

Acoustic Analysis of /F/ Sound on Final Position in Pashtun Speakers of English:

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Abstract:

Bilingualism is the need of the hour, for the world has shrunk a great deal. In the ongoing process of globalization, English language has emerged as one of its agent. People throughout the world desire to learn English in order to communicate other fellow beings beyond the boundaries. L2 learners often face troubles in its acquisition on different levels. Pashtun speakers of English are one such cultural group which receives negative interference from L1 while they produce labiodental fricative /f/ sound on final position of any word. This study is aimed at deviation from RP in articulation of /f/ sound especially when it is on final position. This study needed a qualitative data and ethnographic research design; for being related to a specific behavior of a cultural entity. In order to pursue the objectives of study, 10 participants from native Pashto-speaking community were selected. Half of them belong to Lower Middle Class (henceforth LMC) while the other half were from Higher Middle Class (HMC). This was to measure the difference of acquisition based on higher degree of exposure. Long interactive session with the target population and semi structured interview were carried out. Later on a list of (05) words with /f/ sound on final position were given to the participants to read it out and their pronunciations were recorded. Afterwards these sounds were analyzed through Praat. The findings revealed that deviation from RP does exist and also that the level of deviation differ to a greater extent between the two groups.

Keywords: acoustics, labiodental fricative /f/, bilabial plosive /p/, Received Pronunciation,

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Introduction:

Pashto language is something more than mere a means of communication among Pashtuns. It is the source of identity, pride and a complete code of conduct (henceforth Pashtunwali) entailing some positive tribal codes, the compliance of which are incumbent upon every Pashto speaking individual (Rehman, 1995). The negligence of Pashto and Pashtunwali is crime while living in a Pashtun society. It is owing to the fact that in successive generations have evolved it as an ideal behavior which can keep up integrity and harmony in collective life(Rzehak, 2012). Not only Pashtuns but also the whole Pashtun-land has been named after this language i.e. Pashtunkhwa. Based on the above-mentioned facts, one can safely infer that Pashto language is undoubtedly more efficacious in the overall social life of Pashtuns than any other language spoken by another cultural group.

Despite all these distinctive features Pashto language has been the victim of general apathy; neither government nor Pashtun themselves have done something concrete to uplift their language. One may size up the indifference towards Pashto by the fact that spellings in different dialects and sub-dialects are the source of controversy until now(Rzehak, 2012). Introducing it in educational institutions, imparting it the status of national language and its usage as an official language in Pashtun populated area, seem to a far-fetched dream which are yet to be realized. It is therefore the matter of immense pleasure for the researcher to plunge into the details of Pashto language.

Pashto language has a huge number of speakers; as many as 15.42 pc of the people in Pakistan speak this language and it the second largest lingual group in the said country (Nag, 2017). According to the census report Pashto has 32 million speakers in Pakistan only (PSD, 2017). It exceeds all the other lingual groups in Afghanistan as per as its number of speakers is concerned. It might have been the byproduct of invocations made by Baet Nikka, the ever-famous ancient literary figure of Pashto that he prayed humbly to God that the number of Afghans might be multiplied.

As the number of Pashtuns increased, the area populated by them also spread rapidly. As a result, the diversity in their tastes and tone was intensified. Because of different geographical, social and political circumstances, Pashto has developed two different versions or dialects i.e. Nanagarhari and Kandhari dialects but these dialects are not much different from each other. They could easily be understood by any Pashtun no matter what geography he or she belongs to. The main difference is the difference of phonology while the syntax, semantics and vocabulary are

almost the same. The difference of two sounds is quite comprehensible viz: /sh/ and /kh/ illustrated by following two words; Pashtun in Kandhari dialect while it is Pakhtun in Nangarhari dialect. There is yet another sound too which is a bit different in both the versions of Pashto that is to say /zh/ and /g/. This could be best exemplified by the following two words; Tizha means stone in Kandhari dialect it is pronounced as Tigga in Nangarhari dialect (Farooq, 2013). There are certain other versions of Pashto such Loa Nawa, Waziri and Ormari etc but they cannot be termed as independent dialects, they are in fact sub-branches of the main two dialects(Wazir, 2013).

As per as Pashto phonetic and textual development is concerned it is spanned upon a long period of time. This language has been adapted as per the physical and social needs demanded. It has a rich inventory of phonetic sounds which the native speakers employ in their daily lives. Pashto alphabet consists of 44 letters in all besides 4 diacritics and 1 digraph that is (ځ). Apart from this, there are 4 unique sounds in Pashto language which have no equivalent in English viz; ځ, څ, ږ, ښ. Linguists are almost on one page regarding the fact that Arabic influences on Pashto writing system more than any language spoken around. Pashtun speakers of other languages face some problems, which are quite common to everyone.

