Monophthongization of English diphthongs in loanwords by Saraiki Speakers

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Abstract

The current study explains the phonological adaptation of diphthongs in English loanwords adopted in Saraiki language. This process is described through acoustic analysis of four diphthongs. The data from 30 illiterate participants are analyzed through SPSS and PRAAT software. In order to collect data, pictures downloaded from internet and used as stimuli. The results of the study explain how in all target English loanwords, Saraiki speakers change native English pronunciation. The target loanwords containing diphthongs change into monophthongs, /ei/ is substituted by /e:/ and /əu/ with /o:/ vowel by Saraiki speakers. Similarly, /au/ changes into /əo/ and /ai/ is pronounced as /æ/ or /əi/ by the respondents. The study also explains different factors, which cause to change the pronunciation of Saraiki speakers. Some of these factors are influence of L1, markedness and orthography.

Keywords: Loanwords, substitution, misperception, pronunciation, Saraiki

1. Introduction

The worldwide use of English language is an evidence of its superiority over other languages of the world. Therefore, the marks of English are noticed in almost all languages of the world. Pakistan is a part of the sub-continent and history shows that the British remained the rulers of the sub- continent for a long period and they left their footprints in the form of their language. In the multilingual environment of Pakistan, the authority of English can be widely observed. To some extent, it can be said that English has swapped Urdu in Pakistan and is used in all official matters.

It is also a fact that languages borrow words from each other in contact situation (Weinreich, 1963). The process of borrowing or adaptation of loanwords may be bidirectional or unidirectional but mostly dominant languages have their influence on other languages. For example, English words are frequently used in Hindi (Singh, 1985), Persian (Shademan, 2003), Fijian (Kenstowicz, 2007), Korean (Kim, 2009), Mandarian (Miao, 2006), Samoan and Sranan (Uffmann, 2006) and many other languages. Similarly, Pakistani languages have English loanwords, which are commonly used by Pakistanis. Some of these words are adopted as fashion but mostly those loanwords are used which do not have their alternative in local languages. As mostly, loanwords are need based, so people are bound to use English loanwords in their daily life. These loanwords are not pronounced accurately but go through different changes.

Saraiki is one of those Pakistani languages, which have English loanwords. There are six varieties of Saraiki language in Pakistan (Shackle, 1976) but the current research only focuses on the central variety of Saraiki. This study only focuses on change of English diphthongs used by Saraiki native speakers. The standard of English loanword transcription for the current research is "Oxford English Dictionary" because it is a standard and reliable source of English pronunciation.

1.1.Comparison of English and Saraiki vocalic inventories

Vowels are the sounds produced when the air passes from the larynx to lips without any obstruction (Roach, 2009). Three paradigms explain the nature of vowels. These paradigms are, part of tongue involved in production of a vowel (front-back), tongue-height (high-low) and lip rounding (rounded/unrounded). The first two paradigms of vowels, determine the position and height of the tongue. The lip-rounding paradigm explains involvement of lips in the production of vowels. English and Saraiki vocalic inventories have some similarities and differences. In English, there are 12 monophthongs, eight diphthongs (ei, ai, iə, əu, eə, uə, ɔi, au) while Saraiki

monophthongs are 17 (9 oral and 8 nasal), Shackle (1976, p.13). However for Saraiki phonology Atta, (2019) mentioned 10 oral and 7 nasal vowels with 15 possible sequence of diphthongs. The vocalic and diphthong of Saraiki chart is represented below.

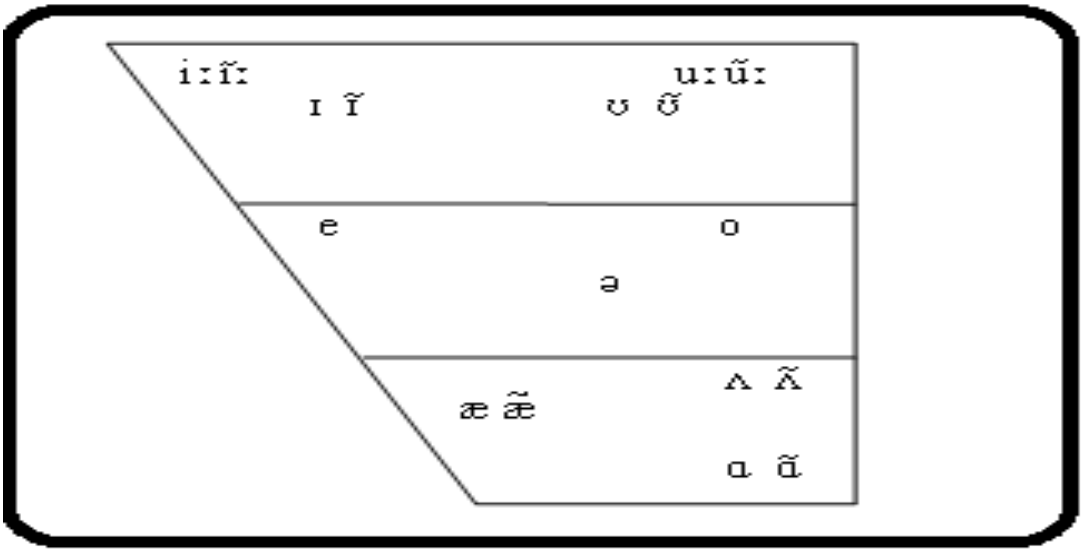
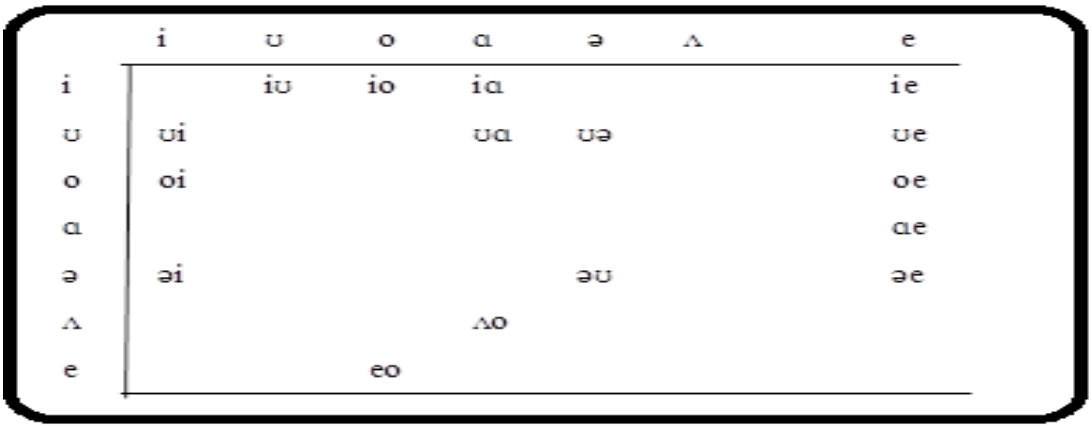


