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Analysis of Glide Epenthesis Used by the Punjabi Speakers as an integration Strategy

Abstract

The study analyzes the process of glide epenthesis as a strategy used by the Punjabi speakers to integrate the English words into the Punjabi language. The fact that all the languages in the world are different entails that their phonological system will also be different. When the words from donor language enter in the receiving language they are modified according to the phonological environment of the receiving language. Among different strategies adopted by the speakers of receiving language to integrate the loan words, epenthesis is a common strategy. This study discusses the epenthesis of glide in the complex peaks which are not acceptable in Punjabi phonology. The data for this study is taken from the native speakers of Punjabi language residing in Lahore. The study blends distinctive feature theory with CV phonology theory for the analysis of English loan words remodeled according to Punjabi language phonology. This work is limited to the epenthesis of glides /w/ and /j/. The results suggest that the glides /w/ and /j/ are inserted by the Punjabi speakers to resolve the branching peak VV configuration into VCV.

Keywords: *Epenthesis, Glide, Distinct feature, CV Phonology, Loan words integration.*

1. Introduction

This study shed light on the Process of epenthesis which is used by the Punjabi speaker as a modification strategy to amend the input provided by English language. English loan words entering into Punjabi phonological environment require phonological changes in order to get accepted. For the study of glide epenthetic process, the study adopts a theoretical framework consisting of a blend, which comprises of two different yet interrelated theories. It is based on the distinctive feature theory presented by Chomsky and Halle (1968)and CV Phonology by Clements and Keyser (1983). The theoretical frame work describes the vowel and consonant arrangement in a phonological structure of a language. It will also account for the 'well formed' condition of the structure. It gives an in-depth analysis of the speech process by providing distinct depiction of the sequence of the segments. These segments are discussed by the distinct features.

Loan words integration is a phenomenon where words from a donor language are integrated by an adopting language. It is defined as 'the taking over of words' by the speakers of one language from other languages (Yule, 2016). It is a natural process of change whereby words are added to lexicon of a language. When words are imported from a donor to a borrowing language, loanwords frequently comprise of structures that disturb the phonological well formedness constraints of the borrowing language. For the words to be conformed to the borrowing language phonology they have to be integrated. This integration requires the phonological alternations in the loanwords according to borrowing language's phonology (Rose, 1999).This also include changes occurring to the phonology, morphology, syntax and orthography. The words are never returned to the donor language, for that reason Hualde, Lakarra, and Trask (1996) referred to them as loan words.

One of the important fields of interrogation in loan words integration is loan words phonology. In order to understand the phonological process involved in loan words integration, the study

of loan words phonology holds the key. There are almost 7000 languages spoken in the world and according to (Abdul, 2004)no two languages are known to share a common phonological structure. This necessitates that phonologically, loan words from donor language are bound to be different from the adopting language. Consequently, specific phonological rules will account for the integration of loan words from one phonological environment to a different environment where these words are adapted.

Among different processes involved in loan word phonology, epenthesis is a common phenomenon. Epenthesis is referred as process where a vowel is added to a word(Halle, 2011). Vowel epenthesis functions to mend the input from other language which is not in line with the integrating language's structure. It provides the consonants to shape up in undesirable context of certain language and function according to phonotactically legal context. Similarly, glides are also epenthesised to restructure the borrowed word according to the adopting languages' phonological environment.

1.1 Glide Epenthesis in Punjabi to handle Complex Peaks

Insertion of a glide between the two vowels (VV) is called glide epenthesis. It is employed to break the VV sequencing in those languagesa which do not have a VV sequencing in the peaks. Glide epenthesis is a strategy used by the speakers of Punjabi Language to manage the complex peaks in accordance to Punjabi Phonology. When the syllable nuclear is a diphthong or a triphthong instead of a pure vowel the syllable is said to have a complex peak(Zivenge, 2009). In other words, the complex peaks have more than one V element in the peak. On the other hand, the peaks having only one vowel in the nuclear are the simple peaks.