There are no two opinions about the fact that languages spoken around, have exerted a lot of influence on Pashto, especially Arabic and Persian languages. The globalization has enhanced the importance of English which seems to have influenced Pashto a great deal. Despite the aforementioned facts one cannot claim 100% perfection for its phonology; there are some limitations too which are quite natural for example it does not have labiodental fricative /f/ sound which is always substituted by its nearer sounds bilabial plosive /p/. Even then the deviation from /f/ phoneme is not 100%; there are some pockets of Pashtun populace where the said phoneme could be articulated with higher degree of accuracy (Ali, 2013). This study deals the same issue; deviation from RP while producing labiodental fricative /f/ on final position and the reasons responsible for it. This study also aims at getting primary data about the said issue that what is the difference between the pronunciation of LMC and HMC.

The significance of the study could be easily sized up from the fact that mispronunciation can mar the process of effective communication and

create confusion between the listener and speaker. First of all, this study will sensitize the Pashtun community as a whole to adopt a particular sound in order to suit the communication needs. This is the sign of living languages that they acquire different sounds when and wherever they need. An additional phoneme will enrich the language. It will create awareness among the teachers of English language who will chalk out their teaching strategies as per the needs of learners suggest.

Literature Review:

Language and its different aspects have been discussed at length by several linguists but as per as the phonological aspects in comparison to English language is concerned, it has been seldom taken in account. Researchers have attempted to explore some relevant areas; (Ijaz, 2003-04) attempted to highlight the phonemic traits of Pashto language. The study is of great value as the sounds produced by Pashtuns are least paid heed to. The researcher opines that Pashto, as an important lingua franca of the region, has a very important role to play in getting the people closer to each other. As the Pashto language has two distinct dialects i.e. Yousafzai dialect and Kandaharai dialect, the researcher has focused upon the former one only. Hence, the study has narrowed down its canvas to only five categories of different sounds viz; retroflex nasal, retroflex oral stops, retroflex palatal, fricatives, dental affricates. The researcher has benefitted the available documented inventory of Pashto phonemes and has found that Pashto scripts and spoken are quite different. The sounds were recorded from the participants and were processed duly by getting help from software like Praat and Winsnoori in order to get the spectrograms of the aforesaid sounds. Later on it was confirmed that some of the sound categories were absent in selected dialect of spoken Pashto.

Another study (Rohit Prasad, Stavros Tsakalidis, Ivan Bulyko, Chia-lin Kao, Prem Natarajan, 2010) has come up with interesting findings that Pashto has 44 letters in all; due to the non-phonetic nature of the language; the native speakers cannot produce some sounds included in their alphabets. According to their joint research it has been maintained that Pashto has only 37 phonemes. They drew the result through Automatic Speech Recognition (ASR); it is a machine which receives auditory signals and converts it into words. Similarly another research study (Ghani Rehman & Riazudding , 2011) revealed some findings about the deviation of Pashtuns from RP with special reference to vowel sounds. They maintained that the number of vowels in two different dialects is

different i.e. Nangarhari has 09 vowels while Kandhari dialect has 7 vowels. Pashto lacks vowel sounds too, as compared to that of English vowel sounds.

The same issue was explored by another group of researchers (Ghani Rehman, Abdul Qadir, Ghulam Haider Bukhari, 2012) in 05 colleges of Pashtunkhwa, the students were undergone test and the results revealed that not only labiodental fricative but certain other phonetic categories are also mispronounced. Though the said sounds are not totally absent but they exist in Pashto with comparatively different form. The subject has been accessed through another angle by (Catherine Doughty & Micheal Long, 2003) who had associated it with the negative interference of L1 in which the target sound may not exist at all or with some nearer equivalent. They have opted for the contrastive analysis of two languages in order to explore the contrast between both the languages. The non-availability in different sounds in Pashto language which causes mispronunciation further begets other problems too such as anxiety among the learners. This has been maintained by (Irfanullah, 2011) and has conducted research in London where the native Pashto speakers were taken as samples. The researcher has come up with a view that expertise in syntax, semantics and other aspects of a language is futile if the learner does not possess phonological awareness. It is believed that exposure to the native speakers can overcome the issue (M. Nanci Kayaoglu & Nuray Çaylak, 2013). These researchers have revealed that those who are exposed to native-like speaking can cultivate the same competence level of pronunciation because it belongs to auditory input rather than reading and speaking practice. The same stance has been taken by (Megan Keilty, Gina L. Harrison, 2015) as well.

