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Phonemic Variations in English Loanwords Borrowed into Afghani Pashto

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Abstract: Due to Pashto–English language contact, a large number of words are borrowed from English into Afghani Pashto. These English loanwords undergo certain types of variation. This study aims at phonemic variations in English loanwords borrowed into Afghani Pashto. A corpus of 90 English loanwords was collected from ten audio–video programs from Afghani TV channels. They were news and discussion panels. The conversation of Afghani Pashto speakers was observed for the collection of the corpus. The data were analyzed according to Levenshtein's (1966) Distance Algorithm Model to investigate the phonemic variations in English loanwords. Based on the research findings, it was revealed that most of the loanwords undergo phonemic variation and some words are just adopted. Most of the words undergo a change of vowel sounds. Some of the words also maintain a change in the consonant sounds. In some cases, the words experience a change in both the vowel and consonant sounds.

Introduction

Languages are like living beings and they are born, developed, changed and died over time (Schleicher, 1863). Sapir (1921) has argued that like cultures, languages are also not sufficient to themselves, and because of the need to interact with the speakers of other languages, the speakers come to have contact with the speakers of those languages which are neighboring languages or culturally dominant languages. This contact between the speakers of different languages with each other is called language contact. Language contact is defined by Thomason (2001, p.2) as "the use of more than one language in the same place at the same time". Thomason further says that the term language contact is applied to such a situation in

which the speakers of the same language interact with those who speak a different language. Samuel Ayodele Dada (2013) points out that contact between languages is unavoidable and indispensable because no one can remain on an island. It is inevitable. Language contact happens due to the spread of languages via conquest, migration, trade, globalization and colonization (Mesthrie, 2009). It is a very common phenomenon and when one language comes into contact with the other language, they affect each other. When a language affects another language, different kinds of linguistic changes occur. It can be at different levels such as phonological changes, morphological changes, syntactic changes or semantic changes. One such change

can be the borrowing of words and it is the simplest kind of influence of a language on another according to Sapir (1921). The process of borrowing is found in many languages of the world. Many languages take words from other languages and integrate them.

English is an international language and international lingua franca. It communicates with many languages of the world. It has influenced them and has been influenced by them. English language has also travelled to Afghanistan where many languages are spoken. Hence, it is one of the multilingual countries where Pashto and Dari are national languages as well as both are official languages. Afghani Pashto is one of those languages that has been influenced by English language. Afghani Pashto has borrowed a huge number of words from English language which belong to almost all domains of life. According to Penzl (1961: 43) "We find among them terms for clothing, food, objects; political, commercial, and Administrative terms; scientific and technological vocabulary, particularly in the field of motor transport; terms in medicine and education, culture and sport". All these words are considered as if they are Pashto words because they are also used by monolingual speakers of Pashto and they are integrated or adapted due to the phonology of Afghani Pashto. In simple words, we can say that these loanwords are influenced by the phonology of Afghani Pashto. The study aims to examine phonemic variations in adapting English loanwords borrowed into Afghani Pashto.

Research Questions

1. Which English loanwords have been borrowed into Afghani Pashto?
2. What are phonemic variations in adapting English loanwords borrowed into Afghani Pashto?

Significance of the Study

This research studies the influences of Afghani Pashto on English loanwords in Afghani Pashto at phonological levels. Afghani Pashto speakers have adapted English loanwords according to the phonology of the Pashto. This study is highly significant for the readers because it will enable them to understand how Afghani Pashto has affected the phonology of English loanwords. It will enable the readers to understand how English loanwords are affected by the phonology of Pashto. It will enable them to know about different phonological patterns which are brought in adapting English loanwords by Afghani Pashto speakers.

Literature Review

Pashto is mainly the language of Pashtuns who live in Afghanistan, Pakistan and India. It is also spoken by a large number of migrants in Kyrgyzstan, Tajikistan, Iran, the United Arab Emirates, the United Kingdom and the United States. Pashto is written from right to left and is a variant of the Arabic script. The population of Pashtuns in Afghanistan is 42 percent which makes it the largest ethnic group in Afghanistan.

As far as the linguistic situation of Afghanistan is concerned, it is very complex because of several regional languages, two national and official languages (Pashto and Dari) and English as a foreign language. According to the constitution of Afghanistan (2004), Pashto and Dari are the official languages of Afghanistan. Both languages are Indo-European. According to Habibullah and Barbara (1996), Pashto belongs to east Iranian from the Indo-Iranian branch of the Indo-European branch of the language family. There are three major dialects of Pashto in Afghanistan. They are the eastern dialect (Ningrahar dialect), central dialect (Kabul dialect) and western dialect (Kandahar dialect). A huge number of words have been borrowed into Pashto from different other languages such as English, Arabic, Persian, Balochi and Sindhi.

English emerges as an important language in Afghanistan, especially after the fall of the Taliban in 2001. English is an international language and international lingua franca. This status of English in the whole world is due to two main reasons. First, it is due to the colonial power of Britain which colonized many countries and cause English to spread. Second, it is due to the United States as a leading power in this twenty-first century.

English is used for different kinds of purposes in the whole world. It is also used in Afghanistan. As per Kachru's three concentric circles model (1992), Afghanistan is considered one of the Expanding Circle countries because English is a foreign language in Afghanistan and it is not an official language in Afghanistan. It is just used for some purposes like diplomacy, business, travel and communication. The interest of Afghani people suddenly increased in the English language due to the fall of the Taliban in 2001 and especially with the arrival of a large number of NGOs to Afghanistan and the United Nations. It has a key role in business, education, economics, government, employment, and mass media. It is a language of opportunity and a shortcut for development. It has also influenced local languages, especially the Afghani Pashto.

Pashto is one of those languages that has been influenced by the English language. Afghani Pashto has borrowed a huge number of words from the English language which belong to almost all domains of life (Penzl, 1961). Several English words have become part of the daily conversation of Afghani Pashto speakers. These words are considered native words of Pashto which are used both by educated and uneducated speakers of Afghani Pashto.

