', similar to *lide* in 6.5.1.

iii) / p# / as / d /	read (25), ride (2)		27/60	45%
/ t /	write		1/60	1.6%
/ n /	written		1/60	1.6

The final consonant / p / was poorly perceived. The rate of 48.2% suggests that subjects had difficulty in recognizing the word *reap*. Perhaps they re-interpreted the word they heard as a more familiar one.

6.5.7 flee / fliː / [fliː]

This word was selected to test perception of the initial cluster / fl- / before a close front vowel. Only 14 out of 60 subjects (23.3%) perceived it correctly. The main deviations were as follows:

/ fl- / as / θr- /	three (20)		20/60	33.3%
/ fr- /	free (9)		9/60	15 %
/ tr- /	tree (6), try		7/60	11.6%
/ dr- /	drink(2)		2/60	3.3%

This suggests that 63.3% of the subjects failed to distinguish between / l / and / r / before the vowel / i: /. The misperception of *flee* as *free* was expected, according to the predictions made in 4.11.9, but not as *tree*, *try* or *drink*, which are re-interpretations of the word by 9 subjects. The high rate of misperception of *flee* as *three* is considerable evidence of the difficulty of Rwandan subjects in distinguishing / θ-f /. The confusion between these two phonemes was also confirmed by the findings in 5.6.1 whereby / f / alone accounted for 19.27% out of a total deviation rate of 47.63%.The correct perception of initial cluster / fl- / did not prevent one subject from interpreting *flee* as *fled*, thus making it a past tense by adding an imaginary */-d /*marker.

6.5.8 breathe / bri:ð / [bri:ðə]

This word was selected to test perception of:

i) the initial consonant cluster / br- / before a front close vowel (4.11.11).

ii) the final consonant / ð / (cf. 4.11.1).

It was correctly perceived by one subject only (1.66%), though it can be acknowledged that 13 subjects out of 60 who wrote *breath*, presumably perceived it right but spelt it wrong. The main deviations were as follows:

i) / br- / as	/ b+v+ l/	believe (3)	3/60	5%
	/ pl- /	plead (2)	2/60	3.3%
	/ θ/ r /	three (2)	2/60	3.3%
	/ dr- /	drink, *dreep	2/60	3.3%
	/ bl- /	bleed, *blaise	2/60	3.3%
	/ pr- /	*pread	1/60	1.6%
	/ tr- /	treat	1/60	1.6%

This indicates the overwhelming difficulty in the recognition of the word, caused in part by the confusion of initial consonant cluster / br-/ with other consonants at a rate of 21.66%. Three instances of epenthesis were noticed in the perception of *breathe* as *believe*. The rate of 11.6% out of a total of 21.4% of deviations is a further evidence of the difficulty posed by the lack of distinction between / l / and / r / as already noted in the perception of *leap*, *reap* and *flee.*

ii) / ð / as / z / * brize (3), *breeze, * brease, *blaise	6/60	10%
/ d / bread (4), plead (2), breed, bleed, *pread	9/60	16%
/ v / believe (3), *breve	4/60	6.6%
/ f / brief (4)	4/60	6.6%
/ θ/ * brith	2/60	3.3%
/ t / treat	1/60	1.6%
/ p / * dreep	1/60	1.6%
/ ŋk / drink	1/60	1.6%
/ ŋ / bring	1/60	1.6%

This suggests that 48.9% of the subjects had a great deal of confusion in identifying the final consonant, which was already predicted to be extremely difficult (see 4.11.1). All the predicted potential variations to / ð / i.e. / θ, t, d, v, s, z / have materialized in the analysis of this word. Three instances in which final / ð / was heard as / p /, /ŋk / / ŋ / were unexpected and suggest that the subjects did not know the word or re-interpreted it as a familiar one.

6.5.9 debt / det / [dɛt^{h}]

This word was selected to test perception of:

i) the final consonant / t / in contrast with / θ / (cf. 4.11.1).

ii) the discrimination between / e / and / eɪ / (cf. 4.6.2-8)

It was interpreted correctly by 3 subjects (5%). The main deviations were as follows:

i) / t / as / tʃ / dutch (7), * duch (4), *dirtch, teach	13/60	21.6%
/ d / dead (5)	5/60	8.3%
/ ns/ŋks / dance (3), thanks	4/60	6.6%
/ θ / death (2), *duth	3/60	5%
/ sk/k / desk, *jeck	2/60	3.3%
/ dʒ / judge	1/60	1.6%

This suggests that 95% of the subjects had great difficulty in interpreting the word *debt* correctly, mostly due to the lack of correct perception of final aspirated [t^{h}]. Final consonant / t / was perceived with a variety of consonants (46.6%). The aspiration of it was interpreted as an affricate / tʃ / in 13

instances. Despite the correct perception of / t / and / e /, a word of the spelling **dette* which was nonetheless counted as correct, does not exist in English. It rather represents evidence of strong influence of French orthography in the perception of *debt* by 2 subjects.

ii) / e / as	/ ʌ / dutch (7), *duch (4), *duth, judge	13/60	21.6%
	/ eɪ / date (11)	11/60	18.3%
	/ æ / that (3), thanks	4/60	6.6%
	/ ɒ / dot	1/60	1.6%
	/ ɜː / dirt	1/60	1.6%
	/ iː / teach	1/60	1.6%

51.3% of the subjects interpreted the vowel incorrectly. The high occurrence of / ʌ / was unexpected to be ahead of that of / eɪ /.

6.5.10 shade / ʃeɪd / [ʃeɪd]

This word was selected to test perception of

i) the discrimination of the vowels / eɪ / and / e / (see 4.6.8).

ii) the initial consonant / ʃ / (see 4.11.2)

It was correctly interpreted by 5 subjects (8.3%). The main deviations were as follows:

i) / eɪ / as	/ ɛə / shared (3), chaired, chair	5/60	8.3%
	/ e / shed (5)	5/60	8.3%
	/ɑɪ / shide	1/60	1.6%

Ten subjects had difficulty in distinguishing between / eɪ /, / ɛə /and */e/* (16.6%) as expected. The interpretation of *shade* as *shed* is evidence of poor perception and lack of discrimination between / eɪ /and / e /and validates the prediction of monophthongization caused by the subjects' mother tongue. The recognition of / eɪ / did not stop 12 subjects from interpreting *shade* wrongly as either *shame* or *shamed*.

ii) / # ʃ / as / tʃ / change (20), chained, chaired, chair, chain,*chean 25/60 (41.6%). This shows that 25 out of 60 subjects were not able to distinguish

between these two phonemes. The rate of 41.6% confirms the extent of difficulty in the recognition of the word being tested.

6.5.11 pull / pʊl / [pʊɬ]

This word was selected to test perception of :

i) the discrimination between / ʊ / and / uː / (cf. 4. 6. 5).

ii) the final / l / (cf. 4. 11.8).

The perception of this word proved extremely difficult to such an extent that none of the 60 subjects gave a single correct response (0%). The main deviations were as follows:

i) / ʊ / as / uː /	pool (15), prove (2), two	18/60	30%
/ ʊə /	poor (10)	10/60	16.6%
/ ɒ /	pot (4), *pome, *po	6/60	10
/ əʊ /	pole (2), told (2), throw	5/60	8.3%
/ ɔː /	Paul (2), paw, pour	4/60	6.6%
/ aʊ /	pound	1/60	1.6%

This suggests that 73.3% of the subjects were not able to disambiguate / ʊ / correctly from the above variant vowels. The lack of correct perception of /ʊ /was expected and was validated by the high rate of misinterpretation of it as its counterpart / uː / (30%), followed by / ʊə / (16.6%).

ii) / l / as / ə /	poor (10)	10/60	16.6%
/ o /	two, *po, throw, paw, pour	5/60	8.33%
/ t /	pot(4)	4/60	6.6%
/ d /	told (2), pond	3/60	5%
/ v /	prove (2)	2/60	3.3%
/ m /	*pome	1/60	1.6%

This indicates that 25 out 60 subjects failed to perceive final consonant / l / correctly, which resulted in a high rate of 41.6% of lexical reinterpretations in the words above.

6.5.12 bud / bʌd / [bʌd]

This word was selected to test perception of

i) the discrimination between / ʌ / and / ɜ: / (4.6.6).

ii) the final consonant / d / (4.11.2).

None of the 60 subjects perceived *bud* it correctly (0%). Six recognized the vowel / ʌ /, but confused final / d / with / t / in interpreting *bud* as *but.*

The dictated word contains one of the most difficult phonemes for Rwandan subjects to either produce or perceive. The main deviations were as follows:

i) / ʌ / as / æ /	bad (25), that (2), bat (2), bag, mad	31/60	51.6%
/ ɜ: /	bird (8), third (3)	11/60	18.3%
/ e /	bed (2)	2/60	3.3%
/ əʊ /	boat	1/60	1.6%
/ ɑ: /	bard	1/60	1.6%

This suggests that 76.6% of the subjects had great difficulty in distinguishing / ʌ / from one of the vowels / æ, ɜ:, e, əʊ, ɑ: /. The higher rate of lack of discrimination between / ʌ / and / æ / (51.6%) was not expected, because the vowel / ɜ: / is much closer to / ʌ /. Nonetheless, it corroborates the findings in 5.5.3 about the subjects' production of it, whereby / æ / ranked much higher than / ɜ: / and / e / as a deviation from / æ /. *Bud* was interpreted as *bad, bed* or *bird*, presumably because of the greater commonness of these words, and certainly due to the lack of distinction between the vowels above.

ii) / d / as / t /	but (6), that (2), bat (2), boat	11/60	18.3%

The rate of 18.3% seems to indicate that nearly a fifth of the subjects failed to distinguish / d / from / t /. However, there is a great deal of evidence to suggest that the misperceptions of the vowel / ʌ / before / d / were far greater than those involving the final consonant / d /.

6.5.13 spot / spɒt / [spɒt^{h}]

This word was selected to measure perceptive discrimination between / ɒ / and / ɔ: /, according to the prediction made in 4.6.4.

It was interpreted correctly by 13 subjects (21.6%). The only major deviation of it was / ɔː / in *sport* (78.3), which shows that most subjects were not able to distinguish between the two vowels as expected. The subjects rather perceived the dictated word as the one they are more familiar with.

6.5.14 dark / dɑːk / [dɑːk^{h}]

This word was selected to test perception of

i) the discrimination between / ɑː /, / ɒ / and / ʌ / (cf. 4.6.4).

ii) the final / k / (see 4.11.2).

It was interpreted correctly by nearly only one-third of the subjects (19/60), i.e 31.6%. The main deviations were as follows:

i) / ɑː / as / ʌ / jug(9), duck (7), drunk (5), dug (3), drug (2), *jumb(2),

	*juck, junk	30/60	50%
/ ɒ /	dock (3), dog (3)	6/60	10%

60% of the subjects had a serious problem in their interpretation of the vowel / ɑː /, judged by its interpretations as either / ʌ / or / ɒ /. The major problem clearly comes from the confusion between the vowels / ɑː / and /ʌ /, judging by the high rate of perception of / ɑː /as / ʌ / (50%). There was one deviant instance caused by the influence of orthographic pronunciation of French, when *dark* was interpreted as **Jaque(s),* presumably meaning *Jacques.*

ii) / k / as / g / jug (9), dug (3), dog (3), drug (2) 17/60 28.3%.

The rate of 28.3% seems to confirm the inability of the subjects to distinguish between final / k / and / g /, as predicted, which led to comprehension failure of the target word.

6.5.15 chip / tʃɪp / [tʃɪp^{h}]

This word was selected to test perception of

i) the discrimination of initial / tʃ / and / ʃ / before a front close vowel (see 4.11.2).

ii) the discrimination between / ɪ / and / iː / (see 4.6.1).

iii) the final consonant / p / (see 4.11.2).

The perception of *chip* by the 60 subjects was nil (0%).

The main deviations were as follows:

i) / # tʃ / as / ʃ / sheep(3), ship(2), shape(2), shift(2) 9/60 15%

This suggests that nearly a sixth of the subjects were not able to distinguish /tʃ / from / ʃ /. The difficulty was corroborated to a greater extent by the results obtained from the analysis of *shade* in 6.5.10.

ii) / ɪ / as / iː /		cheap(23), * cheak	24/60	40%
	/ e /	check(17), *chep(3), *chet	21/60	35%
	/ ɑː /	*chark	1/60	1.6%
	/ eɪ /	change, * chaip	1/60	3.3%

The lack of clear distinction between / ɪ / and / iː / was the most significant in the subjects' failure to perceive the dictated word correctly. The difficulty that these two vowels represent, was discussed and substantiated in 6.5.1.

iii) / p# / as	/ k /	check(16), *cheak, *chark	18/60	30%
	/ t /	shift, *chet	2/60	3.3%
	/ ndʒ /	change	1/60	1.6%

The rate of 30% suggests that almost one-third of the subjects misperceived /k / for / p / more than any of the two other consonants. Interestingly there was no single case of a voiced equivalent / b / or paragoge.

6.5.16 walk / wɔːk / [wɔːkʰ]

This word was selected to test perceptual discrimination between / ɔː / and /ɜː/ (cf.4.6.7).

It was interpreted correctly by only 13 subjects (21.6%). The main deviations were as follows:

/ ɔː / as / ɜː /		work (33), word(2)	35/60	58.3%
	/əʊ /	woke (2), rope, smoke	4/60	6.6%
	/ ɒ /	lock, *wop, *wock	3/60	5%

The learners' inability to distinguish / ɔː / from / ɜː / alone led as many as 35 subjects to fail to understand the word that was uttered. It is a common

mistake among Rwandan learners of English to either produce or perceive *walk* and *work* as homophones. The case of **wock* can be considered as evidence of Kinyarwanda orthographic spelling of the word *walk* or *work* or of both. A word of such spelling does not exist in English.

The confusion between the vowels / ɔ:, ɜ:, əʊ, ɒ / is further validated by the findings of the productive test of the same subjects in 5.5.4/6/8.

6.5.17 barn / bɑ:n / [bɑ:n]

This word was selected to test perception of the discrimination between vowels / ɑ: ,ɜ:, æ, ʌ / (cf. 4.7.6 -7).

It was interpreted correctly by only 3subjects (5%).

The main deviations were:

/ ɑ: / as / ɜ: /	burn (17)	17/60	28.3%
/ æ /	bang(3), ban(2), bank, bad, bag	8/60	13.3%
/ ʌ /	bump(2), bum (2), bun	5/60	8.3%
/ ɑʊ /	bound (2)	2/60	3.3%
/ ɔ: /	born(2)	2/60	3.3%
/ ɒ /	bomb(2)	2/60	3.3%

This suggests that 60% of the subjects were not able to distinguish / ɑ: / from either of the above variants. Most particularly, it was observed that /ɜ: / was by far the most frequent deviation to / ɑ: /. This confirms the findings about the confusion between these two phonemes which caused difficulties even in the productive test in 5.5.6. There were 4 instances of re-interpretation of / ɑ: / in *bar* (3) and *bath* for *barn*.

Though we did not specifically test for final consonant / n /, it is significant to note that 16 out of 60 subjects failed to get it right and rather perceived it as /ŋ, ŋk, mp, nd, m, g, d, θ / at a rate of 26.6%. Incidentally, Kinyarwanda does not have a final /n /. The confusion of / n / with other nasals such as / ŋ / or /ŋk / can result in lexical misperceptions, as predicted in 4.11.7.

6.5.18 think / θɪŋk / [θɪŋk^{h}]

This word was selected to test perception of

i) the initial consonant / θ / in contrast with / s / (cf.4.11.1).

ii) the final cluster contrast between / ŋk / and / ŋ / (cf. 4.11.7).

It was interpreted correctly by 22 subjects (36.6%), which suggests that approximately two-thirds of the time they failed to perceive it. The main deviations were as follows:

i) / # θ / as / s / sink (20), sing (6), sick (5), seek (2) 33/60 55%

This suggests that over half of the time, the subjects were not able to distinguish between these two, as according to our prediction. The analysis of the word *think* showed no instance whereby initial / θ / was perceived as either / f /or / t /, just as in the case of the word *thing* (6.5.5). These results show a disagreement with the findings of the productive test which gave rise to 26.90% of instances of substitution of / f / and / t / for / θ / (see 5.6.1).

ii) / ŋk / as / ŋ / sing (6) 6/60 10%

This means that only 6 subjects did not perceive the final / k /. A further 8 recognized it in *sick, seek, thick*, but missed the / ŋ /. Also, there was no single evidence of any perception of the dictated word with paragoge, as no one interpreted it as *thinker*. The confusion between / ŋ / and / ŋk / was further substantiated in 6.5.5. The overall rate (36.6%) is evidence of the phonetic problems encountered by Rwandan learners of English, as such a word is otherwise quite common in their lexicon.

6.5.19 tank / tæŋk / [tæŋk^{h}]

This word was selected to test perception of

i) the discrimination between initial / t / and / θ / (cf. 4.11.1).

ii) the final / ŋk / (4.11.7).

It was interpreted correctly by 29 subjects (48.3%).

The main deviations were as follows:

i) / # t / as / θ / thank(22), think 23/60 38.3%

This suggests that 38.3% of the subjects interpreted the initial consonant incorrectly. The inability to distinguish / t / from / θ / did not however

materialize in 6.5.18, whereby / θ / was rather perceived as / s /, as there is no word **tink* in English.

The difficulty associated with / θ / and the lack of distinction between it, / s / and / t / was also evidenced in the productive test whereby *thank* was interpreted as *tank, sank* (see 5.6.1).

ii) / ŋk / as / k / take (2), tack (2), talk (2) 6/60 10%

10% of the attempted interpretations demonstrate a lack of perception of the /ŋ /, but on the whole, the perception failures involving final / ŋk / were minimal, as 86.6% got it right. However, there does seem to be a relative degree of consistency in the deviant perception of / ŋk / as / k /, in the light of of the rates of 13.3% in 6.5.18 and 10% in the present case.

6.5.20 heel/ heal / hi:l / [hi:l]

This word was selected to test perception of

i) the discrimination between / i: / and / ɪ / (cf. 4.6.1).

ii) the final / l / after / i: / (cf. 4.11.8).

It was perceived correctly by 14 subjects (23.3%). The main deviations were as follows:

i) / i: / as / ɪ / hill(14), him(5) 19/60 31.6%

This suggests that 31.6% of the subjects interpreted the vowel incorrectly. Though / i: / was well perceived in one further instance in *he*, the dropping of the final / l /, led to the misperception of the word.

ii) / l / as	/ ə /	hear (19), here (3)	22/60	36.6%
	/ m /	him (5)	5/60	8.3%
	/ - /	he	1/60	1.6%
	/rəʊ /	hero	1/60	1.6%
	/-jo /	*hiyo	2/60	3.2%

This clearly shows that slightly over half of the time (51.6%), the subjects (31/60) failed to perceive dark [ɫ] correctly. It suggests otherwise that they perceived some other kind of / l /. The perception of *heel* as **hiyo* was pure invention by two subjects and demonstrates the subjects' poor phonological

perception. Incidentally, it was not possible to associate any meaning in any of the four languages used by the subjects.

6.5.21 fool / fuːl / [fuːɬ]

It was perceived correctly by 11 subjects (18.3%). The selection of this word was aimed at testing perception of

i) the discrimination between / uː / and / ʊ / (cf. 4.6.5).

ii) the final / l / (cf. 4.11.5).

It was perceived correctly by 11 subjects (18.3%). The main deviations were as follows:

i) / uː / as	/ ʊ /	full (22)	22/60	36.6%
	/ ɔː /	four (14), for (3)	17/60	28.3%
	/ əʊ /	folk	1/60	1.6%

The rate of 36.6% corroborates the lack of perceptual discrimination that 22 subjects had between / uː /and / ʊ /, as predicted. The confusion of it with /ɔː / is also no less significant . The case of *foul* is interesting. One can only speculate that two subjects interpreted / uː / in *fool* with a French vowel / u / in mind as in *foule* 'crowd', but with poor French spelling.

ii) Final / l / proved difficult to perceive once again as in 6.5.11 and 6.5.20, judging by the rate of 33.2% of 14 subjects who failed to perceive it and interpreted *fool* as *four*, and three as *for* ; or those who misinterpreted it as a different consonant in *food* (2) and *folk.*

6.5.22 bird / bɜːd / [bɜːd]

This word was selected to test perception of

i) the discrimination between / ɜː / and / ʌ / (see 4.6.7)

ii) the final / d / (see. 4.11.2).

It was interpreted successfully by 40 subjects (66.6%). The main deviations were:

i) / ɜː / as	/ e /	bed (11), dead	12/60	20%
	/ æ /	bad (7)	7/60	11.6%
	/ ʌ /	but	1/60	1.6%

Only 1.6% of the subjects were not able to distinguish between / ɜː / and / ʌ / though as many as 31.6% interpreted it as either /e / or /æ /. The interference of Kinyarwanda in the perception of / ɜː / was corroborated in some measure by the rate of 20% of those who interpreted it as / e /.

ii) / d / as / t / but 1/60 1.6%

The perception failures involving the final / d / in *bird* were minimal.

6.5.23 shared / ʃɛəd / [ʃɛəd]

This word was selected to test perception of

i) the initial consonant / ʃ / (see. 4.11.2).

ii) the discrimination of the vowels / ɛə / and / e / (see 4.6.15).

It was interpreted correctly by only 1 subject (1.6%). The main deviations were as follows:

i) / ʃ / as / tʃ / checked (2), change 3/60 5%

There seems to be little problem in perceiving the initial / ʃ / in the dictated word, compared to the difficulty posed by the same consonant in *shade* , where / tʃ / accounted for 41.6% (see 6.5.10).

ii) / ɛə / as / eɪ / shade(12), shamed (6), change, *shanged 20/60 33.3%
/ ɛ / shed(15), checked (2), *sheld (2), *cher 20/60 33.3%
/ ɜː / shirt(7) 7/60 11.6%
/ ɪə / sheared 1/60 1.6%

The lack of discrimination between / ɛə,eɪ, e / was clearly demonstrated by the rates above. The rate of 80% is sufficient evidence that the major problem in the perception of *shared* comes from the vowel rather than the consonant. It should be pointed out that the misperception of / ɛə / as [e.ja] predicted in 4.6.15 did not materialize in the analysis of this word.

iii) Final consonant / d / was misperceived by only 9 subjects (15%) including 11.6% of those who interpreted it as / t / in *shirt,* and 2 further cases whereby *shared* was perceived without / d / in *change* and **cher*. Incidentally, **cher*

'dear' is evidence of the influence of French in one subject's attempt in the perception of *shared.*

6.5.24 bought / bɔːt / [bɔːt^{h}]

This word was selected to test perception of the discrimination between / ɔː / and / əʊ / (cf. 4.6.9).

It was interpreted correctly by only 4 subjects (6.6%). This extent of difficulty in perception was not expected, as the dictated word is quite common in the subjects' lexicon. The main deviations were as follows:

/ ɔː / as	/ əʊ /	boat (33)	33/60	55%.
	/ ɒ /	bod (3), *botte (2), body, *bot	7/60	11.6%
	/ uː /	boot(s) (3)	3/60	5%
	/ ɪ /	build (2)	2/60	3.3%
	/ ʊ /	books	1/60	1.6%

The difficulty in distinguishing between / ɔː /, /əʊ / and /ɒ / was clearly evidenced by the rates of 55% and 11.6% . The confusion was expected, and corroborated the prediction made in 4.6.4/11. There was one case of paragoge (1.6%) as the word *bought* was perceived as *body.* A further three instances of the influence of French spelling occurred when *bought* was misinterpreted as **botte* 'boot' and **bot* , the second presumably being a poor spelling of the first. Words of that spelling do not exist in English. Moreover, the interpretations of *bought* as *boots* suggests an interpretation of the aspiration as a kind of affrication / ts /, as already seen in 6.5.9.

6.5.25 dare / dɛə / [dɛə]

This word was selected to test perception of

i) the discrimination between initial consonant / d / and / ð / (see. 4.11.1).

ii) the discrimination between / ɛə / and / eɪ /.

It was interpreted correctly by only 4 subjects (6.6%). The main deviations were as follows:

i) / d / as	/ ð /	there (19), they	20/60	33.3%
	/ t /	tell (2), ten	3/60	5%
	/ dʒ /	Jane (2)	2/60	3.3%

The rate of 33.3% corroborates the expected difficulty that the subjects had in distinguishing between / d / and / ð /. Misperception was not expected with initial / / t / or / dʒ /.

ii) / ɛə / as	/ e /	death (3), dead (2), tell (2), ten	8/60	13.3%
	/ eɪ /	Jane (2), they	3/60	5%
	/ ɜː /	girl (3)	3/60	5%
	/ ɪə /	dear	1/60	1.6%

More subjects had a degree of difficulty in distinguishing between / ɛə / and /e / rather than with the predicted /eɪ / (see 4.6.15). Contrary to our predictions, there was no single instance of double syllabification as [de.ja]. The interpretation of /ɛə / as /e / required subjects to imagine final consonants, which led to 14 cases of re-interpretations. The overall perception of *dare* was very poor.

6.5.26 zay / zeɪ / [zeɪ]

This was a made-up word, selected to test the discrimination between initial / z / and / ð / (see 4.11.1).

The native speaker who dictated the words had asked the subjects, as part of the instructions, to spell any made-up word as best as they could. It was interpreted correctly by 10 subjects (16.6%). The main deviation to / z / was /ð / in *they* by 12 subjects (20%). The wrong perception of the dictated word was brought about by misinterpretation of the vowel, rather than that of the consonant / z / (51.6%). This is how **zay* was interpreted: **zin* (5), *zeal* (3), **zen* (2), **zele* (2), *Zaire* (2), **zink* (2), *zebra,* **zea,* * *zeel,* **zig* (33.3%) in which 31.6% accounted for imaginary final consonant such as: / n / (7), / l / (6), / r / (3), / k / (2) and /g / in their perception of **zay*.

6.5.27 hut / hʌt / [hʌt]

This word was selected to test perception of the discrimination between /ʌ, ɑː, ɒ, ɔː, æ / (see 4.6.3/4/7).

It was interpreted correctly by only 4 subjects (6.6%).