This type of difficult situation most often occurs for L2 learner and a study by (Sipra, 2013) has maintained that it happens due to the fact that English is not learner-friendly. The orthography of English is much complex and relations between the letters and context can change the pronunciation of several phonemes. There is yet another study (Thomson, 1970) has approached the issue with another angle. He is of the view that apart from other factors age, gender, community and academic grade matter a lot as they justify the level of exposure to native speakers and his or her own phonological awareness about the target language. Language is all about the development of a common sense; acquisition does not need conscious efforts but it is developed in a favorable environment pretty unnoticeably. He says that children from the countryside are found to be more deviant from RP as compared to those who have lived in urban areas.

Methodology:

The very nature of the study necessitated Ethnographic Research Methodology which deals cultural patterns, the function of culture, similarities and dissimilarities of any cultural setting and also the generalization of human perspective towards it (L R Gay, Geoffrey E. Mills, Peter W. Airasian, 2012). The ethnographer studies a cultural entity in a pure natural setting and become part of the same setting. The researcher experience different techniques and instruments to get relevant information.

This method studies culture through observation, interactive sessions with participants, literature review, interviews and field notes about the target cultural group. (Whitehead, 2005). In this study was conducted by the researcher who himself was from the same community, he therefore did not need longer period of time to observe the participants, as he had already observed the cultural patterns in required natural settings. Same is the case with interactive sessions while the literature review needed a lot of time to resort libraries and go through the concerned literature available at reference section and different websites. Meanwhile taking field notes was in progress. Apart from it the researcher got interviews from the samples in order to get deeper know-how about bio-data so that data collection may not be detracted from the set line of action.

Data Collection:

As the study was about the cultural features of a particular community i.e. the acoustic analysis of /f/ on final position in Pashtun speakers of English, the researcher needed to take some calculated steps. He first of all selected ethnographic research design to collect the concerned data. As he was from the same cultural group he had already been equipped with basic Know-how regarding the issue. The researcher therefore, had a genuine question about the mispronunciation of specific consonant sound. Later on objectives and research questions were set to precede the research work in a systematic way. The researcher therefore needed samples from the said lingual group which may represent the whole group i.e. which may be equipped with distinguishing features thereof. Two secondary schools (01 private and 01 public) were selected and after due permission of the principals, 05 students from each school were selected after semi-structured interview. This was conducted to select them as per the set criterion in order to sort them out in a purposive manner. (Creswell, 2013). All the opted participants were male and native

Pashto speakers but each group was from different social and economic class, this bifurcation was aimed at getting the exact level of deviation between the two different classes. Actually they both were groomed in different settings. The former group was from Higher Middle Class while the second group was from Lower Middle Class. Their overall living style differed from each other.

Afterwards the selected participants of the study were given a list of 05 words which had /f/ sound on final position of the word. They were asked to read it out loudly and their pronunciations were recorded. Later on they were compared to RP of English with the help of Praat software which provided the spectrogram and certain other details. This revealed the real difference which determined the deviation level between both the two groups.

Sampling:

The researcher selected the desired population through Purposive Sampling, which solely depends on researcher's personal experience and keen observations. It is the researcher himself is satisfied that the samples he or she has selected for study, are not atypical, they are utilized to proceed research work. Purposive or judgment sampling is based on researcher's experience and observation of the researcher (Ilker Etikan, Kabiru Bala, 2017). In this kind of sampling process, the selection depends upon the satisfaction of researcher himself; in fact it is based on deliberated choice in order to get the desired group of participants which may possess typical qualities (Crossman, 2017). It is quite logical to avoid atypical data by a selective manner. The set criterion for the selection of samples was applied so that any atypical sample may not mar the process of data collection. (Isabelle Buchstaller and Ghada Khattab, 2104)

Data Analysis:

This study is based on two main objectives; first to determine the deviation of Pashtun speaker from RP while they pronounce /f/ sound on final position, the second objective was to find out the reasons responsible for it. This objective was obtained with the help of Praat which is a sophisticated software designed by Paul Boersma & David Weenink to analyze any sound in an accurate manner. It provides with all the required details of any sound such as intensity, the level of pitch by making a complete spectrogram of the uploaded sound (Lieshout, 2017). After getting the spectrograms, the sounds became relatively easier to be compared with RP of English so that the level of deviation and its substitution might be obtained with required clarity. Later on qualitative

data was duly transcribed which provided the researcher with themes and patterns. These themes are necessary for specification and identification which were obtained from the collected data. This has been discussed by Braun and Clark (2006) with reference to the usage of thematic analysis (Amin, 2016). Thematic analysis is used to quantify the qualitative data which is later on statistically analyzed. As mentioned earlier, the data which was obtained through semi-structured interview and recordings were quantified first then themes or patterns emerged within data; ready for analysis, termed as thematic analysis.