The process of borrowing is found in many languages of the world. Many languages take words from other languages and integrate them. Thomason and Kaufman (1988, p. 21) referred to borrowing as "the incorporation of foreign elements into the speakers' native language". Trask (1996: 18) argues borrowing is "one of the

most frequent ways of acquiring new words and speakers of all languages do it". Haugen (1953: 363) called it "a kind of stealing" while Trask (1996: 18) called it "a kind of copying". These borrowed words are called loanwords. True loanwords are those words that are integrated phonologically, morphologically and grammatically. Kenstowicz (2003) and La Charite and Carole (2005) point out that once words are borrowed, these words go through the process of adaptation at the morphological level and phonological level according to the morphology and phonology of the host language. They are treated as part of its lexicons and follow the rules of the native borrowed language.

Borrowing is caused due to conquest, cultural domination, media, cultural advancement, etc. Lee (2004) argues that the English language has influenced and is influencing the languages of other countries with its technology, arms, economy, politics and dominant culture. Due to all these reasons, English has also influenced Afghani Pashto which has borrowed a large set of lexical items from the English language.

English is the language of power and as a foreign language, it has great importance and high status. In this regard Rehman (2005) considers English to be the language of power and a status symbol. It is not only a status symbol for the people of Afghanistan but also it is their social habit now. The abundance of English words in Afghani Pashto is due to new ideas and technologies. Pashto borrows a large number of words related to science and technology and which enrich the Pashto. It is only one aspect in which Afghani Pashto speakers use English lexical items.

The English language has affected many languages of the world and Pashto is one of them which is heavily influenced. English is considered to be a reservoir for the Pashto from which it takes words and adopts them. English loanwords related to almost all domains are used in the daily conversation of Afghani Pashto speakers. These loanwords are integrated into the Afghani Pashto

morphologically and phonologically. At the phonological level, there is variation in phonemes through different phonological patterns such as addition, deletion, substitution and epenthesis.

The phonological changes take place during the adaptation of foreign words. Haugen (1972) argues that the speakers of the recipient language intimate the pattern of a foreign word by changing them according to the pattern of sounds of their own language. He further says that the speakers of the recipient language change the most related sounds of their native language with those of the other language. Sipra (2013) states that foreign words are either adopted according to the closest sounds to the original sounds or maybe with some phonological changes. In this regard, Al-Qinal (2002) claims

that foreign words are either adopted or adapted. If words do not change the original form and pronunciation, it is adopted. If foreign words are changed phonologically, it is adaptation. According to Hasan and Khan (2019), some phonological processes are substitution, deletion, addition, assimilation and epenthesis. Many researchers have illustrated the process of phonological changes such as Banta (1981), Kay (1995), Tsujimura (1996) and Tyson (1993). Tsujimura (1996) stated that the pronunciation of a word changes inevitably. It is because there may not be all the sounds in the language that borrows it.

There are thirty-two consonants in the central dialect of Afghani Pashto. The following table illustrates the consonant sounds with their place and manner of articulation.

Table 1

Consonants of Pashto (Taken from Tegey and Robson, 1996)

		Bilabial	Dental	Palatal	Retroflex	Velar	Uvular	Pharyngeal
Stops	Voiceless	p	t		ʈ	k	q	ʕ
	Voiced	b	d		ɖ	g		
Nasals		m	n		ɳ	ŋ		
Fricatives	Voiceless		s	ʃ		kh		ħ h
	Voiced		z	x		gh		ʕ
Affricates	Voiceless	f	ts	ch				
	Voiced		dz	j				
Others	Voiceless		l					
	Voiced	w	r	y	ɽ			

Some Pashto consonants that are different from English consonant sounds to some extent are /t/ as in Pashto word /təsh/ (empty), /d/ as in the Pashto word /dang/ (tall), /l/ as in Pashto word /las/ (ten) and /n/ as in Pashto word /nə/ (not). Those Pashto consonant sounds which are different from English consonant sounds to a large extent /gh/ as in /ghat/ (big), /ħ/ as in /fiamlə/ (attack), /kh/ as in /wekhtə/ (hair), /q/ as in /sundəq/ (trunk), /r/ as in /chakar/ (round), /x/ as in /xog/ (sweet) and /ʕ/ as in /ʕəməl/ (act).

Pashto retroflex consonants are /ʈ/ as in /tok/ (episode), /ɖ/ as in /ɖərun/ (piles), /ɳ/ as in /ruɳə/ (brothers) and /ɽ/ as in /mər/ (dead). Those English consonants which are not present in Pashto are /θ, v, ʒ/ while those consonants that are not present in English are /ʈ, ɖ, ɳ, kh, gh, r, x, ħ, ʕ, y, ts, ʕ/.

Pashto central dialect has nine vowels and seven diphthongs. The following chart illustrates Pashto vowel sounds.

Table 2*Pashto vowels adapted by Tegedy & Robson*

	Front Unrounded	Central Unrounded	BackRounded
Close	i ɪ		u ʊ
Mid	e	ə	o
Open	a		ɑ

The following table illustrates Pashto diphthongs.

Table 3*Pashto diphthongs*

	Front	Central	Back
High			ui
Mid		əɪ	oɪ
Low	aɪ, aʊ		ɑɪ, ɑʊ

Elfenbein (1997: 751) notes that the long diphthongs [ɑɪ, aʊ] are always stressed, while the short diphthongs may or may not be stressed.

For a long time, many researchers focused on Loanword adaptations. In this regard, a few recent studies have been cited by Hasan and Khan (2019) which include the studies of Miao (2005), Kenstowicz and Suchato (2006), Abdullah and Daffar (2006), Vendelin and Peperkamp (2006), Chang (2009), Al-Athwary (ALAthwary2017) and Dashti and Dashti (2017) etc. There are many studies on English loanwords borrowed into different languages but there are very few studies on English loanwords borrowed into Afghani Pashto. This study focuses on filling the gap. The researcher is urged to conduct the study of phonemic variations in English loanwords

borrowed into Afghani Pashto due to the above-mentioned studies.