The main deviations were as follows:

/ ʌ / as / ɑː /	heart (25), hart	26/60	43.3%
/ ɜː /	hurt (13)	13/60	21.6%
/ æ /	hat (5), hand	6/60	10%
/ eɪ /	hate (2)	2/60	3.3%
/ e /	help, head	2/60	3.3%
/ ɔː /	halt	1/60	1.6%
/ ɒ /	hot	1/60	1.6%

The rate of 85% is evidence to confirm the great confusion between / ʌ / and the above variants in their interpretation of *hut*, particularly between it, / ɑː / and / ɜː / which accounted for 64.9% out of a total of 84.7% of deviations. The difficulty in the perception of this vowel was expected, mainly due to the fact that the subjects' mother tongue does not have a similar distinction. These results also corroborate the difficulty associated with this phoneme as already noted in 6.5.12.

6.5.28 rice / rɑɪs / [rɑɪs]

This word was selected to test perception of

i) the discrimination between initial / r / and / l / before a non-close front vowel (see 4.11.8/9).

ii) the discrimination between / ɑɪ / and / eɪ / (see 4.6.11).

iii) the discrimination between final / s / and / z / (see 4.11.1).

It was perceived correctly by 47 subjects (78.3%), which is evidence that more than two-thirds of the time the subjects had little difficulty in perceiving that word. This level of success could be attributed to the greater commonness of that word in the subjects' lexicon, despite the fact that words like *rise* and *race* are also very common but not *lice.*

Some deviations occurred nonetheless.

i) There was not a single incidence whereby / r / was perceived as / l /, as opposed to the confusion that occurred in the interpretation of *lead* (6.5.1) and *reap* (6.5.6), before a front close vowel.

ii) / ɑɪ / was perceived as / i / *rince, * riz 2/60 3.3%

/ eɪ / race 1/60 1.6%

This suggests that the vowel / ɑɪ / posed no real perception difficulty in the word *rice*. The case of **riz* is yet another evidence of the influence of French in one subject's perception of *rice*, which in the present case is a straight translation of the latter.

iii) / s / as / z / rise (9) 9/60 15%

Despite correct identification of the vowel, 15% of the subjects were not able to distinguish between final / s / and / z /, thus interpreted *rice* as *rise.* Overall, perception failures involving / ɑɪ / and / s / in *rice* were significant (20%).

6.5.29 text / tɛkst / [tɛkst^{h}]

This word was selected to test perception of a three consonant final cluster /kst /, which does not exist in the subjects' L1 phonological system.

The perception of that word was extremely well achieved by 58 subjects (96.6%), the highest rate thus far reached. This rate is attributed to the commonness of that word in the subjects' lexicon both in English and in French. The main deviation to / kst / was / st / in *test* (2/60) i.e. 3.3%, which shows a lack of clear perception of / k /. The interpretation **texte* as in French, was counted correct even though a word of that spelling does not exist in English, because it was not a spelling test that was being carried out.

6.5.30 dock / dɒk / [dɒk^{h}]

This word was selected to test the perception of

i) the discrimination between vowels / ɒ / and / ɑː / (cf. 4.6.4).

ii) the discrimination between the final / k / and / g / (cf. 4.11.2).

Only 6 subjects perceived this word correctly (10%).

The main deviations were as follows:

i) / ɒ / as / ɑː / dark (14) 14/60 23.3%

/ ʌ / duck (8) 8/60 13.3%

/ ɔː / talk (2) 2/60 3.3%

/ əʊ / don't 1/60 1.6%

This suggests that 41.6% of the subjects had great confusion in disambiguating /ɒ / from one of /ɑː, ʌ, ɔː / and / əʊ /. The lack of discrimination between / ɒ / and / ɑː / was confirmed by a significant rate of 23.3%.

ii) Furthermore, the lack of distinction between final / k / and / g / was quite considerable, in the light of 24 subjects out of 60 who misperceived the word *dock* as *dog* (40%). A further 5 misinterpreted final / k / as / t / in *dock* as *dot* and *don't* (8.33%).

6.5.31 heart / hɑːt / [hɑːtʰ]

This word, as well as the those contained in the series 31-35 and 36-40, was selected to test perception of:

i) the discrimination between vowel / ɑː / and /ɜː, æ, ʌ, ɒ / (cf 4.6.3/6/7).

ii) the discrimination of final / t / and / d / (cf 4.11.2).

It was interpreted correctly by only 13 subjects (21.6%). The main deviations were as follows:

i) / ɑː / as / ɜː /		hurt (10), heard (4),	14/60	23.3%
	/ æ /	hat (7), had (6), have	14/60	23.3%
	/ ʌ /	hut (4), hug	5/60	8.3%
	/ e /	head	1/60	1.6%

This suggests that 56.6% of the subjects were not able to distinguish between / ɑː / and one of the four variants above, in which 46.6% accounted for / ɜː / and / æ / alone. Despite the fact that RP vowel /ɑː / is close to Kinyarwanda vowel / ɑ /, the latter does not nonetheless have similar vowel contrast as English.This explains the difficulty that subjects from Kinyarwanda back-ground have in either producing or perceiving / ɑː / correctly.

ii) / t# / as / d /		hard (9), had (6), heard (4), head	20/60	33.3%

One third of the subjects failed to distinguish final / t / from / d /, among whom 15% nonetheless identified the vowel / ɑː / correctly, but re-interpreted *heart* as *hard*.

6.5.32 hut / hʌt / [hʌt^{h}]

This word was selected to test perception of the discrimination between vowels / ʌ / and one of the following vowels / ɑ:, æ, ɜ:, ɒ / as in 6.5.27. The word was deliberately tested twice in order to check the consistency in the subjects' perceptions. Only 6 subjects interpreted it successfully (10%) in this case, and only 4 in 6.5.27. The main deviations were:

/ ʌ / as / æ /	hat (13), had	14/60	23.3%
/ ɜ: /	hurt (14)	14/60	23.3%
/ ɑ: /	heart (12)	12/60	20%
/ ɒ /	hot (4)	4/60	6.6%

This suggests that 44 subjects (73.2%) were not able to distinguish between / ʌ / and the above variants. Such misperception was expected, and confirms the predictions made in 4.6.6. The difficulty posed by / ʌ / was also evidenced in the findings about the same word in 6.5.27, where 51 out of 60 subjects, i.e. 85% failed to perceive it accurately. In both cases, the rate of confusion between / ʌ / and / ɑ:, ɜ:, æ / was much higher than for any other variant. Incidentally, / ʌ / proved extemely difficult for these subjects even in the productive test (see.5.5.3), as only past over one-third of the time (37.45%), they were able to convince the native speaker judges of their correct production of it. Overall, the perception of *hut* was very poor.

6.5.33 hot / hɒt / [hɒt^{h}]

This word was selected to test perceptive discrimination of the vowel / ɒ / and / ɑ:, ʌ, ɜ:, æ / just as in 6.5.31/32.

It was correctly interpreted by 25 subjects (41.6%). Seven deviations occurred as follows:

/ ɒ / as / ɑ: /	heart (8)	8/60	13.3%
/ æ /	hat (7)	7/60	11.6%
/ ʌ /	hut (6)	6/60	10%
/ eɪ /	hate (3)	3/60	5%
/ ɜ: /	hurt (3)	3/60	5%
/ ɔ: /	halt (2)	2/60	3.3%
/ e /	head	1/60	1.6%

These numbers suggest that half of the time, the subjects had difficulty in discriminating between / ɒ / and either of the above variants. These results are in complete agreement with the predictions made in 4.6.4.

6.5.34 hurt / hɜ:t / [hɜ:t^h]

This word was selected to test perception of the discrimination between / ɜ: / and either one of / ɑ:, ʌ,ɒ, æ / (see 6.5.31-33).

It was interpreted correctly by 12 subjects (20%). The main deviations were as follows:

/ ɜ: / as / ɑ: /	heart (10), hard (4)	14/60	23.4%
/ e /	head (5)	5/60	8.3%
/ eɪ /	hate (4)	4/60	6.6%
/ ɒ /	hot (4)	4/60	6.6%
/ æ /	hat (2), hands, had	4/60	6.6%
/ ʌ /	hut (3)	3/60	5%

This suggests that 56.6% of the subjects had great difficulty in perceiving the vowel / ɜ: / successfully. The misperceptions above confirm the predictions in 4.6.7. The main cause of the difficulty seems to be related to the lack of perception of length and tongue position in the production of / ɜ: /.

We have explained in other instances that this vowel does not exist in the subjects'mother tongue (see 6.5.17/27). There were 3 other instances deviations in which, despite correct identification of the vowel / ɜ: /, *hurt* was interpreted as *heard* (6.6%).

35 subjects perceived final / t / relatively well (58.3%), compared to 16 who misperceived it as / d / (23.3%) and 1.6% as / nz /. Overall, the consonant had less impact on the perception of the word compared with that of the vowel.

6.5.35 hat / hæt / [hæt^h]

This word was selected to test perception of the discrimination between / æ / and / ɑ:, ɒ, ʌ, ɜ: / as in 6.5.31-34.

It was perceived correctly by 19 subjects (31.6%). The main deviations are as follows:

/ æ / as / ɑː /	heart (11), hard (4)	15/60	25%
/ ɜː /	hurt (10)	10/60	16.6%
/ ʌ /	hut (7)	7/60	11.6%
/ ɔː /	halt, *hort	2/60	3.3%
/ ɒ /	hot (2)	2/60	3.3%
/ eɪ /	hate	1/60	1.6%

The rates above suggest that vowels / ɑː. ɜː, ʌ / were the most significant variants to / æ /, and hence confirm the predictions that were made in 4.6.4.

It is noteworthy that 52 subjects have well perceived final / t / (86.6%) in comparison to only 4 who interpreted it as / d / (6.6%).

6.5.36 luck / lʌk / [lʌk^{h}]

The word *luck* was selected to test perceptive discrimination between /ʌ / and either one of / ɒ, ɑː, æ, ɜː / tested in items 36 to 40 (see 4.6.3/4/6). In the present case, the accurate perceptions were measured at 32/60 (53.3%).

Five deviations occurred as follows:

/ ʌ / as / ɒ /	lock (9)	9/60	15%
/ æ /	lack(8), *lac	9/60	15%
/ ʊ /	look (5)	5/60	8.3%
/ eɪ /	lake	1/60	1.6%
/ ɑɪ /	like	1/60	1.6%

This suggests that 41.6% of the subjects had problems with the correct identification of the vowel / ʌ / in *luck*, of whom 38.3% accounted for being major variants / ʌ, æ / and / ʊ /. It was however much better perceived in comparison to findings in 6.5.27 and 6.5.32 whereby 85% and 73.3% respectively of the subjects were unable to distinguish it from other different vowels.

One case of **lac* is taken to represent / æ / as an example of poor spelling unduly influenced by French, since a word of that spelling does not exist

either in English or in Kinyarwanda. No single instance of final / k / being perceived as / g / materialised contrary to the prediction made in 4.11.2.

6.5.37 lock / lɒk / [lɒk^{h}]

This word was selected to test perception of

i) the discrimination between / ɒ, ʌ, ɑ:, æ / (see 6.5.36).

ii) the final consonant / k /

It was interpreted accurately by 28 subjects (46.6%). The main deviations were as follows:

i) / ɒ / as	/ ʌ /	luck (12)	12/60	20%
	/ ʊ /	look (5)	5/60	8.3%
	/ æ /	lack (4)	4/60	6.6%
	/ ɑ: /	*larck	1/60	1.6%

The rate of 20% is an indication that the lack of discrimination was greater between / ɒ / and / ʌ / than between it and the remaining three variants.

ii) Final / k / was extremely well perceived, as there was not a single instance whereby it was interpreted as / g /. This represents a sharp contrast with respective 28.3% and 40% of the subjects who were not able to distinguish between the two consonants in 6.5.14 and 6.5.30. One can only speculate that the fact that no one interpreted it as either *log* or *lag* is an indication they might not be familiar with these words.

6.5.38 lark / lɑ:k / [lɑ:k^{h}]

This word was selected to test perception of the discrimination between /ɑ:, ʌ, ɒ, æ, ɜ: / (see 6.5.36-37).

It was significant that only 2 subjects (3.3%) perceived it correctly. The main deviations were as follows:

/ ɑ: / as	/ ʌ /	luck (17)	17/60	28.3%
	/ æ /	lack(12), rack (2)	14/60	23.3%
	/ ʊ /	look (9)	9/60	15%
	/ ɑɪ /	like (4)	4/60	6.6%

/ ɒ /	lock (2)	2/60	3.3%
/ əʊ /	*loack	1/60	1.6%
/ iː /	*leake	1/60	1.6%

This suggests that 80% of the subjects were not able to distinguish / /ɑː / from the seven variant vowels above, of which / ʌ, æ, ʊ / were the major ones. The lack of discrimination was confirmed by these findings, just as it was in 6.5.14-17-31. Two subjects in particular, reinterpreted the word by inventing new ones whose spelling is not English. Two cases of **lac* are taken to represent *lack /lark*, as a spelling unduly influenced by French, just as in 6.5.36. The evidence clearly shows that it is the misperception of the vowel that caused trouble to the subjects since there was no evidence of any problem with final consonant / k /.

6.5.39 lack / læk / [lækʰ]

The word was selected to test perception of the discrimination between /æ, ɑː, ʌ, ɒ, ɜː / as in 6.5.36-38. It was interpreted correctly by 15 subjects (25%). The main deviations were as follows:

/ æ / as / ʌ /	luck (13), *ruck	14/60	23.3%
	/ eɪ /	lake (8)	8/60	13.3%
	/ ɒ /	lock (5)	5/60	8.3%
	/ ɑɪ /	like (2)	2/60	3.3%
	/ ɛ /	leg (2)	2/60	3.3%
	/ uː /	luke (2)	2/60	3.3%
	/ ɪ /	link	1/60	1.6%

This suggests that 56.6% of the subjects had serious a problem of discrimination between the vowels above, of which / ʌ./, / eɪ / and / ɒ / were major variants to / æ /. The difficulty represented by / æ / was expected, according to 4.6.3 and was substantiated. As in 6.5.36 and 6.5.38, one instance of **lac* is taken to represent / æ / as a spelling influenced by French , because a word of that spelling does not occur in English. Even though one subject identified the vowel / æ / correctly, the *lack* was misperceived because of the addition of an initial consonant / b / that made *lack* to be

interpreted as *black*. Moreover, three cases of the lack of discrimination between initial / / l / and / r / in *ruck*, and between final consonant / k / and /g / in *leg* (2), are not significant. Once again, the deviations above are compelling evidence that correct perception of the vowels is a significant problem to the perceptive competence of these subjects.

6.5.40 luck / lʌk / [lʌk^{h}]

This word was selected to test perception of the discrimination between /ʌ, ɒ, ɑː, æ / as in 6.5.36-39.

It was deliberately tested twice (see 6.5.36) in order to check consistency in the subjects' perception of it. This time around, it was interpreted successfully only by 14 subjects (23.3%)compared to 32, i.e. 53.3% in 6.5.36. The gap of 30% between the results of these two identical words proves that there was little consistency in the perception of it by the same subjects. Two speculations are possible. One is that maybe having heard it once they did not believe their ears the second time, i.e. they showed little confidence in their perceptual phonological competence. The other may be that they felt unduly influenced by the sequence of similar items by the time they reached item 40, and had not been influenced at the start of the list beginning at item 36. In any case, it shows the frailty of their perceptual phonological competence, when put to the test. The main deviations were as follows:

/ ʌ / as	/ æ /	lack (21), *lac (5)	26/60	43.3%
	/ ɒ /	lock (5)	5/60	8.3%
	/ eɪ /	lake (4)	4/60	6.6%
	/ ʊ /	look (2)	2/60	3.3%

This suggests that the perception of the vowel / ʌ / is the main problem, judging by 61,6% of the subjects who interpreted *luck* incorrectly, of whom 43.3% had great confusion between / ʌ / and / æ /. In the present case, there were 5 instances of the misperception of *luck* as * *lac*, compared to one case only in 6.5.36, which are taken as a further evidence of the effect that French has on these subjects. Final / k / was extremely well perceived. As in 6.5.36 not a single instance of interpretation of it as / g / occurred.

6.6 Summary

The following section shows evidence from the word list on how subjects heard different vowels and consonants and how they interpreted them. The word 'odd' will be used throughout to refer to forms which do not correspond to any of the attempted variants.

6.6.1 / iː / was interpreted as follows:

	iː	NR	ɪ	e	ɑɪ	ɪə	odd
Lead	46	0	12	1			lide
Reap	41	3	14				ripe 2
Flee	49	8	1	1			try
Breathe	17	12	4	16	1		*pread, *brize 3, *brith 2, *breve *brease, *blaise, *dreep
Heel /heal	18	0	18			22	hero, *hiyo

Most subjects interpreted / iː / successfully when there was no possible contrast as in *flee* (81.6%); about 25% were tempted to interpret it as / ɪ / if there were possible minimal pairs as in *lead, reap* and *heal*. The greatest degree of uncertainty comes when / iː / is adjacent to / l /; this being no doubt because English / l / is a problematic consonant itself. The fact that an almost equal number confused / iː / and / e / while interpreting *breathe*, presumably derives from a spelling problem.

6.6.2 / ɪ / was interpreted as

	ɪ	NR	iː	e	eɪ	odd
Thing	57	2				thank
Chip	0	4	26	17	3	*chep 3, *cheak, *chaip, *chet
Think	57	1	2			

There are no problems in the perception of / ɪ / if there are no minimal pairs with / iː / as in *think*, but when there are, it is extremely poorly perceived and confused with / iː / or / e /. Four instances occurred *ship* (2), *shift* (2) where /ɪ / was well perceived though in different words from the dictated one.

6.6.3 / **e** / was interpreted as

	e	NR	eɪ	æ	ʌ	ɑː	ɜː	ɪ	iː	odd
Let	27	3	21	2	3	3		1		
Debt	8	12	11	10	12	3	2		1	dot
Text	58			2						

Most subjects interpreted / e / successfully where there was no potential contrast as in *text* (96.6%) but mistook it where contrast was possible especially with a word with / eɪ / (26.6%).

6.6.4 / æ / was interpreted as

	æ	NR	e	ɑː	ɜː	ɒ	ʌ	ɔː	eɪ	odd
Thank	53	1						2	3	think
Hat	21	3		15	10	2	7	2		
Lack	21	5	2			5	14		8	luke 2, like 2, link

It was extremely well perceived in *thank* (88.3%) which does not have direct contrasts compared to the high level of confusion and thus low perception that occurred in potential contrasts with *hat* and *lack*. Possibly, some confused English *lack* with French *lac* which triggered English *lake*. It was interesting to notice that there was no suggestion of *hat* being mistaken for *hate.*

6.6.5 / ɑː / was interpreted as

	ɑː	NR	æ	ʌ	ɜː	ɒ	aʊ	aɪ	ʊ	odd
Dark	19	1	1	30	2	6	1			
Barn	15	13	8	5	15	2	2			
Heart/hart	21	5	14	5	15					
Lark	2	8	17	17		2		4	9	*leake

Only 30.5% perceived it correctly; 16.6% interpreted it as / æ /; 23.7% as /ʌ /; 17.7% as / ɜː / and 5.5% as / ɒ /. Familiar words like *duck, bum, hat, heart, lack, luck* led the subjects away from the target, showing how unstable their phonological perception of this vowel is.

6.6.6 / ɒ / was interpreted as

	ɒ	NR	ɔː	ɑː	ʌ	æ	ɜː	ʊ	odd
Spot	13		47						
Dock	34	1	2	14	8				don't
Hot	29	3	2	8	6	5	3		head, hate 3
Lock	33	4		1	11	6		5	

Overall, there is a great level of indeterminacy in the perception of / ɒ / in the four words, judging by the rate of its misperceptions as / ɔ: /, / ɑ: / and / ʌ / in all four words, and also / æ / in *hot* and *lock*. The perception of / ɒ / was presumably distracted by the occurrence of very familiar words like *sport* (78.3%) for *spot* ; *dark* and *heart* (18.3%) for *dock* and *hot*; *luck* (18.3%) for *lock* . In particular, most Rwandans tend to perceive *spot* and *sport* as homophones, due to the lack of clear discrimin-ation between English / ɒ / and / ɔ: /.

6.6.7 / ɔ: / was interpreted as

	ɔ:	NR	ɒ	ɜ:	əʊ	ʊ	u:	odd
Walk	13	4	3	36	4			
Bought	12	4	4		34	1	3	build 2

It was accurately perceived at a rate of 20.8%. The kind of deviations depends on what potential contrasts a word has. The interpretation of / ɔ: / as / ɜ: / and / əʊ / suggests that for many Rwandan subjects, *walk* and *work; bought* and *boat* are homophones.

6.6.8 / ʊ / was interpreted as

	ʊ	NR	u:	ʊə	əʊ	ɔ:	ɒ	ɑʊ	odd
Pull	0	16	18	10	6	4	4	1	*pome

The perception of / ʊ / was nil. *Pull* is a common word, probably a homo-phone with *pool* for most Rwandan subjects, as suggested by the high rate of 30% of those subjects who misperceived / ʊ / for / u: /.

There is a degree of confusion when / ʊ / is followed by / l /, in the light of incidences where it was perceived as / ʊə / and / ɔ: / (23.3%) in *poor/ pour* ; /əʊ / (10%) and / ɒ / (6.6%).

6.6.9 / **u:** / was interpreted as

	u:	NR	ʊ	ʊə	əʊ	ɔ:	ʌ	odd
Youth	48	4		1		1	5	yacht
Fool	22	3	22		1	10		foul 2

The accuracy of perception was measured at 58.3%. More than a third of the subjects (36.6%) interpreted it as / ʊ / in the potential minimal pair *full* as

expected. Its interpretation as / ɔː / (9%) was quite unexpected, though it is consistent with the findings about / ʊ /.

6.6.10 / ɜː / was interpreted as

	ɜː	NR	ɑː	e	ɒ	æ	eɪ	ʌ
Bird	38	2		12		7		1
Hurt	15	10	14	6	4	4	4	3

It was correctly perceived at a rate of 44%. Its major variants were / ɑː / (23.3%); / e / (14%) and / æ / (9%) in familiar words *bed, bad, heart.*

6.6.11 / ʌ / was interpreted as

	ʌ	NR	æ	ɜː	ɑː	ɒ	ɔː	ɛ	ʊ	odd
Bud	8	6	31	11	1			2		boat
Hut	5	1	6	15	27	1	1	2		hate 2
Hut	6	10	14	14	12	4				
Luck	32	3	9			9			5	like ,lake
Luck	14	9	26			5			2	lake 4

Only 65 interpretations out of 300 of / ʌ / were accurate (21.6%). Its major variants were / æ / (28.6%) , / ɜː / (22.2%), / ɑː / (22.2%) and / ɒ / (7.9%), depending on alternative familiar words. There were also 6 instances of evidence of the interference of French when *luck* was perceived as **lac.*

6.6.12 / **eɪ** / was interpreted as

	eɪ	NR	e	ɛə	iː	ɪ	odd
Strange	43	4	3		3		strenge 3, stead 2, streach, *strich
Shade	38	9	5	6			chean, shide
*Zay	22	17	5		5	8	Zaire 2, zebra

It was satisfactorily interpreted (67.5%). The overall perception was affected by the rate of 16.6% of those who did not attempt any response. Monophthong / e / for / eɪ / was expected though it accounted for only 6.6%. Variants / iː / and / ɪ / were quite unexpected. However, / eɪ / was less well perceived in **zay* (36.6%) in comparison to either *strange* or *shade*, judging by the high rate of non- response (28.3%) for **zay*, and those who misinterpreted it as / iː / and / ɪ / (21.6%).

6.6.13 / ɑɪ / was interpreted as

	ɑɪ	NR	eɪ	odd
Rice	56	1	1	rince, riz

It was extremely well perceived (93.3%) in a familiar word ' *rice* '; but being tested only once, its results may not be conclusive and generalisable. Only one subject inerpreted it as / eɪ / in *race* for *rice*.

6.6.14 / ɛə / was interpreted as

	ɛə	NR	e	eɪ	ɜː	ɪə	odd
Shared	22	7	10	15	5		*cher
Dare	39	11	6	2	1	1	

The accuracy of perception of / ɛə / in *shared* and *dare* was measured at 61/120 (50.8%). More than half of the subjects successfully perceived it in *dare* compared to *shared* in which the variants / e /, / eɪ / or / ɜː / were rated as high as 50%, principally on account of the potential minimal pairs *shed* and *shade.*

6.6.15 / p / was interpreted as

	p	NR	odd
Pull	40	16	throw, told, prove 2
Spot	60		
Reap	29	2	read 24, *wippy, ride 2, lick, write
Chip	35	4	check 17, *cheak, *chet, change, shift

The accuracy of perception of / p / was measured at 68.3%. All the subjects interpreted it extremely successfully (100%) where there was no possible contrast as in *spot.* It was less well perceived in final position (Table 6.8) as in *reap* (18.3%) and *chip* (0%). Interestingly, / p / was not perceived as / b / in any of the tested words. The relatively low score for *reap* might well be accounted for by its relative infrequency compared to, for example, *read* which was chosen by 24 subjects.

6.6.16 / b / was interpreted as

	b	NR					odd
Bud	47	7					third 3, that 2, mad
Barn	47	13					
Bird	57	2					dead
Bought	56	4					
	br	NR	pr	bɪl	bl	pl	
Breathe	35	12	1	3	2	2	treat, dr- 2, three 2

It was better perceived as a single consonant in four words (207/240), i.e 86.25%, but less so in the consonant cluster / br- / (58.3%), the / r / before /iː / being a potential problem.

6.6.17 / t / was interpreted as follows

	t	NR	θ	d	tə	tʃ	dʒ	odd
Text	60							
Tank	36	1	23					
Let	41	3		4	1	4	3	*luk,lunch, rent, leg
Debt	22	9	3	5		13	1	dance 3, thanks,*jeck,dent,desk
Spot	60							
Bought	44	4		9				boots, books, bod
Hut	54	2		1				halt, hand, help
Hut	49	10		1				
Heart	34	7		19				
Hot	52	5		1				halt 2
Hurt	35	10		14				hands
Hat	51	4		4				halt
			tʃ	st	sp	s		
Strange	49	4	3	2	1	1		

The accuracy of perception of / t / in 13 words was measured at 75.2%. It was extremely well interpreted where there was no potential contrast as in *text* and *spot.* The confusion was significant where there was potential contrast as between / t / and / θ / in initial position (see 6.5.19) *tank /thank* (38.3%). Similar confusion also occurred between / t / and / d / in final position (see 6.5.31/34) when *heart* was perceived as *hard, had, heard, head* (33.3%) and *hurt* as *heard* (6.6%). The aspiration of the final / t / is often perceived as the friction element of the affricate / tʃ / and / dʒ / as in 6.5.3 where *let* was perceived as * *lach, rich, large* and in 6.5.9 where *debt* was also interpreted as either *dutch, teach* or *judge* or as an additional phoneme usually / s / as in *boots, books, hands* and *thanks*.

