International Journal of Contemporary Issues in Social Sciences
Volume 3, Issue 1, 2024 ISSN(P):2959-3808 | 2959-2461

PUNJABI ALLOPHONES: A CORPUS-BASED STUDY OF URDU LOANS IN PUNJABI

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Received: 16 February, 2024 **Revised:** 15 March, 2024 **Accepted:** 22 March, 2024 **Published:** 31 March, 2024

ABSTRACT

This paper explores the adaptation of Urdu loanwords into Punjabi mainly as equivalent allophonic variants. It is a study of allophonic variation in Punjabi language that has resulted from Urdu phonology with respect to orthographic and perceptual roles. To examine the Punjabi allophones, a corpus was developed. The data was taken from Punjabi theatre and movies, a Punjabi bulletin and actual life conversations. A corpus of 75 words was carefully chosen for the present study which exhibited Urdu loanwords used as Punjabi allophonic equivalent. This study explicates that allophonic variation in Punjabi is a systematic phenomenon and borrowings from Urdu to Punjabi are still possible.

Keywords Punjabi, allophones, loanword adaptation and importation, phonology.

INTRODUCTION

Change is a universal law for all languages in this world. Saussure is of the view "Time modifies everything: there is no intention behind languages evading such universality" (Aitchison, 2004, p. 3). Languages alter inherently via the generation of new lexemes through existing lexemes or get influenced by foreign languages. Languages interact with each other, thereby leading to diversification at phonological, morphological, grammatical or semantic levels.

New words enter into a recipient language through different ways and one of the most fundamental sources is borrowing from the proximate languages in multilingual communities. As a consequence, this language contact situation leads to the systematic phenomenon of borrowing loanwords. It further unveils the latent linguistic structures of the languages used for interaction. The importation of loanwords means a receiver language has to accommodate the linguistic subsystems with respect to consonant or vowel phonemic inventories of the donor language. When a language incorporates words in accordance with its phonological system, it is referred to as loanword adaptation.

There is a critical debate on loanword adaptation among linguists. According to Batais (2024), as it has become an important phenomenon due to its multidimensionality; it manifests the language interaction, multilingual contact situations, psycho-social factors, language flexibility with respect to grammar, vocabulary and phonology. Recent studies (Batais, 2024; Kim, 2022; Guevara-Rukoz & Peperkamp, 2021; Kwon, 2017) on loanwords have resulted in theory development in phonological adaptation like constraint theories and repair strategies (LaCharite & Paradis, 1997), consonantal debuccalization (Batais, 2024), the Multi-scansion model (Silverman, 1992), and optimality Theory (Zaharani, 2005). Based on studies (e.g., Babaalipour, Razinejad, & Oroji, 2024; Wang, 2023; Dohlus, 2010) conducted on multiple languages, these advances have extended the scope of loanword phonology while identifying phonological constrictions behind them.

Multilingualism is more conspicuous in Punjab than the other provinces of Pakistan. Three languages are predominantly spoken; English as an academic or institutional language, Urdu as a national language in formal situations and Punjabi as a regional language in informal situations in the major cities of Punjab (Lahore, Multan, Sheikhupura, Faisalabad, Gujranwala and Bahawalpur). Punjabi has borrowed

Urdu phonemes or words expansively for it is the second most prestigious language after English. Urdu is not only broadly articulated but also plays the part of lingua franca. During the adaptation process a given Urdu loan sound is observed to be plotted onto the phonetic set of Punjabi language in such a way that meaning remains the same. Hence, it marks the use of Urdu loans as Punjabi allophones. For example, /baal/ becomes allophonic variant of /vaal/ in the Punjabi language (see data analysis). The current study, therefore attempts to develop a corpus to explore Punjabi allophonic variants or equivalents borrowed from the Urdu language.

In addition, it tries to examine the influence of experience with the source language for loanwords on loanword adaptation, asking whether the influence can be attributed to listener-borrowers' perception of the source language. It further explores the phonological phenomenon with respect to orthography.