Methodology

The present study employs the qualitative approach that used a descriptive research design to investigate the phonemic changes in English loanwords borrowed into Afghani Pashto. Levenshtein's (1966) Distance Algorithm Model is used to investigate phonemic variations of English loanwords in Afghani Pashto. This framework or model has been used by many researchers such as Hasan and Khan (2019), Chochan and Garcia (2019), Garcia and Yapici (2014) and Sander and Chin (2009). This theoretical model gives a clear picture of phonemic changes or phonemic similarities. This model is depicted by the following figure:

Figure 1*The Levenshtein's Algorithm adopted by Hasan and Khan (2019)*

$$\text{lev}_{a,b}(i, j) = \begin{cases} \max(i, j) & \text{if } \min(i, j) = 0, \\ \min \begin{cases} \text{lev}_{a,b}(i-1, j) + 1 \\ \text{lev}_{a,b}(i, j-1) + 1 \\ \text{lev}_{a,b}(i-1, j-1) + 1_{(a_i \neq b_j)} \end{cases} & \end{cases}$$

This model is used to investigate the similarities or differences in the phonemes of a word pronounced by different speakers. The distance value between the two words is the minimum number of a single phoneme (addition, substitution or deletion) that is required to change one word to another. Here distance value means the phonemic variation that English loanwords have when they are adapted into Afghani Pashto. According to Chochan, Habib & Hasan (2020), the more the distance value, the more the number of phonemic variations. In this method, words are transcribed into IPA sounds and compared to know the differences between the words. Thus it is a perfect model to investigate the difference in the pronunciation of English loanwords.

The sample consists of 90 English loanwords which were selected purposively from ten audio-video programs in Afghani Pashto aired on different Afghani private TV channels. Six programs were collected from Shamshad TV Chanel. Five of them were episodes of 'Narai Da Wakht'. Narai Da Wakht is a news bulletin of 06:00 PM which was aired on BBC Pashto News. One episode of 'Tawda Bahsona' which is a discussion panel was recorded from Shamshad TV. Four programs were taken from 'Tolo News' which were the episodes of 'Khabari Saath'. Khabari Saath is a news bulletin of 07:00 PM. Programs that are selected for the collection of data for this study are shown in the following table.

Table 4

Selected Programs for Data Collection

S. No.	Channel Name	Program Name	Type Program	Of	Duration (Minutes)	Airing Date
1	BBC Pashto News	Narai Da Wakht	News		00:26:27	23-01-2021
2	BBC Pashto News	Narai Da Wakht	News		00:26:15	22-11-2021
3	BBC Pashto News	Narai Da Wakht	News		00:26:15	25-11-2021
4	Tolo News	Khabari Saath	News		00:26:50	26-11-2021
5	Tolo News	Khabari Saath	News		00:25:17	29-06-2020
6	Tolo News	Khabari Saath	News		00:20:02	22-11-2021
7	BBC Pashto News	Narai Da Wakht	News		00:23:52	20-05-2017
8	Shamshad TV	Tawda Bahsona	Discussion Panel/Talk Show		00:46:52	30-04-2017
9	BBC Pashto TV	Narai Da Wakht	News		00:23:52	11-07-2018
10	Tolo News	Khabari Saath	News		00:22:52	23-09-2021

Here it is worth mentioning that the data collection technique is the observation of the conversation of Afghani Pashto speakers. In some cases there was a conversation between English speakers, Persian speakers and Pakistani Pashto speakers, thus their conversation was not considered for this study. The participants were newscasters, reporters, residents and government officials in the above ten programs. All the recorded programs are news except

"Tawda Bahsona" which is a discussion panel. The data consist of news because there is news about different issues and different fields of life. Hence, data for different domains was provided. All the collected data covered almost all the social domains such as clothing, food, objects, political, commercial, administrative, scientific, technological, transportation, medicine, culture and sport. These terms include both formal and informal social domains.

The following table presents a corpus of ninety English loanwords borrowed into Afghani Pashto.

Table 5

English Loanwords in Pashto

S. No	English Transcription	Pashto Transcription	Distance Value	English Gloss	Pashto Gloss
1	/klɪk/	/klɪk/	0	Click	کلیک
2	/bʌs/	/bas/	0	Bus	بس
3	/'krɪkɪt/	/'krɪkɪt/	0	Cricket	کرکټ
4	/tɛst/	/tɛst/	0	Test	ټسټ
5	/'ɪntə,nɛt/	/ɪntərnet/	0	Internet	انټرنیټ
6	/tʌn/	/tʌn/	0	Ton	ټن
7	/kʌp/	/kap/	0	Cup	کپ
8	/ʧɑ:ns/	/chans/	0	Chance	چانس
9	/'tæblɪt/	/tʌblɪt/	1	Tablet	ټابلېټ
10	/'ɒpʃən/	/apshən/	1	Option	اېشن
11	/beɪs/	/bes/	1	Base	بیس
12	/gru:p/	/grup/	1	Group	گروپ
13	/ti:m/	/tim/	1	Team	ټیم
14	/keɪs/	/kes/	1	Case	کیس
15	/kə'mɪʃnə/	/kə'mɪʃnər/	1	Commissioner	کمیشنر
16	/ə'drɛs/	/adres/	1	Address	ادرېس
17	/rəʊl/	/rol/	1	Role	رول
18	/'dʌbl/	/dabal/	1	Double	ډبل
19	/bɒm/	/bam/	1	Bomb	بم
20	/'feɪs,bʊk/	/fesbuk/	1	Facebook	فیسبوک
21	/bæt/	/bet/	1	Bat	بیت
22	/'petrəl/	/petrol/	1	Petrol	پټرول
23	/gəʊl/	/gol/	1	Goal	گول
24	/li:g/	/lig/	1	League	لیگ
25	/bu:t/	/but/	1	Boot	بوټ
26	/lɪst/	/list/	1	List	لیست
27	/'sɪstɪm/	/sɪstəm/	1	System	سیسټم
28	/'məʊbaɪl/	/mobail/	1	Mobile	موبایل
29	/kæmp/	/kamp/	1	Camp	کمپ
30	/'tɪkɪt/	/tɪkat/	1	Ticket	ټکټ
31	/'tenɪs/	/tenas/	1	Tennis	ټینس
32	/ʧɑ:ʤ/	/charj/	1	Charge	چارج
33	/drəʊn/	/dron/	1	Drone	ډرون
34	/'mɛdl/	/medal/	1	Medal	مډال
35	/'fʊtbɔ:l/	/fotbal/	1	Football	فوټبال
36	/'pɑ:spɔ:t/	/pasport/	1	Passport	پاسپورټ
37	/kri:m/	/krim/	1	Cream	کریم
38	/dɪ'plɒməsi/	/dɪplomasɪ/	2	Diplomacy	ډیپلوماسی
39	/'vaɪərəs/	/wirus/	2	Virus	ویروس