Figure 1: Saraiki vowels

The main difference between the diphthongs of these two languages is that no Saraiki diphthong ends at short vowel. The comparative study of English and Saraiki languages shows that apart from some similarities, there is a huge phonemic difference between these languages. The current research explains only four diphthongs of English (ei, ai, uə, au) as produced by Saraiki speakers in loanwords.



	i	ʊ	o	ɑ	ə	ʌ	e
i		iʊ	io	iɑ			ie
ʊ	ʊi			ʊɑ	ʊə		ʊe
o	oi						oe
ɑ							ɑe
ə	əi				əʊ		əe
ʌ				ʌo			
e			eo				

Figure 2: Saraiki Diphthongs

1.2.Research questions

The aim of this study is to know:

1) How Saraiki speakers modify the English diphthongs while using in English loanwords?
2) What kinds of errors usually occur in adaptation of English diphthongs?
3) What are the triggers of these errors?

1.3.Objectives of the study

The objectives of the study are to find out different structural and phonological changes, which take place during adaptation of English loanwords. The main objective is to determine the reasons, which cause English loanwords to go through some phonological changes in the process

of adaptation. One of the main objectives is to find the differences in pronunciation of English diphthongs when produced by Saraiki speakers.

2. Literature Review

The literature on loanword adaptation shows that different researchers regarding loanword phonology have presented many theories about loanword adaptations. These theories explain the role of perception as well as production in loanword adaptation. Although some scholars believe that perception has a very important role in loan adaptation, but there are some other scholars (Paradise, 1996; Paradise & LaCharite, 1997; Ito & Mester, 1995; Davidson & Noyer 1997; Jacobs & Guessenhoven, 2000), who believe in production based approach to loanword adaptation. They propose that loanword adaptation is a phonological process and speakers of the recipient languages use words of donor languages, which slowly and gradually become a part of their native language. Some other studies (Ito & Mester, 1995; Davidson & Noyer, 1997; Jacobs & Gussenhoven, 2000) assume that phonological constraints could be better explained by the production grammar of loanword adaptation. In this regard, a Theory of Constraints and Repair Strategies (TCRS) was also proposed by Paradise and LaCharite (1997), which is based on production phonology. In this theory, they explain that deletion and substitution of a consonant occur in order to satisfy the native language phonology. For example, if a segment is absent in native inventory, deletion may occur, but sometimes preservation involves the substitution of sounds. Brasington (1997) observes that the theory of constraint ranking and strategies easily explains the steps of vowel insertion and consonant deletion, but fails to explain all repair strategies in various contexts. Similarly, Ulrich (1997) also points out that TCRS also fail to explain, loan phonology process in different languages. It is clear from the above discussion that in loaning situation production approach cannot clarify all the perspective involved in loan adaptation. Production approach can better explain the L1 phonology rather than loan phonology. According to Dupoux and Paperkamp (2002) and Paperkamp (2002, 2003), loanwords are adapted on the basis of perception or misperception by the speakers of the recipient language. For example, if the Japanese listen to an English word of CVC structure, they will pronounce it as CVCV. Another study of vowel epenthesis in Japanese loanwords (Kenstowicz, 2003) indicates that at a perceptual level, they realize the presence of vowel and perception can play a better role in the adjustment of loanwords, according to the native grammar. Some other studies (Takagi & Mann, 1994; Smith, 2004, etc.), propose that although perception is an important factor, but there are some other factors such as orthography and grammar of the native language, which also play a crucial role in loan phonology.

In another approach of loanword adaptation, equal importance is given to both perception and production but they are treated as separate. Many studies (Silverman, 1992; Yip, 1993; Kenstowicz, 2003; Broselow, 2005) explain the importance of both perception and production but treat them individually. It is because perception needs the same phonemic structure and production needs native pronunciation of words in the language of recipient speakers.

Silverman (1992) investigates, English loanwords in Cantonese. He presented two levels or Scansions model. With the help of these two levels, he explains the loan adaptation phonology. In the first level, according to him, the listener is not able to detect the contrast between two languages (receiver and donor languages) and scans all input on Perceptual level. While at the second scansion, output shows the difference between the donor and the native language, as the output operate and adjusted, according to the native language phonology. This level, is also called Operative level. At the Operative level, the scanned input operates and adjusts; it is because the donor word structure is considered as ill formed in the native language phonology. In

1993, Yip proposed her conception of perception and adaptation, similar to Silverman's (1992) concept of perception and adaptation. She agrees to Silverman's idea that recipient speakers filter loanwords through their native phonology, but she also suggests that mostly those consonants which are less prominent in Cantonese are deleted while vowels never delete. In contrast, Kenstowicz (2003b) suggests that there is a difference between perception and production constraint hierarchies. In perception grammar, the constraint DEP-V (no vowel insertion) is ranked higher than MAX-C (no consonant deletion). However, in production MAX-C dominates DEP-V, which prefers insertion rather than deletion.

Later studies (Fleischhacher, 2001, 2002; Steriade, 2002; Walker, 2003) explain the role of perceptual similarity in loanword adaptation. There are some other studies, which also support the position of perceptual similarity in loan adaptation (Kang, 2003; Adler, 2004). Kenstowicz (2003a) explains the importance of perceptual similarity in the Fijian adaptation of English words. In this study, Kenstowicz explains, the most salient feature 'stress' in loan adaptation. The study explains that stress is mostly imitative for Fijian learners of English by adopting different repairing strategies. The English stress system is adopted based on perceptual similarity by lengthening vowel or adjusting the rhyme of a word. Kang (2003) conducts a similar study on this approach. This study shows Korean adaptation of English post-vocalic final stops. She explains that perceptual similarity causes various repairing strategies, which may include insertion or deletion of sounds. She also suggests that insertion of vowel occurs both in phonetic and phonological contexts.