Purpose of the Research

This study aims to explore the extent to which Urdu loanword adaptation allows for the variation in phonological tendencies of Punjabi. For instance, the phonemic change at the word onset and the word coda position has no effect on the semantic value of the word. Therefore, it becomes a source of Punjabi equivalent allophones.

Research Question

This study attempts to answer the following research question:

- Do Urdu loanword phonological adaptations in Punjabi act as its equivalent allophonic variants?

Literature Review

Loanword Adaptation

Previous studies approached loanword adaptation in three different ways. The perception-oriented approach arose from misperceptions at the phonetic level close to the available phonemes in the receiving language (Kim, 2022; De Jong & Cho, 2012; Boersma & Hamann, 2009; Peperkamp, 2005; Peperkamp & Dupoux, 2003). These adaptations are the result of perceptual assimilation when the non-native structural sounds phonetically map the closest possible native sound (Peperkamp, Vendelin & Nakamura, 2008). For example, Mahmood et al., 2011 and Hussain, 2011 studied the perceptual closeness of the /əʊ/ and /o/ in Punjabi and Urdu. So, this change in loanwords was noted at the perceptual level without involving phonology. In contrast to this, is the phonological approach where adaptation follows the proximity principles as the phonetic segments correspond to the phonological categories of the donor language (Abdulrazzaq & al-Ubaidy, 2023; Zibin, 2019; Greg & Nkamigbo, 2014; Rose & Demuth, 2006; Uffmann, 2006; La Charite & Paradis, 2005). For example, Chang (2009) opines that English voiced stops bear phonetic closure to Spanish voiceless stops with short-lag voice onset time. Similarly, adaptation of English rhotics in Japanese shows a similar structural pattern. But this is not the case always, as Silverman (1992) proposed that bilinguals while adapting did not apply their L1 knowledge and perceived the loanwords just like monolingual speakers. With this, came the perception-phonology approach also known as Optimality Model. This approach previewed the phonological constraints of L1 as well as the orthographic effects of L2 in the sense that perceptual contribution is modified by the recipient language's phonological organization (e.g., Kenstowicz & Suchato, 2006; Mao, 2006; Yip, 2006; Zaharani, 2005; Kang, 2003; Steriade, 2001).

Apart from above-mentioned models, there are multiple factors involved in loanword adaptation such as orthography, morphology and semantics (e.g. Batais, 2024; Kim, 2022; Guevara-Rukoz & Peperkamp, 2021; Kwon, 2017; Adler, 2006; Davis & Cho, 2006 & Smith, 2006). "Production-oriented approaches" propagates that loanword adaptations are influenced by production grammar (Jacobs & Gussenhooven, 2000, p. 23). They further elaborate that recipient language speakers make modifications in the loans via deletion, epenthesis or substitution (see also Kartushina & Martin, 2019).

Loanword Phonological Studies

Studies on loanword phonology investigated the adaptation and integration of foreign words into a target language's phonological system. These studies analyzed how loanwords undergo phonological changes, such as assimilation, deletion, or modification, to fit the phonotactic constraints of the borrowing language. By examining patterns of phonological adaptation, linguists gained insights into the phonological processes at work in language contact situations, shedding light on how languages evolve and interact over time. Moreover, loanword phonological studies contribute to our understanding

of linguistic borrowing, language change, and the mechanisms underlying phonological variation and stability within a linguistic community.

According to Kenstowicz and Suchato (2004), the loanword adaptation in Thai voiceless-aspirated stops as in [phin], [thees] and [khoon] are equated with English word-onset voiceless stops like [pin], [test] and [cone] respectively. On similar lines, Shinohara et al. (1997) investigated Japanese-Korean voiced versus voiceless correspondences with a data set of 150 loanwords from the restaurant menu, fashion news and tourist maps. Examples of these correspondences like [data] vs. [tata] and [gata] vs. [kata] are not based on acoustic or perceptual similarity but on phonological resemblances.

Davis and Cho (2006) considered multiple views on phonological adaptations by exploring the English word final /s/ into the Korean language. Due to the durational difference, it has modified into tense /sˈ/ with a vowel epenthesis as exemplified in the English bus as [pˈəsˈɨ]. Kim and Curtis (2002) explained that the importation of coda /s/ as tense [sˈ] and plain [s] in a cluster segment was due to the sub-phonemic acoustic properties of both the languages and thereby support the perceptual approach of loanword phonology.