40	/ˈvæksi:n/	/waksin/	2	Vaccine	واکسين
41	/ˈtrɪljən/	/trilyun/	2	Trillion	تريليون
42	/pəˈli:s/	/pulis/	2	Police	پوليس
43	/plæn/	/pɪlan/	2	Plan	پلان
44	/ˈprəʊgræm/	/program/	2	Program	پروگرام
45	/tæŋk/	/təŋk/	2	Tank	ټانک
46	/pəˈziʃən/	/pozishən/	2	Position	پوزيشن
47	/ˈdɒlə/	/dɒlər/	2	Dollar	ډالر
48	/ʌpˈdeɪt/	/apdeɪt/	2	Update	اډيټ
49	/ˈkærɪktə/	/karɪktər/	2	Character	کرکټر
50	/ˈmaɪkrəʊb/	/mikrob/	2	Microbe	میکروب
51	/kənˈtrəʊl/	/kantrɒl/	2	Control	کنټرول
52	/ˈrɛstrɒnt/	/restorant/	2	Restaurant	رستورانټ
53	/ˈbɒtl/	/botal/	2	Bottle	بوتل
54	/ˈtʌnl/	/tunal/	2	Tunnel	تونل
55	/ˈætəm/	/atum/	2	Atom	اتوم
56	/fɪˈzi:k/	/fizik/	2	Physique	فزيک
57	/ˈkæməɾə/	/kamrə/	2	Camera	کمره
58	/ˈlɒtəri/	/latrɪ/	2	Lottery	لاټري
59	/bæŋk/	/bank/	2	Bank	بانک
60	/dɪˈmɒkrəsi/	/dɪmokrasi/	2	Democracy	ډيموکراسي
61	/həʊˈtel/	/hoɬal/	2	Hotel	هوټل
62	/ˈmɑ:kɪt/	/ˈmarkɪt/	2	Market	مارکيټ
63	/rɪˈpɔ:t/	/rapot/	2	Report	رپوټ
64	/ˈbætəri/	/betrɪ/	3	Battery	بيټري
65	/ˈmɛθəd/	/metod/	3	Method	ميټود
66	/ˈmɔ:tə/	/moɬar/	3	Motor	موټر
67	/ˈdʒɜ:nəlɪst/	/jornalist/	3	Journalist	جرنالیست
68	/ˈdɒktə/	/daktar/	3	Doctor	ډاکټر
69	/ˈsektə/	/sektor/	3	Sector	سکتور
70	/kəmˈpjʊ:tə/	/kampyutər/	3	Computer	کمپیوټر
71	/ˈkɒnfərəns/	/kanfrans/	3	Conference	کنفرانس
72	/ˈhækə/	/hakar/	3	Hacker	هاکر
73	/ˈkɪləʊˌmi:tə/	/kilo.miɬər/	3	Kilometer	کیلومتر
74	/ˈdʒɛnərəl/	/janral/	3	General	جنرال
75	/ˈhektə/	/hektor/	3	Hector	هکتور
76	/spɔ:t/	/sport/	3	Sport	سپورټ
77	/ˈkɒŋɡrɛs/	/kangrəs/	3	Congress	کانګرس
78	/kəˈmɪti/	/komeɬa/	3	Committee	کمیټه
79	/ˈtræfɪk/	/trafik/	3	Traffic	ترافیک
80	/ˈdeɪtəˌbeɪs/	/detabes/	3	Database	ډیټابیس
81	/ˈplæstɪk/	/plastik/	3	Plastic	پلاستیک
82	/ˈtelɪfəʊn/	/tilifun/	3	telephone	تیلیفون
83	/ˈkʌltʃə/	/kaltur/	3	Culture	کلتور
84	/dɪpləˈmætɪk/	/dɪplomatik/	3	diplomatic	ډیپلوماتیک
85	/ˈdeməkræt/	/demokrat/	4	Democrat	ډیموکرات

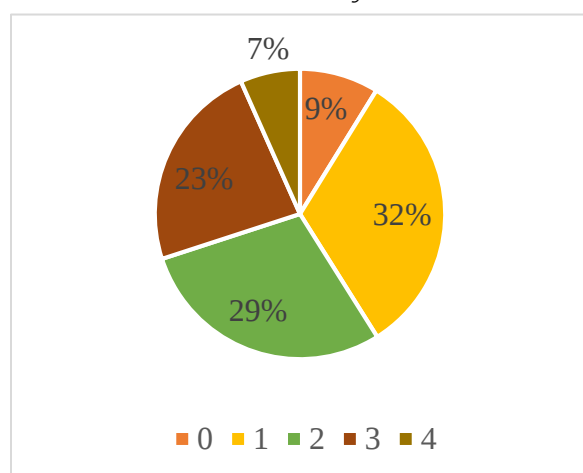
86	/ˈkætɪgəri/	/kaɪtagurəi/	4	category	کټیگوری
87	/ˌriːˈfɔ:m/	/riforam/	4	Reform	ریفورم
88	/kəˈmɪʃən/	/kamisun/	4	commission	کمیشن
89	/əˈmɛrɪkə/	/amrika/	4	America	امریکا
90	/ˈfɔ:mjʊlə/	/farmul/	4	Formula	فارمول