6.6.18 / d / was interpreted as follows

	d	NR	ð	t	dʒ	g	odd
Debt	42	8	3	1	2		thanks 4
Dark	39	3			11		dr- 6, Jacques
Dare	20	17	17		2		girl 3, ten
Dock	58	1		1			

	d	NR	ð	t	dʒ	g	odd
Bud	40	8		11		1	
Lead	55	0					lived 5
Shade	29	8					change 20, chain, chair, *chean
Bird	57	2		1			
Shared	41	10		7			change, *cher

The accuracy of perception of / d / in initial position was measured at 66.2% (159/240) and 74% (222/300) in final position. This suggests that subjects had no great problem in identifying it, though its relative confusion with /ð / (16.6%), / t / (7%) and / dʒ / (8.3%) where possible minimal pairs exist needs to be mentioned.

6.6.19 / k / was interpreted as follows

	k	NR	g	odd
Dark	38	5	16	*jumb
Walk	51	4		*wop, rope, word 3
Dock	30	1	24	dot 4, don't
Luck	57	3		
Luck	51	9		
Lock	56	4		
Lark	52	8		
Lack	49	9	2	

	ŋk	NR	k	ŋ
Think	43	3	9	5
Tank	52	1	7	

The accuracy of perception of / k / in 8 items was estimated at 384/480 (80%). It seemed higher where there were less potential minimal pairs as in *luck, lock*, *lark* , compared to higher confusion between between final / k / and / g / in *dark* (40%) and *dock* (28.3%) respectively. It can be speculated that presumably the vowel / ɒ / led to a higher misinterpretation of *dock* as *dog* (45%) than did the vowel / ɑ: / in *dark.* / ŋk / was interpreted at a very high rate (79%) in the two items; perceived as /k / in 16 interpretations (13.3%) and as / ŋ / (8.3%).

6.6.20 / n / was interpreted as follows

	n	NR	m	ŋ	odd
Barn	28	15	3	3	bar 3, bound 2, bump 2, bank, bath, bad, bag

	ndʒ	NR	n	ŋ	odd
Strange	42	4	3	1	*strich, *streach, *stread 2,

speak, street 2, set, stage, *strench

The problem seems to be final / n / which was correctly perceived by only 28 subjects, i.e less than 50%. The perception failure is further aggravated by a significant 25% of those who did not attempt any response. The perception of / n / before a consonant was more successful in *strange* (70%).

6.6.21 / ŋ / was interpreted as follows

	ŋ	NR	ŋk	
Thing	31	2	27	
	ŋk	NR	ŋ	k
Think	44	3	6	7
Tank	52	1		7

These figures seem to suggest two things. One is that there is generally no major problem in the perception of /ŋ / itself (88.8%) by Rwandan subjects, although they failed to perceive the nasal before / k / at a rate of 11.6%. Second, when they hear final / ŋ /, there is a strong tendency to perceive an imaginary additional / k / as suggested by the 45% of those who interpreted /ŋ / as / ŋk /. This means that /ŋ / is more prone to misinterpretation than /ŋk /.

6.6.22 / f / was interpreted as follows

	f	NR				odd
Fool	60	0				
	fl	NR	fr	θr	tr	
Flee	15	8	9	20	7	drink

As a single consonant, it did not cause any problem of perception (100%). But the problematic / l / before / i: / led one-third of the subjects to perceive / f / as / θ / (33.3%); and 11.6% as / t /.

6.6.23 / θ / was interpreted as follows

	θ	NR	s	odd
Thing	28	2	30	
Think	26	3	31	
			s/z	
Youth	31	4	19	you 2, your 2, yours, young

It was not well percived as on average the learners perceived it correctly in 85 out of 180 interpretations. It is significant that the major variant to / θ / was / s / and not / t / (41.6% in *thing*, 55% in *think*). In the case of *youth*, the spelling *use* might indicate either / s / or / z /; the single item *yours* might also indicate / z /.

6.6.24 / **ð** / was interpreted as follows

	ð	NR	θ	v	z	d	f	odd
Breathe	1	12	15	4	6	9	4	bring 3, three 2 drink, *dreep, bribe, treat

It was extremely poorly interpreted as only one subject perceived the word containing it accurately (1.6%). The subjects had a great deal of confusion between / ð / and its voiceless dental fricative / θ / (25%); / d / (15%); / z / (10%); / v /and / f / (6.6%) each. The fact that 12/60 (20%) did not attempt any response is indicative of the difficulty posed by the perception of / ð /.

6.6.25 / **s** / was interpreted as follows

	s	NR	st	z	odd
Spot	60	0			
Strange	49	4	2		chain 3, speak, set
Rice	48	1		10	*rince
Text	60	0			

It was well perceived where there was no possible contrast as in *spot* and *text* (100%), as compared to *rice* in which 10/60 (16.6%) interpreted it as / z / in *rise* and **riz*, despite its commonness.

6.6.26 / **z** / was interpreted as follows

	z	NR	ð
*Zay	31	17	12

Just over half of the time , the phoneme / z / was successfully perceived. The rate of 51.6% was caused in part by the possibility of perceiving it as / ð / (20%). It is significant that as many as 17 subjects (28.3%) did not attempt any interpretation of the made-up word. This can be considered as evidence of poor processing skills by these subjects.

6.6.27 / ʃ / was interpreted as follows

	ʃ	NR	tʃ
Shade	29	6	25
Shared	47	10	3

The perception of / ʃ / was poor when followed by a vowel that could suggest other words, particularly *change* for *shade*. It was better perceived in *shared* since *chaired* is much less familiar.

6.6.28 / tʃ / was perceived as follows

	tʃ	NR	ʃ
Chip	47	4	9

Despite a high perception rate of / tʃ / (78.3%), a certain lack of discrimination was noticed between it and / ʃ /. A rate of 15% suggests a certain degree of uncertainty between / tʃ / and / ʃ /, which was also even more conspicuous in the immediately preceding word (6.6.27).

6.6.29 / dʒ / was perceived as follows

	dʒ	NR	tʃ	odd
Strange	43	4	3	chain 3, *steing, *stread 2, street 2, set, speak

More than two-thirds of the time, the subjects interpreted / dʒ / successfully (71.6%). It was misperceived as / tʃ / in only 3 instances. It should be acknowledged here as in the cases of *breathe*, **zay* and *chip*, that however significant they might be, the results from one single item may not realistically be taken as conclusive.

6.6.30 / h / was interpreted as follows

	h	NR
Heel	60	0
Hut	60	0
Hut	60	0
Heart	60	0
Hot	60	0
Hurt	60	0
Hat	60	0

/ h / caused not a single instance of perception failure as its accuracy was measured at a maximum rate of (100%).

6.6.31 / l / was interpreted as

	l	NR	r	odd
Lead	45	0	15	
Let	52	3	4	pet
Luck	60	0		
Luck	51	9		
Lock	54	0	6	
Lark	58	0	2	
Lack	58	0	1	black
Flee	15	8	37	

	l	NR	< r >	#	
Pull	28	16	11	4	told
Heel/heal	30	0	22	1	hero, *hiyo 2, him 4
Fool	41	0	15		food 3, folk

The results above suggest that the perception of / l / was not a major problem in initial position (378/420) i.e. 90%, except when / i: / followed: 25% interpreted *lead* as *read*, and 75% either interpreted *flee* as *free* or made no response. Perception in final position was more generally problematical, with only 55% success. As many as (26.1%) interpreted it as orthographic <r>, especially when preceded by / i: /.

6.6.32 / r / was interpreted as follows

	r	NR	l	w	odd
Reap	50	2	6	2	
Rice	59	1			
Breathe	42	12	6		
Strange	49	4			chin 3, stage, *steing, set, speak

As a single consonant, / r / was better interpreted in 109/120 perceptions (90.8%) compared to its perceptions in consonant clusters / br- / and / str- / (75.8%). There were 12 perceptions of it as / l / (10%). The presence of the /i: / vowel following / r / as in *reap* and *breathe* seems to be the major cause of its relatively lower rate in those two words. It is also noticed that the rate of non-response is higher in consonant clusters (13.3%) than in single consonants (2.5%) containing / r /. This may confirm the claim that consonant clusters are likely to pose more problems of perception than single consonants.

6.6.33 / **j** / was interpreted as

	j	NR	odd
Youth	54	4	2 (us)

Most subjects (90%) perceived the semi-vowel extremely well. It was misperceived or unattempted in only 6 instances (10%).

6.6.34 / **w** / was interpreted as

	w	NR	odd
Walk	53	4	rope, lock, smoke.

The perception of / w / caused little difficulty, as 88.3% of the subjects perceived it correctly.

6.7 Summary

The evidence from the perceptual competence of vowels and consonants in dictated words shows that there are sounds that cause major, medium and minor phonological problems to the Rwandan learners of English. The results are evidence of the difficulty that some English vowels and consonants represent in the perceptive competence of Rwandan learners of English. The lack of clear distinction between vowels and consonants of English led to serious comprehension failure in the interpretation of dictated words. However, some of these phonemes are more problematic in some environments than others. The difficulty found in ranking these phonemes is that one phoneme may occur in different words, whose correct interpretation will largely depend upon the lexical knowledge learners have. Phonemes that were rated below 45% are categorised as a major problem. Those that rank between 45% and 60% are considered as medium, and those above 60% as minor.

The evidence from our analysis shows for example that / ɪ / is a major problem in the perception of *chip* (6.6%), but a minor one in *think* (95%) and *thing* (96.6%). / æ / was a major problem in *hat* (35%) and *lack* (35%) in 6.6.4 but minor in *thank* (88.3%). Also, / ʌ / and / uː / are a major problem in the perception of *hut* and *fool*, but medium in *luck* and minor in *youth.*

Furthermore, while / iː / is a major difficulty in *breathe, heal / heel*, it appears minor in *reap* and *lead*. Unfortunately, the smallness of the sample of items used in testing the use of / ʊ / and / ɑɪ / in *pull* and *rice* is not helpful enough to generate conclusive results. There seems to be relatively fewer problems with diphthongs, apart from / ɛə /. For example, / ɑɪ / was extremely well perceived in *rice* (93.3%) and its interpretation as *rise*, but the results from such a small sample can not be objectively generalised about the other diphthongs.

The findings show that certain phoneme contrasts are a major problem for comprehension, and therefore deserve due attention in both teaching and testing. Some other phonemes represent either medium or minor perceptual difficulties as summed up below.

Major	Medium	Minor
/ ɪ / in contrast with / iː /	/ uː-ʊ /	/ iː- ɪ /
/ ʊ / - /uː /	/ ɛə-ɛ, eɪ /	/ eɪ /
/ ɔː / - / ɒ / and / əʊ /		/ aɪ /
/ʌ / - / æ, ɑː, ɜː, ɒ /		/ aʊ /
/ ɑː / - / æ, ɜː, ʌ /		/ ɔɪ /
/ ɜː / - / ɑː, ɛ, æ,/		/ əʊ /
/ ɒ / - / ɔː, ɑː, ʌ/		/ ɪə /
/ ɛ / - / eɪ /		/ ʊə /
/ æ / - / ɑː, ɜː, ʌ /		

Of consonants, it was predicted that the lack of equivalents of / θ,ð,dʒ /, the lack of distinction between / l / and / r / and the difficulty of consonant clusters of English that are unaccounted for in Kinyarwanda, were to cause a great deal of perceptual difficulties to the Rwandan subjects. The above difficulties were closely corroborated by the present findings. However, the results from the analysis of the perception of /dʒ / in *strange* (6.5.2. ii) did not fully support the prediction made about it.

As in the case of vowels, consonants ranked as major and minor difficulty, or as major, medium and minor, depending upon the lexical competence that the subjects had of different words. For example, while initial / d / ranked as a major problem in *dare* because of its potential contrast with / ð /, it also ranked medium in *dark* and minor in *debt* and *dock*. Likewise, final / t / was a

major problem in *debt* but minor in *hat, hot, let, hut* and *bought* and no problem at all in *spot* and *text* (see 6.6.17).

Major	Medium	Minor	
/-t# - tʃ, d /	/-p#/	/ b /	/v (-f#) /
/#d- ð, dʒ/	/ #t- θ/	/ f-θ(r)/	/z (-s#) /
/θ- s /	/-k#- g /	/ s#-z /	/ ʒ (-z, ʃ, dʒ) /
/ð /	/-n# /	/ #tʃ-ʃ /	
/#l- r(i:)/	/-ŋ# /	/ #dʒ-tʃ /	
/-(i:)l#-ɪə /	/ #z- ð; #ʃ- tʃ /	/ #r- l(i:) /	

The difficulty associated with fricatives was substantiated by the extent of confusion that 25 out of 60 subjects had between / θ / and / s / when they mistook *thing* for *sing* and *sink* (41.6%); *think* as *sink, sing, sick, seek* (55%). Twenty subjects mistook it for / s / or / z / in misperceiving *youth* as *use, us, yours* (33.3%). The lack of discrimination between / θ / and / ð / (25%) and the confusion of it with / d / (15%), / z / (10%) , / f / and / v / (6.6%) each, were also corroborated.

Of the nasals, it came as a surprise that / n / was less successfully perceived (46.6%), thus a major problem in *bam*, but minor where / ŋ / (51.6%) is involved.

Consonant clusters / br-, str- / did not cause significant perceptual difficulty in view of their rates of 58.3% and 81.6% respectively. However, the confusion between / l / and / r / followed by / i: / in a consonant cluster / fl- / was conspicuous, particularly in the misperception of *flee* at a rate of 61.6% (see. 6.5.7).

Concerning the liquids, the results showed that / l / in initial position was not a big problem for perception, except only occasionally as in *lead, lock, let* whereby it was mistaken for / r / (25%, 10%, 6.6%) respectively. While final / l / was a major problem in *pull* and *heel*, it was only medium in *fool*.

The overall rate of phonological perceptual competence of 60 subjects can be summarised as follows. The vowels were correctly perceived at (1083/2400) i.e 45.12% and consonants at (3677/4920), i.e. 74.73%. These findings clearly suggest that as in Chapter Five vowels represent a greater perceptual difficulty to successful comprehension of these subjects than the consonants. Vowels which were not expected to be very problematic on the basis of the comparative CA such as long vowels / uː, iː, ɔː / which are closer to Kinyarwanda ones than the short vowels, were misperceived in potential cases of minimal pairs.

Finally, the unevenness of the distribution of both vowels and consonants in different word environments needs to be acknowledged in this analysis, as it might have affected the present results to a certain extent. The extent of potential misperceptions depends much on the level of interlanguage competence the subjects have, hence the relevance of proper teaching of pronunciation. This analysis has also demonstrated that regardless of the level of education they belong to, the subjects dealt with had the same perceptual phonological problems and almost used the same strategies to get around them. The findings have shown that phoneme contrast is a major problem for comprehension, hence it is of crucial significance for teaching and testing. The impact and relevance of perceptual competence and processing skills to comprehension will be further measured beyond isolated words in the following analysis of sentences.

6.8 SENTENCE PHONOLOGY.

6.8.1 Purpose

The major aim of the present section is to present the overall comprehension of a group of Rwandan learners in processing English phonological speech features contained in a set of 10 sentences uttered by a native speaker of English. In the current task, particular focus will be given to both the perception of weak forms and different forms of simplifications, such as elisions,

assimilations, coalescence, contracted forms and tag-questions, as well as on the recognition of stressed words that contribute a great deal to meaning.

Though it is not primarily a lexical and syntactical test, the more items perceived accurately by the subjects, the higher their comprehension of the whole sentence is likely to be. For example, a subject who manages to perceive three content words out of a total of five in a given utterance, will be rated as having achieved a higher level of comprehension than one who recognizes only one or two.

In Chapter Five, we drew the reader's attention to the importance, the difficulty and effect of weak forms and varied forms of simplification of English in both words and connected speech to foreign learners. In that respect, the results from the analysis of sentences in the productive test revealed that NSs had little difficulty in understanding the subjects using strong forms on stressed and unstressed words in English, lack of contractions and deviant stress. The writer sought to measure the extent to which these subjects can understand the native English speaker's speech made of features and forms spoken about and predicted from the contrastive analysis in Chapter Four (see 4.15). It is Jenkins (2000:147) who said that learners may find it difficult to retrieve the underlying full forms of reduced words. Tench (2001:261) pointed out that if either the listener or the speaker are not native users of the language, then either perception or production is likely to be adversely affected by the phonological "filter" of the native language(s).

The underlying claim in the current work is that if learners have not been taught how to use weak forms and other English speech features correctly, they will likely not be able to recognize them when they are used by NSs in connected speech. It is often noticed that most of the non-native learners of English are not aware of the changes that can take place between words in contact in connected speech. Also, they seem not to know that sounds are not always produced or perceived separately in connected speech. Jenkins (2000:72) confirmed that sounds change in different phonetic environments through the influence of neighbouring sounds. It can therefore be said that on

the basis of the mother tongue interference, the phonological productive competence and performance of foreign learners determine and shape their perceptual abilities in the target language to a large extent.

The results from the receptive word test revealed that the learners under study had serious difficulty in perceiving dictated items to such an extent that in many cases, they ended up confusing contrastive minimal pairs such as *walk / work*; *lead / lid*; *spot / sport*...etc. Compared to word phonology, the difficulty becomes more serious at the sentence level. Receptive phonological ability is assumed to be further aggravated by the fact that learners have not been taught and trained to use or listen for weak forms and other forms of simplification, which causes them to fail in interpreting the native speaker's utterance efficiently.

Jenkins' (2000:147-9) claim that the use of weak forms is unteachable, does not necessarily imply they are not useful to be learned by non-native learners in view of enhancing their perceptual competence, hence their level of comprehension. She nonetheless reckons the need and relevance of such forms together with other features of connected speech to be learnt and taught for receptive purposes.

The relevance of the analysis of the weak forms and other features of English connected speech rests on the assumption that a sentence uttered by a native speaker of English may be lexico-syntactically easy to process, but extremely difficult to non-native listeners who have little exposure to those forms to understand. Brown (1974: 47) maintained that for spoken English to be clearly understood, it is essential that the main units of information be made to stand out, which means that subordinate words and unstressed syllables are not usually made distinctly. This often represents the most problematic area for foreign learners of English, such as those involved in the current study, who tend to perceive words in their full citation forms only as evidenced in their reading of sentences in Chapter Five. The analysis of receptive competence in perceiving spoken utterances by a native English speaker in the following section, was undertaken in view to substantiate the

learners' perceptual difficulties exposed above, as well as to highlight the need for improved teaching of pronunciation.

6.8.2 Subjects

Three groups of 10 learners each from Kabiria Secondary School –forms 2, 4 and 6 took part in this test. The teacher who supervised this task strictly followed the instructions given by the researcher who could not be available to carry it out. Each group performed the task separately from the others. As part of the instructions, the subjects were asked to listen carefully to a native speaker of English recorded in reading 15 sentences without writing anything for the first time. They were given a piece of paper and were asked to write 15 individually numbered sentence interpretations in advance. On the replay of the recording, they were asked to write down as much as they thought they had understood from what was said. In case there was anything they could not understand, they were advised to leave a blank and carry on. There was sufficient pause between each sentence, to allow them enough time to process and write.

6.8.3 Materials

There was a shift in number, from the original 15 sentences to 10, explained by the writer's realization that the 5 sentences left out tested almost exactly the same features as those already contained in the remaining 10. The 10 sentences were designed to measure the subjects' perceptive processing ability to comprehend a native speaker of English.

They were chosen on the basis that they contained features of English connected speech which are thought to be a major pronunciation difficulty for most foreign learners, such as weak forms and different forms of simplification.

The main stressed (lexical) words were tested too, on the grounds they greatly contribute to comprehension. The subjects' interpretations were faithfully transcribed, analyzed and rated by the researcher himself, as the following pages will show. In the analysis of this material, 1 to 10 represents the subjects belonging to form 2, 11 to 20 form 4 and 21 to 30, form 6. One weakness needs to be mentioned at this level. The difficulty of not being able

to use live speech interaction as in real life, which would have been much better for such a test, left the writer with no other alternative than the use of recorded material as a second best to identify phonological problems. The advantage of the recording, on the other hand, is that each subject heard the sentences in exactly the same way. A transcription of 10 sentences read by a native speaker will appear in appendix 8. Here is the list of the sentences.

1. It's changed a lot since you were here, hasn't it?
2. That's the fourth best shirt my boy's burned.
3. This shop's lost many of its customers over this year.
4. You can't go into the theatre, the play's already begun.
5. He says it's not him but I bet it is.
6. She doesn't like pie and apples, give her something else.
7. It'd be better to knock at the door before coming in.
8. They'd booked two rooms.
9. She caught the vase before it hit the floor.
10. What's he on about?

6.8.4 Procedure

The rating of the level of sentence comprehension for each of the 10 sentences will be calculated and totaled up on the basis of the mean scores attributed to each interpretation attempted by 30 subjects, according to the following calculation:

$$\frac{100 * X}{180}$$

The results of the subjects' perception will be comparatively analyzed. The interpretations will be graded on a 0 to 5 point scale, whereby:

(0) Total incomprehension, i.e. the subject did not attempt anything, or perceived totally unrelated information from the dictated utterance;

(1) Poor comprehension, i.e. the subjects perceived one key word or weak form from the dictated sentence;

(2) Low comprehension, i.e. the subjects perceived two key words or identified two connected speech features;

(3) Fair comprehension, i.e. the subjects understood three or more connected speech features and key words;

(4) High comprehension, i.e. the subjects understood most of all stressed words and most of the weak forms and simplifications;

(5) Total comprehension, i.e. the subjects perceived the meaning of utterances as accurately and completely as intended by the NS.

N.B. At the end of each interpretation, CR will throughout stand for comprehension rate out of 5.

6.8.5 Sentence Analysis

Standard type will show correspondence, while italics will represent deviations. Sentence level stresses are indicated by (ˈ) and tonic syllables are underlined.

6.8.5.1 Sentence1 tests

i) perception of contracted form of *is* ('s) in *It's* before a sibilant consonant.
ii) perception of past tense marker –ed / -d / before a vowel
iii) perception of *since*, with final / -s / before the consonant / j /
iv) perception of weak form of *were* / wə /.
v) perception of tag *hasn't it.*

It's ˈchanged a ˈlot since ˈyou were here | ˈhasn't it? CR

1		change *the*					1
2				you		*listener*	0
3			*lost*		*what*	*is name*	0
4	It's	change				*Is*	1
5						*listener*	0
6	It's		*not*				0
7				you		*listener*	0
8		change *the*	*lord*	*if* you	*want to*	*leave now*	1
9	*He*	change *the*			*to the*	*listener*	1
10				*sincely*	*to the*	*listener*	0
11	*It*	change					0
12							0
13		change	*what*	you	*know*		1

	It's	changed	a lot	since you	were here	hasn't it?	CR
14							0
15		change *the*	*last*				1
16	*It*	changes	a lot				2
17					*what's*	*name*	0
18	It's	change	a lot				2
19	*It*	changes	*lanes*	you		*listener*	1
20	*It*	changes	a lot		*of throughout*	*at night*	2
21		change	a lot			*live now*	2
22	*It*	changes	a lot of	*a century*		*Now*	2
23	It's	change *the*	*last*	*until* you		*'re not*	1
24	It's	change *the*	*right*	*into* you		*right now*	1
25	It's	change	a lot	*that's* you		*'re a snake*	2
26	*You*	change	a lot				2
27		change *the*	*lost*				1
28		exchange the					1
29	*It*	changed	a lot	since you	were here	isn't it	4
30	*He*	changed *the*	*list*	since *two*			1

Correct perceptions:
Form 2

It's	2	he, it
Changed	0	change 4
A	0	the 3
Lot	0	lost, not, lord
Since	1	If
You	3	
Were	0	what, want
Hasn't it	0	listener 5, name, leave now, is

Form 4

It's	1	it 4
Changed	0	changes 3, change 7
A	3	the
Lot	3	what, last, lanes
Since	0	
You	2	
Were	0	know, what's
Hasn't it	0	listener, name, at night

Form 6

It's	3	it 2, he
Changed	2	changes, change 8
A	5	the 5
Lot	4	last, lost, list, right
Since	2	
You	4	
Were	1	
Hasn't it	0	isn't it, snake, 're not, live now

Commentary

i) only 6/30 perceived the /- s / correctly; a further 6 recognized the word *it* but not the contracted form of *is*, thus interpreting it as *it changed (s).*

ii) Only 2/30 perceived the /- d / correctly; 8 interpreted it as the beginning of *the* / d / as / ð /, as *change the* ; 1 as *changed the*. 3 interpreted it as *changes a;* 7 as *change* uninflected.

iii) Only 3/30 recognized the word *since*; 1 interpreted it *as century* probably on the basis of the assimilation of final /- s / with / j / producing / ʃ /.

iv) Only 1 recognized the weak form *were*; 3 heard words beginning with /w /.

v) No one recognized the tag correctly, although 1 was close with *isn't it*. The most salient feature seemed to be the sequence – *sn-*, judging by 9 attempts.

It was noticeable that the strong forms at the beginning of the sentence were relatively well recognized, with a progressive deterioration through the remainder : *change(s, d)* (21/30), *lot* 8, though many others recognized initial /l /; *you* was recognized by 9 subjects as the tonic syllable, while only 2 subjects (25, 29) perceived the assimilation in *since you* successfully. Some subjects either gave up completely or partially, or composed their own message but with little sense. Some even, like 8,13,20,25,30 showed a lot of imagination. Comparatively, form 6 did considerably better (34%) than form 4 (20%) and form 2 (8%), but none of the 3 forms reached acceptable comprehension.

6.8.5.2 Sentence 2 tests

i) perception of the contracted form of *is ('s)* before the consonant / ð /.
ii) perception of the weak form *the.*
iii) perception of the word *best* with / t / elided before another consonant / ʃ /
iv) perception of the contracted form of *has ('s*) before a consonant.