Shoul (2007) conducted perceptual experiments in which the three vowels /ti/, /tu/ and /ta/ were altered systematically in Morroccan Arabic. This loanword adaptation occurred due to the enhancing relation coexisting between redundant vocalic segments and distinctive lexical features as is shown in the case of /boite/ (tin can) as /bwaT/ in Mandarin and /bwiyT-a/ in Morrocan Arabic.

Ito and Kentowicz (2008) studied 240 loanwords from Mandarin into Yanbian dialect of Korean. They focused on the adaptations of Mandarin voiced plosives in the Yanbian aspiration at two-word positions: initially and medially; and Mandarin unvoiced plosives as Yanbian tense plosives in word-onset position but as lax plosives at medial position.

Hsieh et al. (2009) developed a corpus-based study of English loanwords into Mandarin. The possible combinations of loan source included front versus back vowels and coronal versus velar nasal segments. In keeping with the Rhyme Harmony phonotactic constraint, the adaptations in Mandarin were reduced to as /an/ or /aŋ/. Another example of loanword adaptation (Kentowicz & Louriz, 2009) showed adaptations of French words into Arabic (Morroco) in terms of vowel correspondences. Pharyngealization modified the French language on the nearby phonemes, that is, /o/ /ɔ/ and /a/. Even the loanwords with /e/ and /ɛ/, the variable results range between /i/, /a/ and /e/ with an emphatic tone.

Ito and Mester (2009) discussed the distribution of germinate obstruent in Japanese loanwords from English. In opposition to single obstruent like /pp/, /tt/, /kk/ versus /p/, /t/, /k/, germinate obstruent is determined on the basis of contrastive consonant length in their study. They further revealed that loanword phonology constraints severely affected Japanese loanword adaptations. Kang (2012) examined diachronically English liquid adaptation in Korean based on loanwords from 1890 till present. In contrast to the realization of /l/ as /n/, it variably modified to singleton /r/ which was a remnant of Japanese-mediated loans and germinates /ll/ based on the durational differences of the English language.

De Jong & Cho (2012) investigated the adaptation of English loanwords into Korean, particularly focusing on the perception of consonant sounds by Korean students of English in Korea. Through a comparative analysis of English loanwords in Korean and perceptual responses to English productions by Korean learners, they examined the mapping of obstruent consonants onto Korean categories in different prosodic contexts. They found a strong logistic relationship between loanword adaptation and perceptual patterns, indicating a process of regularization in aligning loanwords with cross-language perception patterns. However, they also identified exceptions that suggest influences from historical lexicalization and sociocultural standards, highlighting the complexity of loanword adaptation beyond mere synchronic perception. Overall, loanword adaptation in Korean involved an intricate interplay of perceptual bases, historical factors, and sociocultural influences, with perceptual patterns being significant but not exclusive determinants.

Tu and Davis (2013) investigated the tonal adaptations of Japanese loanwords into Taiwanese Southern Min by focusing on suprasegmental patterns. Taiwanese Southern Min is a tonal language and Japanese is a pitch accent language, therefore, the differences in both the languages led towards tonal adaptation without the lexical specifications of accent.

Beel and Felder (2013) examined two ways in which Turkish people assimilated and adapted English loanwords to fit their phonological system. Their

findings revealed that with the help of deletion, the word /əpɑrtmɜnt/ becomes /ʌpʌrʔman/ and the final consonant [t] was deleted. Similarly, epenthesis added a sound as in the word studio became /sʉtʉdiɔ/ with the extra vowel [ʉ]. Here the adaptation was done through several linguistic processes to cope with the phonological constraints of the borrowed words.