Data Analysis

Data in the above table show that Afghani Pashto borrowed words from the English language which belongs to almost all domains. These words belong to the domains of sport, technology, information technology, transportation, measurement, medicine, health, military, minerals, government, law, politics, currency, material etc. The distance value is indicated by column 4 in above table 5. Zero distance value means that there is no phonemic change in English loanwords borrowed to Afghani Pashto. Other distance values such as 1, 2, 3, and 4 mean that these number of sounds or phonemes have been changed due to adaptation in the process of borrowing these words from English into Pashto. It is clear from the corpus that those English loanwords which are borrowed into Pashto are of two types. One type of word goes through the process of adaptation and changes its phonemic structure while the other does not change its phonemic structure. The following figure clarifies and summarizes the analysis of Levenshtein's distance of English loanwords borrowed into Afghani Pashto.

Figure 2

Levenshtein's Distance Analysis



Phonemic variations through different patterns are discussed in the following detailed analysis. Levenshtein's distance value is also elaborated in detail. Data is described according to different phonological patterns such as substitution, deletion, addition and epenthesis. The detailed description is as below:

Words with no Phonemic Change

Eight English loanwords borrowed into Afghani Pashto shows zero distance value. They range from serial no.1 to serial no.8 in table 5. This means that these eight words do not undergo any phonemic variations when they are adapted to Afghani Pashto and their pronunciation is not changed.

Words with One Phonemic Change

Twenty-nine English loanwords borrowed into Afghani Pashto show one distance value. They range from serial no.9 to serial no.37 in table 5. This means that these English loanwords undergo one phonemic change during the process of adaptation. By comparing Pashto pronunciation with the English pronunciation of English loanwords from serial no. 9 to serial no. 37 in table 5 indicates that this variation is done through the substitution of a vowel or consonant or the addition of a vowel or consonant. Details are given as:

Substitution of Vowel: It is observed from the data that the substitution of a vowel sound of Afghani Pashto in borrowing English loanwords is a dominant adaptation pattern. It is indicated from the data that some Pashto vowels replace English vowels in adapting English words. Examples of Pashto vowel substitution in adapting English words from table 5 are as below:

- Pashto low back rounded vowel /ɑ/ replaces the English short vowel (front open vowel) /æ/ as in the word *tablet* (s.no 9) and the English back long vowel /ɔ:/ as it is there in *football* (s.no 35).
- Pashto low central unrounded vowel /a/ replaces the short vowel /ʌ/ as in the word *option* and *bomb* (s.no10 and 19). It also replaces the English short vowel (front open vowel) /æ/ as in *camp* (s.no 29) and the English short vowel /ɪ/ as in *ticket* and *tennis* (s.no 30 and 31). English schwa sound /ə/ is also replaced by Pashto low central unrounded vowel /a/ as in *address* (s.no 16).
- Pashto mid-front unrounded vowel sound /e/ replaces English diphthong /eɪ/ as in the words *base*, *case* and *Facebook* (s.no 11, 14, and 20) and it also replaces English short vowel (front open vowel) /æ/ as in *bat* (s.no 21).
- Pashto high back tense rounded vowel sound /u/ replaces the English long back close rounded sound /u:/ as in *group* and *boot* (s.no 12 and 25).
- Pashto high front tense unrounded vowel /i/ replaces English long /i:/ as in words *team*, *cream* and *league* (s.no 13, 24, and 37).
- Pashto mid-back rounded vowel /o/ replaces the English diphthong /əʊ/ as in *role*, *goal* and *drone* (s.no 17, 23, and 28). It also replaces the English short vowel schwa sound /ə/ as in *petrol* (s.no 22). English back long vowel /ɔ:/ is also substituted by Pashto English back long vowel sound /ɔ:/ as in *passport*.
- Pashto mid-central lax unrounded vowel /ə/ replaces the English short vowel /ɪ/ as in 'system'.

Substitution of Consonant: Since some English consonant sounds are missing in the phonemic inventory of Pashto and some Pashto consonants are missing in the English phonemic inventory, variations in consonant sounds occur in adapting English words by Pashto. English consonant such as /θ, v, ʒ/ are missing in Pashto phonetic

inventory while Pashto consonant sound such as /t, d, n, kh, gh, r, x, ɸ, ʔ, y, ts, ɟ/ are missing in English language. When words are borrowed from English into Pashto, the consonants of English language are changed into the nearest consonant of Pashto. Sometimes there may be an English consonant in Pashto but still Pashto speakers substitute it with their Pashto consonant sound. There is only one instance of substitution of English consonant sound with a Pashto consonant from table 5 in which the English alveolar plosive and voiceless consonant sound is /t/ substituted with the Pashto dental stop and voiceless consonant sound /t/. They both have the same symbols but they have different places and manners of articulation. It is there in the word *list* (s.no 26).

Addition of a Consonant: Some silent letters in English words are not pronounced by English speakers but Pashto speakers pronounce them. This is considered as an addition of a consonant sound in this study. In the words *commissioner* and *charge* (s.no 15 and 32), the final /r/ sound is not pronounced by English speakers but Pashto speakers pronounce these consonant sounds and thus /r/ sound is added.

Epenthesis: In the strategy of epenthesis, a vowel sound is inserted to break the consonant cluster. It is also noted in adapting English loanwords into Pashto as in the word 'double' (Sr.no 18), Pashto low central unrounded vowel /a/ is added between the English consonant sounds /b/ and /l/ to break the consonant cluster. Pashto low back rounded vowel /ɑ/ is inserted between /d/ sound and /l/ sound to break the consonant cluster in the word *medal* (s.no 34).