ˈThat's the ˈfourth ˈbest ˈshirt my ˈboy's ˈburned. CR

1						0
2						0
3		the		*shed*	my boys *friend*	1
4					my boy's *band*	1
5					*on the end*	0
6	*faster*				my boys *band*	1
7				*must change*	*husband*	0
8						0
9					my boys	1
10	*Past*		*four*			0
11	*First*	*of*	*all*	*he is in*	my *house*	0
12		the	*blind*	*burst*	my *boys band*	1
13	*As*	the	*first*	*patient*	my *boys bends*	1
14						0
15					my *boys burnt*	2
16	That's	the	*first*		my *boy band*	2
17	*Pass*	the	*flow*	*by sheet*	my *boyfriend band*	0
18			*first*	*bitch*	my *boy bends friend*	1
19	That's	the	*first*		my *boy friend*	2
20	*At*	the	*foth of*		my *boy band*	1
21					*no about the end*	0
22	*Pass*	the	*by first*	the shirt	my *boys band*	2
23	That's		*first*		my *husband*	1
24	That's		*forth*		boy	2
25	That	the	*fo*		boy	1
26	That's	the	*first*	that shirt	my boys *friends*	3
27	*But*	the	fourth		*is no band*	1
28			*first*		*band*	0
29	That's	the	fourth		my 's burned	3
30					my boys *bent*	1

Correct perceptions.

Form 2

That's	0	faster, past
The	1	
Fourth	0	four
Best	0	must
Shirt	0	shed, change
My	4	
Boy's	1	boys 3
Burned	0	band 2, husband, end, friend

Form 4

That's	2	first, as, pass, at
The	6	of
Fourth	0	first 3, flow, *foth
Best	0	patient, by, bitch
Shirt	0	sheet
My	9	
Boy's	0	boy 4, boys 4
Burned	1	band 4, bend, friend

Form 6

That's	4	pass, but
The	5	
Fourth	3	first 3, *forth, *fo
Best	0	first, that
Shirt	2	
My	5	
Boy's	0	boys 3, boy 2, my's, about
Burned	1	band 2, husband, end, friends, bent, bound

Commentary.

i) Only 6 subjects interpreted *that's* correctly; 5 perceived an /s / but not the word *that,* and one identified *that*, but missed *('s).*

ii) Only 12 out of 30 perceived the unstressed form *the* / ðə / correctly; one interpreted *that's the* as *faster*, whereby presumably / ðə / was perceived as / tə /.

iii) Nobody recognized *best* with elided / t / before / ʃ / in *best shirt*; the words *burst, must* and *first*, indicate some phonetic recognition.

iv) *Boy's /boys* was recognized by 11 subjects; a further 6 at least recognized *boy* without *'s.*

None of the stressed words was well recognized. Only 3 perceived *fourth* correctly; 2 recognized *shirt;* and 3 more *burned/ burnt.* 12 subjects only perceived the unstressed word *the* correctly, while the remainder gave up. Form 6 did better (28%) than form 4 (20%) and form 2 (8%).

6.8.5.3. Sentence 3 tests

i) perception of *this* with assimilation of final / s / to / ʃ / of *shop*
ii) perception of contracted form of *has* as *'s*
iii) perception of *lost* with final / t / elided before the following consonant
iv) perception of the weak form of *of* / əv /
v) perception of *this* with assimilation of final /-s / to / ʃ / before / j /

ˈThis ˈshop's ˈlost ˈmany of its ˈcustomers ˈover this ˈyear

1	this *short* has		many			1
2			many			0
3	*The shot*					0
4			many			1
5					*of the chair*	0
6	*Let's shot*					0
7						0
8						0
9	*Richard*	*was*	*the one*	*customer*	*of the CA*	1
10						0
11	*The shock*				*of destination*	0
12	*the short has*		many	*discussed too*	over this year	3
13	*bishops have*		many	*discuss too*	this year	2
14	*the shock has*		*must*	*to*	the end	0
15	*Let's shout*		many	customers	*of this*	2
16	*Richard has*			customer	*of the CL*	1
17	This shop	lost	many	of *his* customer	over this year	4
18	*Richard has*	*discussed*	many	customers		2
19	*The shock*		many	*customs*	*of the sea*	2
20	*the short was*		many	*discussment*	*of* this year	2
21		*listen*	many	*discuss*		1
22	*The shorts*					0
23	*this short*	lost *so*	many	*discuss*	this year	2
24	*Let's show*	*there are*	many	of customers		2
25	*Bishop*		many	customers	*of* this year	2
26	*Be short*					0
27	*Richard*				*transmit*	0
28	*The shock*				*doesn't*	0
29	This shop *has*	lost	many	of its customers	this year	4
30	This shop *has*		many		this year	3

Correct perceptions.

Form 2

This	1	the, let's
Shop's	0	short 2, shot, Richard
Lost	0	
Many	3	
Customers	1	discuss
Over	0	of 3
Year	0	chair, CA, destination

Form 4

This	1	the 5, let's
Shop's	1	shock 3, short 2, bishops, shout, Richard 2
Lost	1	
Many	7	must
Customers	5	discuss(ed) 3
Over	2	of 5
Year	4	end, CL, sea

Form 6

This	3	the 2, let's, be
Shop's	2	short(s) 3, shock, shows, bishop, Richard
Lost	2	listen, doesn't
Many	6	transmit
Customers	3	discuss(ment) 3
Over	0	of
Year	4	

Commentary.

i) Only 4/30 recognized the word *this*, a further 8 interpreted it as *the*.

ii) *shop's (has*) was correctly recognized by only 2 subjects, though a further 5 heard('s) but not *shop.*

iii) Only 3/30 perceived the word *lost* correctly; 2 recognized the elision of *t,* but interpreted a wrong word *was*, while 20 gave up.

iv) *the* / ðə / was recognized by only 3 subjects.

v) The assimilation of final /-s / in *this year* was correctly recognized by 9 subjects, including one who identified the word *this* only. The three interpretations : *the CA*, *the CL*, *the sea* indicate that they failed to identify final /-s / by interpreting this as a weak form of *the.*

Only 3 subjects recognized the word *shop*, though as many as 19 identified initial / ʃ / in different other words: *shot, short, shock, shows*. There were two instances whereby the assimilation of ('s) to / ʃ / was perceived, though in a totally different word, *bishop(s)*. A further 4 misperceived / -s / before / ʃ /as /tʃ / in interpreting *this shop* as *Richard*. *Many* was well perceived (16/30) as a familiar word, whereas *customers* was less well perceived by only 9 subjects, including *customer* (2) and *customs*. 6 subjects misperceived *customers* as *discuss(ed),discussment* , presumably because of the wrong perception of the preceding possessive *its* as / d /.

Incidentally, only one subject perceived *its* correctly. The word *over* and *year* were correctly perceived by only 2 and 8 subjects respectively. The phrase *this year* was successfully recognized by only 8 subjects. This time, form 4 did better (34%) than form 6 (28%) and form 2 (8%).

6.8.5.4 Sentence 4 tests

i) perception of unstressed *you*
ii) perception of contracted form *can't* with / t / articulated as a glottal stop [ʔ]
iii) perception of stressed word *into*
iv) perception of weak form of / ðə /
v) perception of contracted form of *has ('s)* before a vowel.

You ˈcan't go ˈinto the theatre| the play's alˈready beˈgun. CR

1	You can't	*to teach*	the *place you born*	1
2			*what* began	1
3	*come*	*to teach*	began	1
4	You can't go	*to the*	the already begun	3
5	You *come*		begun	1
6	You can *plit*		*because again*	1
7	You can		began	1
8				0
9	*Come*		the play *was* began	2
10	You *come*	to the *teacher*		0
11	You can't go	to the theatre	the play has already begin	4
12	You cannot *beat*	the *future*	the *place* already begin	2
13	You can't	*teach*	has already begin	2

	You can't go	**into the theatre**	**the play's already begun**	CR
14	He can't *began*	to the *last*		1
15	*How are you going*	to	*it* has already began	2
16	You *came*	*I'm going to teach*	the play is already began	2
17	You can't go	to the theatre	the play is already begun	4
18	If I go	to the *pitch*	the *time goes again*	0
19	If I am going	to *thing*	begun	1
20	You can't go	to *I co*	*unless it* began	2
21	You can	to *take*	*because you like again*	1
22	You can't go	to	the play already began	3
23				0
24	You can't go	in the	already began	3
25	You can't *a great*	to the theatre		1
26				0
27	You can't *going*	to the *details*	*on the place to* begin	2
28	You can't go	to	*might* began	2
29	You can't go	into the theatre	the play's already begun	5
30	You can		the *place* is already began	2

Correct perceptions.

Form 2

You	6	
Can't	4	can 2, come 4
Go	1	
Into	0	to 3
Theatre	0	teach(er) 3
Play's	0	play, place, because
Already	1	
Begun	2	began 4, born, again

Form 4

You	6	
Can't	6	came
Go	4	
Into	0	to 7
Theatre	2	teach 2, future, pitch, thing, last
Play's	2	play, place, time, unless
Already	6	goes
Begun	2	began 3, begin 3, again

Form 6

You	8	
Can't	8	can 2
Go	4	going
Into	1	to 5, in
Theatre	1	teacher, take, details
Play's	1	play, place 2, because
Already	4	you like, might
Begun	1	began 4, begin, again

Commentary

i) Unstressed *you* was relatively well perceived by 20/30 subjects; 2 interpreted it as *if;* 2 as *he* and *how*, while 6 gave up.

ii) 14 subjects correctly recognized the form *can't* articulated with / t / as a glottal stop; a further 4 recognized the positive form *can* only. Only 9 were able to perceive *can't* and recognize the following word *go* correctly.

iii) Only 1/30 recognized the stressed word *into*, though as many as 16 have interpreted it as *to*, and 11 have not attempted anything.

iv) 11 subjects only correctly recognized the weak form of / ðə /.

v) *play's (has*) was recognized by only 3 subjects, although 2 were close with *is,* and a further 2 recognized *play* without *'s.*

While 11 recognized the weak form of / ðə /, 3 interpreted *theatre* correctly, and only 1 got the phrase *into the theatre* right. 7 instances occurred that indicated that the subjects were not able to distinguish between initial / θ / and / t /, *(teach- er, take*). A further 8 represent the misperception of final / tə / of *theatre* as / tʃ / including *teach, pitch*, and *future*. The misperception of *play's* as *place (*4) and *unless*, reveal the subjects' inability to distinguish between final / z / and / s /. The final stressed item *begun* was relatively well perceived by 20 subjects, including acceptable syntactical forms of *began* and *begin.* Overall, form 6 did better (40%) than form 4 (38%) and form 2 (22%).

6.8.5.5 Sentence 5 tests

i) perception of unstressed *he*
ii) perception of contracted form of *is* as /s /
iii) perception of stressed *him*

iv) perception of unstressed *but*
v) perception of stressed *is*

He 'says it's not 'him | but I 'bet it 'is. CR

1	He says			1
2			*brother*	0
3			*in that days*	0
4	He says			1
5			*days*	0
6		it's	*another day*	0
7			*guard days*	0
8	*Listen*	it's not	*the day*	1
9	He says			1
10	*You listen*	it's not	*the day*	1
11				0
12	*You said*	it is not	it is	2
13				0
14	He says			1
15		*that's what*	it is	1
16				0
17	He says		that it is	2
18	He says			1
19	He says		it is	2
20	He says	it is not *in*	but it is	3
21	He says	*there are*	*under the desk*	1
22			it is	1
23	He says	it's not *the case*	but *indeed* it is	2
24	*You say*	it's	*the days*	1
25	*You say*	Is	*in better days*	1
26	He says			1
27			*under the desk*	0
28			*these days*	0
29	He says	it is not *in*	but I bet it is	4
30	He says			1

Correct perceptions

Form 2

He	3	
Says	3	
It's	3	
Him	0	listen 2
Bet	0	brother, another, guard
Is	0	days 4, day 2

Form 4

He	5	
Says	5	said
It's	2	that's
Him	0	In
Bet	0	
Is	5	

Form 6

He	5	
Says	5	say 2
It's	3	
Him	0	in, the case
Bet	1	under 2, indeed, in better
Is	3	desk 2, days 3

Commentary

i) Only 13/30 perceived unstressed *he* / iː /, 4 interpreted it as *you*, while 12 others did not attempt anything.

ii) Only 8 subjects interpreted *it's* correctly, 1 perceived an / s /, but not the word *that.*

iii) Nobody recognized *him*, although 2 were phonologically close with *in* . The remainder 27 gave up on it.

iv) Only 3/30 recognized *but* correctly, all the others (27) did not attempt anything.

v) Stressed word *is* was correctly perceived by only 8 subjects, the most noticeable deviation being 7 interpretations of it as *days*. 11 gave up, while 4 heard it as *day* and *desk* respectively.

It was noticeable that after the first stressed item *says*, which was relatively well perceived by 15 subjects, the results went worsening. For instance, *him* (0/30*);* ' ɪ '(1/30) and *bet* (1/30). Most of the interpretations were incomplete, made- up and made little sense in comparison to the dictated utterance. Comparatively, form 6 and form 4 did equally better (24%) than form 2 (10%), though not remarquably well.

6.8.5.6 Sentence 6 tests

i) perception of unstressed *she.*
ii) perception of *doesn't* with / t / articulated as a glottal stop [ʔ] before a consonant.
iii) perception of *and* as / ən /, to distinguish *pie and apples* and *pineapples.*
iv) perception of unstressed *her.*

She doesn't ˈlike ˈpie and ˈapples | ˈgive her ˈsomething ˈelse. CR

1	She doesn't *have*	*a pinaple*			1
2	She doesn't				1
3	She doesn't like	*penepper*			2
4	She doesn't like	*pinople*	*get*	something else	3
5					0
6	She *is*	*a pine apple*			0
7	She does not				1
8	*It is not*				0
9	She does not				1
10	She does not				1
11	She does not like	*pineapple*			2
12	She does not like	*pineapple*	give her	something else	4
13	She does not *know*				1
14	She does not *have*	*pineapples*	*she can have*	something else	2
15			give	something else	1
16	She doesn't *know it*				1
17	She doesn't like	*pinapple*	*get*	something else	2
18	She doesn't like	*pineapple*	give her	something else	4
19	She doesn't like	*pineple*	*she likes*	something else	3
20	She doesn't				1
21	She doesn't like	*a pineapple*			2
22	She doesn't like	*pinepals*	give	something else	3
23	She doesn't like	*pinapple*	give her	something else	4
24	She doesn't *pay at all*				1
25	She doesn't *eat*	*pineapples*	give	something else	3
26	She doesn't like	*cainer to*		*listen p.m*	2
27	She doesn't *know*		*kinder*		1
28	She doesn't *know*	*piner*			1
29	She doesn't like	*pineapples*	give her	something else	4
30	She doesn't like	*pinepers*	give her	something else	4

Correct perceptions.

Form 2

She doesn't	7	
Like	2	have
Pie and apples	0	pinaple, *penapper, *pinople, pine apple
Give	0	get
Her	0	
Something else	1	

Form 4

She doesn't	9	
Like	5	have, know 2
Pie and apples	0	pineapple 5, *pineple
Give	3	get, like
Her	2	
Something else	6	

Form 6

She doesn't	10	
Like	6	know 2, eat, pay
Pie and apples	0	pineapple 4, *pinepals, piner, *pinepers
Give	5	
Her	3	*cainer, kinder
Something else	5	

Commentary

i) Unstressed word *she* was extremely well perceived by 27 subjects. Only 2 gave up, and 1 interpreted it as *it.*

ii) The final / t / in the negative auxiliary *doesn't* was also highly well perceived by 26 subjects; 2 heard it as *is,* while 2 more did not attempt anything.

iii) None recognized the weak form of *and* as / ən /, the lack of which led as many as 16, to perceive *pie and apples* as *pineapples,* if we ignore spelling errors such as *pinapple, pineple* and *pinepers.*

iv) Only 5/30 recognized unstressed *her* as / ə /. The reason for such lack of comprehension comes from the fact that these subjects have not been taught how to use and process weak forms in speech. In this case, they would have expected to hear strong forms of *give her,* instead of / giv ə /.

It was noticeable that the beginning of the sentence including the syntactical form *doesn't* was extremely well perceived (26/30), after which a progressive

deterioration through the remainder occurred: *like* 13/30; *something* 12/30; *else* 12/30; *give* 8/30; *her* 5/30; *pie and apples* 0/30. Overall, form 6 once again did much better (50%) than form 4 (44%) and form 2 (20%).

6.8.5.7 Sentence 7 tests

i) perception of weak form of *would* as /-əd / but assimilated to the following bilabial consonant, as /-əb /.
ii) perception of weak form *to* in infinitive construction.
iii) perception of weak form *at*
iv) perception of weak form *the* after a consonant
V) perception of strong form of *in.*

It'd be ˈbetter to ˈknock at the ˈdoor | before ˈcoming ˈin. CR

1	It'*s* better	to *know the dog*	before *come out*	1
2			before coming in	2
3	*is* better	n*ock*	before coming in	3
4	It *is* better	to knock at the door	before *come* in	4
5	It'*ll* be			0
6			before coming in	2
7	It *will* be	*talk*	before	0
8	It'*ll* be that		before *the* coming	1
9	It *will* be better	*when you will knocked*	before *come* in	2
10		*a dog*	coming *again*	1
11	It *is* better	to knock at the door	before coming in	4
12	It *will* be better	to knock *on* the door	before coming in	4
13				0
14				0
15	It *is* better	to knock at the door	before coming in	4
16	It *will* be better	to knock	before *you're* coming	3
17	It would be better	to knock at the door	before *come* in	4
18	It *will* be back		before *the dog comes* in	2
19	It will be better	to *nock* the door	before *you go* in	3
20	It *will* be better	to *nock* at the door	before coming in	4
21	I *will* be better	doesn't not	before coming in	2
22	It *will* be better	to knock at the door	before coming in	4
23	It *will* be better	to knock at the door	before coming in	4
24	It *will* be better	to knock at the door	before coming in	4
25	It *will* be better	to knock at vthe door	before coming in	4
26	It *is* better	to talk a dog	before coming *end*	2
27	It *will be back*	*it is not at work*	*or*	0
28	It's better	n*ock*	before coming in	3
29	It'd be better	to knock at the door	before coming in	5
30	It *will* be better	to knock at the door	before coming in	4

Correct perceptions.

Form 2

It'd	0	
Better	4	
To	2	
Knock	1	knocked, *nock, know, talk
At	1	
The	2	
Door	1	dog 2
Coming	8	
In	5	

Form 4

It'd	1	
Better	7	
To	7	
Knock	5	*nock 2
At	4	
The	6	
Door	6	
Coming	7	
In	7	

Form 6

It'd	1	
Better	8	
To	7	
Knock	6	* nock, talk
At	5	
The	6	
Door	6	dog, work
Coming	9	
In	8	

Commentary

i) Only 2/30 perceived the *'d* before /-b / as / -əb / correctly; a further 22 recognized the word *it*, but interpreted *would be* as either *it is* or *it will be.*

ii) The weak form *to* was relatively well perceived by 16 subjects, compared to 11 who gave up and 3 who invented something that made little sense.

iii) Only 11/30 recognized the weak form *at,* while 17 have not attempted anything.

iv) Only 14/30 correctly interpreted the weak form *the* after consonant / t /.

v) The tonic syllable in *was* relatively well perceived by 20 subjects. Moreover, the first stressed word *better* was well recognized (19/30), among who only 2 got the expression *it'd be better* correctly. The second stressed word *knock* was recognized by only 13 subjects, including one who perceived it as a past tense form - *ed* in *knocked*. The four cases of * *nock*, are taken to be evidence of poor spelling to represent *knock*. Only 13/30 were able to recognize the third stressed word *door*, 3 interpreted it as *dog*, probably on the basis of lack of discrimination between / ɔː / and / ɒ /. The fourth stressed word *coming* was successfully recognized by 24 subjects, including 5 syntactical deviations of it as *come* and *comes*. The perception of the whole expression *before coming in* was successfully interpreted by 18 subjects. Comparatively, form 6 did considerably better (64%) than form 4 (56%) and form 2 (32%).

6.8.5.8 Sentence 8 tests

i) perception of weak form of *had* as / d /, but assimilated to the following bilabial consonant as / b /.
ii) recognition of elision of / t / as past tense marker between 2 consonants.

They'd **'booked** **two** **'rooms.** CR

1	*It*	*pook*	two	rooms	2
2			*is to*	*loose*	0
3					0
4	*It*	*took*	two	rooms	2
5	*It*		*to*	*loose*	0
6	*The*	*books*	*to*	*lose*	1
7		*repeat*	*to*	*us*	0
8		*report*	two	rooms	2
9			*the*	rooms	1
10	They	*poc*	two	rooms	2
11	*It*		*to*	*loose*	0
12	*It*	*pack*	*to*	*loose*	0
13	*He*	booked	*to*	*loose*	1
14	*It*	*packed*	*to*	*loose*	0
15	*It*	*got*	two	rooms	2
16	*It*	*took*	two	*rules*	1
17	*It*	*got*	two	rooms	2
18	*He*	*took*	two	rooms	2
19	*He*	books	two	rooms	3
20	*It*	*pokes*	two	rooms	2

	They'd	**booked**	**two**	**rooms**	CR
21	*He*	*spoke*	two	rooms	2
22		book	*to*	*loose*	1
23	*It*	booked	two	rooms	3
24	*It*	book	two	rooms	3
25	*Let's*	book	two	rooms	3
26	They	book	*to*	*whose*	1
27	*It is*	*good*	*to be in*	rooms	1
28		*report*	*to*	*news*	0
29	*He*	booked	two	rooms	3
30	*It's*		two	rooms	2

Correct perceptions.

Form 2

They'd	0	they
Booked	0	books
Two	4	to 4
Rooms	5	loose 2, lose, us

Form 4

They'd	0	
Booked	1	books, packed
Two	6	to 4
Rooms	5	loose 4, rules

Form 6

They'd	0	they
Booked	2	book 4
Two	6	to 3
Rooms	7	loose, whose, news

Commentary.

i) No one recognized the assimilation of the weak form of *had* to the following bilabial consonant as / b /; and only 2 heard *they* but not the weak form *'d.*

ii) Only 4/30 perceived the elision of / d / between preceding / k / and following / t / correctly, though 1 in a totally different word *packed.* 6 perceived *book(s),* thus showing no sign of recognition of the past tense marker – *ed.*

The last stressed word *rooms* was relatively well perceived (17/30). But 8 instances occurred whereby the subjects were confused between / r / and / l / (cf. 4.11.9), as *rooms* was interpreted as *loose* and *lose.* Also, cardinal number *two* was misperceived by 12 subjects as *to* , which demonstrates the

lack of correct distinction between / u: / and / ə /. Many interpretations were syntactically incomplete or made very little sense. Form 6 did better (38%) than form 4 (26%) and form 2 (20%).

6.8.5.9 Sentence 9 tests

i) perception of weak form of *does*
ii) perception of stressed form of *he* after a consonant

ˈHow does ˈhe ˈknow ? CR

1	*I am*	*say no*	0
2	*I'm*	*seeing now*	0
3	*Come*	*in now*	0
4	*I'm*	*seeing now*	0
5	*Come*	*see now*	0
6	How	*see now*	1
7	*Our*	*listener*	0
8	How	*is it now*	1
9	How	*do you* know	2
10	How	*is you* know	2
11	*I'll*	*see you now*	0
12	*I'm*	*Zaina*	0
13	How	*say now*	0
14	*I'm*	*Zainabu*	0
15	*I'm*	*saying no*	0
16	How	*they* know	2
17	How	*is* he *now*	2
18	*I am*	*sorry now*	0
19	*I am*	*sorry now*	0
20	*I'm*	*seeing you now*	0
21	How	's he know	3
22	I'm	*see you now*	0
23	*I'm*	*seeing you now*	0
24	How	*is* he *now*	2
25	*I'm*	*enough*	0
26		*as you know*	1
27	*I am*	*as known*	1
28	*Who*	*see you now*	0
29	How	does he know	5
30		*as you* know	1

Correct perceptions.
Form 2.

How	4	
Does	0	do
He	0	
Know	2	now 6, no

Form 4

How	3	
Does	0	
He	1	
Know	1	now 6, no

Form 6

How	3	
Does	1	
He	3	
Know	4	now 4, known, enough

Commentary.

i) Only one out of 30 subjects recognized the weak form of *does* correctly; a further 6 recognized the final consonant / *z* / but in different words (*is, as*) from the dictated one.

ii) Only 4/30 correctly perceived the personal pronoun *he,* 14 heard words beginning with / s / in (*see, say(ing), sorry*), due to the lack of clear perception of the weak form after / *z* / of *does.*

It was striking that none of the investigated items of this sentence was well recognized. Only 10/30 perceived the first stressed question-word *how.* 16 interpretations of the last stressed word *know* as *now* are evidence of the subjects' inability to distinguish between vowels / əʊ / and / ɑʊ /; whereas 2 instances of *no* indicate that these subjects consider *know* and *no* as homophones. Most of the subjects composed their own message, among who, particularly two (12,14) showed a lot of imagination. Incidentally, **Zaina* is a shortened form of **Zainabu,* a Kiswahili proper name for girls. Subjects from form 6 did better(26%) than those in form 2 (12%), who for the first time outperformed those from form 4 (8%).

6.8.5.10 Sentence 10 tests

i) perception of unstressed *she*
ii) perception of final unreleased / t / of *caught* and *hit* before a consonant
iii) perception of weak forms *the.*

She ˈcaught the ˈvase | before it hit the ˈfloor. CR

1	She *calls*			1
2	She *could*			1
3				0
4	She *call*	*she yet*	*going*	1
5	She *came over*			1
6		*that is*	the *table*	1
7	She		*fast for*	1
8	She *call*	before		2
9	She *call her*			1
10	She *come*	*past four*	*o'clock*	1
11	She *thought about*			1
12	She *call* the *tab*	before *he* hit	the floor	3
13	She *call first*	before *he*	*refuse*	2
14	She *coft about*			1
15	She *calls out*	before		2
16	She *calls first*	*for his*	*diplo*	1
17	She *calls* the *bus*	before *she get*	*to* the floor	3
18	She *calls*	before *she get*	floor	2
19	She *cold*	before	floor	2
20	She *cooled about*	before *she*	*could*	2
21	She *call about*	before *she is*	*gone*	2
22	She caught the *past*	before *had*	the floor	3
23	She *called* the *force*	before *I hate*	the floor	2
24	She *called first*	before *had*	*flo*	2
25	She *call* the *farm*	before *it is*		2
26	She *call first*	before he	*destroys*	2
27	She goes fast	before *his*	floor	2
28	She *call* 13th		floor	2
29	She caught the *flies*	before *they got*	*on* the floor	3
30	She *closes* the *bath*	before		2

Correct perceptions.
Form 2

She	8	
Caught	0	
The	1	
Vase	0	
Hit	0	
Floor	0	for, four, table

Form 4.