Adler (2004) suggests that loanword adaptation is based on both perceptual and articulatory similarity. He explains the process of English loanwords in Hawaiian. In order to explain the phenomenon, Adler used three approaches, (perceptual map) P-map, (Steriade, 2001), PAM (perceptual assimilation model, (Best, 1994, 1995) and TCRS (theory of constraints and repair strategies: Paradise, 1988). All these theories suggest that output is based on similarity to input but it cannot be determined only on the basis of a single approach. According to Adler, it is difficult to determine, whether the input-output similarity is based on perceptual, articulatory or phonological grounds. Best explains that learners can easily perceive those sounds, which are 'gesturally similar' to their L1 phonology. Although none of these approaches can solely explain the process of adaptation but perceptual and articulatory approaches are most appropriate to explain the process of loanword adaptation. Adler (2001) also explains that adaptation of sounds and modification of place and voice is possible but that of nasality and sonority are not. For example, /b/ changes into /p/ but not into /m/. It means that sonority and nasality have stronger perceptual cues than voicing.

This approach is more suitable for the study of loan adaptation and can be find in the loanwords phonology, which properly explains the process of perception than production. It is also obvious that there is no universal generalization of adapting a segment, which is based on one thing (either perception or production). It is also widely observed that studies in favor of perceptual similarity approach explain the reasons of deletion, insertion and substitution, which mostly occur in loanword adaptations. However, to my knowledge, literature in Saraiki loanword is not presented before and this is the first study of its nature. So this study fills the gap with respect to loanword phonology in Saraiki language.

3. Research Methodology

An acoustic analysis of diphthongs in English loanwords adapted by Saraiki speakers are presented here. The first three formants (F1, F2, and F3) which are very necessary to understand the nature of vowels and diphthongs are studied in this article. Only focus remained those

English loanwords which has the target diphthongs and mostly used by Saraiki speakers. Three different words carrying each target sound were selected as stimuli. Well known Software PRAAT (Boersma & Weenink, 2012) was used to determine the formant values (F1, F2, and F3). These values were further analyzed through SPSS in order to determine the required values (mean, std. deviation). The F1 formant signifies the height of vowels. The front and back vowels are discriminated by formant F2 and [+round] feature shows low F3 value. The formant values from Saraiki male illiterate participants are compared with the formants values of British speech recorded by Deterding (1997). The p value of the test against a standard of .05 was use to differentiate the formant values of English and Saraiki speakers statistically. If the p-value is above .05 then the differences are considered non-significant which means that there is no meaningful difference between the two means. A significant difference between the two sets of data is assumed if the p value is less than .05.

3.1. Data Collection and Analysis

Picture naming task was used for data collection in this study. The participants were 30 (mean Age= 27years, range= 19 – 50, st dev. = 7.16) in number and all were illiterate. Three loanwords for each sound were used for data collection. The pictures of the target words, which were used as stimuli, taken from the internet (see pictures in appendix A) were shown to the participants, and they were asked to tell the names of the items in the pictures and their voices were recorded through an I-Phone S-5. The purpose of recording was to see the difference between pronunciation of British[1] and Saraiki speakers in the target sounds. A paired sample-t- test is used to compare the mean values of British and Saraiki speakers. The population for this research is native Saraiki speakers of central variety, which is spoken in the Taunsa Shrif, D.G Khan District of Southern Punjab. These target sounds along with the carrier words, and pronunciation of Saraiki and English speakers, are given in the table below.

Target diphthongs Sounds	Phonetic transcription	Words
/ei/	/keik/,/ʤeil/, /breik/.	cake, jail, brake
/əʊ/	/kəʊk/,/ rəʊl/,/kəʊʧ/	coke, roll, coach
/aʊ/	/faʊl,/paʊdər/, /aʊt/	Foul, powder, out
/ai/	/piap/, /fial/, /raifl/	Pipe , file, rifle

Table 1: List of stimuli

The data was analyzed through PRAAT (Boersma & Weenink, 2012) software.

3.2. Paradigms of data analysis

Diphthong is a combination of two vowels, which are differentiated based on their formants. Therefore, there is a difference between the starting and the final point of first formant (F1) in the production of diphthong. While Gay (1968) explained that, the rate of change of frequency in formants is a better way to explain the nature of diphthongs. However, Fry (1979) claims that a diphthong is measured by taking the values of on-glide (the starting point) and the off-glide (the final point) on the first formant (F1). The current study follows the idea of Fry.

The first formant explains the height of the vowels. Low vowels have greater F1 as compared to high vowels. In other words, frequency of F1 decreases with the increase of height of vowels. The front vowels have greater F2 frequency and it decreases when it goes to the back vowels. The third formant (F3) explains whether the vowels have rounded feature or not. The Rounded

[1] The frequencies of British speakers recorded by Deterding (1997) were compared with the formant values of Saraiki speakers.

feature decreases the frequency of third formant. The average formant values of British speakers (Deterding, 1997) are given in the table below:

Vowels	F1	F2	F3	Vowels	F1	F2	F3
i:	280	2249	2765	**ɒ**	558	1048	2481
I	367	1757	2556	**ɔ:**	415	828	2619
E	494	1650	2547	**ʊ**	379	1145	2473
Æ	690	1550	2463	**u:**	316	1119	2408
ʌ	644	1259	2551	**ɜ**	478	1436	2488
ɑ:	646	1155	2490				

Table 2: Formant values of British speakers

Hypothesis 1

It is noted that the Saraiki speakers substitute /əʊ/ '/kəʊk/' sound with /o:/ '[kok]' vowel. Therefore, it is hypothesized that in production of Saraiki speakers there will be no difference between the initial and the final values of the first formant (F1) of this sound. It is because formants frequency of monophthongs remain the same from the start to the end while it may change in diphthongs as latter is related to change of vowel quality. The second hypothesis was that there should be no difference between initial and final phase of F2 of the Saraiki speakers in the target diphthong. However, the values (initial and final) of the F2 formant of British speakers are significantly different in the /əu/ diphthong.

Hypothesis 2

Saraiki speakers modify /aʊ/ sound while producing English loanwords. It is also observed that Saraiki speakers substitute /aʊ/ '/faʊl' sound with /əo/ 'fəol'. In order to confirm the observation it was hypothesized that in the production of Saraiki speakers, there should be no/slight difference at initial and final phases on the first formant of the target sound because the height of /ə/ and /o/ is same. On the other hand, there is a significant difference at initial and final phases in the production of /aʊ/ by native English speakers. Therefore, it is assumed that there will be a significant difference between the production of English and Saraiki speakers at initial point of F1.

Hypothesis 3

It is observed that /ei/ 'keik' diphthong is substituted with /e:/ 'ke:k' monophthong by participants. There is a difference between the starting and the final point of first formant (F1) in the production of /ei/ by native English speakers but the Saraiki speakers are expected to produce it without difference in initial and final phase of formants.