English language permits both: simple and the complex peaks in a syllable. It means that English allows a monophthong as v-element in a simple peak (CVC), diphthongs (CVVC) and triphthong as a v- segment (CVVVC) in a syllable. English phonology does not put any restrained on the use of complex peaks

in either open or close syllable. Punjabi on the contrary, only allows a simple peak (CVC) in a close syllable. For the loan words to be integrated in the Punjabi phonological environment from English phonology, having a complex peak in a close syllable environment, have to be modified by using glide epenthesis.

The results of the study suggest that glide /j/ and /w/ are inserted by the Punjabi speakers in the complex peek configuration. This insertion is a rule governed activity and follows the closer distinctive feature typology with the vowels close to the glides.

1.2 Research Question

1. What is the process of glide epenthesis in Punjabi complex peaks?

2. Literature Review

2.1 Glides

Glides are unique class of consonants. For the production of glides, the tongue dorsum raises towards palate creating a narrow passage for the air to pass through. In case of /w/ the lips came in the similar form. Thus, glides are close to vowel in a way that they are produced without any contact between the articulators. But they are consonants in their behavior because they cannot make a nucleus of a syllable (Davenport & Hannahs, 2013). The difference between the glides and consonant or vowel is the degree of constriction in the oral tract. The constriction is lesser than the consonants but narrower than vowels. The constriction created, relatively weakens the spectrum amplitude of glides with the close vowels yet, it is not able to create a consonant like adequate acoustic discontinuity (Bird, 1991).

2.2 Epenthesis

Epenthesis is defined as "any process in which a vowel is added to an utterance"(Hall, 2011, p. 1). This definition is a simplified description of the phenomenon under consideration because the process of Vowel epenthesis is divers in terms of characteristics. Many aspects of it has to be understood and yet has not been explored. It can also be defined as insertion of lax vowel

(Jabeen, 2012). It is of two types, prothesis and anaptyxis. Prothesis is insertion before the cluster and anaptyxis is insertion to break consonant clusters(Mahmood, Hussain, & Mahmood, 2011).

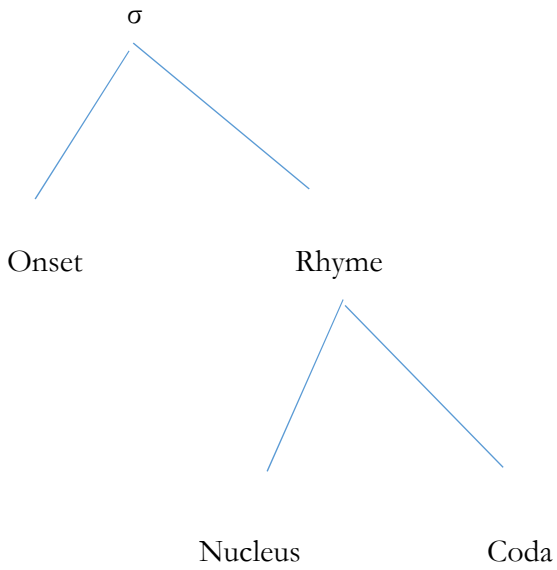
Epenthesis is mostly used to break unacceptable consonant clusters and to deal with codas which are not allowed in Punjabi language. It makes a loan word adjust according to the Phonotactic constraints posed by the receiving language (Adomako, 2008). Epenthesis is a common process in borrowing or loan words integration which satisfies the Phonotactic constraints and syllable structure in the receiving language. The process of epenthesis is normally associated with the insertion of vowels but Punjabi also include glides for the process of epenthesis. This insertion of glides is referred as glide epenthesis. This process is not random but it is a rule governed activity as discussed in the analysis section.

This study is guided by the theoretical framework. The CV Phonology theory is used to organizedatathroughoutthe discussions. CV Phonology is based on the syllable. For the study of Epenthesis, changes occurring to syllable structure are discussed. Before discussing the changes, a brief introduction of syllable is discussed.