She	10	
Caught	0	thought
The	4	
Vase	0	
Hit	1	
Floor	4	*diplo, refuse, could

.

Form 6

She	10	
Caught	2	
The	8	
Vase	0	
Hit	0	
Floor	5	*flo, destroys, gone

Commentary.

i) The perception of unstressed *she* was successfully high (28/30), after which, there was a significant deterioration in the perception of the tested items.

ii) Only 4/30 perceived the / t / correctly, though 2 in totally unrelated words *thought* and * *croft*. 5 subjects were not able to distinguish between final / t / articulated as a glottal stop [ʔ] and / d /, in interpreting *caught* as *could, cold*, *cooked*, and *called*. A further 7 failed to recognize the glottal and linked the first part of the word *caught* to the following consonant / ð / perceived as / z / (see 4.11.1) in words like *calls* (5), *goes, closes*. Only 1/30 correctly recognized the final unreleased / t / of *hit,* though 6 heard a final / t / in different other words from the dictated one. Both weak forms of *the* were poorly perceived, judging by only 7 and 6 subjects who correctly perceived them respectively. 22 subjects did not attempt any perception for the first *the*, compared to 21 for the second one.

It was noticeable that the first stressed word *caught* was accurately recognized by only 2 subjects from form 6; though as many as 23 recognized initial / k /, 16 the vowel / ɔː /, but did not manage to work out the past tense of the verb as *caught*. No single subject recognized the first tonic syllable in *vase*, and only 1 perceived final / z / correctly, though in a different word

flies. Only 9 out of 30 subjects recognized the last stressed and tonic syllable as *floor.* One interpreted it as **flo* as evidence of poor spelling, while 2 more correct perceptions of the vowel / ɔ: / in *for- four* revealed poor listening that missed the consonant / l / out. As in the previous sentences, many left their interpretations incomplete or composed their own message, though with little sense in relation to the dictated utterance. Overall, form 6 did much better (44%) than form 4 (36%) and form 2 (10%).

6.9 Summary

The rate of comprehension of the 10 sentences by 30 subjects can be summarized in the following two tables.

Table 6.10 Sentence perception rate out of 5

Sentence	0/5	1/5	2/5	3/5	4/5	5/5
1	9	13	7	0	1	0
2	11	11	6	2	0	0
3	13	5	8	2	2	0
4	5	10	9	3	2	1
5	10	14	4	1	1	0
6	3	12	6	4	5	0
7	5	3	6	4	11	1
8	8	7	10	5	0	0
9	18	5	5	1	0	1
10	1	11	14	4	0	0

Table 6.11 Comprehension rate for each sentence

Sentence	Total	Form 2	Form 4	Form 6	CR %
1	60	4	10	17	17.2
2	60	4	11	14	16.1
3	60	3	18	15	20
4	60	11	20	19	27.7
5	60	5	12	12	16.1
6	60	10	21	25	31.1
7	60	16	28	32	42.2
8	60	10	13	19	23.3
9	60	6	4	13	12.7
10	60	10	19	20	21.6

The results from this table indicate that overall the more advanced the subjects are, the better level of comprehension they have. The analysis of the

10 sentences (Table 6.10) has shown that the number of cases of total incomprehension (83/300), poor (91/300) and low (75/300) comprehension was significantly greater than that of subjects who achieved fair (26/300), high (22/300) and total (3/300) comprehension. The above tables show also which sentences were more difficult than others, according to the following order 9>2/5>1>3>8>4>10>6>7.

These results greatly contrast with the findings about the subjects' intelligibility in English through the analysis of the features of connected speech that we carried out in Chapter Five (Table 5.35) where all the subjects reached above 54%. It was found that the lack of use of these features did not impair the subjects' intelligibility to the anticipated extent. The results nonetheless substantiate the difficulty predicted about the phonological perceptual competence that second language learners have in understanding native English speakers. Furthermore, these results seem to indicate that the problem in perception is not the speed with which the sentences were read only that is causing difficulties, but the fact that learners were not able to pick up the most important words from the less important. Voss (1984:121) suggested that though comprehension problems can occur at any level from the phoneme to the word and the sentence, learners nonetheless tend to have more difficulties with features characteristic of spontaneous speech. In the present analysis, the use of processes that involve features of connected speech such as elision, weak forms and different forms of simplification by the native English speaker has given rise to considerable misinterpretations to such an extent that even syntactic and lexical levels were detrimentally affected.

Voss's (ibid) own experiment on the perceptive ability of a group of German students at university level substantiates the difficulty associated with perceptual abilities in second language learners. They were given excerpts of English texts which they were asked to listen to and to write down what they thought they heard. In one utterance for example, the lack of perception of unstressed forms led to 65 instances of misperception of *they are going,* 33

of which it was interpreted as *I'm going*; 19 as ø--*going*; 3 as *I* ø *going*; 2 as ø ø *going* and 9 other similar misinterpretations (p.148-9).

It could be said that the less familiar with the forms and features of the target language the learners are, the greater difficulties they have in perceiving them in connected speech. The comprehension task has shown that the perceptual difficulty at the level of vowels and consonants led to a large number of failures in understanding what was uttered. The results got worse in the interpretation of sentences where the degree of comprehension failure was signaled by numerous instances of incompleteness of sentences, omissions, invention of totally unexpected items. From the teaching point of view, one significant outcome from these results is that they are evidence of the learners' deficiencies in linguistic processing skills. This therefore points to the priority that spoken English should give to the teaching of the features of connected speech through guided exposure to listening to materials containing spontaneous speech by native English speakers.

CHAPTER SEVEN

SUMMARY AND RECOMMENDATIONS

7.1 Summary

The present study was mainly undertaken to assess the intelligibility of the pronunciation of 60 representative Rwandan learners of English and their ability to comprehend native speakers' discourse. It measures the extent of phonological difficulties posed by the phonology of English to these learners' productive and receptive competences through reading aloud and listening to isolated words and unrelated sentences.

In order to better understand the pronunciation problems these subjects experience, it was deemed necessary to start with a detailed description of their multi-lingual background (Chapter One), with a particular focus on the position and role of English. Both linguistic and educational factors were explained that have affected the development of the subjects' phonological interlanguage competence.

It was followed by a discussion of the place of pronunciation, (and phonology and phonetics) in language teaching in the context of a review of relevant methods. Contrastive Analysis (CA), Language Universals and Markedness Universals were introduced to help to explain the kinds of phonological difficulties that Rwandan learners have with English consonants, vowels, word stress, rhythm and other sentence features, and the impact they have on their intelligibility and comprehension in English. The value of CA is that it provides relevant information for teachers, linguists and researchers. The impact of the learners' mother tongue and socio-psychological factors on L2 interlanguage phonology of Rwandan learners was also explained.

The aim pursued in L2 teaching is to help learners achieve comfortable and sufficient intelligibility and comprehension in the target language. The concepts of intelligibility and comprehension were used to explain communication as a two way process that is affected by pronunciation. This was fully explored in Chapter Three.

A detailed description of the contrastive phonology of Kinyarwanda and English provided similarities and differences between the two languages, as the basis of identification of the most likely areas of difficulty. In the present work, the writer used CA for two reasons. One, it was used as a basis for the design of instruments to collect, analyse and process data on Rwandan learners' interlanguage phonology; two, as a basis for accounting for cases of negative transfer (interference), and positive transfer (approximation) within the analysis.

Chapter Five measured the intelligibility of a group of 60 subjects through the reading of a set of isolated words and sentences which were rated by a group of 5 native English speakers. The data were designed on the grounds they contained phonemes and features of English speech that were thought to affect the learners' intelligibility. The relevance of using both words and sentences came from the thought that ordinary communication goes beyond the simple production and recognition of single sounds and isolated words. Learners may be able to articulate sounds and words in isolation, but fail to produce them appropriately in connected speech due to the occurrence of different forms of simplification and weakening. As the figures suggested however, there were fewer intelligibility failures in sentences than in isolated words, because the subjects were using full forms, unmodified by any simplification or stress-timing process.

Chapter Six evaluated the phonological perceptual competence of a group of 55 subjects listening to native English speakers reading a set of words and sentences, which were designed on the same principles as the methodology for production.

The results of the analysis of the interlanguage data in Chapters Five and Six provided evidence that supported many of the expectations that were derived from the CA hypothesis, Language universals and Markedness universals.

7. 2 Major interlanguage findings

One of our main research questions was to see if the Rwandan learners' interlanguage phonology was in actual fact significantly influenced by features of their mother tongue. The learners' competence in French and Kiswahili was also shown to have affected their interlanguage phonology. This is what we discovered.

A comparison of the phonological systems of Kinyarwanda and (standard Southern) English leads one to expect, as a typical hypothesis from Contrastive Analysis, potential difficulties as found in Chapter Four. The impact of the weakness in productive and perceptive distinctions between contrastive vowels and consonants was supported by the findings from the two experiments, though not always at the level that was anticipated.

It is also hypothesized that phonological perception is the basis of production. The results from the present analysis have shown that the learners' weakness in perceiving the contrast /ɪ-iː /, /ʊ-uː/, /æ-ɑː/, /əʊ-ɔː/, /eɪ-ɛ/, for example is also shown in their weakness to produce /ɪ,ʊ,æ,əʊ,eɪ/ convincingly. Similarly, the learners' difficulty in perceiving contrasts involving /æ, ʌ, ɑː, ɜː / was reflected in their weakness in producing them, except /ɑː /, since it matches a Kinyarwanda vowel. The learners' lack of perception between /ɒ / and /ɔː / was also reflected in their weak production of /ɒ /, but /ɔː / was produced convincingly enough, even though its near equivalent in Kinyarwanda is actually /o /. In the same manner, the learners' weakness in perceiving / θ /, /ð /, / l / and / r / correctly was reflected in their weakness in producing them convincingly. The results from both experiments suggest that learners had little problem of intelligibility and comprehension in instances where there is no potential vowel or consonant contrast, such as the vowels in *thing, think, text.* But, in instances where such potential contrasts exist, the difficulty was often considerable. It can also be said that the production and perception of vowels and consonants that have the learners' mother tongue equivalents were not a big problem.

It is very likely that if, for example, Rwandan learners say [θi:ŋk] instead of [θɪŋk], they will be understood as saying *think*, as there is no English word like *theenk*. There is no potential for contrast in the vowel in this case with the target word. But, if they say [tʃi:p] instead of [tʃɪp], they will be understood as saying *cheap* instead of *chip*, because there is an actual contrast. Likewise, if they say [fri:] instead of [θri:], because of the actual contrast in the words, they will be misunderstood as saying *free* instead of *three*.

Perceptually, learners understood [pʊl] as [pu:l] (see 6.5.11), because of the actual contrast between *pull* and *pool.* Similarly, if they perceive [sɪŋ] or [sɪŋk] instead of [θɪŋ] as in 6.5.4, there will be a significant comprehension failure of *thing* as *sing* or *sink*, due to the actual contrast between / θ / and /s / and / ŋ / and / ŋk / in these cases. In another instance, the learners perceived [ri:d] instead of [li:d], because of the actual contrast between *lead* and *read.*

The following sections 7.2.1 and 7.2.2 will concentrate on cases of potential contrasts in production and perception.

7.2.1 Difficulties with English vowels

Among the vowels of English, it was expected that Rwandan learners of English may have difficulty in producing and perceiving:

1. / ɪ / as distinct from / i: /
2. / æ / as distinct from / ɑ: /
3. / ɒ / as distinct from / ɔ: /
4. / ʊ / as distinct from / u: /
5. / ʌ /
6. / ɜ: /
7. All diphthongs, especially / eɪ / as distinct from / ɛ /
8. and / əʊ / as distinct from / ɔ: /

There was sufficient evidence to suggest that where there is potential contrast; there were difficulties in the learners' **production** as in the following cases.

1. In Table 5.2, native speaker judges perceived the articulation of / ɪ / by Rwandan learners as / iː / at a rate of 33.4%. Learners typically failed to distinguish between *ship / sheep*, *lid / lead, bins / beans, sit / seat, hills / heals-heels, list / least,* and *will / wheel.*

2. The native speaker judges' perception of Rwandan learners' attempts at /æ / as / ɑː / in their interpretation of *ham* as *harm*, *hat* as *heart*, and *match* as *march* (Table 5.3) was not the major problem as anticipated. / ʌ / was the major difficulty in the light of a high percentage rate (32%) of variants in words containing that potential contrast: *cap / cup; match / much; stamp / stump; batter / butter; bag / bug; fan / fun; ankle / uncle* (see 5.5.2).

3. Concerning / ɒ / - / ɔː /, like in the previous case, / ɔː / was not the major problem, but / ʌ /. The lack of contrast between / ɒ / and / ʌ / was evidenced in the high rate of confusion between *cot / cut-cult; shot / shut; dock / duck; stock / stuck; gone / gun; pomp / pump* (see 5.5.4).

4. Native speaker judges heard Rwandan learners' attempts at / ʊ / as / uː / at a rate of 21.4% out of a total of 39.27% of variants in *pull* as *pool* (9/30); *full* as *fool* (14/30); *soot* as *suit* (13/30); and *could* as *cooled* (6/25) (Table 5.6).

5. Rwandan learners' attempts at / ʌ / were perceived as / æ / by native speaker judges at a high rate of 45.45% out of a total of 59.27% of variants in the following minimal pairs: *hut / hat* (15/25); *much / match* (23/25); *stump / stamp* (25/30); *butter / batter*; *bug / bag* (10/30); *bud / bad* (12/25); *hum / ham* (11/25); *fun / fan* (5/25); *uncle /ankle-anchor* (11/30); and *cup / cap* (2/25). Their lack of contrast between /ʌ / and / ɑː / was also significant though not to the same extent as between /ʌ / and /æ / in the judges' perception of *much* as *march; bud* as *bad*; *hum* as *harm*, and *bud* as *bad* as seen earlier (see 5.5.3).

6. Their attempts at / ɜː / were perceived as / ɑː / and / ʌ / at a rate of 11%, respectively, in the interpretation of *girl* as *guard* (2/30); *stir* as *star* (5/30); *surgeon* as *sergeant* (4/30); *birth* as *bath* (13/30); *shirt* as *shut* (9/30); and *bird* as *but* (8/30).

7. / eɪ / was perceived by native speaker judges as / e / at a rate of 51.63% out of a total of 62.5% of variants. There was great difficulty in distinguishing *taste / test; sale / sell; raced / rest; late / let; pain / pen; shade / shed; tail / tell; paper / pepper; saint / sent; and age / edge* (see Table 5.8).

8. The perception of / əʊ / as / ɔː / by native speaker judges accounted for 25% out of a total of 62.5% of variants. The potential for contrast between these two caused intelligibility problems between *bone / born* (4/25); *coat / court-caught* (4/30); *woke / walk* (18/30); *bowl / ball* (5/30); *load / lord*(10/25); and *coal / call* (11/25). It is relevant as well to mention a significant perception difficulty of / əʊ / as / ɒ /, as it accounted for 18% of all the variants, such as in the interpretation of *coat* as *cot* (3/30); *coast* as *cost* (24/30); *load* as *lot-rod* (4/25); *robe* as *rob* (4/25); and *slope* as *slop-slob* (4/30).

As far as the other diphthongs are concerned, namely the wide closing diphthongs represented by / ɑɪ / in 'incidental' data, and the centring diphthongs represented by / ɪə / in the 'incidental' data, they did not pose a major problem. /ɑɪ / and / ɪə / reached average rates of 89.97% and 68% in the production of *tribe*, *prize*, *eyes*, *drive*, and *jeer* and *sphere*, respectively (see 5.5.9).

In the analysis of the productive data, Table 5.10 showed the intelligibility rates of the targeted vowels referred to. The results are reproduced here (Table 7.1) to show, in rising order, the level of difficulty these vowels represent, and their main variants, as interpreted by the native speaker judges. The percentages of non-judgement (NJ) are also given as a further

indication of the difficulty that the judges had in interpreting the Rwandan subjects' attempts at articulation.

Table 7.1 Intelligibility rates of targeted vowels

	IR%	NJ	Main variants
/ ɜː /	33.45	6.54	ɑː, ʌ, ɒ, æ
/ eɪ /	34.54	2.9	ɛ
/ əʊ /	35.63	3.27	ɔː, ɒ
/ ʌ /	37.45	3.17	æ
/ ɒ /	52.00	2.54	ʌ, ɔː
/ æ /	53.09	1.45	ʌ
/ ɪ /	54.41	2.54	iː
/ ʊ /	57.45	3.27	uː

This indicates on the one hand how difficult successful articulation of these vowels is for Rwandan learners of English. On the other hand, the other vowels proved less difficult for them, as shown by their relative success in the 'incidental' data (Table 5.11): / iː / (60%); / ɑː / (64%); /ɛ / (65.9%); / ɪə / (68%); / ɔː / (69.2%); / aɪ / (91.7%); /uː / (94.5%).
This indicates that the subjects were relatively successful with / iː, ɑː, ɛ, ɪə /, and then, presumably also with the other centring diphthongs; and extremely successful with / aɪ, uː /, and presumably also with the other closing diphthongs / aʊ, ɔɪ /.

A similar picture emerges from the analysis of **perception** data (Chapter Six). The details (see 6.5) show very clearly that where there is a potential for contrast, there are difficulties for the subjects. The following examples illustrate the biggest problems:

1. / ɪ / in contrast with / iː/, whereby 40% of the subjects interpreted the native speaker's *chip* as *cheap – cheak* (6.5.15). Similarly, *lead, reap*, and *heel* were

interpreted as *lid*, *rip* and *hill* on average by 24.4% of the subjects. Also, a no less significant rate (35%) of misinterpretation of / ɪ / as / ɛ / was observed in their perception of *chip* as *check* (17/60), **chep* (3/60), and **chet.*

2. The subjects interpreted / æ / as / ɑː / in *hat* as *heart* (18%). The perception of / æ / as either / ɜː / or / ʌ / deserves mention in the light of high rates of misperception of *hat* as *hurt* , and *lack* as *luck* by (16.6%) and 23.2%, respectively. Such rates corroborate the level of production difficulty that was noted above.

3. / ɒ / in contrast with / ɔː /. Approximately three-quarters of Rwandan learners seem to treat *spot* and *sport* as homophones in their perception of *spot* as *sport* by the majority of 78.3% (see 6.5.13). / ɒ / was also interpreted as / ɑː / in *dock* as *dark* (23.3%), and *hot* as *heart* (13.3%) (See 6.5.30/33); / ɒ / as / ʌ / in *dock* as *duck* (13.3%), *hot* as *hut* (10%); *lock* as *luck* (20%) (See 6.5.30/33/37), and / ɒ / as / æ / in *hot* as *hat* (11.6%); *lock* as *lack* (6.6%) (See 6.5.33/37).

4. / ʊ / in contrast with / uː /. The difficulty in the perception of / ʊ / in *pull* was evidenced in the fact that nobody interpreted it as *pull* (0%). The rate of 26.6% of no-response reinforces the observation of difficulty that learners had in the perception of *pull.* The lack of discrimination between / ʊ / and / uː / is also shown by a percentage of 25% of the subjects who interpreted *pull* as *pool*; and 36.6% who interpreted *full* as *fool* (see 6.5.21).

5. / ʌ /. The following rates of misinterpretation confirm the learners' lack of contrast between / ʌ / and the vowels: / æ, ɑː, ɜː /. / ʌ / as / æ / in *bad* for *bud* (41.6%); *hat* for *hut* (14.9%), and *lack-*lac* for *luck* (29%). / ʌ / as / ɜː / in *bird* for *bud* (13.3%); *hurt* for *hut* (22.4%). / ʌ / as / ɑː / in *heart* for *hut* (31.6%); and as / ɒ / in *luck* as *lock* (15%). (See 6.5.12/27/32/36/40).

6. / ɜː /. The main difficulties with / ɜː / are / ɑː / (23.4%), / ɛ / (18.3%), and / æ / (11.6%) where minimal pairs exist, such as in *hurt / heart*, *bird / bed, bird / bad* (see 6.5.22/34). It is also significant that a majority (55%) of subjects perceived *work* for *walk* (6.5.16).

7. / eɪ / in contrast with / ɛ /. An average of 26.6% of the subjects perceived *let* and *debt* as *late* and *date*; but 25% of them interpreted *shade* as *shared* (see6.5.10); while 20% interpreted *shared* as *shade* (6.5.23). The main problem with *shade* were *share(d)* (10%) and *shed* (8.3%). The data indicates that the contrast between / eɪ / and / ɛə / was just as significant as that between / eɪ / and / ɛ /.

/ ɛ / was misinterpreted as / ʌ / (12.5%) and as / æ / (10%); / ɛə / as / ɛ / (25%) in *shared* as *shed* (6.5.23). There is a greater degree of misinterpretation between / ɛ / and / ɛə, ʌ, æ / than there is with / eɪ /.

8. / əʊ / in contrast with / ɔː /. The main difficulty with / əʊ / was / ɒ / and / ɔː / as 55% of the subjects interpreted *bought* as *boat*, and 11.6% perceived it as / ɒ / in *bod*, **botte*, **bot* (see 6.5.24).

The interpretation of / ɑɪ / (93.3%) as in the case of *rice*, proved extremely satisfactory, and disconfirms our expectation of the difficulty posed by the other diphthongs to Rwandan learners of English.

The major perceptual difficulties of Rwandan learners of English are as follows:

/ ɪ / in contrast with / iː / and / ɛ /

/ ʊ / in contrast with / uː /

/ æ / in contrast with / ʌ /, / ɑː /, and / ɜː /

/ ɒ / in contrast with / ɔː /

/ eɪ / in contrast with / ɛ / and / ɛə /

/ əʊ / in contrast with / ɔː / and / ɒ /

The results from both experiments suggest two things. One is that the perception of the target vowels caused more difficulty to the learners being investigated compared with their success in production. Two, they show that learners had little problem in their comprehension in instances where there is no potential for contrast such as the vowels in *thing* (96.6%), *think* (95%), and *text* (96.6%), compared with *chip* (0%), for example. In instances where such potential exists, the subjects experienced great problems in both tasks. Another example is /æ /: there was more success with *thank* (88.3%) because there is no potential contrast, as opposed to *hat* and *lack* (3.3% each) (see 6.6.4). With / ɔ: /, *walk* (21.6%) and *bought* (20%) were poorly perceived because there is potential for contrast. / u: / in *youth* was better perceived (80%) because there is no direct potential for contrast, compared with *fool* (36.6%) (see 6.6.4). The case of / ʊ / in *pull* (0%) clearly demonstrates the effect of potential for contrast. Also, / ʌ / in *bud* (13.3%), *hut* (8.3% & 10%), *luck* (53.3% &23.3%) are yet further evidence of the effect of potential for contrasts. It can also be said that the production and perception of vowels that have the learners' mother tongue equivalents were not a big problem for the subjects under investigation.

7.2.2 Difficulties with English consonants

Among the consonants, it was expected that Rwandan learners will have difficulty in producing and perceiving:

1. Final consonants, especially voiced obstruents
2. / θ /
3. / ð /
4. / dʒ /
5. / ŋ / as distinct from / ŋk /
6. / l / as distinct from / r /
7. medial sequences of nasal and voiceless plosives / -mp- , -nt-,-ŋk-/
8. Initial consonant clusters which do not occur in Kinyarwanda, e.g. /pr-, br-, tr-, dr-, gl-, sp-, sf- /

First of all, we will consider the **production** data.

1. The rates of final consonants indicate that the difficulty occurred mostly in distinguishing between voiced and voiceless equivalents. Native speaker judges perceived / b # / as / p / in *robe / rope*, *rib / reap – leap, cub / cup*, and *tribe / tripe*, at a rate of 33.9% out of a total 48.69% of all variants.

The production of / d # / was very successful. There were only 8 cases in which / d # / was interpreted as / t /, when *hard* was perceived as *heart / hat / hurt.*

/ g # / was satisfactorily produced. But, there was a significant degree of failure in distinguishing / g # / from / k # /, as native speaker judges perceived / g / in *pig, bag,* and *dog* as *peak / peek*, *back* , and *duck*, at a rate of 31.25%, respectively.

The production of / v # / was successful. The main variants to / v / were /f / and / z / (10.3%) out of a total of 18.26% of variants, in minimal pairs *leave / leaf*, *save / safe*, *prove / proof*, and *dove / doors – dose.*

/ z # / was successfully produced. The main variant to it was / s / (23.1%) in the following minimal pairs: *prize / price*, *peas / peace*, *buzz / bus*, *cause / course*, *eye / ice*, *grows / gross.*

There appears to be no difficulties with the voiceless obstruents in final position, in the light of high average of / - p # / (90.47%) in *slope*, *ship*, *cup, cap*; / t # / (92.24%) in *sit, hat, shirt, hut, put, cot, shot, coat, soot*; and / k # / (86%) in *woke, thank, stock, work, dock.* This is reinforced by the results from 'incidental' data whereby, for example, *slope* (93.3), *coat* (100%), and *woke* (100%). There is only a minor problem with final / -t # /, / - d # /, being interpreted as / - tʃ #, -dʒ # /.

There was also little difficulty in their production of the final / m /; / n / and / l /. In 'incidental' data, final /-m / (95%) in words like *ham*, *hum*; final /- n / (92.39%) in words like *bone*, *pigeon*; and final /- l / (87.1%) in words like *ankle*, *will*. This may be explained by the subjects' competence in French whereby final resonants are clearly released in citation forms, as for example in *bonne* [bɔnə], *salle* [salə]. The learners therefore transfer these features into their articulation of English final nasals and / l /. This is true for all final consonants in French. This however does not cause any comprehension problem to the native speakers of English.

Learners seemed to have difficulty in cases where there is potential for contrast in minimal pairs. Table 5.24 showed the intelligibility rate of the 'targeted' consonants in final position. They were chosen on the basis of the universal principle that final voiced obstruents are more marked than voiceless ones, hence the learners' tendency to produce the latter rather than the former. The following table extrapolates the information on final consonants in the production data.

Table 7.2 Production rates of final consonants

	IR%	Main variants
-b#	49.56	p (33.9)
-d#	81.25	t (11.25), dʒ (3.75)
-g#	62.5	k (31.25)
-v#	79.13	f (6.0)
-z#	67.5	s (23.1)

2. / θ / reached an intelligibility rate of only 49.81%. The main alternative to /θ / is / f / in both word-initial and word-final positions, according to the native speaker judges' interpretations of the minimal pairs: *thin / * fin*, *three / free-flee*, *author / offer*, *path / puff*, *worth / wolf-wharf*, *death / deaf*.