Obiamalu and Nkamigbo (2014) studied the phonology of loanwords in Ma'da, a Benue-Congo language spoken in Nasarawa state, North Central Nigeria, employing Optimality Theory (OT) as its theoretical framework. Drawing data from the Ma'da-English dictionary and audio recordings of native speakers, they investigated the phonological processes involved in the adaptation of borrowed words, including vowel deletion, coda and cluster simplification, structure preservation, and syllable deletion. They analyzed the strategies employed by Ma'da speakers in integrating loanwords into their language, revealing that while these words often undergo phonological changes, constraints are utilized to maintain the integrity of Ma'da's phonological structure. Despite violating syllable structure and phonotactics to some extent, Ma'da employed constraints that ensure the output material remains independent of the input, shedding light on the mechanisms of borrowing and adaptation within the language.

Hashemi et al. (2014) gathered 700 Arabic words from the Persian dictionary of Moienand and phonemic words from two other Arabic dictionaries, a contemporary Arabic-Persian dictionary and the Assimil FranXais-Arab dictionary to study the Arabic loanwords in Persian. Using Optimality Theory, loanwords of the closest approximation replaced the interdental, pharyngeal and bilabial sounds with respect to the place of articulation. Furthermore, the glottal plosive consonant /ʔ/ is deleted at word-coda positions.

Kang, Pham and Storme (2016) showed that extensions of French phonotactic constraints were adapted productively in the loanwords. This adaptation is not native-like due to its non-isomorphic relation to the French input. However, French-Vietnamese vowel correspondences comprise of complex loanword adaptation involving L1 phonological tendencies, phonetic resemblance and L2 phonological constraint.

Boersma and Hamann (2017) examined loanword adaptation, focusing on Korean, through phonological and phonetic mechanisms. They found that loanword adaptation can be fully understood within an Optimality-Theoretic grammar model, utilizing three levels of representation similar to those in native phonology. Accordingly, this bidirectional model suggested that the same constraints and rankings are employed by both listeners and speakers during loanword adaptation, aligning with processes observed in native language processing. Methodologically, they conducted detailed analyses of loanword phenomena, mapping them onto established phonological and phonetic mechanisms in Korean to demonstrate their applicability within the OT framework. Moreover, their study contributed to our understanding of how loanword adaptation occurs and its relationship to native language processing.

Kwon (2017) investigated how experience with the source language (English) affects the adaptation of loanwords into the target language (Korean), focusing on the variable insertion of /ɨ/ after word-final plosives in English loanwords borrowed into Korean. Korean participants of varying English proficiency were asked to borrow non-word stimuli ending in plosives into Korean by adding appropriate case-markers. This study examined four context factors to understand their influence on the insertion of /ɨ/. She suggested that less experienced participants are more attentive to non-contrastive phonetic information, like coda release, compared to more experienced participants, leading to variation in loanword adaptation patterns in Korean.

Kim (2018) conducted a production experiment examining how Korean-speaking learners of English produce English forms ending in stops, focusing on the phenomenon of vowel insertion. Participants repeated English nonce words ending in stops, revealing that only 3% of Korean productions transcribed by English speakers showed vowel insertion, despite longer noise intervals after stop closure for Korean speakers compared to English speakers. Her findings challenged previous theories based on loanword data and perceptual similarity by suggesting a discrepancy between observed behavior and theoretical predictions. Her study contributed to our understanding of cross-linguistic phonological transfer in language production.

Zibin (2019) investigated a linguistic trend in Urban Jordanian Arabic where young individuals, particularly females in Amman, appended the Arabic suffix -ık to English loanwords to appear more

modern, such as transforming "I love you" into [lʌvvɪk]. According to her, gemination of the coda consonant occurs when -ɪk is added to monosyllabic English words with short vowels, while disyllabic words or monosyllabic ones with long vowels or diphthongs do not exhibited gemination. She employed hierarchical syllable structure, metrical phonology, and optimality theory to analyze this phenomenon, offering insights into linguistic borrowing and sociolinguistic trends in UJA.

Erardi, Gardner, and Comploi (2022) examined the usage of English loanwords in Ladin publications and broadcasts, along with the perceptions of Ladins regarding their incorporation into the language. Conducting a survey within an Italian Ladin community, he found that while many loanwords are associated with technology, tourism, and business, Ladins generally do not view English as a threat to Ladin language preservation. However, there is criticism of loanword usage, and he showed a divide over the necessity of creating new Ladin terms to limit borrowing, revealing complex attitudes towards linguistic change within the community.