Hypothesis 4

Saraiki speakers substitute /ai/ diphthong with another diphthong. Sometimes it is also realized that they produce /əi/ 'pəip' instead of /ai/ 'piap' in the target words. It was hypothesized that if Saraiki speakers substitute diphthong with any monophthong their F1 for this diphthong will show no difference at initial and final phases but there is a significant difference at the initial and the final position of F1 of English speakers as they change the height of vowels from high to low position. Second, if Saraiki speakers produced /əi/ then the initial phase of the first formant of Saraiki speaker should be lower than British speakers in /ai/ diphthong, because of the height of /a/ to /ə/ vowel.

3.3. Results

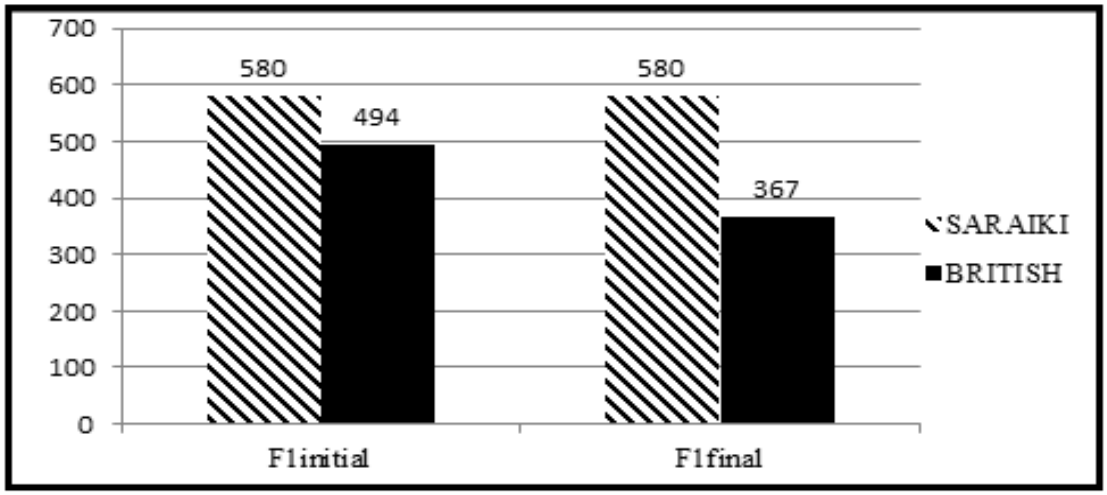
The significance of difference between formant values of English and Saraiki speakers were determined through p value of the test against a standard of .05. If the p-value is above .05 the

differences are considered non-significant, which means that there is no meaningful difference between the two means.

The results and analysis of all variables are explained in the following sections. In the following subsections, the data are presented and analyzed. Each subsection is based on the study of one of the target sounds.

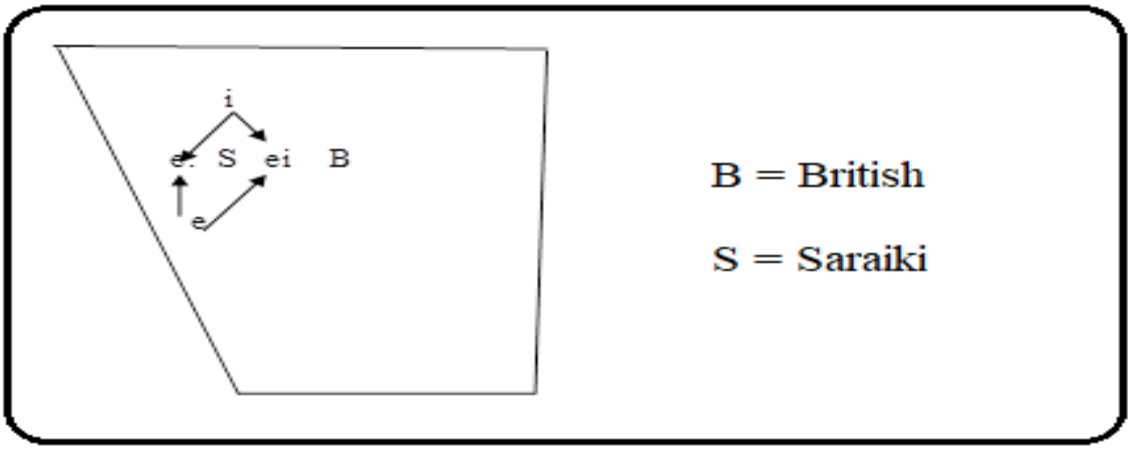
3.3.1. Diphthong/ei/

The results show that the mean F1 initial (mean=580,) of the Saraiki speakers is significantly different (p-value=.001, t-value=11.41) from the British speakers (mean=494) in the target diphthong /ei/. Similarly the results of the F1 final value (mean=580) of the first formant of the Saraiki speakers is significantly different (p-value=.001, t=28.75) from the British speakers (mean F1 final=367). For this purpose three loanwords *cake, jail* and *brake* are analyzed through PRAAT software. In order to note a difference between the initial and the final value of F1 of Saraiki speakers in the target sounds a paired sample t-test was applied. The results of the paired t-test of the stimuli *cake* (t-value=.367, p-value=.716) *jail* (t-value=.360, p-value=.721) and *brake* (t-value=1.00, p-value=.326) show a non-significant difference between the final and the initial values of the F1 of Saraiki speakers. The difference of pronunciation of British and Saraiki speakers is reflected in the graph below



Frequencies of first formant of British and Saraiki speakers '/ei/ into /e:/.

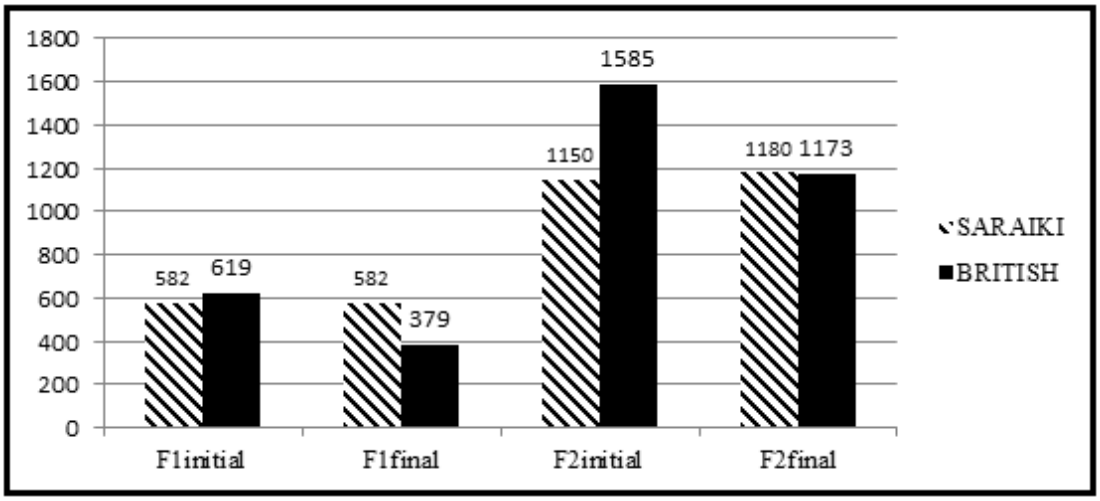
The difference in the initial and final values of F1 is evidence that Saraiki speakers produce monophthong instead of diphthong, which is according to the hypothesis. The substitution of /ei/ with /e:/ vowel is shown in the figure below:



Substitution of /ei/ with /e:/

3.3.2. Diphthong /əʊ/

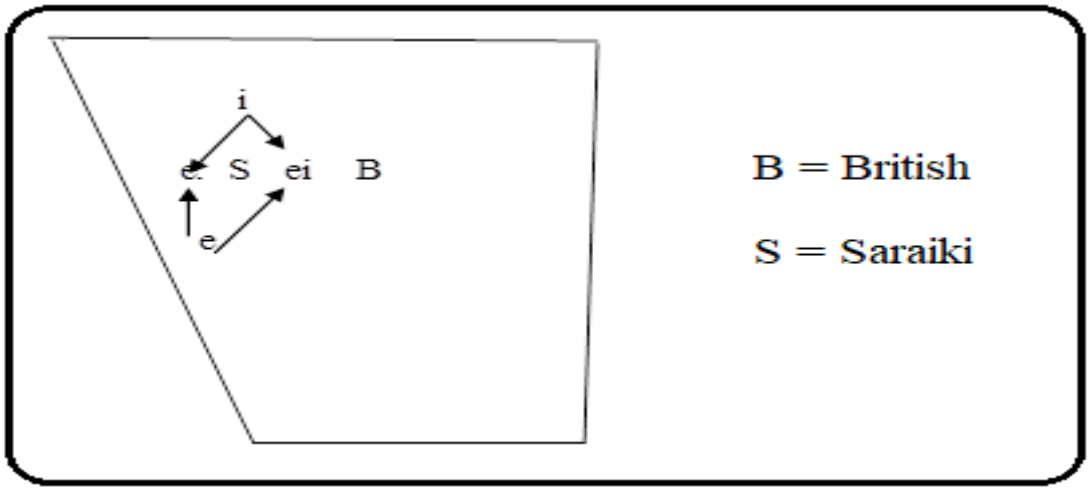
The mean F1 initial (mean=582) and final (mean= 582) phases of the participants of this study show no significant difference whereas a significant difference between the initial (mean=619) and final (mean=379) phases of F1of British speakers in noted. The measurement of F2 initial phase of the words *coke* (mean=1039, std. dev.=102.8) *coach* (mean= 1067,std. dev=115.) and *roll* (mean=1343, std.dev=615.8) shows that these values are different from the mean F2 initial (mean=1585) value of British speakers. Similarly, the F2 final phase of these words (coke, mean=1069, std.dev=97.9, coach, mean=1238, std dev=88 and roll, mean=1234.3, std.dev=122) are different from the mean of F2 final value (1173) of the British speakers. The difference of two formants, which reflect the pronunciation of British and Saraiki speakers, is reflected in the graph beneath.



In the above graph, initial and final frequencies of first formant of Saraiki speakers show a non-significant (t-value=.028, p-value=.978) difference. It means Saraiki speakers produce the sound with the same frequency (i.e. producing it as a monophthong) instead of changing the rate of frequency in final and initial phases of the target sound (producing it as a diphthong). While on the other hand, in order to observe the difference between initial and final phase of the Saraiki speakers of F2 a paired sample t-test was applied and the results indicate that there is a non-significant (t-value= -.815, p-valu=.422) difference between the initial and final values of the

target diphthong. For further confirmation, the values of the stimuli are compared with the values of the British speakers by applying the one sample t-test.

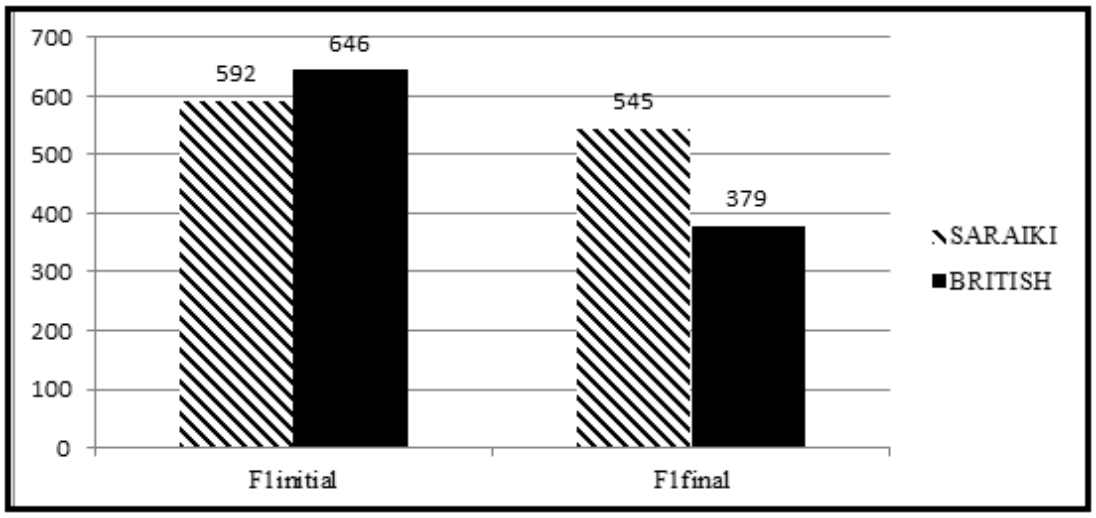
The results also indicate that the mean value of F2 of the Saraiki speakers (mean=1149) lies between the mean value of the /ə/ (mean=1585) and the /u/ (mean=1173) vowels. Although both these vowels have distinctively, different positions in the vocalic inventory of British speakers but their F2 values show an insignificant difference. It is because the constriction in the oral cavity in the production of /u/ is relatively greater than that of the /o/ vowel, which decreases the value of second formant. The above results indicate that Saraiki speakers replace /əu/ diphthong with /o:/



