

An acoustic phonetic study of six accents of Urdu in Pakistan

by

Mahwish Farooq

M. Phil in Applied Linguistics



Department of English Language and Literature

School of Social Sciences and Humanities

University of Management and Technology

2014

An acoustic phonetic study of six accents of Urdu in Pakistan

by

Mahwish Farooq

M. Phil in Applied Linguistics

This research was submitted to University of Management and Technology,

Johar Town, Lahore in the partial fulfillment for the requirements of the

Degree

of

M. Phil in Applied Linguistics

Department of English Language and Literature

School of Social Sciences and Humanities

University of Management and Technology

2014

ACKNOWLEDGEMENTS

Start with the name of Allah Almighty who holds and guides us in darkness. I owe to start with the praise of Allah Almighty as I know I am nothing without His help.

It is my pleasure to acknowledge different people who have been contributed a lot to my thesis. Firstly, I am incredibly thankful to my supervisor Prof. Dr. Sarmad Hussain for inspiring me with the idea for this project and of course for supervising me. I am very lucky to have a supervisor like him. I would like to express my gratitude for his patience, encouragement and guidance during my research. He is an inspiration for me to enter into the challenging field of research. I am very obliged and thankful to him for responding my queries each and every time during this work.

I am very grateful to the former chairperson Mr. Rao Jalil and the present chairperson Dr. Shaban of Department of English Language and Literature, for their co-operation and guidance. I am thankful to all my teachers who helped me in my queries. Specially, I would like to thank Prof. Dr. Abdul Hameed, dean of School of Social Sciences and Humanities who has guided me in analyzing the data statistically well. I am also grateful to Ms. Sana and Sr. Asad who always encouraged and motivated me. I would like to say special thanks to my friends Afsheen Razaqat Ali and Saba Noman for guiding me in the technical problems. I am grateful to all my friends and colleagues who helped me in my queries.

Finally, I am indebted to my beloved parents and my family from my core of the heart. Without their affectionate love, continuous encouragement and support, it would be very difficult for me to complete my degree and especially this research work.

ABSTRACT

Urdu is a lingua franca, an official language (Mahmood, 2004) and the mother tongue of only 7.5% population in Pakistan (Zia, 2011). The present study deals with an acoustic phonetic analysis which is conducted for finding out the accent variation in Pakistani Urdu. As, we know, Pakistan is a multilingual country therefore the purpose of the research is to analyze the influence of the other languages on Urdu. This research is based on quantitative methodology. The list of the 139 district names has been used as a corpus. The recording of the utterances by the speakers of Urdu, Punjabi, Sindhi, Balochi, Pashto and Saraiki languages have been collected by developing a system for online data collection. 30 Volunteers of each language have been enrolled to provide recordings for speech corpus. The corner vowels from the utterances have been evaluated by comparing them with the acoustic properties. Accent differences are acoustic manifestations of differences in duration, pitch, intonation pattern and of course the difference in phonetic transcription (Yan & Vaseghi, 2002). As this is the first step in the work of an acoustic phonetic study of Urdu accents therefore only variations of vowels have been identified by measuring the formant frequencies manually in PRAAT software. The preliminary analysis of first and second formant frequencies showed the differences in the characteristics of vowels. This research has verified that the formant frequencies of the vowels (uttered by the speakers of six major languages) show differences and variations across phonetic context. This is due to the fact that Urdu is the second or third language for Pakistani speakers (Rehman, 2002). It has also verified that some utterances are showing more similar values of formant frequencies (of the speakers' utterances) than the others e.g. the formant frequencies in the utterances of Urdu and Punjabi speakers while

the other showing more variant and dissimilar formant tendencies as in the case of Urdu, Punjabi and Sindhi language speakers'' utterances.