Abdulrazzaq and al-Ubaidy (2023) investigated linguistic borrowing, focusing on the process of incorporating foreign linguistic elements, known as loanwords, into recipient languages through loanword adaptation. This adaptation involved phonological, morphological, or semantic changes to ensure compatibility with the grammar of the recipient language. They provided an overview of lexical borrowing and investigated three primary models of phonological loanword adaptation: nativization-through-perception, nativization-through-production, and the Optimality Model. They contributed to scholarly understanding by elucidating the mechanisms and theoretical frameworks involved in the integration of loanwords into recipient languages, particularly in the context of phonological adaptation.

Mashaqba et al. (2023) studied plural formation in Jordanian Arabic through a corpus analysis of loanword adaptation, challenging traditional views on idiosyncratic plural forms in the mental lexicon. They found multiple default regularities, with a preference for the feminine sound plural -aat over memory-based broken plural patterns. Accordingly, this preference was attributed to limitations in the mental lexicon, hindering successful mapping of broken plural inflections for loanwords not aligning with the canonical root system. Despite prosodic similarities, factors like frequency and memory association did not significantly sway this preference, highlighting the dominance of default rules in the short term.

Batais (2024) investigated the phonological adaptation of Indonesian loanwords into Minangkabau. Using Optimality Theory, he investigated phonotactic repair strategies employed in Minangkabau, focusing on why and how these strategies are triggered. Through transcribing 52 native Indonesian loanwords elicited from native Minangkabau speakers, he revealed two main adaptations: consonantal debuccalization and deletion, driven by Minangkabau's phonotactic constraints. Notably, debuccalization occurs with word-final voiceless stops and fricatives, while deletion applies to word-final liquid consonants in Indonesian loanwords. His findings supported a phonological basis for loanword adaptation, emphasizing Minangkabau's coda restrictions as guiding factors. Moreover, he contributed to the broader debate on whether loanword adaptation leans more towards phonology or phonetics.

Punjabi Loanword Phonology

The phonological structure of Punjabi is similar to Urdu. Both languages resemble each other with respect to phonemic consonantal inventories. It is because of their interaction with the same foreign languages Arabic and Persian. Gill and Gleason (1962) have listed 42 segmental phonemes in Punjabi of which 29 are the consonants and Urdu has 43 consonants (as cited in Saleem et al. 2002). Bhatia (2009, p.885) has presented the consonantal inventory of Punjabi as follows:

Table 1
Phonemic Consonantal Inventory of Punjabi Language

Type / Place / Manner	Labial	Dental	Retroflex	Palatal	Velar	Back Velar
Stop						
Unvoiced unaspirate	p	t	T	c	k	(q)
Unvoiced aspirate	ph	th	Th	ch	kh	
Voiced unaspirate	b	d	D	j	g	
nasal	m	n	N	˜n	ŋ	
Fricative	f					
Unvoiced		s	sh		x	
Voiced		z			G	
Flap						
Voiced unaspirate		r	R			
Voiced aspirate			Rh			
Lateral						
		l	L			
Semivowels				y		
	Labio-dental w/v					

Apart from the phonemic consonants of Punjabi presented above (Bhattia, 2009, p. 887), the researcher found certain loan phonemes in Urdu which are part and parcel of Punjabi allophonic inventory and that they do not represent phonemic contrast such as /v/ and /b/. Furthermore, instances related to allophones will be dealt in the data analysis section. Punjabi allows allophonic segments at onset, medial and coda position from Urdu loanwords.