Findings:

After interactive sessions and close observation of the participants, a semi-structured interview was conducted from the participants; the interview revealed the following demographic information about them. This was aimed at bifurcating social classes they belong and also the overall living style and schooling system;

Table 1.0: Demographic information about the participants

Group	Social class	Number of Participants	Medium of instruction	English Language Center	TV channels mostly watched	Parents' Qualification	%
1	Lower Middle Class (LMC)	5	Urdu	No	Urdu and Pashto TV channels	illiterate	100%
2	Higher Middle Class (HMC)	5	English	Yes	English and Urdu TV channels	Literate/ highly educated	100%

The table 4.1 shows the demographic information about the participants i.e. the education qualification of their parents, medium of instruction, schooling system, TV channels which they mostly watch and their means of income which may determine their social and economic class. Sometimes the availability of these equipment does not play important role if the learner's mind is bereft of any interest. This study

focuses those learners who really want to learn English language. These are some the factors, if available can enhance the pronunciation in accordance with RP of English. Later on they were handed over the following list of following 05 words, having /f/ sound on final position and they were asked to read them out loudly:

Off, of, belief, self, stuff

Their pronunciations were recorded and evaluated by repeated listening and also with the help of Praat. Following results were obtained;

Table 1.1 shows the errors made by participants of first group from HMC

	W1	W2	W3	w4	W5	errors	%
P1					×	1	20
P2				×	×	2	40
P3					×	1	20
P4						0	0
P5						0	0

Table 1.1 shows the errors made by first group of 05 students from Higher Middle Class.

Table 1.1 show the errors made by the first group of the participants from HMC. P1 committed only 01 mistake which suggested 20% of deviation from RP while P2 made 02 mistakes and his deviation from RP constituted 40%. P3 made 01 mistake; it means that he deviated 20%. P4 and P5 made no mistake.

Table#1.2

Shows 4 words having /f/ sound on final position and first five participants from LMC with their recorded performance

	W1	W2	W3	W4	W5	Errors	%
P1	×	×	×	×	×	5	100
P2	×	×	×	×	×	5	100

P3	×	×	×	3	60
P4			×	1	20
P5	×	×	×	3	60

The table 1.2 shows the performance group from LMC. They deviated a great deal from the standard pronunciation of English language in producing /f/ sound. P1 and P2 came up with very poor performance, they made mistakes and none of the word was pronounced with accuracy. Therefore, their deviation was 100%. P3 was comparatively better as he made three mistakes in producing the target sound. His deviation from RP was 60%. P4 was better than all the other group of LMC members as he made only one error. His deviation level was only 20%. P5 made (03) mistakes and his deviation from RP was 60%. The average performance or accuracy level was poor which is calculated as 32%.

The following spectrogram in figure 1.0 shows the difference between RP and the pronunciation made by one of the participants.

Figure 1.0 shows the spectrogram of Stiff and Stip

One can easily feel the difference; labiodental fricative /f/ sound which has been shown in the spectrogram has taken more time as compared to bilabial plosive /p/ sound. The time taken by the articulation is shown by the horizontal line visible in the figure 1.0. The word “stiff” is marked by a dragging line in spectrogram which denotes the gradual release of air from a smaller opening between upper teeth and lower lip while /p/ phoneme is marked by the release of energy at once. One can easily observe the white strip in spectrogram. Apart from the above-mentioned facts the following measurement of pitch and intensity also provided distinguishing details of stiff and stip:

75.74455784493641 dB (mean-energy intensity of stiff)

70.64872517708622 dB (mean-energy intensity of stip)

435.7999276186183 Hz (mean pitch of stiff)

205.1725794196811 Hz (mean pitch stip)

The difference between intensity is almost 05 decibels while the margin between pitch of RP and mispronunciation is almost 365 hertz. This is a very huge margin. This study proves that the deviation level between HMC and LMC is different by 20:84. Besides the glaring difference between their deviation levels it has been observed that Pashtun speakers of English substitute /f/ phoneme with /p/ which is nearer possible equivalent. It means that the target sound is not absent at all but it is

somehow different in Pashto language. It was found that excessive exposure to the native-like pronunciation does matter and that auditory input can enhance the articulatory output.

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