Words with Two Phonemic Changes

27 English loanwords borrowed to Afghani Pashto showed two changes in phonemes. These words are from serial n. 38 to 63 in table 5. The changes follow the pattern of substitution of two vowels, substitution of consonant and vowel, epenthesis and substitution of vowel, substitution of a vowel and epenthesis,

Substitution and addition of consonant and substitution and deletion. They are explained with examples below:

Substitution of Two Vowels: In this strategy, two Pashto vowel sounds are substituted in an English loanword. Following are some of the cases for this strategy from the data:

- When English diphthong /əʊ/ and short vowel schwa /ə/ is used in English loanwords, /əʊ/ is substituted by Pashto short mid-back rounded vowel /o/ and English schwa /ə/ is replaced by with Pashto long low back rounded vowel /ɑ/ in adapting process as in *diplomacy* (s.no 38).
- If the English diphthong /aɪ/ and short vowel schwa /ə/ are used in English words, Pashto high front tense unrounded sound /i/ replaces the English diphthong /aɪ/ and Pashto high back tense rounded vowel /u/ replaces English short vowel schwa /ə/ as in *virus* (s.no 39).
- When the English short vowel /æ/ and English long vowel /i:/ are used in the English word, Pashto low back rounded /ɑ/ replaces the English short vowel /æ/ and Pashto high front tense unrounded sound /i/ replaces the English long sound /i:/ as in *vaccine* (s.no 40).
- If the English short vowel /ɪ/ and short vowel schwa /ə/ are used in the English word, Pashto high front tense unrounded sound /i/ replaces the English short vowel /ɪ/ and Pashto high back tense rounded vowel /u/ replaces English short vowel schwa /ə/ as in the case of 'trillion' (s.no 41).
- When the English short vowel schwa /ə/ and long vowel /i:/ are used in the English word, Pashto high back tense rounded vowel /u/ replaces the English short vowel schwa /ə/ and, Pashto high front tense unrounded sound /i/ replaces English long vowel /i:/ as in the word *police* (s.no 42).
- If the English diphthong /əʊ/ and English short vowel /æ/ is used in the English word, Pashto short mid-back rounded vowel /o/ replaces the English diphthong /əʊ/ and Pashto low back rounded /ɑ/ replaces English short vowel /æ/ as in the word *program* (s.no 44).
- If the short vowel schwa /ə/ and English short vowel /ɪ/ and are used in the English word, Pashto short mid-back rounded vowel /o/ replaces the short vowel schwa /ə/ and Pashto high front tense unrounded sound /i/ replaces the the the English short vowel /ɪ/ as in the word *position* (s.no 41).
- If the English central short vowel /ʌ/ and English diphthong /eɪ/ and are used in the English word, Pashto low central unrounded vowel /a/ replaces the English central short vowel /ʌ/ and Pashto mid front unrounded sound /e/ replaces English diphthong /eɪ/ as in the word *update* (s.no 48).
- If English diphthong /aɪ/ and English diphthong /əʊ/ are used in the English word, Pashto high front lax unrounded /ɪ/ replaces English diphthong /aɪ/ and Pashto short mid back rounded vowel /o/ replaces English diphthong /əʊ/ as in the word *microbe* (s.no 50).
- If the English short vowel schwa /ə/ and English diphthong /əʊ/ are used in the English word, Pashto low central unrounded /a/ replaces the short vowel schwa /ə/ and Pashto short mid back rounded vowel /o/ replaces English diphthong /əʊ/ as in the word *control* (s.no 51).
- If the English short vowel /æ/ and short vowel schwa /ə/ are used in the English word, Pashto low central unrounded /a/ replaces the English short vowel /æ/ and Pashto high back tense rounded vowel /u/ replaces English short vowel schwa /ə/ as in the word *atom* (s.no 55).
- If the English short vowel /ɪ/ and English long vowel /i:/ are used in the English word, Pashto high front tense unrounded sound /i/ replaces the English short vowel /ɪ/ and

English long vowel /i:/ as in the word *physique* (s.no 56).

- If the English short vowel /ɒ/ and English short vowel schwa /ə/ are used in the English word, Pashto short mid-back rounded vowel /o/ replaces the English short vowel /ɒ/ and Pashto low back rounded /ɑ/ replaces the English short vowel schwa /ə/ as in the word *democracy* (s.no 60).
- If the English diphthong /əʊ/ and English short vowel /e/ are used in the English word, Pashto short mid-back rounded vowel /o/ replaces the English diphthong /əʊ/ and Pashto schwa /ə/ replaces English short vowel /e/ as in the word *hotel* (s.no 61).
- If the English short vowel /ɪ/ and English long vowel /ɔ:/ are used in the English word, Pashto low central unrounded /a/ replaces the English short vowel /e/ and Pashto short mid-back rounded vowel /o/ replaces the English long vowel /ɔ:/ as in the word *hotel* (s.no 61).

Substitution of consonant and vowel: In this pattern, an English consonant and vowel both are replaced by a Pashto consonant and vowel in adapting English words by Pashto speakers. Data shows a few such cases which are described below:

- a) English short vowels /æ/ and velar nasal consonant sound /ŋ/ are replaced by Pashto low back rounded /ɑ/ and Pashto consonant /n/ respectively as in *tank* and *bank* (s.no 45 and 59).

Epenthesis and Substitution of vowel: In this pattern, one vowel sound is inserted or added and one vowel sound is substituted in a word. Description of this pattern with examples from data is as:

- a) Insertion of Pashto high front lax unrounded vowel and the substitution of English short vowel /æ/ with Pashto low

back rounded vowel /ɑ/ is observed in the word *plan* (s.no 43).

- b) Insertion of the Pashto short mid-back rounded vowel /o/ and the substitution of the English short vowel schwa /ə/ with Pashto low back rounded vowel /ɑ/ is observed in the word *restaurant* (s.no 52).