Research Methodology

The present study is descriptive and quantitative in nature as it takes into account the occurrence of Urdu loans as Punjabi allophones. The data comprised 75 Urdu loanwords used as Punjabi allophonic equivalents. In order to explore allophonic variants, six Punjabi dramas: Chamkili, Barfii, Budhay Shararti, Jai Ho Zafri di, Darbar Lagao and Sholaa, one Punjabi news channel, that is Punjab TV and eight Punjabi movies including Dhi Rani, Sher-e-Lahore, Chaudrani, Choorian, Heer Ranjha, Majajan, Shareeka and Mohabbataan Sachiyaan were observed closely for study. The list was primarily drawn from the aforementioned Punjabi theatre and movies (recorded time 12:01:27), Punjabi bulletin (recorded time 35:15) and actual life conversations (recorded time 45:05) mainly because allophonic variants were used in them. The researcher also elicited sound tokens of the commonly used Urdu loans as allophones in Punjabi using a picture naming method from Punjabi speakers residing in Lahore. The inclusion of fieldwork data into the analysis was not taken into account but it was considered for the reliability and validity of the Urdu-Punjabi sound correspondences observed in the corpus. Bhatia's (2009) inventory was used as a source of Punjabi sound symbols to transcribe all the Punjabi scripts to IPA transcriptions.

Batais (2024) proposed a phonological epistemological stance and was taken into consideration for the aforementioned adaptation pattern. He described that the closest possible phonological mapping of the non-native segments on the native segments takes place as a result of adaptation processes. In present case, the recipient language which is Punjabi typically followed one of strategies. These strategies resonate with the study of La Charite and Paradis (2005). Either the Punjabi language replaces phonetically similar Urdu loan

phoneme or it retained the phoneme from Urdu thereby acquiring a new phonemic distinction through borrowing. In the first strategy, the complete nativization of Urdu loans keeps us unaware of the origin of the word. According to second strategy, Urdu loans retained a non-native flavor because of the presence of the borrowed phoneme. These were well-attested possibilities but it was not clear as to which was likely to be adopted in a given situation. In both the cases, Urdu loans were adapted as Punjabi equivalents either through adopting phonetic or phonological strategies during the adaptation process. For example borrowed words with [b] such as /ba:l/ (hair) and /bɪnnəna:/ (ear or nose hole piercing) were realized with [v] in the recipient language. The voiced unaspirated bilabial stop [b] was consistently borrowed in place of semi-vowel labio-dental [v] and thus actually occurred as an allophonic equivalent of [v] in word –initial position.

Data Analysis and Findings

The data was analyzed on the basis of the following categories of substitution occurring in words at onset, medial and coda positions as shown in the table 2.

Table 2

Categories of Substitution in Data

Sr.#	Word-Positions	Type of Allophonic Substitution
1.	Onset	[v]/[b], [j]/[z], [t]/[d]
2.	Medial	[v]/[b], [j]/[z], [t]/[d], [Rh]/[L]
3.	Coda	[j]/[z], [t]/[d], [Rh]/[L]

In order to analyze the Urdu loanword adaptation as Punjabi allophonic equivalents, only those items were dealt with in which the relevant three word-positions were found. In fact, there were many words with several substitutions, they were considered as word-onset or word-medial or word-coda change as a result of the involvement of the same adaptation strategy.

Loanword Adaptation Patterns for Punjabi Consonants

Several asymmetries were identified in how Urdu loanwords with phonemes [b], [z], [d] and [L] align with Punjabi phonemes [v], [j], [t] and [Rh] respectively resulting in semantic similarity and thereby serving as Punjabi allophones. Examples are as follows:

Table 3

Substitution of /b/

Word-initial Position

Sr. #	Urdu	Punjabi	English Gloss
1.	/ba:ja/	/va:ja/	Trumpet
2.	/beɪa:hi:/	/veɪa:hi:/	Married
3.	/beɪlʌn/	/veɪlʌn/	chapati flatbread tortilla presser
4.	/bɪnana:/	/vɪnana:/	nose or ear piercing
5.	/bɪkna:/	/vɪkna:/	sell or sold
6.	/bhɪsha:na:/	/vhɪsha:na:/	Spread
7.	/bʌsna:/	/vʌsna:/	living or dwelling somewhere
8.	/bʌtna/	/vʌtna/	Rouge
9.	/ba:lɪ/	/va:lɪ/	Earring
10.	/beɪsʌn/	/beɪsʌn/	gram flour
11.	/ba:ns/	/va:ns/	Bamboo
12.	/beɪcha:ra/	/veɪcha:ra/	Unblessed