3. / ð / reached an intelligibility rate of 51.6%. For / ð / in initial position, native speaker judges recognized it at a rate of 60% (see 5.6.2); as / t / (10.4%), and as / d / (7.2%). In final position, they recognized / ð / in only 41.73% of cases, and perceived it mainly as / θ / (35.45%). The total interpretation rate of / ð / as / θ /, /t / and / d / by native speaker judges accounted for 32.4% out of a total of 42.8% of variants.

The difficulty represented by / θ / is particularly reflected by the low production results of these in words such as *worth, author*, *then* that reached only 20%, 32%, and 16.6%, respectively,(see 5.6.1); and / ð / in *clothe*, *bathe*, and *these* that reached only 19.9%, 20% and 32%, respectively (see 5.6.2).

4. / dʒ / did not represent as big a difficulty as expected. It does not occur in either Kinyarwanda or French, but in Kiswahili as in *jambo* 'how are you'; *kujaribu* 'to try'; *kungoja* 'to wait'. Their competence in Kiswahili must have influenced the learners' good production of / dʒ /. Initial / dʒ / was successful at the rate of (81.17%), and medially (77.08%). 71.3% of the subjects successfully produced / dʒ / in final position in words such as *large*, *judge*, *ridge*, and *pledge* (see 5.6.3). / tʃ / and / ʒ / were the main alternatives in *ledger / leisure*; *major / measure*; *large / latch*; *ridge / reach-leach*; and *jeer / cheer*.

5. Concerning the velar nasal / ŋ /, the subjects had difficulty in producing a distinction between final / -ŋ / and / ŋk /, as native speakers' interpretation of *thing* as *think*, *tank*, *sink*, reached a high rate of 45%. There was much less difficulty in making clear distinction between final / ŋk / and / ŋ / in the light of a rate of only 10% of the subjects who perceived *think* as *thing*, or even *sing* (see 6.5.18).

6. / l / and / r /. Initial / l / and / r / were well recognized by the English judges at the rates of 90.75% and 84.1%, respectively. / r / was weakest before

/iː, ɪ / at 77.64%. There was some evidence in the production data of substitution of one for another, such as in *lost* as *roast*; *rod* as *lord* (55.4%); *load* as *rod* (5.5.8). / l / in final position was well produced and rated 87.1%.

7. Nasal medial clusters were successfully produced as indicated by the rates of /-nt-/ (90.66%) in *winter*, *enter*, *content*; /-mp- / (90.43%) in *hamper*, *whimper*, *important*, *impact*; /-ŋk-/ (84.70%) in *blanket, conquer*, *linker*. These medial nasal clusters with voiceless plosives were well produced presumably due to a mixture of influence of Kiswahili in words like *asante* 'thank you', and a Rwandan accent of French words, e.g. *lentement*, *temperature*, *vaincre*.

8. Initial consonant clusters were successfully perceived by the judges. Their results disconfirm the hypothesis that consonant clusters that do not exist in the learners' mother tongue were going to be difficult. This is borne out of the successful average rates of words containing / pr-, br-, tr-, dr-, gl-, sp-, sf- /. (Table 5.24). It is worthwhile noting however, that of all these consonant clusters, / gl- / was the most poorly perceived as suggested by the lowest rate (26.6%) in the interpretation of *glow*; there was a high rate (60%) of reinterpretation of it as *grow*, *growly*, *broke*, *love*, *law*, *go*. The results from 'incidental' data further corroborate the above results as /sl- / in *slope* reached (96.6%), and / st- / in *stamp/ stump*, *stock, stir*, reached (93.9%), respectively. Once again, such high rates of success in initial consonant clusters may be attributed to the learners' competence in French.

The difficulties from the **perceptual** data are as follows:

1. Final consonants represented a difficulty, particularly when learners have to distinguish between voiced and voiceless equivalents. For example, 36.6% of the subjects interpreted *heart* as *hard*, and 23.3% interpreted *hurt* as *heard*; 40% of them interpreted *dock* as *dog*; and 26.6%, *dark* with various items ending with / g /.

With fricatives, the problem of the lack of distinction between voiced and voiceless equivalents was noticed as 15% of the subjects interpreted *rice* as *rise*, and /-ð / as / -θ / (3.3%).

Another problem involves the interpretation of the release of / t, d /. Final / t / was perceived as / tʃ / by a minority, but also 33.35% perceived *shade* as *change*, with a final / dʒ / (see 6.5.10). The high rate of perception of final / p / as / d / in *read* (45%) for *reap* must be attributed to the greater familiarity learners have of the former than the latter.

2. There was poor perception of / θ /, as learners interpreted it in *thing*, *think*, *youth* at an average rate of only 47.2%. At least 50% of the subjects misinterpreted word initial / θ / as / s /, as in *thing* as *sing*, *sink*; and *think* as *sink, sing, sick / seek*. Another third of them interpreted final / θ / as / s /, (or possibly / z / (33.3%) – *use* is a homograph (see 6.5.5/18). The data suggested that confusion would likely be also with / s / or / t /. It appears that where minimal pairs allow for it, initial / t / is susceptible to a misinterpretation as / θ /, but initial / θ / is susceptible to a misinterpretation as / s /.

3. Final / ð / was extremely poorly perceived as only one subject correctly interpreted the word containing it, and 25% interpreted it as / θ / (although '*breath*' could possibly be considered as a misspelling). It is significant to note that 20% gave no response, while other subjects imagined it as / d /, /z /, / v /, / f /...(39.2%) out of a total of 48.9% of variants (see 6.5.8). In the same way, / d / is susceptible to a misinterpretation as / ð / where potential for contrast allows for it, as 28.8% interpreted *dare* as *there / they*, and another 28.8% gave no response.

4. Concerning final / dʒ /, there was some confusion between / dʒ / and / tʃ /, and of non-perception of the / n / in *strange*, but overall, there was little problem in the perception of / ndʒ / in the light of the findings in 6.5.2. There was a voiceless interpretation of / dʒ / as / tʃ / as *strange* was interpreted as

**streach*, **stritch*. The rate of interpretation of final /dʒ/ as / d / and / t / was only minor (3.3%) respectively, as in **stread*, *street* and *set* (see 6.6.29). It is worthwhile noting that the rate of non-perception of / dʒ / including 4 cases of no-response accounted for 23.3%.

5. As for / ŋ /, 45% of the subjects misinterpreted *thing* as *think*, whereas only 10% misheard *think* as *thing;* 11.6% heard no / ŋ / in *think* and *tank*, interpreting them as *thick*, *seek*, *sick* and *tack*, *talk*, *take*, respectively.

6. Regarding / l / and / r /, the problem in initial position is the recognition of /l / before / i: /. In *lead* and *flee*, average success was 50%, whereas / l / before other vowels as in *let*, *luck*, *lock, lark*, *lack* (see 6.6.3) reached a high average rate of 92.5%. The learners' competence in French and Kiswahili must have helped in their recognition of / l /.

There is no problem with initial / r /, except only that 10% of the subjects interpreted it as / l / before / i: /, e.g. *reap* and *breathe* as *leap* and *bleed, believe*, respectively. As seen in the production data, there was some evidence of substitution between / l / and / r / in the learners interpretation of *lead* as *read* (see 6.5.1), *late* as *rate*, *red* (6.5.3), and *reap* as *leap, lip* (6.5.6).

In final position / l / reached a rate of 55% of correct perception. On average, 31.1% interpreted it as zero or orthographic <r>, such as in *pull*, *heel*, *fool* as *poor*, *hear / here*, *four*, respectively. The rate for *heel*, with a preceding / i / was as high as 43.3% as in *hear/here*, together with *he*, *hero* and **hiyo*. Also, the rate of 26.6% of no-response in the perception of *pull* is high, thus significant in terms of the extent of the difficulty posed by / l /.

7. The medial consonant clusters with nasals /-mp-/, /-nt-/, /-ŋk-/ were not tested in the perception data, because the results from the productive data showed they do not pose a problem as noted above. Nasals in word-initial position would not pose a major problem. Word-finally, *barn* reached a rate of

only 46.6%, and there was a significant percentage (25%) of no-response (see 6.6.20). The remaining 28.4% was more or less equally divided between / m /, / n / and zero. The difficulty of perceiving final nasals may be related to their competence in French. We would assume that Rwandan learners have difficulty in recognizing native English speakers' articulation of *charm*, because they do not produce the schwa release that Rwandan learners would expect in the French pronunciation of *charme*.

8. Consonant clusters in initial position were not a major difficulty. Only 11.6% of the subjects had difficulty in perceiving / str- / properly. The main deviants to / str- / were / tʃ / and / st- / in the interpretation of *strange* as *chain*, *stage*, **steing*.

Initial clusters with / l / before / i: / led to some lexical re-interpretations. For example, the learners interpreted *flee* as *three* (33.3%) and *free* (15%).

For initial / br- /, the lack of distinction between / l / and / r /, and the misperception of / b / as / p, θ, d, t / equally led to lexical re-interpretations of the target item *breathe*.

To sum it up, the major perceptual difficulties for Rwandan learners of English consonants from the evidence from the analysis of perceptual data are:

- voiced and voiceless obstruents in final position
- / θ, ð / in all positions
- nasals in final position
- / l / - / r / in initial position before / i:, ɪ /
- / l / in final position

7.2.3 Word Stress

As for word stress in the production data, the average intelligibility rates of 96.66% for words ending in *-ise*, and 94.16% for those ending in *-ate*, suggest that the native speaker judges had very little difficulty in interpreting the

learners' pronunciation with stress placed late in the word rather than early (Tables 5.26 /27).

The writer strongly believes that the deviant stress placement by these subjects was due to their exposure to French which tends to locate stress on the final syllables as in the words which were tested, e.g. *associ'er* 'to associate' and *organi'ser* 'to organise'.

Nevertheless, such deviant stress placement seemed to cause no problem to the native speakers' judgement, and therefore this feature was not pursued in the perception experiment.

7.2.4 Sentence phonology

It was predicted that the processes of simplification and features of connected speech of English, as well as the difference between syllable and stress-timed rhythm would affect intelligibility and comprehension of Rwandan learners of English. The findings from this work, however, were contrary to our predictions as far as the productive experiment was concerned.

The subjects read English sentences without using simplification forms and were well understood by the native speaker judges, in the light of an average rate of 62.1%. This seems to indicate that not only the use of syllable-timed rhythm by Rwandan learners but also their pronunciation of sentences with full forms do not hinder intelligibility to native English speakers. The lack of use of simplifications and reduced forms indicates the tendency of the learners to articulate 'written' forms of speech, though they have not articulated the target sentences in a native speaker's fashion. The non-use of stress-timed rhythm and simplification forms of English results in the existence of a local accent of English, in this case, a Rwandan accent. We can therefore say that the results from the productive test did not support the general hypothesis according to which perceptive performance provides the basis for productive ability, as learners performed better in production than in perception task.

The learners' comprehension of a native speaker of English reading a set of 10 sentences was dismal. Evidence shows that the average rate of 82.9% of the learners totally failed to understand (0/5), had poor (1/5) or little (2/5) comprehension of what was said, compared with only 16.9% of those who had fair (3/5), high (4/5), and total (5/5) comprehension (Table 6.10). It is significant to note that 83 out of 300 interpretations were cases of total incomprehension as opposed to only 3 out of 300 cases of total comprehension.

These results indicate that the learners were not able to hear different forms of simplification, and features of connected speech such as assimilation, weak forms, elision, and contractions, thus, were not able to reconstruct and process what they heard. The relevance of teaching learners the use of weak forms is found in Jenkins (2000:147) when she says that "weak forms hold potential problems of recoverability for their NBES (non bilingual English speaker) interlocutors, who may find it difficult to retrieve the underlying full forms of reduced words". With regard to features of connected speech, she further maintained that such learners of English do not need them when communicating with other non-native speakers, but do need them when they listen to L1 speakers (p.149).

The data from this study have demonstrated that there is more need for learners to work on weak forms and features of connected speech for receptive purposes than there is for their productive purposes. Once learners are able to understand L1 speakers of English, they might also be able to learn to produce these forms acceptably. It should be noted that though in most cases the learners got the vowels of stressed words right, they were not able to successfully interpret much of the unstressed words. Nevertheless, this is clear evidence to support the general assumption that production performance relies heavily on perception, in that the learners' actual use of simplifications and reduced forms was very low, because they simply do not perceive them.

As far as the effect of rhythm is concerned, the difficulty that Rwandan learners had in successfully perceiving a native English speaker reading a set of ten sentences, was related to the fact that English uses a stress-timed rhythm that is reflected in a speaker's use of the features of connected speech the same learners find extremely difficult to perceive. Because of the use of syllable-timed rhythm, they tend to give prominence to all words, stressed and unstressed alike. This is likely to make it difficult for them to understand native English speakers who usually stress content words at the expense of unstressed ones. Brown (1974:47) suggests that "for spoken English to be clearly understood, it is essential that the main units of information should be made to stand out, which means that subordinate words and syllables must be unstressed".

Overall, the analysis of the interlanguage competence of Rwandan learners of English seems to have satisfactorily answered the main research questions formulated in the introduction of this work. CA was effective as a tool and basis for designing and collecting data to test intelligibility and comprehension in English. The findings from Chapters 5 and 6 and summarized above have demonstrated what both native speakers and Rwandan learners find difficult to understand from each other.

In the light of the problems revealed by the findings from the analysis of interlanguage competence of Rwandan learners in English, the writer wishes to offer some suggestions towards improving the teaching of pronunciation.

7.3 Pedagogical suggestions

The present work has provided evidence at the phoneme, word and sentence levels of the interlanguage competence of the Rwandan learners of English. The interlanguage features revealed by this research can be of practical value to L2 teachers, text book writers and researchers, with particular focus on the pronunciation of English as the most significant cause of intelligibility and comprehension problems. Pedagogical suggestions come as follows.

7.3.1 Target: MGI

The performance target in the pronunciation teaching should first and foremost focus on developing learners' Minimum General Intelligibility (MGI) as developed by Gimson (2001:298) (see 3.2.4.1) and Abercrombie (1963) as a competence that "displays a set of distinctive elements which correspond in some measure to the inventory of the RP phonemic system and which is capable of conveying a message efficiently from a native listener's standpoint". The teaching should also give due attention to developing "mutual intelligibility" and comprehension for effective communication in English as the target language. In 3.2.3, we have underlined the importance, for non native speakers of English, of achieving mutual intelligibility with other non native speakers and native speakers. Rwandan speakers should aim at being understood by native speakers of English. If they achieve that, they may equally be intelligible to other speakers of English, such as the East African users of English.

7.3.2 Teachers' awareness of CA

This study will make teachers more aware of the fundamental differences and similarities, as well as the difficulties revealed by a systematic comparison at the phoneme, word and sentence levels between Kinyarwanda and English, that can affect the communicative performance of their students. Such comparison can therefore be applied to pronunciation teaching and production of teaching materials. This study highlights what native speakers found difficult in interpreting the Rwandan learners' production and what the latter found difficult in their interpretation of the native speakers' speech.

7.3.3 Teachers' training in phonetics

There is a need for training in phonetics and phonology for teachers of English themselves in order to ensure their understanding of the processes of articulation, ability to make a distinction in sounds in a native-like manner and the ability to produce sounds that lead to comfortable MGI of their students. The writer's experience is that many teachers of English in Rwanda need that training. Developing discrimination skills should involve both production and perception, on the basis that learners who are not able to hear the contrast in

a minimal pair exercise, will find it extremely difficult to produce them in their speech. The impact of the teacher's competence is therefore of great importance and should be catered for. The writer's experience is that the majority of teachers of English in Rwanda need that training that would enhance the teaching of English pronunciation in contrast with what is stated in Chapter 1 (1.5.4.9).

In practice, one way to help the teachers would be to send them to English native speaking countries such as UK, USA, Canada, and South Africa where they would greatly benefit from expert teachers in phonetics and phonology, and a wide range of teaching materials. Another alternative would be for the government to request teaching assistance from these countries to send trained teachers and teacher trainers to help at University and in secondary schools.

The political decision to officially introduce English in primary school education is a positive step towards helping Rwandan learners of English to learn more and hopefully better English. It is expected that trained teachers will help those pupils who do not proceed beyond primary school to acquire some degree of fluency, and give a solid basis to those who go on for secondary and higher education.

7.3.4 Need to focus on difficulties

The study showed the need for concentrated effort on difficulties at word level.

Vowels. The teaching should focus on improving the learners' discrimination skills between phonological contrasts in minimal pairs which matter for both intelligibility and comprehension in English. Once, for example, the learners are able to hear the phonemic difference between long and short vowels / ɪ / and / iː / as in *sit* and seat, or / ʊ / and / uː / in *pull* and *pool*, they may be able to produce a target like sound. Ikegushi (1997:13) stresses the point by saying that "the more correctly students can distinguish the basic sound elements of English, the more likely they will correctly produce these sounds".

On the grounds that perception ability seems to precede production ability in L2 sounds, teaching learners how to correctly identify, categorize and discriminate phonological contrast in minimal pairs may help learners with a fossilized phonology. Therefore, priority should be given to listening through exercises of ear-training.

In the light of the difficulties from both the productive and receptive experiments, a concentrated effort on practising the following vowel discriminations is needed.

a. / ɪ / from / iː /
b. / æ / from / ɑː /, / ʌ /, / ɜː /
c. / ʊ / from / uː /
d. / ɒ / from / ɔː /
e. / ɔː / from / ɜː /, / əʊ /
f. / ʌ / from / ɜː /
g. diphthong / eɪ / from / ɛ / and / ɛə /
h. / əʊ / from / ɔː/.

Consonants. Discrimination skills between phonological contrasts in minimum pairs involving consonants should be taught and practised. The lack of contrast between consonants matters for intelligibility and comprehension. For example, there might be a problem of communication if a listener interprets *think* as *sink,* or *play* as *pray*.

Voicing deserves attention. Productive and receptive distinction between voiced and voiceless pairs in word-final position should be taught. For example, 31.6% interpreted *heart* as *hard*, and 40% interpreted *dock* as *dog*. Initial consonants seem to cause no major perceptual problem, in the light of for example / p / which was correctly interpreted at 83.3%, but dropped to 53.3% in final position.

The analysis of data suggests that a concentrated effort is needed on practising to distinguish final voiced obstruents from voiceless ones, and

- / θ / from / t /, / f /, / s /
- / ð / from / d /, / v /, / z /
- / dʒ / from / ʒ / or / tʃ /
- / ŋ / from / ŋk /, and the perception of final nasals
- / l / from / r / in initial position; before / i: ,ɪ /, and in final position

Word Stress. Even though there was no strong evidence to suggest that deviant stress placement has affected intelligibility (see 5.8.1/2), it is recommended to train learners to perceive and produce correct stress particularly in cases of potential contrast. For example, if a learner misplaced stress on the word /ˈdezət / or /ˈpreznt /, he/she would be perceived as saying /dɪˈzɜ:t / or /prɪˈzent / (Gimson 2001:233).

7.3.5 Focus on difficulties at sentence level

The teaching should also focus on difficulties at sentence level. The findings from perceptual data revealed that learners were not able to interpret sentences pronounced by NS with weak forms and simplifications. Furthermore, the fact that the same learners were not able to use simplification forms and weak forms is evidence that proves the assumption that production relies on perception. This prompts the writer to support teaching and training the learners to be able to hear and interpret the way in which native English speakers naturally speak, though not necessarily to speak as they do. Jenkins (2000) suggests the need for learners to work on the use of weak forms receptively, on the grounds that many learners of English as an International Language (EIL) need to understand L1 speakers of English in international contexts (p.148).

7.3.6 Designing exercises

The findings from our data have highlighted the areas of expected difficulties (vowels, consonants, sentences) for the learners' interlanguage competence in English. On the basis of those, the teachers should use exercises from cassettes or their own reading to reinforce the learners' hearing and speaking, by making sure they master contrasts and other features of English speech

that matter for communication. A recommandable range of exercises is readily available in Baker (1981), Mortimer (1985), O'Connor & Fletcher (1989), Bowen & Marks (1992), Hewings (1993), Gilbert (1993, 2001), some of which we have used in this section.

The relevance of practice in hearing and saying the sounds of English correctly is underlined by O'Connor & Fletcher (1989:6) who maintain that "students who can't hear a particular English contrast have no chance of reproducing it". The findings from this work showed that the poor perception of for example / ɪ / (38%) in *think*, *chip*, *thing* (Table 5.10) must have led to poor quality of its production (53.28%) (see 5.5.1). Also, the poor perception of / θ / (28%) in *youth*, *thing* and *think*, and of / ð / in *breathe* (1.6%) had a similar impact on their production of the same phonemes at a rate of 49.81% and 51.6%, respectively (see 5.6.1-2). Furthermore, findings from the perception of sentences showed that the learners' failure to perceive the use of weak forms and different forms of simplification, was reflected in their lack of use of these in their reading of sentences.

Pronunciation teaching/practice must be integrated with the rest of the syllabus, and the practice of problematic sounds should appear in context and not only in isolation. Teachers of English should spend sufficient time on exercises of ear training/discrimination, repetition and reproduction of minimal pairs, drilled sentences and rehearsed conversations. However, learners must move from such practice to free speech that reflects actual use of the target language. One of the disadvantages of repetition of individual sounds and minimal pairs is that they neither belong to or create any language context. The advantage of imitation of constructed sentences and dialogues on the one hand is that they are meant to contain minimal pairs involving problematic sounds to be practised in a context. Their disadvantage on the other hand is that they are limited to a particular situation, and only partly reflect real life language. Repetition of sentences and dialogues from a book does not allow the learners to generate the language related to real life language experience outside the classroom. In other words, communication outside, such as going

to a shop, a restaurant, an appointment with a doctor, a conversation on the phone is not a reproduction of rehearsed sentences and dialogues in a classroom, though some general expressions practised in the classroom may be of great help.

In communicative activities, the teacher can play a cassette or read a story, and ask learners to listen and be prepared to answer questions at the end of the reading. They prepare questions of comprehension based on the main points which were developed in the reading. If most of the learners can answer the questions satisfactorily, this is evidence that they have understood what they heard. Learners should be given an opportunity to talk among themselves about their understanding of the reading. The advantage of such communicative exercises (question-answer-comment) is that they resemble the language in actual daily communication.

The data from the present work showed that Rwandan learners of English have great difficulty in understanding native speakers' connected speech. Their weakness in perceiving the processes of simplification in connected speech such as elision, assimilation, weak forms, contractions, and reductions, as well as their use of equal strength on stressed and unstressed syllables represent a barrier to their comprehension of speakers who use them. Though learners do not need to produce forms of simplifications in their speech to make themselves understood, they, nonetheless, need to be able to understand them when they listen to proficient speakers such as native English speakers.

All these points mean that the teaching of English should focus on oral fluency and use of natural rhythm through the use of linking words together. Teachers should make the learners aware of the fact that the pronunciation of some words in natural English connected speech sounds different when they are said on their own, or in slow, careful speech, from when they are used in connected speech (Hewings 1993:49). Learners should be taught about the disappearance of sounds as a result of their environment. Bowen & Marks (1992) mention the fact that for example, learners are unaware that the final

/t / of 'first' in *first light* disappears in rapid speech (p.51). They can practise different forms of elision in phrases like: *first time*, *next week*, *last chance*, *best team*, *just one*; and assimilation as in *this shop*, *good goal*, *ten girls*, *bad manners*, *does she* (p.52). The same writers acknowledge that short sentences or phrases containing unstressed syllables such as: əpi:səkeɪk, fɪʃntʃɪps, ələʊfəbred, can be a useful exercise for practice for learners who tend to give full value to unstressed syllables as a way of improving the rhythm of their speech (p.53).

In our study, when a native speaker of English read the sentence *They'd booked two rooms* (6.8.5.8) -ðeɪ b bʊk tu: ru:mz-, to test the perception of weak form of *had*, to be assimilated to the following bilabial consonant / b /; the elision of /d / as past tense marker between two consonants,none of the 30 learners had either (4/5) or total (5/5) comprehension to reproduce it as intended by the reader. Rather, as many as 25 out of 30 either completely failed (0/5), or had poor (1/5) or low (2/5) comprehension.

The design of exercises should move from practice of isolated phonemes, such as the contrast between / ɪ /-/ i: /, / ʊ /- / u: /, / θ /- / t /, to words containing these, to sentences, to dialogues using communicative exercises. There are three basic techniques that we would like to recommend, namely: simple ear training/ discrimination exercise, repetition (imitation/individual and choral) practice, and communication activities.

First, the teacher plays a cassette containing the following vowels in contrast or reads them for ear training, and asks the learners to listen without repeating anything. The vowels to be practised can be written on the blackboard to allow the learners to identify which one the teacher says. At the re-play, they now can start repeating. The teacher says for example / ɪ /, the learners repeat / ɪ /. Then, the teacher says / i: /, and the learners repeat it.

1. / ɪ /-/ i: /
2. / ʊ /-/ u: /

3. / ʌ /-/ æ /-/ ɜː /-/ ɑː /

4. / ɒ /-/ ɔː /

5. / əʊ /-/ ɔː /

6. / eɪ /-/ ɛ /-/ ɛə /

Such practice becomes more relevant once the learners start practising them in word minimal pairs. The learners may repeat words first without looking at them. Then, the teacher can reproduce them on the blackboard, and ask learners to repeat them after him.

iː ɪ	ʊ uː	ʌ æ	ʌ ɑː	ʌ ɜː
bean - bin	look - Luke	cup - cap	hut - heart	shut - shirt
sheep- ship	pull - pool	hut - hat	much-march	huts - hurts
eat - it	full - fool	suck -sack	cup - carp	bud - birds
cheeks- chicks	foot - boot	bug - bag	bun - barn	bun - burn

ɒ ɔː	əʊ ɔː	eɪ e
cot - caught	coat - caught	pain - pen
pot - port	boat - bought	shade - shed
spots -sports	bowl - ball	tail - tell
cod - cord	Joe - jaw	wait - wet

(Baker 1981:4-7, 18,21,28,35,40,49,63)

It would be a great advantage if the teacher is good at drawing as in Baker's (1981) book, so that the learners can associate the words they hear and repeat with the image. Visual aids could be used to represent words that are being learnt.