Substitution of a vowel and epenthesis: This pattern is the reverse of the previous pattern i-e first of all a sound is substituted and then another sound is inserted in a word. Examples of this pattern are as:

- a) Substitution of the English short sound /ɒ/ with Pashto short mid-back rounded vowel /o/ and insertion of Pashto low central unrounded /a/ is observed in the word *bottle* (s.no 53).
- b) Substitution of the English short sound /ʌ/ with Pashto high back tense rounded vowel /u/ and insertion of Pashto low central unrounded /a/ is observed in the word *tunnel* (s.no 54).

Substitution and Addition of consonant: In this pattern, the English vowel is substituted with a Pashto vowel sound and a Pashto consonant sound is added to the words. Examples are as:

- a) English short vowel /æ/ is substituted with Pashto low central unrounded /a/ and Pashto voiced dental tap or trill consonant /r/ is added in the word *character* (Sr.no 49).
- b) The substitution of Pashto low central unrounded /a/ with the English long vowel sound /ɑ:/ and the addition of the Pashto voiced dental tap or trill consonant /r/ is noted in the word *market* (s.no 62).
- c) English short vowel /ɒ/ is substituted with Pashto low back rounded vowel /ɑ/ and Pashto voiced dental tap or trill consonant /r/ is added in the word *dollar* (s.no 47)

Substitution and deletion: In this pattern, an English vowel is substituted with a Pashto vowel and an English vowel is deleted from the words. Examples are as:

- a) English short vowel /æ/ is substituted with Pashto low central unrounded vowel /a/ and the English vowel is deleted in the words *camera* (s.no 57).
- b) Substitution of the English short vowel /ɒ/ with the Pashto low back rounded vowel /ɑ/ and deletion of the English short vowel schwa /ə/ is noted in the word *lottery* (s.no 58).

Words with Three Phonemic Changes

23% of words shown from serial 64 to 84 in table 5 show Levenshtein's distance value 3 (three). It means, these English loanwords undergo three phonological changes when they are adapted into Afghani Pashto. Their details are given below with examples.

Substitution of three vowels: In this process, Some English loanwords have undergone the substitution of three vowel sounds. Examples are as:

- a) In the word *telephone* (s.no 82) there is the substitution of three vowel sounds as the English short vowel /e/ is replaced by the Pashto high front tense unrounded vowel /i/, English short vowel /ɪ/ by Pashto high front tense unrounded vowel /ɪ/ and English diphthong /əʊ/ by Pashto high back tense rounded vowel /u/.
- b) In the word *database* (s.no 80) there is the substitution of three vowel sounds as English diphthong /eɪ/ is replaced by Pashto mid front unrounded sound /e/, English short vowel schwa /ə/ by Pashto low back rounded vowel /ɑ/ and English diphthong /eɪ/ by Pashto mid front unrounded sound /e/.
- c) In the word *committee* (s.no 78) there is the substitution of three vowel sounds as the English short vowel /ə/ is replaced by Pashto short mid-back rounded vowel /o/, the English short vowel /ɪ/ by Pashto mid-front unrounded sound /e/ and English /i/ by Pashto low central unrounded /a/.

Substitution of two vowels and addition: In this pattern, two English vowel sounds are substituted and a Pashto consonant is added. Examples are as:

- a) In the word *motor* and *kilometre* (s.no 66 and 73), there is the substitution of English diphthong /əʊ/ with Pashto short mid back rounded vowel /o/, English short vowel schwa /ə/ with Pashto low central unrounded /a/ and the addition of Pashto dental tap and voiced consonant /r/ at the end.
- b) In the word *hacker* (s.no72), there is the substitution of the English short vowel /æ/ with Pashto low back rounded vowel /ɑ/, English short vowel schwa /ə/ with Pashto low central unrounded /a/ and the addition of Pashto dental tap and voiced consonant /r/ at the end.
- c) In the word *computer* (s.no70), there is the substitution of the English short vowel schwa /ə/ with Pashto low central unrounded /a/, English long vowel /u:/ is replaced with Pashto high back tense rounded vowel /u/ and the addition of Pashto dental tap and voiced consonant /r/ at the end.
- d) In the word *doctor* (s.no 68), there is the substitution of English short vowel /ɒ/ with Pashto low back rounded vowel /ɑ/ English short vowel schwa /ə/ with Pashto low central unrounded /a/ and the addition of Pashto dental tap and voiced consonant /r/ at the end.

Substitution of vowel and consonant and vowel: In this pattern, the first vowel is substituted, then the consonant and then again the vowel. The examples are as:

- a) In the word *plastic* (s.no 81), Pashto low back rounded vowel /ɑ/ replaces English short vowel /æ/, Pashto dental stop and voiceless consonant /t/ replaces English alveolar plosive /t/ and again Pashto high front tense unrounded vowel /i/ replaces English short vowel /ɪ/.

- b) In the word *congress* (s.no77), Pashto low back rounded vowel /**ɑ**/ replaces English short vowel /**ɒ**/, the dental nasal and voiced consonant (**n**) replaces English velar nasal /**ŋ**/ and again Pashto short vowel schwa /**ə**/ replaces English short vowel /**e**/.

Consonant and vowel substitution and consonant addition: In this pattern first English consonant and vowel are substituted with a Pashto consonant and vowel and then a Pashto consonant is added. Examples are as:

- a) English post-alveolar affricate consonant /**tʃ**/ is changed with Pashto dental stop and voiceless consonant /**t**/, English short vowel schwa /**ə**/ is changed with Pashto high back tense rounded vowel /**u**/ and Pashto dental tap and voiced consonant /**r**/ is added at the end as in *culture* (s.no 83).
- b) English alveolar plosive /**t**/ is changed with Pashto dental stop and voiceless consonant /**t**/, English short vowel schwa /**ə**/ is changed with Pashto short mid back rounded vowel /**o**/ and Pashto dental tap and voiced consonant /**r**/ is added at the end as in *sector* and *hector* (s.no 69 and 75).