13.	/bɪchəRa:/	/vɪchəRa:/	Estranged
14.	/bakheɪRa/	/vakheɪRa/	fight or quarrel
15.	/bʌchRa:/	/vʌchRa:/	Calf
16.	/beɪa:/	/veɪa:/	Marriage
17.	/bɪkhreɪ/	/bɪkhreɪ/	disheveled or disorderly
18.	/bʌstɪ/	/vʌstɪ/	urban settlement
19.	/bær/	/vær/	hostility or enmity
20.	/bɪgri:/	/vɪgri:/	spoil or damage
21.	/bi:daɪ/	/vi:daɪ/	Valediction
22.	/ba:l/	/va:l/	Hair
23.	/ba:ri/	/va:ri/	turn or opportunity
24.	/brətna/	/vrətna/	to use
25.	/bəri:/	/vəri:/	wedding clothes and accessories
26.	/bʌrma/	/vʌrma/	auger (carpenter's tool)
27.	/bɪkaʊ/	/vɪkaʊ/	Unsold
28.	/bɪgrhi/	/vɪgrhi/	spoiled relation
29.	/ba:chʌr/	/va:chʌr/	rain with light wind
30.	/ba:nsʊri/	/va:nsʊri/	bamboo flute
31.	/bʌjna/	/vʌjna/	Play
32.	/ba:si:/	/va:si:/	Settled
33.	/ba:g/	/va:g/	rein or bridle
34.	/bʌsni:k/	/vʌsni:k/	Resident
35.	/bɪga:rh/	/viga:rh/	damage or impair
36.	/beɪchna/	/veɪchna/	to sell
37.	/ba:n/	/va:n/	Twine
38.	/bɪkri/	/vɪkri/	Retail
39.	/bəpa:ri/	/vəpa:ri/	Monopolist
40.	/bi:ra:/	/vi:ra:/	Brother
41.	/bʌsna:/	/vʌsna:/	reside or settle or dwell

Word-medial Position

Sr. #	Urdu	Punjabi	English Gloss
42.	/abəda:n/	/avəda:n/	cheerful
43.	/bagba:n/	/bagva:n/	garden keeper or guard

Table 3 shows the substitution of /v/ in Punjabi to adapt to Urdu phoneme /b/. In Punjabi, /b/ substituted words at word-initial and word-medial positions with /v/. /b/ is the most appropriate Urdu phoneme that is used to fix words having /v/ and the phonetics of adapted phoneme is identical thereby, serving as Punjabi allophone in all the above mentioned words. The data reveals that the Urdu bilabial voiced plosive is adapted into Punjabi and its phonemic character is allophonic in nature to the labiodental voiced fricative.

Table 4
Substitution of /z/

Word-initial Position

Sr. #	Urdu	Punjabi	English gloss
1.	/za:lɪm/	/ja:lɪm/	Tyrant
2.	/zɪddi:/	/jɪddi:/	Stubborn
3.	/zəna:ni/	/jəna:ni/	Woman
4.	/zɔ:r/	/jɔ:r/	Force

Word-medial Position

Sr. #	Urdu	Punjabi	English gloss
5.	/ta:za/	/ta:ja/	Fresh
6.	/ba:zi:/	/ba:ji:/	Wager
7.	/rɔ:zi:/	/rɔ:ji:/	Livelihood
8.	/meɪza:j/	/meɪja:j/	Temperament
9.	/na:zʊk/	/na:jʊk/	tender
10.	/dɜ:rzi:/	/dɜ:rji:/	Tailor
11.	/dɜ:rva:za/	/dɜ:rva:ja/	Door
16.	/rɔ:z/	/rɔ:j/	Daily
17.	/kəmi:z/	/kəmi:j/	Shirt
18.	/ʌnda:z/	/ʌnda:j/	style or mien
19.	/sa:z/	/sa:j/	organ or harness
20.	/əva:z/	/əva:j/	voice or sound
21.	/meɪz/	/meɪj/	Table
22.	/na:z/	/na:j/	elate or pride
23.	/teɪz/	/teɪj/	Sharp
24.	/peɪa:z/	/peɪa:j/	Onion
25.	/jəheɪz/	/dəheɪj/	Dowry