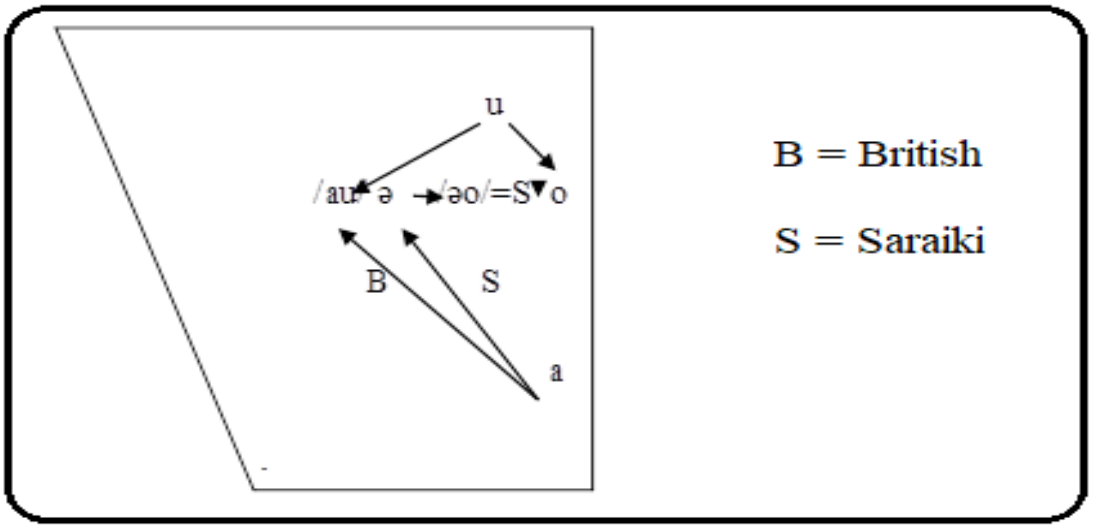
Change of /əu/ into /o:/

3.3.3. **Diphthong /aʊ/**

In British English, this is the only diphthong in which the tongue position changes from lower to higher. In this diphthong, the initial phase starts from the lowest tongue position /a/ to the highest position/u/. The results show that the initial phase of the first formant value of British speakers (mean=646) is significantly different (t-value=5.16, p-value=.001) from the Saraiki speakers in the target diphthong. From the analysis it is obvious that mean value of the initial phase of the first formant (mean=592) of Saraiki speakers is less than the value of initial phase of the F1 of British speakers (mean=646). Similarly the F1final value (mean=545) of the Saraiki speakers is greater than the value noted in the final phase of the first formant (mean=379) of the British speakers in production of the target words. Both initial and final values of F1of British and Saraiki speakers indicate that there is a wide difference between their pronunciations. The difference of formant frequencies of both speakers is explained in the graph below.



The difference between F1 initial values of both speakers indicates that Saraiki speakers produced the initial sound, which is higher than the vowel produced by British speakers. The initial F1 value of Saraiki speakers is closer to the F1 value of /ə/ vowel (mean=619) rather than /a/ in the target words. Similarly, in the above graph, final frequency of F1of Saraiki speakers is greater than that of British speakers, which indicates that Saraiki speakers produced relatively low vowel than that of British speakers. The results seem to prove the prediction that Saraiki speakers shorten the first vowel in the target diphthong and also lower the position of second vowel in production of the target diphthong. The substitution process is shown in figure below:

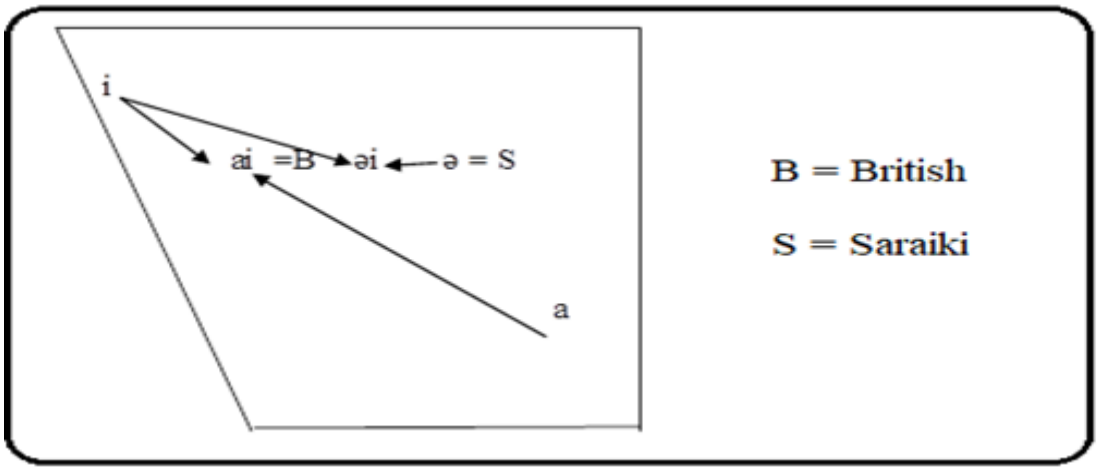


Change of /au/ into /əo/.

3.3.4 .Diphthong /ai/

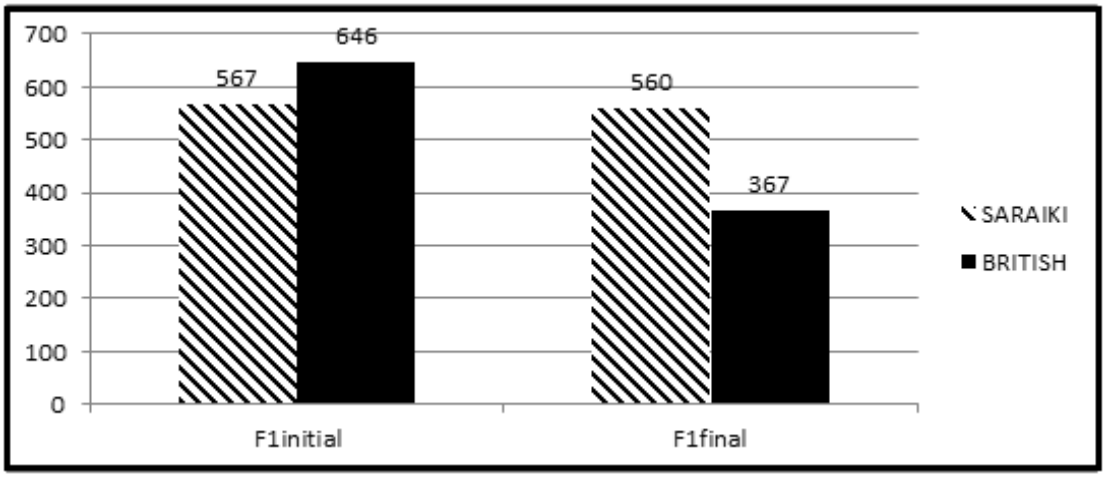
In order to confirm the hypotheses, three English loanwords 'pipe', 'file' and 'rifle' were used as stimuli. The difference between the initial and the final phases of F1 of the target sounds indicate that out of three, two (pipe, file) words have a significant difference (pipe, t-value=2.9, p-value=.007, file, t-value=3.31, p-value=.002) from that of British speakers. The results indicate that the mean value of the initial phase of F1 of British speakers (mean=646) is different from Saraiki speakers (mean=616, std.dev.=48) which indicates the difference of pronunciation. The difference in the initial phases of both British and Saraiki speakers indicates that Saraiki speakers produce the vowel, which is at higher position than that produced by British speakers in the