Table of Content

Contents

ACKNOWLEDGEMENTS	iii
ABSTRACT	v
Table of Content	vii
List of Tables	xi
List of Figures	xiii
CHAPTER 1	1
INTRODUCTION	1
Scope of the Study.....	2
Statement of the Problem	2
Motivation and Goal of the Study	3
Research Question.....	4
Delimitations	4
CHAPTER 2	5
LITERATURE REVIEW	5
Important Terms.....	6
Articulatory Phonetics.....	6
Auditory Phonetics.....	7
Acoustic Phonetics	8
PRAAT.....	8
Spectrogram	9
Formant Frequencies.....	10
Phonetic Inventory	10

	viii
Consonants	11
Vowels	12
Accent Variation	12
Multilingualism	14
Multilingualism in Pakistan	17
Multilingualism in Punjab	18
Multilingualism in Sindh.....	19
Multilingualism in Balochistan	20
Multilingualism in Khyber-Pakhtunkhwa.....	21
Multilingualism in FATA.....	22
Multilingualism in Azad Kashmir	22
Multilingualism in Gilgit-Baltistan	23
Six Majorly Spoken Languages in Pakistan.....	24
Urdu	24
Punjabi	32
Sindhi	38
Balochi	45
Pashto.....	49
Saraiki	55
Comparison of Consonantal Inventories by Using Literature Review	64
Step I: Analysis of Phonetic Inventories on the basis of Place of Articulation ...	64
2.10.1.	
Bilabials.....	65
Labiodentals	66
Dental/interdentals	67
Alveolar.....	68
Post-alveolar.....	69
Retroflex.....	70
Palatal	72
Velar	73
Uvular.....	74

Glottal.....	74
Step II: Analysis of Phonetic Inventories on the basis of Manner of Articulation	75
Stops/Plosives	75
Fricatives	77
Affricates.....	79
Nasals	80
Laterals	81
Post alveolar Approximants	82
Trills/Rolls.....	83
Tap/Flaps.....	83
CHAPTER 3	86
METHODOLOGY	86
Nature of the Study	86
Population	86
Sampling	86
Instrumentation	86
Instrument	86
Corpus	87
Data	87
Data Analysis	87
CHAPTER 4	96
DATA ANALYSIS & RESULTS	96
4. Acoustic Analysis of Vowels.....	96
Acoustic Analysis of I_I (i:) Vowels.....	99
Acoustic Analysis of A_E (æ:) Vowels.....	104
Acoustic Analysis of A_A (a:) Vowel.....	109
Acoustic Analysis of U_U (u:) Vowel.....	114
CHAPTER 5	126

CONCLUSION.....	x 126
5.1. Recommendations and Future Directions	125
Bibliography	i
APPENDIX A.....	x
APPENDIX B.....	xi
APPENDIX C.....	xii
APPENDIX D.....	xiv
APPENDIX E.....	xv

List of Tables

Table 1: <i>Urdu Consonantal Inventory</i>	26
Table 2: <i>Oral & Nasal Vowels in Urdu</i>	29
Table 3: <i>Urdu Syllable Templates</i>	30
Table 4: <i>Punjabi Consonantal Inventory by Lata, 2011</i>	34
Table 5: <i>Punjabi Oral Vowels</i>	35
Table 6: <i>Contrastive Nasal Vowels in Punjabi</i>	36
Table 7: <i>Punjabi Syllable Templates</i>	37
Table 8: <i>Sindhi Consonantal Inventory</i>	41
Table 10: <i>Sindhi Vowels</i>	43
Table 11: <i>Sindhi Syllable Templates</i>	44
Table 12: <i>Balochi Consonantal Inventory</i>	47
Table 13: <i>Balochi Vowels</i>	48
Table 14: <i>Balochi Syllable Templates</i>	48
Table 15: <i>Pashto Consonantal Inventory (Elfenbein, 1997)</i>	52
Table 16: <i>Pashto Vowels</i>	54
Table 17: <i>Saraiki Consonantal Inventory (Awan et al., 2011)</i>	59
Table 18: <i>Saraiki Vowels</i>	61
Table 19: <i>Saraiki Syllable Templates</i>	62
Table 20: <i>Comparison of Bilabial Stops among Six Languages</i>	65
Table 21: <i>Comparison of Labiodentals among Six Languages</i>	66
Table 22: <i>Comparison of Dentals among Six Languages</i>	67
Table 23: <i>Comparison of Alveolar Consonants among Six Languages</i>	68
Table 24: <i>Comparison of Post Alveolar Consonants among Six Languages</i>	69
Table 25: <i>Comparison of Retroflex among Six Languages</i>	71
Table 26: <i>Comparison of Palatals among Six Languages</i>	72
Table 27: <i>Comparison of Velars among Six Languages</i>	73
Table 28: <i>Comparison of Uvular Consonants among Six Languages</i>	74
Table 29: <i>Comparison of Glottal Consonants among Six Languages</i>	74
Table 30: <i>Comparison of Stops among Six Languages</i>	76
Table 31: <i>Comparison of Fricatives among Six Languages</i>	78
Table 32: <i>Comparison of Affricates among Six Languages</i>	79
Table 33: <i>Comparison of Nasals among Six Languages</i>	80
Table 34: <i>Comparison of Laterals among Six Languages</i>	81
Table 35: <i>Comparison of Approximants among Six Languages</i>	82
Table 36: <i>Comparison of Trills Consonants among Six Languages</i>	83
Table 37: <i>Comparison of Flap/Taps Consonants among Six Languages</i>	83
Table 38: <i>Speaker Distribution in each Accent</i>	97
Table 39: <i>Accent Variation among Six Languages</i>	97
Table 40: <i>Difference among /i:/ Vowels</i>	103