Word-final Position

Sr. #	Urdu	Punjabi	English gloss
12.	/dəra:z/	/dəra:j/	Drawer
13.	/chi:z/	/chi:j/	Thing
14.	/tərz/	/tərj/	Way
15.	/neɪa:z/	/neɪa:j/	dedication or offering

Table 4 indicates Urdu phoneme /z/ is adapted into Punjabi as /j/ its equivalent allophone at all word-positions i.e. word-initial, word-medial and word-final positions. Urdu voiced alveolar fricative /z/ continues to be mapped to the Punjabi voiced palatal category /j/. These correspondences persisted as a result of Urdu loanword adaptation and the overall proportions are shown in the above data.

Table 5
Substitution of /d/

Word-initial Position

Sr. #	Urdu	Punjabi	English gloss
1.	/dɔ:tɪ/	/tɔ:tɪ/	male garment or loincloth

Word-medial Position

Sr. #	Urdu	Punjabi	English gloss
2.	/ba:dəsha:/	/ba:təsha:/	king

Word-final Position

Sr. #	Urdu	Punjabi	English gloss
3.	/rəsʌd/	/rəsʌt/	tote
4.	/bheɪd/	/bheɪt/	Pry
5.	/pəli:d/	/pəli:t/	nefarious or impious

Another instance of Urdu loanword adaptation in Punjabi is the substitution of /t/ with /d/ as shown in Table 5. The finding that is most relevant here was that the Urdu alveolar dental plosive was adapted as Punjabi consonant at word-initial, word-medial and word-final positions. Hence, the Urdu phoneme /d/

was replaced and acted as equivalent allophone to Punjabi phoneme /t/ (dental voiceless plosive). As a result of these Urdu-Punjabi correspondences, the meaning is not distinguished and phonetic bases are responsible for this sameness.

Table 6

Substitution of /L/

Word-medial Position

Sr. #	Urdu	Punjabi	English gloss
1.	/ha:Li:/	/ha:Rhi:/	farmer

Word-final Position

Sr. #	Urdu	Punjabi	English gloss
2.	/dhu:L/	/dhu:Rh/	Dust or agaric

The above examples indicate that Urdu phoneme /L/ maps onto /Rh/ of Punjabi as a result of the phonetic and phonological adaptation process. Table 6 clearly shows the correspondences in how Urdu retroflex lateral /L/ aligns with Punjabi voiced retroflex flap /Rh/ without bringing a change in meaning or sound of the words in the borrowed language. It is noted that this substitution occurs at two word-positions, that is, medial and final and that no instance was recorded where such replacement at the word-initial position took place.

The data evidenced that the maximum number of Urdu-Punjabi correspondences was found in [b] – [v] and [z] – [j] at almost all word-positions but the substitution of /b/ was not conspicuous at the word coda position. Furthermore, the adaptation of two more Urdu phonemes, that is, [d] and [L] mapped onto Punjabi phonemes at all word-position except the occurrence of [L] at word-onset position. Another significant point is noted that while adapting, Punjabi favored marked voiced sound in place of another voiced sound. Except the rare case of voice – voiceless sound correspondence was found in the instance of the Urdu phoneme /d/ - the voiced dental plosive was replaced and acted as equivalent allophone to Punjabi phoneme /t/ which is a dental voiceless plosive. The use of Urdu loan phonemes as Punjabi allophones is not the consequence of the lack of phonemes in the Punjabi language inventory (see the consonantal inventory of Punjabi delineated in section 2.3).

Conclusion

The present study concludes that the allophonic variation in Punjabi language is an effect of Urdu loanword phonology with respect to the orthographic and perceptual role. It is a direct result of Punjabis' contact with the Urdu language due to which a given Urdu loan sound is observed to be plotted onto the phonetic set of the Punjabi language in such a way that meaning remains the same. Hence, the focus rests on the actual sound that is pronounced behind the grapheme acting as allophonic equivalents. In short, Urdu loanword adaptation is a systematic phenomenon and on the basis of such productive patterns, borrowings from Urdu to the Punjabi language are still possible.

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