target sounds. The following figure reflects the substitution of /ai/ with /əi/ in the speech of Saraiki speakers.

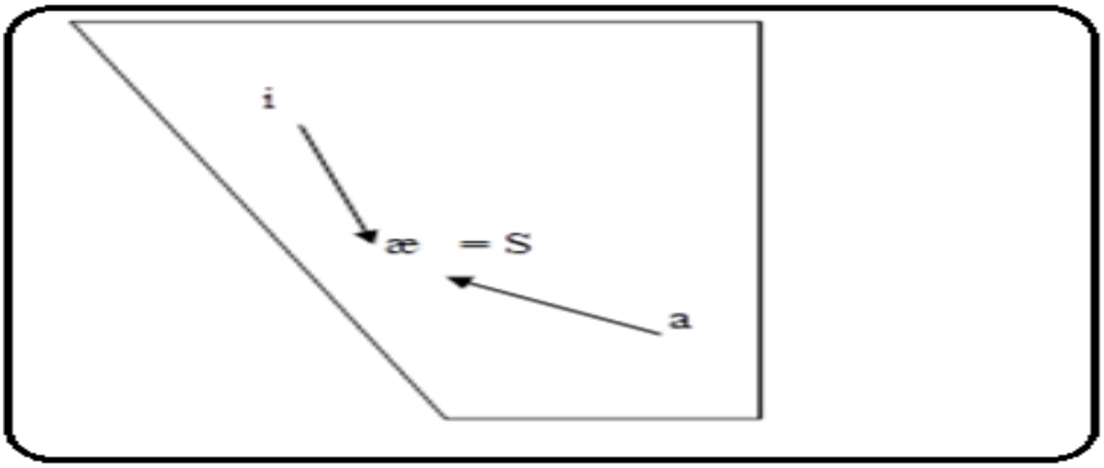


Change of /ai/ into /əi/

From the above figure, it is clear that Saraiki speakers produce /əi/ instead of /ai/ in the target words. However, the F1mean values of the stimuli (pipe, file, and rifle) vary from each other. The results of two stimuli 'pipe' and 'file' leads to the conclusion that Saraiki speakers substitute /ai/ with /əi/. But the initial (mean=567) and final (mean=560) mean values of the formants of the diphthong produced in the third stimulus 'rifle' indicate a non-significant (t-value= -.361, p-value=.721) difference. This non-significance difference proved that Saraiki speakers also produce /æ/ sound instead of /ai/. The difference of initial and final frequencies of first formant is mirrored in the graph below.



The difference between the initial and final phases is compared by applying a paired sample t-test. The results of the first two words show that Saraiki speakers produced a diphthong but their F1initial values are lower than the British speakers. In contrast, the difference between initial and final phases of word 'rifle' indicates that Saraiki speakers substitute the target diphthong with a monophthong. The process of substitution of /ai/ with /æ/ is explained in the figure below



Substitution of /ai/ with /æ/

4. Comparison and discussion

The above discussed results show that the Saraiki speakers produce English diphthongs like /ei/ as /e/, /əʊ/ as /o/, /aʊ/ as /əo/ and /ai/ as /əi/ respectively.

It means British speakers produce gliding vowels and Saraiki speakers pronounce a monophthong in some words and different diphthongs in others. It is because the diphthong /ei/ is not a part of Saraiki phonemic inventory and is substituted with /e/ (also a long vowel in Saraiki) by the participants in loanwords of English containing the target diphthong /ei/. As diphthongs are two vowels and are produced consecutively in one nucleus, they need relatively more force and articulatory gestures as compared to monophthongs. This is one of the reasons that Saraiki speakers go to the easier option and produce monophthong for a diphthongs, which does not exist in their language. Hence, the replacement of English diphthongs with Saraiki diphthongs, in some words, suggests that they are categorically absent in Saraiki language.

Another reason in term of Feature Geometry is that English speakers start the target diphthong with tense vowel and end with an open vowel/ tense vowel. It means the radical feature [ATR] remains active in the production of the /ei/ sound in pronunciation of British speakers while the Saraiki speakers produce this as /e:/ monophthong. In other words, the feature [ATR] remains absent in the pronunciation of participants. It can be said that it is because of the absence of feature [ATR] in the sound system of Saraiki language that they cannot produce tense vowels but they can perceive the difference of tense and lax vowels. In order to compensate the loss of the feature [ATR] Saraiki speakers increase the quantity of the tense vowels, this is considered as the differentiating feature between tense and lax vowels. As this diphthong is at lower position or start with tense vowel in British English and starts with tense vowel that is why, the Saraiki speakers substitute it with a monophthong. In terms of FG the substitution of features are explained below in 4.9.

British		Saraiki
/e/	/i/ into	/e:/
-low -back -high +ATR	+high -back -low -ATR	-high -back -low

Change of /ei/ into /e:/

When the process of substitution occurs, the output loses [+high] and [ATR] features but retains rest of the features in the output. In the above analysis it is clear that the community under discussion substitute a diphthong with a monophthong. Another important thing, which is essential to note is that in production of the target sounds Saraiki speakers maintain the weight of a syllable. In British English the weight of /ei/ is two moras and Saraiki speakers maintain the prosodic structure of the word by producing long vowel /e:/ (at the cost of loss of the feature [ATR]).