2.3 Syllable

Before dealing with the different types of syllable and its types we need to define it. Syllable is defined as a phonological unit of speech consisting of a vowel preceded by a consonant and followed by a consonant (Davies & Elder, 2008). The syllable is one of the oldest concepts in the study of language. Defining syllable is a difficult job and many linguists have tried to define it. Traditionally, a syllable consists of a vowel generally, preceded by consonants. According to (Hockett) syllable is a grouping of segments in sequence (1955). Study of syllable is important for the study of phonotactics. Syllable consists of Onset and Rhyme. Rhyme is further divide into Nucleus and Coda. A syllable is shown by Latin symbol σ (sigma).

Figure 1. Syllable structure



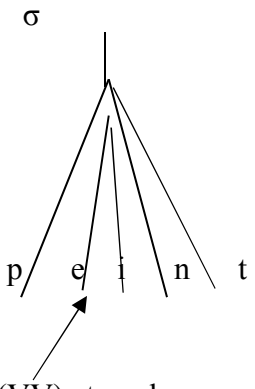
An onset is a part of the syllable which is occupied by the consonant. It always proceeds rhyme. The next part is rhyme which can be further subdivided into nucleus and coda. Nucleus of the syllable is either vowel or diphthong or vocalic part. It functions as sonority peak. Coda is the part of the syllable occupied by the consonant. Both onset and rhyme are optional parts of syllable and nucleus is compulsory. Syllable-initial consonant clusters and syllable-final consonant clusters are possible (Nodoushan, 2010). In generative notion the word nucleus is equated with the term peaks. This study is following the theory of generativist paradigm hence, the term peak is used for the nucleus.

2.4 Resyllabification

Resyllabification is procedure of restructuring the syllable tiers from the donor language to the pattern recognizable in the phonology of receiving language. In this study, resyllabification will be studied from the prospect of English as a donor language and Punjabi as the receiving language. English recognize a number of syllable structures while Punjabi favors both CV and CVC syllable. It entails that for the integration of English loan words in

Punjabi, English loan words has to be resyllabify in order to suite Punjabi syllable typology. It implies the handling of complex peaks (CVVC) not present in Punjabi phonology and existence of branching rhymes in English words such as /peint/. The CV notation for /peint/ is presented in the following diagram.

Figure 2.



complex Peak with (VV) at nucleus position.

The figure 2 indicates a monosyllabic (CVVCC) syllable type taken form the English language. It has an onset consonant as /p/ with complex peak (VV) configuration as/eɪ/along with /nt/ as complex coda. It is a monosyllabic construction thus it is characterized by'σ' a single node. This configuration is demonstrated in figure 3.

Figure 3.

σ

/ | \

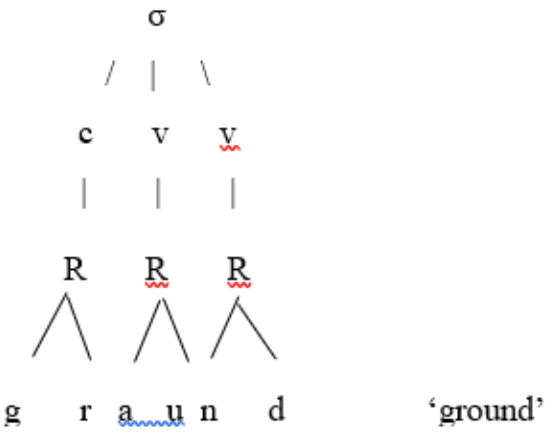
C V C

The onset of syllable is not acceptable in the Punjabi phonological environment where only a single consonant is acceptable at onset position. Generally, the diphthong in the Punjabi environment is only acceptable in open syllable. Thus, VV configuration in closed syllable is not acceptable in Punjabi. Therefore, Punjabi speakers change VV configuration in closed syllable into a single V configuration by replacing the diphthong

with a long vowel. This phenomenon of replacement of diphthong with a long vowel is not dealt in this study. The coda configuration is acceptable in Punjabi language. Punjabi possesses complex consonant instead of consonant clusters. Thus, Punjabi takes /nt/ as a complex consonant and gives a unitary treatment to /nt/. On the contrary, a consonant cluster will be handled by the Punjabi speakers by either inserting a vowel or deleting consonant. The Punjabi language accepts CV, VC, V, CVC, CVV and VCV configuration.