The teacher can reinforce the hearing discrimination by making the learners listen to a set of 3 words and ask them to identify which word is different by marking either A, B, or C in front of each set. Such exercise should involve all vowels and consonants that were found to represent a problem to the learners interlanguage competence (see 7.2.1 &7.2.2).

e.g. feet - fit - fit

seem- sum - seem

full - full - fool

late - let - let

hurt - hut - hut

The teacher can even write a set of three words on the blackboard and ask the learners to tick the word they think the teacher says (in bold).

e.g. work – walk – woke **walk**

herd – hard – hurt **hurt**

fair – four – fear **fear**

main – mine – moan **main** (Bowen &Marks 1992:37)

Learners can now start practising the identification of each pair of vowels in sentences. The teacher asks them to identify which of the two word contrasts they think he said.

e.g. 1. The beans/bins were quite cheap

2. I'm going to leave/live with my brother.

3. Did you feel/fill it?

(O'Connor &Fletcher 1989:91)

A communicative task that involves freedom in the choice of the language to use can be designed to allow learners do a meaningful practice of the targeted phonemes /iː / and / ɪ / and other vowels as well. The focus should however particularly be on the practice of / ɪ / which is the main problem. For example, three friends are going to a restaurant. They will look at the menu and choose what they each want to eat. In a classroom context, the teacher can write the menu on the board for learners to use in their practice.

Chris: Hello Phil, how are you?

Phil: Fine, thank you. How about you?

Chris: Fine, thanks. Phil, this is my brother Tim.

Phil: Nice to meet you Tim.

Tim: Nice to meet you too.

Phil: Hey... Chris...That is the Karibuni restaurant over there, isn't it?

Chris: Yes, it is indeed. So, what are you thinking of?
Phil: Let's go in and have some thing to eat and drink. I am starving.
Chris: I feel hungry and thirsty too. I didn't have my breakfast.
Phil: Let us sit at that table near the window and have a look at the menu first.
Chris: So, what will you have, Phil?
Phil: I will have fish and chips, and ...um...green salad. How about you?
Chris: Let me think....um...um...I think I will have chips and chicken and ...um...let me see...green beans. And you, Tim?
Tim: Can I have pizza and green salad please?, and ..um...o.k..that will be all.
Chris: Of course, Tim. You can have what you want.
Phil: Please waiter. Can we have one fish and chips and green salad; one chips and chicken and green beans; and one small deep pan pizza with green salad, please?
Waiter: Certainly. Any thing else? Any drink?
Phil: Oh ...silly us!! we didn't order any drink. Can we have two cold Cokes, and...(*after asking Tim*) milky tea, please?
Waiter: It won't be long... Here you are. Enjoy your meal.
Chris: Is that OK, Phil?
Phil: It is fantastic, it's really filling...and it is a bit big too. How is yours?
Chris: Delicious. Hope the bill will not be as big though.
Tim: Not at all. Look, Chris, on the menu here. It is actually cheap.
I think we should give him a tip. That was good service, wasn't it?

A similar exercise can also be used to reinforce the practice of different phonemes by using 'question-response' practice which tests whether or not the listener has mastered the articulation of a particular vowel discrimination. Learners practise in pairs. Learner 1 says *a* or *b*, then learner 2 answers.

e.g. 1. a. was it cut? No, it was broken
b. was it caught? No, it's still free
2. a. is it a big cat? No, it is a lion!!
b. is it a big cut? No, not too deep
3. a. what's paper for? To write on
b. what's pepper for? Flavour

(Gilbert 1993:122)

Another illustrative example of a constructed conversation will show what real communication language for learners should look like. Words, sentences and dialogues need to be relevant and meaningful to the learners and the context they live in as much as possible. After the learners have practised the imitation of individual sounds (as in the earlier case of / ɪ / and / iː /), words and sentences containing the contrast /ʌ /-/æ /, such as in *butter/batter*, *uncle/ankle*, *cup/cap* in the following sentences :

1. I like my fish cooked in butter/ batter
2. He's worried about his uncle/ankle
3. Here's a cup/cap for you

The teacher can now start pair work with learners as in the following dialogue that reflects one example of daily communicative language. The writer made up this conversation.

Invitation for lunch

A. Hello, Tatu
B. Hello. How are you, Jamina?
A. Well, Tatu, I was calling to invite you and Jeff for lunch next Sunday. My cousin Janine will be there too. She is coming by bus all the way from Kaduna. She would love to see you both.
B. I'd love to, but I really can't. What a pity!
A. What's the problem, Tatu?
B. The thing is, my uncle George has just rung up to let us know he is visiting us the same Sunday. We haven't seen him for so long.
A. Oh! I understand. You mustn't worry. We will arrange a lunch for another day. Just keep in touch.
B. I will, Jamina. Give our love and a big hug to Janine. She is a wonderful girl. Thank you very much for inviting us as well.
A. That's nothing, Tatu. Have a lovely time with your cousin, too.
B. Bye bye...Have fun. See you soon.

We turn now to the repetition of consonants.

This will include repetition practice of word initial and final consonants (voiced-voiceless) equivalents

/ b /-/ p /, / d /-/ t /, / g /-/ k /;

/ θ / -/ t, s, f /

/ ð /- / z, d /

/ ŋ /- / n, ŋk /

/ dʒ /- / ʒ, tʃ /

/ l /-/ r / (initial position, before / i: - ɪ /, in final position)

First, the learners listen to the phonemes the teacher says without repeating. For example, the teacher says / b /, and then / p /. Second, the teacher says /b / and the learners repeat it. They do the same with / p /. Now, the teacher uses words containing / b / and / p / which learners listen to without seeing them and before repeating them. Now, the teacher says *bin*, the learners repeat *bin*. The teacher says *pin*, the learners repeat *pin*. A similar exercise can be done with these two phonemes in word final position, as in practising *robe* and *rope*. The teacher can check if the learners have mastered the practice of the targeted phonemes in words by asking the learners for example to raise their hands if they hear *bin*, *robe* and to keep them down if they hear *pin* or *rope*. All the consonants listed above should be practised in the same manner.

The teacher draws the learners' attention to the listening of the following pairs of words :

b	p	d	t	g	k
cub	cup	side	sight	pig	pick
robe	rope	hard	heart	league	leak
bought	port	played	plate	angle	ankle

Now, the teacher can put such minimal pairs into sentences and ask learners to practise them.

e.g. 1. The rope/ robe is too short

2. My brother hit/hid the ball

3. He has never made a bed/bet (O'Connor &Fletcher 1989:46)

In another exercise, the teacher articulates each of the following pairs of words containing the contrast / θ /- / t /, and asks the learners to imitate:

e.g. / θ /	/ t /	/ θ /	/ s /	/ θ /	/ f /
bath	bat	thick	sick	three	free
both	boat	think	sink	thirst	first
faith	fate	thing	sing	death	deaf
thought	taught	path	pass	Ruth	roof

/ ð /	/ z /	/ ð /	/ d /
breathe	breeze	there	dare
teething	teasing	lather	ladder
clothing	closing	breathe	breed

(O'Connor &Fletcher 1989:70-76)

Learners can now practise the above contrasts in sentences, such as:

1. The *theme/team* was very popular.
2. Which *path/ part* are you going to take? (ibid. 73)

Once the teacher is satisfied with the learners' practice, he can start involving learners in pair work practice. He can for example ask student (A) to ask a question to student (B), and vice versa.

e.g. A	B
1. What is a bath for?	to get clean
What is a bat for?	to play ball
2. What does "faith" mean?	believe
What does "fate" mean?	destiny

The practice becomes more meaningful in simulated interactions. A constructed conversation may be used to reinforce the practice of / θ - t /. In the following exchange, we replaced the name *Theo* with *Matthew* that is more familiar to the learners.

A. You forgot Matthew's birthday on Tuesday!

B. Oh no! I knew his birthday was this month, but I thought it was the tenth.

A. No, it's the fourth.

B. Did he have a birthday party?

A. Yes, he had thirteen friends to tea.

B. Goodness! I didn't think three-year-olds had as many as thirteen friends.

(O'Connor & Fletcher 1989:73)

Similar practice at the word, sentence and dialogue levels can be done for the remaining pairs / θ-s /; / θ- f /; / ð - z /; / ð - d /.

For the practice of contrast between / dʒ / - / ʒ / and / tʃ /, the teacher can ask the learners to think of words containing each of these, such as *January*, *manage*, *Jane*, *measure*, *leisure*, *March*, *church*, *cheap*, etc...After that, learners can make sentences with the words they found. A dialogue to reinforce this practice can be constructed and practised by the learners.

The contrast between / ŋ /, / n / and / ŋk / should be practised in making the learners aware of the distinction between *sing- sin*; *bang –ban*; *singer –sinner*, *stop singing* and *stop sinning* (O'Connor &Fletcher 1989:67). A dialogue-conversation to reinforce such practice can be constructed to that effect as well.

The practice of the discrimination between / l / and / r / before front closed vowels is the main problem. During the practice of / l /-/ r /, the learners listen to a cassette or the teacher's reading of words containing pairs of words such as *lead / read*, *limb / rim*, *clean / cream*, *click / crick*, *leer / rear*, *splint / sprint*, and then repeat them. The teacher can ask them to listen and tick one different word in a set of three, as in *lead-read-read*; *cream-cream-clean*. Learners can now move to sentence practice.

e.g. 1. The examiner is *collecting/correcting* the exam papers.

2. He dialled the *long/wrong* number.

3. She weighed the packet, and found the weight was *light/right*.

(O'Connor &Fletcher 1989:55)

The teacher can do group work with this practice by asking student (A) to say the sentence with one contrastive word, and student (B) the other one, and ask student (C) to repeat what A or B said.

After the repetition of sentences, a constructed dialogue can be used to make the practice more meaningful. For example, the teacher invites the students in pairs to listen, and practise the following conversation at a hotel reception desk. (Names that are not relevant to the learners'context can be replaced by the learners' own names during this practice).

A. Good evening. My name is Bridget Rees. I've got a room reserved.
B. Oh Ms Rees. We thought you were coming tomorrow. We have reserved a room for you tomorrow night.
A. Tomorrow night? But I wrote to you. I made the arrangements by phone. Then I wrote and confirmed the reservation.
B. Don't worry. I'm sure there is a room free tonight...Yes, Room 3 is free. Would you sign the register, and I'll ring for the porter. He'll carry your cases cases to your room.

(O'Connor &Fletcher 1989:59)

After the practice of such a controlled exercise, learners need to be encouraged and to be given opportunities to practise the targeted items through more communicative tasks as we showed in the two previous exercises (see p. 477 & 479).

Teaching and testing should go hand in hand, to ensure that learners are learning and using the language appropriately and communicatively. A communicative test therefore represents evidence to the teacher and the learners themselves of whether or not the teaching and practice have been effecient.

7.3.7 Testing

Teaching and testing English in foreign language contexts have often focused on grammar, vocabulary and writing skills at the expense of phonological and

communicative competence. Learners should not be tested only in grammar, vocabulary and writing skills, but also and importantly in oral skills competence, in particular, pronunciation competence.

My own experience with Rwandan learners of English is that they were able to score highly in written exams because they had memorized grammar rules, vocabulary, and were able to write about a given topic successfully, but they consistently failed in spoken English.

On the basis of the definition we used in Chapter 3.1 of communication as a two-way process involving listening and speaking, the design of features to test pronunciation must mainly focus on intelligibility and comprehension. The findings from our data have given us sufficient subject matter to suggest what should be taught and tested in English.

Tench (1997:42) suggests that "a test must be designed to evaluate whether a learner's pronunciation is accurate enough to be intelligible to an 'ordinary listener'(i.e. the vast majority of native English speakers) in a (simulated) communicative event where the focus is exclusively on phonological skills at either word, phrase, or discourse level, or combined".

In addition to that, the findings from the data in Chapter 6 have given us sufficient reason to require learners' pronunciation skills to be tested receptively too. We would assume that if they read words and sentences said by two native speakers, they would have had little difficulty in understanding. But, because of their weak competence in the perception of features of connected speech, they would have significant difficulty to understand targeted sentences.

Tench (1997) argues that "the ultimate test is convincing performance by learners outside the classroom and the examination setting in real life situations with interlocutors who are not testing them but interacting with them. For phonological performance to succeed they must be accurate enough to be intelligible" (p.35). In the light of the expected difficulties for

Rwandan learners in English, and what we said in the section of 'design of exercises', the teacher should test vowel discrimination, consonants in initial, medial, and final position, initial and final clusters; sentence intelligibility and comprehension.

At the word level, Tench (ibid:39) suggests first giving learners a written list of minimal pairs by selecting which items they have to produce. This is a way of judging accuracy of production of consonants, vowels and word stress. Secondly, to give learners a list of words that they read to somebody who does not know the list as a way of judging intelligibility. (The list contains cases of problematical consonants, vowels and word stress). Thirdly, to read a list of words to learners, who have to write them down, as a way of judging discrimination of problematical consonants, vowels and word stress.

At the phrase level, he suggests giving learners a written list of phrases containing weak forms, to read out. This is a way of judging accuracy of rhythm, and weak forms. Then, to read a list of phrases containing weak forms and contractions to the learners, who have to write them down, as a way of judging perception of rhythm.

At the discourse level, he suggests getting the learners to read a passage/ tell a story/ speak for a minute about something they know well (to avoid lexico-grammatical difficulties) to someone unacquainted with the person or the topic; that person judges the learners' intelligibility on a 5 point scale:

1. totally intelligible
2. pretty intelligible, i.e. apart from the odd word or two
3. intelligible enough to get the gist of the topic
4. barely intelligible, i.e. a few words understood here and there
5. not intelligible at all

It is relevant to test learners on their communicative skills through simulated contexts of real life in which they can find themselves involved outside the classroom, such as going to a shop, a restaurant, at the hospital, on the telephone. The teacher can use a strategy of role plays and oral presentation, either individually, in pairs or in groups.

One way of helping the learners is to give them a topic to prepare and talk on. The presentation of a topic, or a story to tell will require them to use the language skills including a reasonably good pronunciation, grammar rules of the language, and the right choice of words and expressions that are required in order to make themselves clearly understood.

Another useful strategy to help the learners increase their communicative skills is to make regular oral practice (short and long talks) and oral exams part of term and annual assessment at all levels, with particular focus on developing oral fluency and natural rhythm of English. The advantage of such exercises is that they teach learners to develop confidence in spontaneous speech instead of encouraging them to rely on memorized rules and practices.

7.3.8 English beyond the classroom

The idea behind English beyond the classroom is to make the free use of English more enjoyable, productive, entertaining and motivating to learners by engaging in activities that reflect the language of the real world. There are some activities that we would like to suggest, as in the writer's experience the practice of English in Rwanda is limited only to the classroom.

Teachers are encouraged to use 'English clubs' as an extra-curricular activity that gives the learners plenty of time to practise the language and interact more freely than they do in the classroom. They are divided in small groups and are given a topic to talk about or to discuss. Learners need to be encouraged to speak English only among themselves while performing these activities. The topics should be relevant to the learners' context as much as possible. The teacher moves around the groups as a facilitator to help out where difficulties in pronunciation arise. He can write down the pronunciation mistakes that he thinks are vital for communication, which can be explained towards the end of the practice session for the benefit of the whole class.

Learners can be individually encouraged to talk about the things they know of, their experience, their families, their favourite activities, and make a presentation before their mates. They can be asked questions that they are expected to be able to answer in real life. They can also be asked to prepare, practise and perform little sketches before their classmates. They can watch television, a film, and talk about what they saw or heard.

The teacher can occasionally invite guest speakers to come and entertain the learners. The purpose is not only to give learners the opportunity to listen comprehensibly, but also to learn to ask question and to discuss the topic that was covered. He can also use games that involve and stimulate language.

7.4 Limitations of the Study

This study has been an attempt to investigate the phonological interlanguage competence of a group of Rwandan subjects through the analysis of intelligibility and comprehension of word and sentence phonology. The results from this study remain valid despite a number of limitations that need to be conceded.

1. The data used in this study were controlled materials and not spontaneous speech as in face-to-face communication. The writer agrees with Voss's (1984:37) comments that "using taped material (unless it is video-taped) excludes the visual information which listeners in ordinary situations usually also have access to". Though they lack the spontaneity associated with free speech, recorded materials nonetheless have great value in providing uniformity, in the sense that all the learners listen to exactly the same thing even on different occasions. The concentration on linguistic forms as in the present study provides essential information on the phonological level for the analysis of errors in spontaneous speech. The effect of phonological errors on communication is highlighted by Jenkins (2000) who found that a high proportion (70%) of instances of communication breakdown among non-native English speakers was the result of pronunciation errors. She found that such cases were caused by the transfer of L1 sound (p.87-88). Nevertheless,

the data of this study could be complemented with data from spontaneous speech.

2. The word list did not test all the phonemes in all word positions, particularly those consonant clusters which are expected to cause difficulty to the learners who do not have them in their L1. Nevertheless, the intention was that the data generated in the experiments would be readily generalisable to cover the whole of the phonological system.

3. The imbalance between the number of the subjects who participated in the intelligibility and comprehension tasks (50 living in exile in Kenya and 10 in Rwanda) was unavoidable, due to unfortunate circumstances beyond the writer's control while he gathered the data. The writer does not suspect that the results would have been different had the balance been maintained or indeed had the data been collected in Rwanda. However, it would have been interesting to have collected data solely from Rwanda in case the exposure to English in exile (Kenya) might have affected the learners' phonological competence.

4. The number of sentences testing productive competence (Chapter 5) was unduly long compared with sentences used to test comprehension, and fewer would have achieved the intended purpose. Furthermore, the distribution of sentences among the subjects was very uneven and should have been consistent. For example, each subject could have read one sentence only. There is no reason why sentence 1 was read by 7 subjects in comparison with sentence 4 which was read by 10, and sentence 15 by only 5. I concede that an uneven distribution of the sentences might possibly have yielded a small difference.

5. In hindsight, it would have been better if the writer had used a panel of other NS judges to help him rate the subjects' receptive competence of the target sentences, so as to keep the potential level of subjectivity at its lowest level.

6. No modern sophisticated acoustic devices were used to measure the subjects' productive competence, to determine for example the quality of vowels, length of syllables and consonants, since it is intelligibility and comprehension rather than accuracy that are at the heart of the present work. The NS judges relied solely on their natural listening to recordings and wrote down what they heard. Nevertheless, instrumental analysis could have supplied complementary information.

7. The potential effect of noise on the learners' performance (Chap. 3.4.2.6) was not explored by using a control group of other Rwandan learners in a quieter context. Similarly, the quiet native speakers' recordings could have been played to another control group of Rwandan learners in a quieter context. In case the results from the noisy and quiet contexts were different, the effect of noise would have been justified. The issue of noise and its potential effect came about only when the analysis of the recordings was underway, and when there was neither any further opportunity to involve a control group of Rwandan learners, nor to ask the native speaker judges the extent to which noise had affected their understanding.

8. Fatigue was explained (Chap. 3.4.2.5) as one of the factors that can affect the listener's comprehension. The writer recognizes that there was a possible risk of fatigue among the judges with the requirement of them to listen intensively to approximately 60 minutes of recordings. To the writer's recollection, none of the judges reported any trouble or discomfort in completing the task which took them between two and two and half hours to complete. Nevertheless, we concede that their degree of attention might have decreased towards the end of the task. The alternative might have been to employ twice as many judges to listen to half as much materials. That would have increased the risk of greater variability amongst the judges. In hindsight it would have been advantageous to have advised the judges to take regular breaks every, say, 15 minutes.

9. Just as fatigue reduces concentration, it might be argued that increasing familiarity with the experimental design could lead to undue anticipation which

itself could also lead to reduced concentration. In order to safeguard against such a possibility, it was decided to construct 10 different lists in which each subject would read only one list. By having 10 separate but parallel lists, it was expected that the potential for order effect would be considerably reduced. Furthermore, the judges were not told that there were 10 sets, so that by the time they listened to subject 11, they would not anticipate or even remember what subject 1 said.

7.5 Suggestions for further research

This study is the first and only work that has attempted to investigate the phonological productive and receptive interlanguage difficulties of Rwandan learners of English to the best of the writer's knowledge, so that he welcomes any further suggestions.

1. A more thorough analysis of the relationship between the intelligibility and comprehension of the interlanguage phonology in English is possible on the basis of the present data, but it is beyond the scope of this present research. It would be interesting to compare, for instance, the comprehension of individual segments like / ɪ /, / θ/, / l, r / before / iː / etc., with successful production (intelligibility) of them.

2. Non-segmental issues such as intonation features and their effect on intelligibility have not been explored in this study and should become a topic to be treated as another additional piece of research.

3. The use of live and authentic speech data that reflect more interpersonal communication in less controlled settings than the reading of unrelated words and sentences is highly desirable for comparative purposes. This research with its controlled settings on word phonology and sentences provides the basis for the phonological investigation of such a study.

4. This present study has concentrated on questions of intelligibility and comprehension. Reference is also made in 7.4.6 above to the possibility of acoustic analysis of the data to determine degrees of accuracy. The value of the use of acoustic would supply relevant linguistic data for this purpose.

5. Further research could investigate the Rwandan speakers' level of intelligibility to and comprehension of other African speakers of English.

6. Finally, the analysis of intelligibility could be revisited with reference to the period after English received official status in Rwanda in 1996. Such analysis would help to gauge whether or not that change has in any form affected the Rwandan speakers' phonological competence and thus improved their level of intelligibility and comprehension in English.

4. This present study has concentrated on questions of intelligibility and comprehension. Reference is also made in 7.4.6 above to the possibility of acoustic analysis of the data to determine degrees of accuracy. An acoustic analysis would be useful in supplying new insights for research of this kind.

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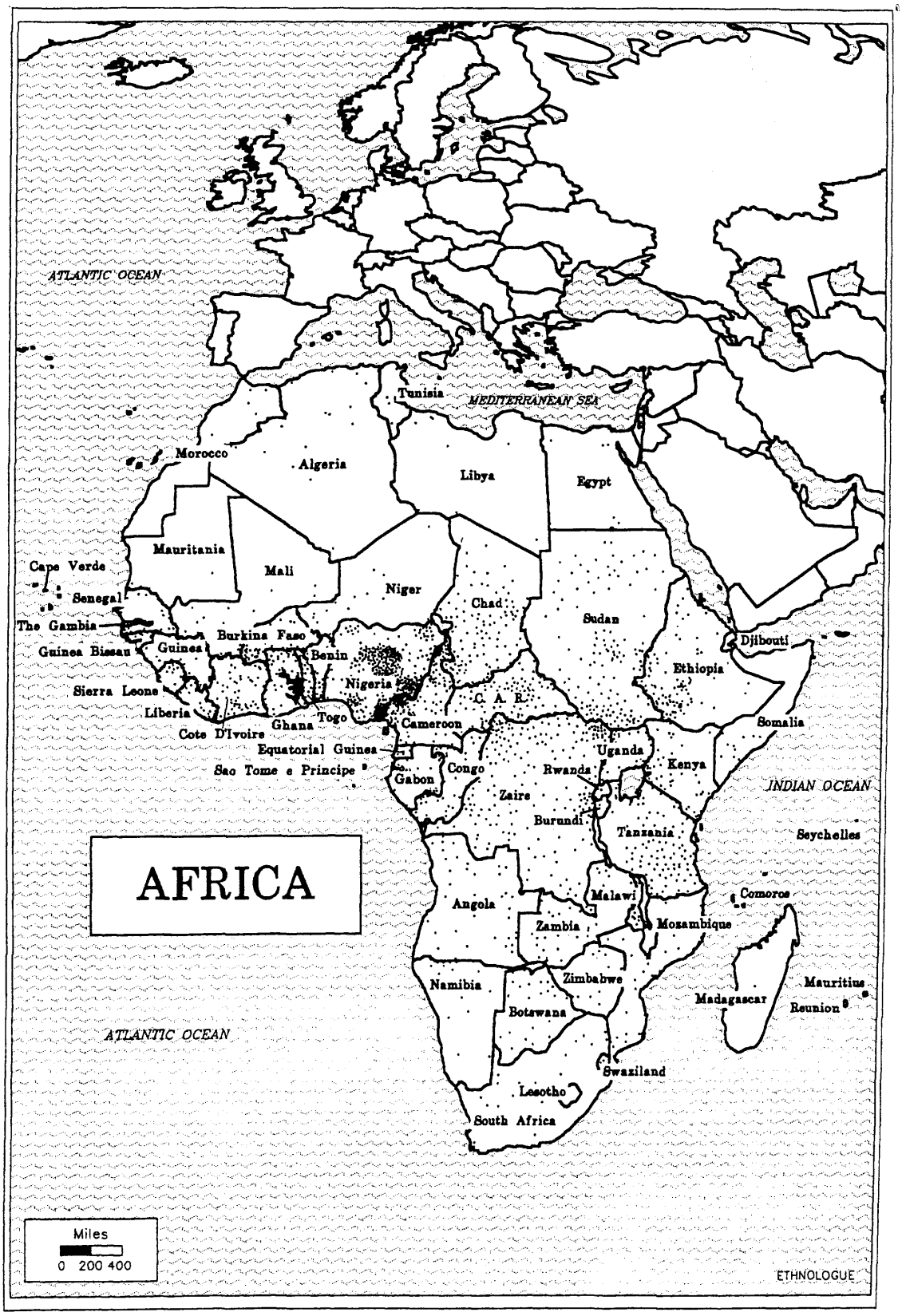
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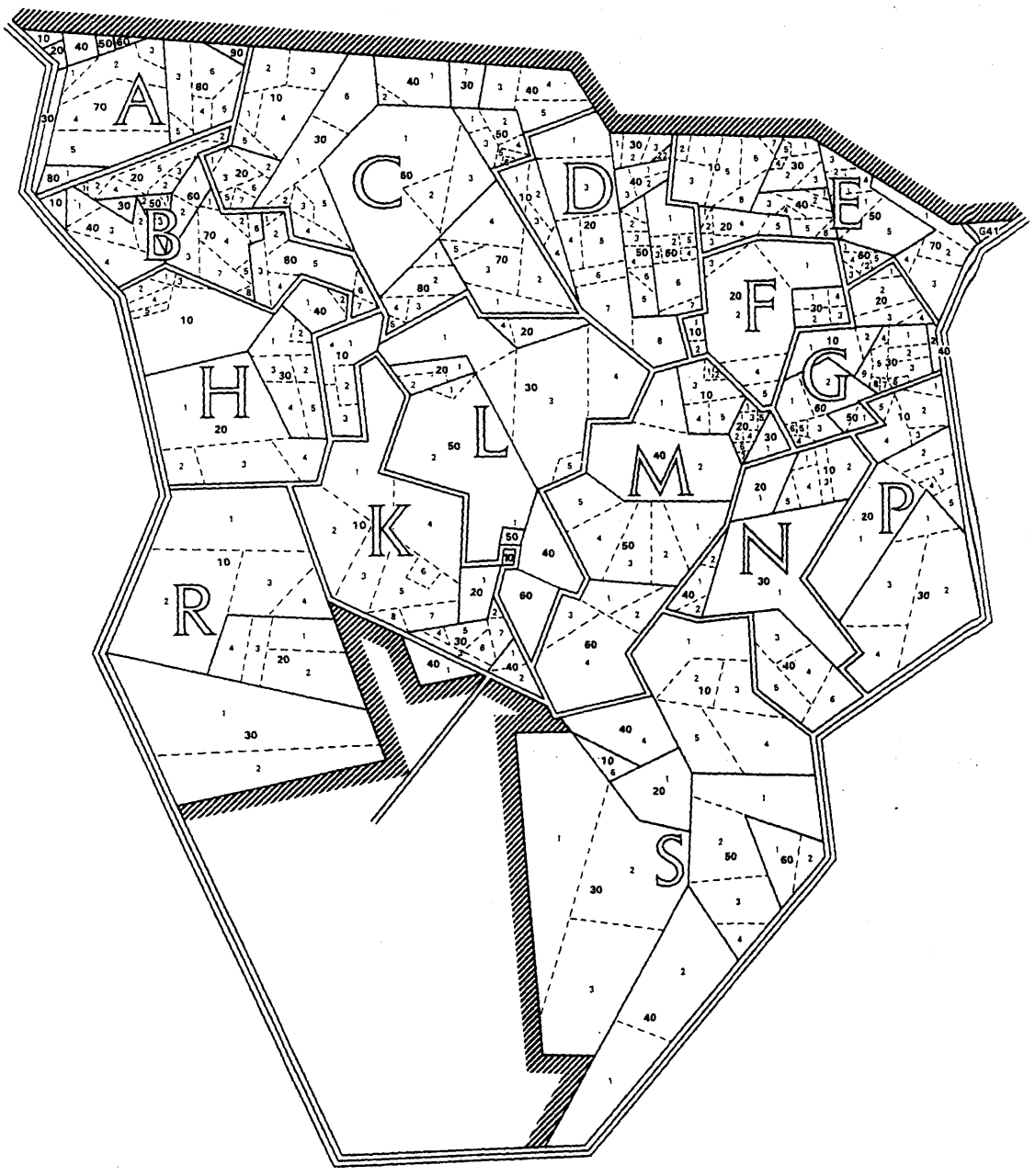
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Appendices