In substitution of /əu/ with /o:/, Saraiki speakers also maintain weight of vowels in the same way. Saraiki language does not have /əu/ diphthong; therefore they do not perceive it and assimilate it with the closest sound of their L1 or the sound which retains maximum features of the input. The production of /o:/ for target words is a result of coalescence. The features [+back] and [+round] are retained in the output along with place [high] feature. The output shares first two features ([+back] and [+round]) from the /u/ vowel and takes the height feature ([mid]) of the /ə/ vowel. The process is reflected below in the diagram below.

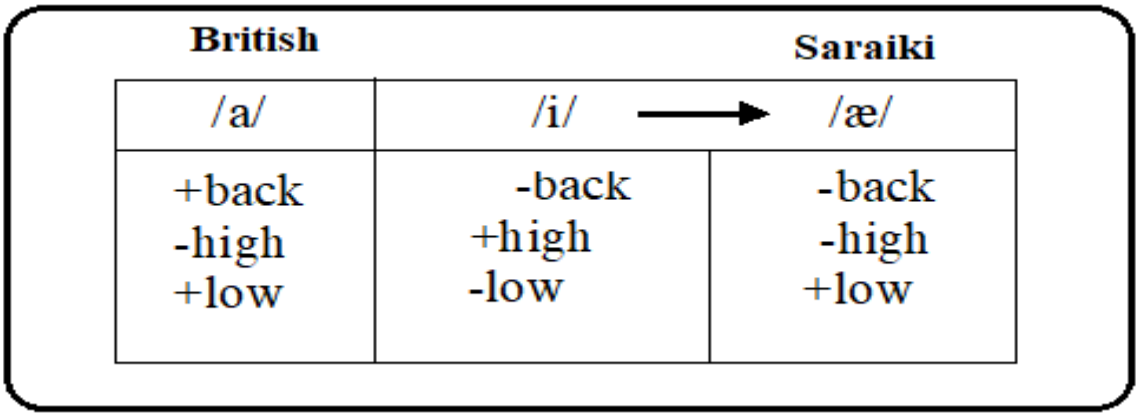
British		Saraiki
/?/	/u/ →	/o:/
[-round] [mid]	[+round] [+back] [mid]	[+back] [+round]

Change of /əu/ into /o:/

The above analysis of /au/ shows that participants do not produce /au/ diphthong accurately, in English loanwords. The diphthong /au/ is not a part of Saraiki language; therefore, they do not produce it in the loanwords containing this sound. However, this is not as simple as it is said rather a long discussion is needed to explain the issue. It is clear that /au/ is not a part of Saraiki

language but is it the only way to substitute this sound. Second question is why they substitute /au/ with /əo/ and not with any other sound. It is clear from the existing literature on loanword phonology that when words of other languages are adopted, they go through different phonological processes. Some of these common processes are deletion and substitution. Here Saraiki speakers select the second option and give preference to substitution over deletion. The second reason for giving preference to substitution over deletion is that here, the most important part of a syllable (nucleus) is involved and nucleus deletion means the deletion of the whole syllable. Because of these reasons, Saraiki speakers perceive /əo/ diphthong for /au/, which is a part of their own language. It means at perceptual level, Saraiki speakers are able to understand the real nature of diphthong but because of the absence of /au/ in their vocalic inventory, they misperceive. They produce the sound (/əo/) which they have in their vocalic inventory.

In case of /ai/ it is obvious that /ai/ is substituted with both /əi/ and /æ/ vowels. This leads to the question that why Saraiki speakers produce the one sound in two different ways? This is very important to note that because of the absence of /ai/ diphthong in Saraiki phonemic inventory, they substitute it with other sounds. The sound /æ/ exists in between /a/ and /i/. So, as a result of coalescence, they produce /æ/ sound. The results of the word 'rifle' support that Saraiki speakers produce /æ/ instead of the target diphthong. The substitution of /ai/ with /æ/ is simplified below in terms of FG.



Change of /ai/ into /æ/

The results of the other two words (pipe, file) indicate that in the production of Saraiki speakers the initial and final phase of F1 is significantly different. But the value of initial phase of F1is lower which indicates that Saraiki speakers produce initial sound which is at higher position than the sound produced by the British speakers. As the adaptation of loanwords is a cyclic process and mostly these words come from literate people and the illiterate people try to follow their pronunciation but their already existing sound system does not accept it and as a result, they shorten the first phase of the diphthong and produce /əi/ instead of /ai/.

The results show that the pronunciation of Saraiki speakers in target English loanwords is strongly different from the original /native pronunciation. The analysis also shows that the difference of pronunciation is because of different factors. Some of these factors, which strongly influence the pronunciation of loanwords, are involvement of Urdu and English orthography, interference of L1and markedness. The most important reason, which is noted in the analysis, is the involvement of a third language Urdu that in the current scenario plays the role of mediator between English and other local languages of Pakistan. In Pakistan Urdu is the national language, which has a great influence on all indigenous languages. Like other Pakistani languages, Urdu also does not have alternatives of English loanwords. These loanwords are

written in Urdu orthography and literate people pronounce these English loanwords like Urdu words. Although the present study focuses on the illiterate people but it is also a fact that these loanwords come from literate people. Therefore, the illiterate people follow the pronunciation of literate people that is also not native like but in some words, the illiterate people further change this non-native pronunciation because of the interference of L1. For example, some illiterate people produce /æ/ and some produce /əi/ instead of English /ai/ in the target loanwords. Those who produce it as /əi/ actually follow the educated class. Apart from Urdu orthography, English orthography also causes to change pronunciation. It is because the people pronounce English loanwords according to its orthography.

Markedness is also one of the major factors, which are responsible to change native pronunciation. In the current study, the process of substitution occurs and marked sounds are substituted with the unmarked ones i.e diphthongs are more marked than monophthongs. Some sounds may be unmarked in one language but they are substituted when produced by non-native speakers because they are considered more marked for foreigners.

One of the most important factors is interference of L1, which influences pronunciation of loanwords. As Flege (1987) explains that because of 'equivalence classification', learners cannot perceive a difference between the L1 and L2 phonemes and the already existing sound pattern of L1 prohibits the correct production of new sounds. It is obvious that the interference from the L1 cause misperception of the non-native sounds and this misperception results in change in the original pronunciation.

5. Conclusion

The study indicates that the change of pronunciation of English words is simply is the matter of L1 transfer and role of Urdu in loanword adaptation. All these findings suggest that English diphthongs are either absent in Saraiki language or substituted for ease of articulation.

An experiment based on learning in native environment is needed to prove whether these are the only factors or there may be some other reasons that cause to change the pronunciation of English loanwords.

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