Substitution, deletion and substitution of a Vowel: In this pattern, a substitution, deletion and substitution of vowel occur. Examples are as:

- a) English short vowel /**ɒ**/ is replaced with Pashto low back rounded vowel /**ɑ**/, English short vowel schwa /**ə**/ is deleted and second English short vowel schwa /**ə**/ is replaced with Pashto low back rounded vowel /**ɑ**/ as in the word *conference* (s.no 71).
- b) English short vowel /**e**/ is replaced with Pashto low central unrounded /**a**/, English short vowel schwa /**ə**/ is deleted and second English short vowel schwa /**ə**/ is replaced with Pashto low back rounded vowel /**ɑ**/ as in the word *general* (s.no 74).

Substitution of consonant, vowel and consonant: In this pattern first consonant sound is substituted, then the vowel is substituted and

then again the consonant sound is substituted. In the word *method* (s.no 65) there is the substitution of fricative dental consonant /**θ**/ with Pashto dental voiceless stop consonant /**t**/, then English short vowel schwa /**ə**/ is replaced with Pashto short mid back rounded vowel /**o**/ and then again English alveolar plosive dental consonant /**d**/ is replaced with Pashto dental stop and voiced consonant /**d**/.

Epenthesis, deletion epenthesis: In this pattern first Pashto vowel is inserted, then the English vowel is deleted and again Pashto vowel sound is replaced as in the word *battery*. In the word *battery* (64), there is the substitution of English short vowel /**æ**/ with Pashto mid-front unrounded sound /**e**/, English short vowel schwa /**ə**/ is deleted and then English short vowel /**i**/ is substituted with Pashto mid-central diphthong /**əi**/.

Substitution of vowel and addition and substitution of consonant: In this pattern, first, a consonant sound is substituted and then a consonant sound is added and finally, vowel sound is substituted. In the word *sport* (s.no76) this pattern is followed. In the word *sport*, English long vowel /**ɔ:**/ is substituted with Pashto short mid-back rounded vowel /**o**/, Pashto dental tap and voiced consonant /**r**/ is added and then English alveolar plosive /**t**/ is changed with Pashto dental stop and voiceless consonant /**t**/.

Substitution of Consonant and double vowel: In this pattern, the first a consonant sound is substituted and then two vowels are substituted as in *traffic* (s.no 79). In this word English alveolar plosive /**t**/ is changed with Pashto dental stop and voiceless consonant /**t**/, the English short vowel /**æ**/ is replaced with Pashto low back rounded vowel /**ɑ**/ and then Pashto high front tense unrounded vowel /**i**/ replaces English short vowel /**ɪ**/.

Vowel substitutions, consonant addition and vowel substitution: In the word 'journalist' (s.no

67), Pashto short mid-back rounded vowel /o/ replaces the English long vowel /ɜ:/, Pashto dental tap and the voiced consonant /r/ is added and English schwa /ə/ which is a short vowel is replaced with Pashto low back rounded vowel /a/.

Words with Four Phonemic Changes

Six English words borrowed to Afghani Pashto from serial no. 85 to serial no. 90 in table 5 indicated a distance value of 3. It means that these six English words change four phonemes when they are borrowed to the Afghani Pashto. Their detail is given as:

- a) In the word 'democrat' (s.no 85), first, an English alveolar plosive dental consonant /d/ is replaced with Pashto dental stop and the voiced consonant /d/, English schwa sound /ə/ is substituted with Pashto mid back rounded sound of vowel /o/, short vowel of English /æ/ is replaced with Pashto low back rounded sound of vowel /a/ and finally the alveolar plosive sound of English /t/ is changed with Pashto dental voiceless consonant /t/.
- b) In the word *commission* (s.no 88), a short vowel of English schwa /ə/ substitutes with Pashto low central unrounded /a/, Pashto high front tense unrounded vowel /i/ replaces English short vowel /ɪ/, English postalveolar fricative consonant /ʃ/ is replaced with Pashto dental fricative and voiceless consonant /s/ and finally English short vowel schwa /ə/ is replaced with Pashto high back tense rounded vowel /u/.
- c) In the word 'category' (s.no 86), four English vowels are substituted with four Pashto vowels as an English short vowel /ə/ is replaced with Pashto low central unrounded /a/, English short vowel /ɪ/ is changed into Pashto low central unrounded /a/, English short vowel schwa /ə/ is changed into Pashto short mid back rounded vowel /o/ and finally, English short vowel /i/ is changed into Pashto mid-central diphthong /ai/.

- d) In the word 'reform' (s.no 87), double vowel substitution, the addition of consonant and epenthesis occurs because of the substitution of English long vowel /i:/ with Pashto high front tense unrounded sound /i/, English long vowel /ɜ:/ is replaced by Pashto short mid back rounded vowel /o/, Pashto dental tap and voiced consonant /r/ and finally Pashto low central unrounded /a/ is added.
- e) In the word 'America' (s.no 89), substitution and deletion and then double substitution of vowels occur as the English short vowel schwa /ə/ is replaced by Pashto low central unrounded /a/, English short vowel /e/ is deleted, a short vowel of English /ɪ/ is replaced with Pashto high front tense unrounded vowel /i/ and finally, English short vowel sound schwa /ə/ is replaced with Pashto low back rounded vowel /a/.

Conclusion

It is concluded from the above discussion that English words borrowed from Afghani Pashto undergo phonemic variations. It is also clear from the above discussion that 9% of English words which are borrowed into Afghani Pashto do not undergo the process of phonemic variation and they retain their original pronunciation whereas 91% of English words borrowed into Afghani Pashto undergo the process of phonemic variation. 32% of words indicate single phonemic change. 29% of English words show two phonemic changes. 23% English words result in three phonemic changes. 7% English words borrowed into Afghani Pashto show variation in four phonemes.

These variations occur through different phonological patterns such as addition, deletion, substitution and epenthesis. In phonological strategies, substitution is more frequent as compared to other strategies. It is noted from that data that English loanwords enrich Pashto vocabulary but the purity of the Pashto is also being lost by borrowing English words.

Consonant sounds as well as vowels sounds are changed. Vowel variations are more frequent than consonant variations.

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