Appendix 1 Map of Africa and the position of Rwanda


AFRICA
ATLANTIC OCEAN
MEDITERRANEAN SEA
INDIAN OCEAN
ATLANTIC OCEAN
Tunisia
Morocco
Algeria
Libya
Egypt
Mauritania
Mali
Niger
Chad
Sudan
Djibouti
Cape Verde
Senegal
The Gambia
Guinea Bissau
Guinea
Burkina Faso
Benin
Nigeria
Ethiopia
Sierra Leone
Liberia
Cote D'Ivoire
Ghana
Togo
Cameroon
C A R
Somalia
Equatorial Guinea
Sao Tome e Principe
Gabon
Congo
Zaire
Uganda
Rwanda
Kenya
Burundi
Tanzania
Seychelles
Angola
Malawi
Comoros
Zambia
Mozambique
Namibia
Zimbabwe
Mauritius
Madagascar
Reunion
Botswana
Swaziland
Lesotho
South Africa
Miles
0 200 400
ETHNOLOGUE

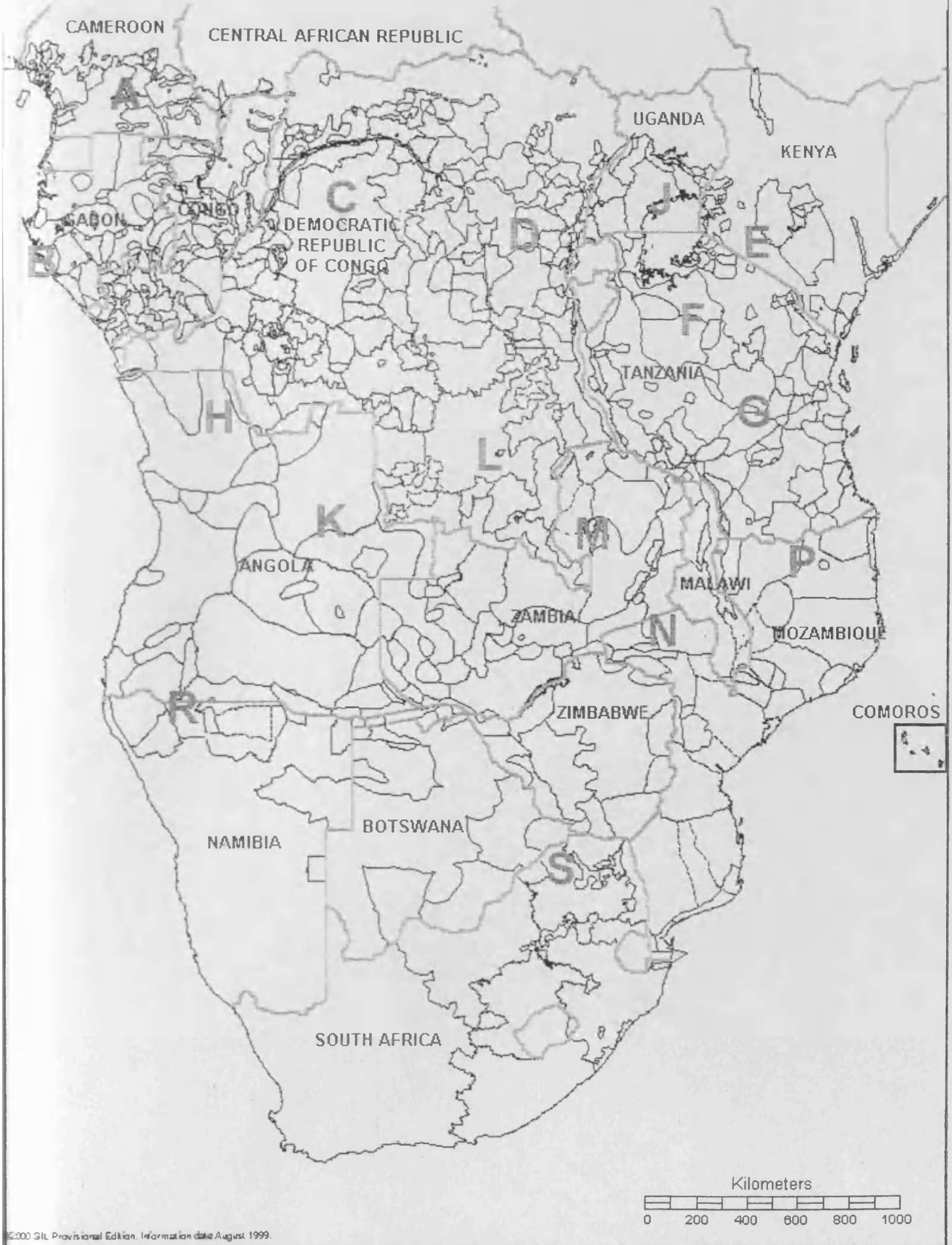
Appendix 2 Guthrie's classification of Bantu languages



Guthrie (1967)

The Bantu Languages of Africa

Groupings based on Guthrie, 1948



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Appendix 3 Kinyarwanda and Kiswahili : Bantu languages

Niger-Congo (1436)
- Atlantic-Congo (1347)
- - Volta-Congo (1272)
- - - Benue-Congo (895)
- - - - Bantoid (646)
- - - - - Southern (625)
- - - - - - Narrow Bantu (489)
- - - - - - - Central (319)
- - - - - - - - J (48)
- - - - - - - - - Nyoro-Ganda (J.10) (12): HEMA.NIX (Zaïre)
- - - - - - - - - - KENYI.LKE (Uganda)
- - - - - - - - - - NYANKORE.NYN (Uganda)
- - - - - - - - - - NYORO.NYR (Uganda)
- - - - - - - - - - RULI.RUC (Uganda)
- - - - - - - - - - SINGA.SGM (Uganda)
- - - - - - - - - - SOGA.SOG (Uganda)
- - - - - - - - - - TOORO.TTJ (Uganda)
- - - - - - - - - Rwanda-Rundi (J.60) (6): HA.HAQ (Tanzania)
- - - - - - - - - - HANGAZA.HAN (Tanzania)
- - - - - - - - - - RUNDI.RUD (Burundi)
- - - - - - - - - - RWANDA.RUA (Rwanda)
- - - - - - - - - - SHUBI.SUJ (Tanzania)
- - - - - - - - - - VINZA.VIN (Tanzania)
- - - - - - - - - Shi-Havu (J.50) (8): FULIIRU.FLR (Zaïre)
- - - - - - - - - - HAVU.HAV (Zaïre)
- - - - - - - - - - HUNDE.HKE (Zaïre)
- - - - - - - - - - JOBA.JOB (Zaïre)
- - - - - - - - - - KABWARI.KCW (Zaïre)
- - - - - - - - - - NYINDU.NYG (Zaïre)
- - - - - - - - - - SHI.SHR (Zaïre)
- - - - - - - - - - TEMBO.TBT (Zaïre)
- - - - - - - - K (27)
- - - - - - - - - Chokwe-Luchazi (K.20) (9): CHOKWE.CJK (Zaïre)
- - - - - - - - - - LUCHAZI.LCH (Angola)
- - - - - - - - - - LUIMBI.LUM (Angola)
- - - - - - - - - - LUVALE.LUE (Zambia)
- - - - - - - - - - MBUNDA.MCK (Zambia)
- - - - - - - - - - MBWELA.MFU (Angola)
- - - - - - - - - - NKANGALA.NKN (Angola)
- - - - - - - - - - NYEMBA.NBA (Angola)
- - - - - - - - - - NYENGO.NYE (Angola)
- - - - - - - - - Diriku (K.70) (1): DIRIKU.DIU (Namibia)
- - - - - - - - - Holu (K.10) (4): HOLU.HOL (Angola)
- - - - - - - - - - KWESE.KWS (Zaïre)
- - - - - - - - - - PHENDE.PEM (Zaïre)
- - - - - - - - - - SAMBA.SMX (Zaïre)
- - - - - - - - - Kwangwa (K.40) (6): KWANGALI.KWN (Namibia)
- - - - - - - - - - LUYANA.LAV (Zambia)
- - - - - - - - - - MASHI.MHO (Zambia)
- - - - - - - - - - MBOWE.MXO (Zambia)
- - - - - - - - - - MBUKUSHU.MHW (Botswana)
- - - - - - - - - - SIMAA.SIE (Zambia)
- - - - - - - - - Mbala (K.60) (1): MBALA.MDP (Zaïre)
- - - - - - - - - Salampasu-Ndembo (K.30) (3): LUNDA.LVN (Zambia)
- - - - - - - - - - RUUND.RND (Zaïre)
- - - - - - - - - - SALAMPASU.SLX (Zaïre)
- - - - - - - - - Subia (K.50) (1): TOTELA.TTL (Zambia)
- - - - - - - - - Subia (L.50) (2): FWE.FWE (Namibia)
- - - - - - - - - - SUBIA.SBS (Botswana)
- - - - - - - - L (14)
- - - - - - - - - Bwile (L.10) (1): BWILE.BWC (Zambia)
- - - - - - - - - Kaonde (L.40) (1): KAONDE.KQN (Zambia)
- - - - - - - - - Luba (L.30) (6): HEMBA.HEM (Zaïre)
- - - - - - - - - - KANYOK.KNY (Zaïre)
- - - - - - - - - - LUBA-KASAI.LUB (Zaïre)
- - - - - - - - - - LUBA-SHABA.LUH (Zaïre)
- - - - - - - - - - LWALU.LWA (Zaïre)
- - - - - - - - - - SANGA.SNG (Zaïre)
- - - - - - - - - Nkoya (L.50) (1): NKOYA.NKA (Zambia)

Niger-Congo (1436)
- Atlantic-Congo (1347)
- - Volta-Congo (1272)
- - - Benue-Congo (895)
- - - - Bantoid (646)
- - - - - Southern (625)
- - - - - - Narrow Bantu (489)
- - - - - - - Central (319)
- - - - - - - - E (34)
- - - - - - - - - Kuria (E.10) (11): GUSII.GUZ (Kenya)
- - - - - - - - - - IKIZU.IKZ (Tanzania)
- - - - - - - - - - IKOMA.NTK (Tanzania)
- - - - - - - - - - KABWA.CWA (Tanzania)
- - - - - - - - - - KURIA.KUJ (Tanzania)
- - - - - - - - - - NGURIMI.NGQ (Tanzania)
- - - - - - - - - - SIZAKI.SZK (Tanzania)
- - - - - - - - - - SUBA.SUH (Kenya)
- - - - - - - - - - TEMI.SOZ (Tanzania)
- - - - - - - - - - WARE.WRE (Tanzania)
- - - - - - - - - - ZANAKI.ZAK (Tanzania)
- - - - - - - - - Nyika (E.40) (9)
- - - - - - - - - - Mijikenda (4): CHONYI.COH (Kenya)
- - - - - - - - - - - DIGO.DIG (Kenya)
- - - - - - - - - - - DURUMA.DUG (Kenya)
- - - - - - - - - - - GIRYAMA.NYF (Kenya)
- - - - - - - - - - Pokomo (3): MALAKOTE.MLK (Kenya)
- - - - - - - - - - - POKOMO, LOWER.POJ (Kenya)
- - - - - - - - - - - POKOMO, UPPER.PKB (Kenya)
- - - - - - - - - - Taita (2): SAGALLA.TGA (Kenya)
- - - - - - - - - - - TAITA.DAV (Kenya)
- - - - - - - - F (16)
- - - - - - - - - Nyilamba-Langi (F.30) (4): LANGI.LAG (Tanzania)
- - - - - - - - - - MBUGWE.MGZ (Tanzania)
- - - - - - - - - - NILAMBA.NIM (Tanzania)
- - - - - - - - - - NYATURU.RIM (Tanzania)
- - - - - - - - - Sukuma-Nyamwezi (F.20) (6): BUNGU.WUN (Tanzania)
- - - - - - - - - - KIMBU.KIV (Tanzania)
- - - - - - - - - - KONONGO.KCZ (Tanzania)
- - - - - - - - - - NYAMWEZI.NYZ (Tanzania)
- - - - - - - - - - SUKUMA.SUA (Tanzania)
- - - - - - - - - - SUMBWA.SUW (Tanzania)
- - - - - - - - - Tongwe (F.10) (6): BENDE.BDP (Tanzania)
- - - - - - - - - - FIPA.FIP (Tanzania)
- - - - - - - - - - MAMBWE-LUNGU.MGR (Zambia)
- - - - - - - - - - PIMBWE.PIW (Tanzania)
- - - - - - - - - - RUNGWA.RNW (Tanzania)
- - - - - - - - - - TONGWE.TNY (Tanzania)
- - - - - - - - G (33)
- - - - - - - - - Bena-Kinga (G.60) (7): BENA.BEZ (Tanzania)
- - - - - - - - - - HEHE.HEH (Tanzania)
- - - - - - - - - - KINGA.KIX (Tanzania)
- - - - - - - - - - KISI.KIZ (Tanzania)
- - - - - - - - - - PANGWA.PBR (Tanzania)
- - - - - - - - - - SANGU.SBP (Tanzania)
- - - - - - - - - - WANJI.WBI (Tanzania)
- - - - - - - - - Gogo (G.10) (2): GOGO.GOG (Tanzania)
- - - - - - - - - - KAGULU.KKI (Tanzania)
- - - - - - - - - Pogoro (G.50) (2): NDAMBA.NDJ (Tanzania)
- - - - - - - - - - POGOLO.POY (Tanzania)
- - - - - - - - - Shambala (G.20) (4): ASU.ASA (Tanzania)
- - - - - - - - - - BONDEI.BOU (Tanzania)
- - - - - - - - - - SHAMBALA.KSB (Tanzania)
- - - - - - - - - - TAVETA.TVS (Kenya)
- - - - - - - - - Swahili (G.40) (6): COMORIAN, SHINGAZIDJA.SWS (Comoros Islands)
- - - - - - - - - - COMORIAN.SWB (Comoros Islands)
- - - - - - - - - - MAKWE.YMK (Mozambique)
- - - - - - - - - - MWANI.WMW (Mozambique)
- - - - - - - - - - SWAHILI, ZAÏRE.SWC (Zaïre)
- - - - - - - - - - SWAHILI.SWA (Tanzania)

Appendix 4 Students' Questionnaire

Students' Questionnaire

Name:.....

School:.....Year:.....

1. Should English course have more hours than French at school?
2. Should English course have more hours than Kinyarwanda at school?
3. Should English course have more hours than Kiswahili at school?
4. What accent of English do you prefer: British, American, African?
5. Who would you like your teacher of English to be: British, American, Rwandan, East African?
6. Teaching English in Primary school is: important, extremely important, not important (Choose one answer).
7. Give at least three reasons why you learn English.
8. Rank the four skills of English (listening, speaking, reading and writing) by order of their communicative importance to you. Use a scale of 1 to 4, where 1 represents the most important, and 4 the least important.
9. What is the most difficult thing for you when you learn English. Is it vocabulary, grammar, or pronunciation?
10. Which of these languages most affects the way in which you speak English: Kinyarwanda, French, or Kiswahili?

Thank you.

Appendix 5 Teachers' Questionnaire

Teachers' Questionnaire

Your qualification:.....

Years of teaching experience:....

Answer the following questions to your best knowledge and experience. Your contribution is greatly appreciated and your answers will be used for pedagogical purposes only.

1. Rank from 1 (as the most serious) to 5 (as the least) what you think the major problem for Rwandan learners of English is : pronunciation, listening, vocabulary, reading, writing?
2. How important do you think the teaching of pronunciation is for Rwandan learners of English?
3. The pronunciation of English by Rwandan learners is more affected by Kinyarwanda, French or both.
4. What are the major problems that you encounter in teaching English, and pronunciation in particular?
5. Evaluate (1 to 4) how the four languages are used in Rwandans' daily life, by using (1) as the most, to (4) as the least used.

Thank you.

Appendix 6 Judges' chart of answers: Words and Sentences

:	Sp 1	Sp 2	Sp 3	Sp 4	Sp 5
1	soup	beat	buns	sit	tins
2	cup	hat	match	stamp	butter
3	hat	match	stump	butter	bug
4	lost	cot	should	dog	stock
5	pull	full	suit	wood	should
6	pan	wack	word	set	girl
7	test	sell	wrist	late	pen
8	burn	pots	~~wot~~ walk	bowl	cost
9	thin	puff	three	punk	term?
10	breathe	then	bath	cloth	with
11	large	judge	religion	leads	major
12	rope	recap?	cab	tribe	hard
13	leave	save	dove	prove	prize
14	winter	hamper	blanket	book	wimper? wine bar?
15	prayed	blow	train	drive	grow
16	to criticise	to brutalise	to organise	to clarify?	to nurse
17	to associate	to negotiate	to complicate	to calculate	to communicate

	Sp 6	Sp 7	Sp 8	Sp 9	Sp 10
1	bitch? beach?	cheeks	live	least	we
2	burnt ? banned?	bag	ham	fun	unkle
3	ham	bad	fun	unkle	cup
4	lodger	gone	dock	pump	road
5	pool ?	could	full	put	good
6	search	still	Surgeon	bath	bad ? but?
7	rail	shed	pepper? paper?	sent	edge
8	load	Sour	road	Slope	call
9	puff	author	warth?	death	death
10	this	laugh	teas?	Sudden	lather?
11	pidgeon	agent	pledge	year?	gem
12	rod? road?	food	bike	bug	dog
13	booge	peace	cows	eyes	close
14	linker	enter	impotence	impact	content
15	sphere.	spot	brief	drive	blew
16	to disorganise	to demorratise	to summanise	to demoralise	to economise
17	interesting	a certificate.	to discriminate	to celebrate.	to cultivate?

	SENTENCES	IMPRESSIONISTIC RATE
Sp. 1	1. What do you want for your breakfast, bread or butter?	1 2 3 (4) 5
	2. They have been living there for the last 10 months.	
	3. I want you first to apologise before going to play.	
Sp. 2	1. They are always talking about good food.	1 2 (3) 4 5
	2. The girls were playing in the garden when we arrived.	
	3. I'll just drink a glass of water she said.	
Sp. 3	1. Look at it, and if you think you like it, take it with you.	1 2 (3) (4) 5
	2. They didn't move in, they didn't move in there until last September.	
	3. I saw him last month and we talked for about 1/2 an hour.	
Sp. 4	1. I was thirst, that is why I asked them for something to drink.	1 2 (3) 4 5
	2. They bought this new car for 10 thousand, but they don't like it.	
	3. The three men have been working at home for the whole day.	
Sp. 5	1. "Sit down here" they said, "come and sit down here" they said	1 2 (3) 4 5
	2. "What do you think you should do this evening?"	
	3. He thought about it for a long time - didn't he?"	
Sp. 6	1. The boy received his prize from the teacher.	1 (2) 3 4 5
	2. They asked him what he was thinking of.	
	3. He was running so fast that I couldn't catch him.	
Sp. 7	1. You should come and see us, the other day.	1 2 (3) 4 5
	2. The first train leaves at about 10, doesn't it?	
	3. Run away without eating anything.	
Sp. 8	1. He ran away without eating anything	1 (2) 3 4 5
	2. They must have taken the wrong road.	
	3. Nothing prevented them from going to demonstrate in the streets.	
Sp. 9	1. What do you want for your breakfast, bread or butter?	1 2 (3) 4 5
	2. They have been living there for the last 10 months.	
	3. I want you first to apologise before going to play.	
Sp. 10	1. They are always talking about good food.	1 (2) 3 4 5
	2. The girls were praying in the garden when we arrived.	
	3. "I will just drink a glass of water," he said	

Appendix 7 Phonetic Transcriptions- words

Transcription of words containing target vowels and one consonant read by subject 1 (Hope)

	Items	Target	Subject 1(Hope)
1	ship	ʃɪp	ʃip^{h}
2	cap	kæp	kap$^{\urcorner}$
3	hat	hæt	haʔt
4	lost	lɔst	lost^{h}
5	pull	pʊl	pul
6	turn	tɜːn	tan
7	test	test	test^{h}
8	bone	bəʊn	bɔn
9	thin	θɪn	fin
10	breathe	briːð	brif
11	large	lɑːdʒ	dlad̥ʃ
12	rope	rəʊp	rɔb$^{\urcorner}$
13	leave	liːv	dliːv
14	winter	wɪntə	wintɑ̥
15	prayed	preɪd	preːd̥
16	To criticize	tə ˈkrɪtɪsaɪz	tu kritiˈsaiz
17	To associate	tə əˈsəʊʃɪeɪt	tu asoʃiˈeːt

Realisation of one vowel / ɪ / in ten words by 10 subjects (Hope)

Ship Lid Bins Sit Hills Chicks Pitch Live List Will

ʃip^{h} piːk biːnz siːt biːnts fiːks piːtʃ laiv liːst wiː

Realisation of one consonant /dʒ / by 10 subjects (Hope)

Large Judge Ledger Ridge Major Agent Pigeon Pledge Jeer Jam

dlad̥ʃ dʒatʃ rəlidʒən liːtʃ meːdʒɔ lɑːʒ piːdʒɒn pletʃ dʒia dʒɛm

Appendix 8 Phonetic transcriptions- sentences

Phonetic transcription of 3 sentences read by subject 1(Hope)

1. What do you want for your breakfast, bread or butter
   ˈwɔt du ju wɔntʰ fɔ jɔ ˈbrekfastʰ ˈbred ɔ ˈbita

2. They have been living there for the last ten months
   dej av bin ˈleːʒiŋ ˈdeja fɔ də ˈlast ten ˈmʌnfs

3. I want you first to apologize before going to play
   ai ˈwɔnt ju ˈfɜs tu apɔləˈdʒaiz̩ befɔ gɔiŋ tu ˈpleː

A phonetic transcription of 10 sentences read by a native speaker of English

1. it's ˈchanged a ˈlot since ˈyou were here ˈhasn't it
   ɪts tʃeɪndʒ də ˈlɒʔ sɪns juː wər iə hæznʔ ɪʔ

2. ˈthat's the ˈfourth ˈbest ˈshirt my ˈboy's ˈburned
   ðæts ðə fɔːθ bɛʃ ʃɜːtʰ maɪ bɔɪz bɜːnd

3. ˈthis ˈshop's ˈlost ˈmany of its customers ˈover this ˈyear
   ðzʃ ʃɒps lɒs mɛni əv ɪts kʌstəməz əuvə ðzs jɪə

4. you ˈcan't go ˈinto the theatre the play's alˈready beˈgun
   ju ˈkɑnʔ gəʊ ˈɪnt(ə) ðə ˈθɪətə ðə ˈpleɪz ɔːlrɛdi bɪˈgʌn

5. he ˈsays it's not ˈhim but I ˈbet it ˈis
   i ˈsɛz ɪts nɒt ɪm bəd aɪ bɛt ɪt ɪz

6. she doesn't ˈlike ˈpie and ˈapples ˈgive her ˈsomething ˈelse
   ʃi dəznʔ ˈlaɪk ˈpaɪ ən ˈæpəls ˈgɪv ə ˈsʌmθɪŋ ˈɛls

7. it'd be ˈbetter to ˈknock at the ˈdoor before ˈcoming ˈin
   ɪt əb bi ˈbɛtə tə ˈnɒk ət ðə ˈdɔː bɪfɔː ˈkʌmɪŋ ˈɪn

8. they'd ˈbooked two ˈrooms
   ðeɪ b bʊk tuː ruːmz

9. she ˈcaught the ˈvase before it hit the ˈfloor
   ʃi ˈkɔːʔ ðə ˈvɑːz bɪfɔːr ɪʔ ˈhɪʔ ðə ˈflɔː

10. ˈwhat's he ˈon about
    ˈwɒts i ɒn əbaʊʔ