Table 41: <i>Difference among /æ:/ vowels</i>	108
Table 42: <i>Difference among /a:/ Vowels</i>	113
Table 43: <i>Difference among /u:/ Vowels</i>	119
Table 44: <i>Difference among the Vowels of all six Languages</i>	122

List of Figures

<i>Figure 1: Process of Articulation</i>	6
<i>Figure 2: Production and Perception of Speech</i>	7
<i>Figure 3: The Speech Chain, speaker's mind to listener's mind</i>	8
<i>Figure 4: Physical Properties of Sound Wave</i>	8
<i>Figure 5: Formants Analysis in PRAAT</i>	9
<i>Figure 6: Three Dimensional Spectrograms</i>	9
<i>Figure 7: Spectrogram showing Formants</i>	10
<i>Figure 8: Place & Manner of Articulation in Vowels</i>	12
<i>Figure 9: Geographical Division of Pakistan</i> <i>Figure 10: Language Division in Pakistan</i>	18
<i>Figure 11: Geographical Division of Punjab</i>	19
<i>Figure 12: Geographical Division of Sindh</i>	20
<i>Figure 13: Geographical Division of Balochistan</i>	21
<i>Figure 14: Geographical Division of Khyber-Pakhtunkhwa (NWFP)</i>	22
<i>Figure 15: Geographical Division of FATA</i>	22
<i>Figure 16: Geographical Division of Azad Kashmir</i>	23
<i>Figure 17: Geographical Division of Gilgit-Baltistan</i>	23
<i>Figure 18: Contrastive Urdu Vowels</i>	28
<i>Figure 19: Punjabi Vowels</i>	35
<i>Figure 20: Family Tree of Iranian Languages</i>	45
<i>Figure 21: Pashto Vowels (by Ijaz, 2002-2003)</i>	54
<i>Figure 22: Formation of Saraiki Language</i>	56
<i>Figure 23: Distribution of Saraiki Language in Pakistan</i>	57
<i>Figure 24: Saraiki Vowels</i>	60
<i>Figure 25: Mean & St. Deviation of /i:/ Vowel</i>	101
<i>Figure 26: Mean & St. Deviation of /æ:/ Vowels</i>	106
<i>Figure 27: Mean & St. Deviation of /a:/ Vowels</i>	111
<i>Figure 28: Mean & St. Deviation of /u:/ Vowels</i>	116
<i>Figure 29: Comparison of Urdu Corner Vowels</i>	122

CHAPTER 1

INTRODUCTION

Pakistan is a multilingual country as people could communicate and understand more than two languages but the majorly spoken languages are only six those are Urdu, Punjabi, Sindhi, Balochi, Pashto and Saraiki. Among the different linguists, there is a controversy in deciding the total number of languages in Pakistan. The difference in the number of spoken languages occurs because of the confusion of languages as dialects or independent languages as Rehman (2002) said that there are 59 spoken languages in Pakistan whereas according to Ethnologue, there are 72 spoken languages and most of these languages are belonging to Indo-Aryan, Indo-Iranian, Indo-European, and Turkic language families (Gordon, 2005).