Apart from these six syllable templates Punjabi language does not allow any other syllable structure. The complex consonants are not included in this discussion. In order to get a loan word into Punjabi the word has to adopt either of the six structures. Thus, Punjabi speakers has to resyllabify the loan words in accordance with the above-mentioned structures. This also implies that the Punjabi has a simple peak for all the closed syllable but it can possess a complex peak in an open syllable. On the other hand, English syllable allows branching rhyme for onset, peak and coda. as shown in the figure 10

Figure 4. Complexonset, peak and coda



The figure 4 presents a CV syllable typology involving a branching C and branching V elements. The branching C element is characterized by /gr/ and /nd/ while the V element is characterized by /au/. Punjabi on the other hand, has a different

syllable typology. Punjabi language does not accept a branching rhyme for C element i.e. onset or coda. As mentioned earlier Punjabi language only accept branching rhyme in absent coda typology thus, the branching peak in figure 5.9 has to be restructured by replacing the diphthong with the monophthong. Hence, the word is resyllabify according to Punjabi syllable structure. Resyllabification is a process of rearrangement of the syllable structure. Resyllabification of English words are done by using the integration process which involve the handling of consonant cluster. Complex peaks and the structures not recognized in Punjabi phonology.

3. Methodology

3.1 Theoretical Frame work

This study is taking into its consideration the phonological integration of English loan words into Punjabi. For this purpose, Generative phonology is taken as a theoretical frame work. Further, in Generative phonology CV phonology and distinctive feature theory is taken for the phonological understanding of the phenomenon. The main reason for opting this frame work is that it caters phonological structures. In CV notation C stands for consonant and V stands for Vowel.

As mentioned above, this study will blend Distinctive Feature with CV Phonology. Distinctive features (DF) theory was propounded by Chomsky and Halle (1968). It discusses the underlying phonetic forms in phonological process. These features are useful in describing the phonological processes such as vowel epenthesis. This theory emphasizes that listener and the utterer create phonological depictions so with distinctive features we can dispense accurate representation to the sounds in such a way that it shows the utterer's internalized grammar. This notion is very helpful for the researcher to understand the changes occurring to the words that are integrated from English to Punjabi in term of Vowel epenthesis.

This study adopts a tiered structure of the syllables as propounded by Clements and Keyser (1999). It demonstrates

changes occurring to the syllable from English to Punjabi suitable syllable at various tiers which constitutes the syllable. These hierarchal tiers are the syllable nodes which comprises of the segmental tier and the CV tier. It is useful in understanding the syllable peaks and non-peaks which in turn has given the researcher an insight into the changes occurring to the CV structures from English loanwords to Punjabi.CV phonology is concerned with the syllabicity of the elements. Therefore, it gives a universal set of rules ofthe connection between the consonant and vowel in a syllable. The adopted framework is helpful in discerning the parts govern by the C and the V elements. It further explains the process through which these parts are altered due to the integration process. The connecting lines are insightful for providing the changes occurring to consonants and vowel.

3.2 **Data**

The data used in present research are based on the corpora of English loanwords collected for the dissertation "Phonological and morphological integration: A corpus-based study of English loan words in Punjabi Language." This study is a part of this dissertation

3.3 Data Collection

This work is descriptive in nature and will adopt a qualitative approach for collection and analyzing data. The target population for this study is the Punjabi speech community residing in Lahore.

3.4 Sample

The sample consisted of recording of

1. You Tube clips, consisting of Punjabi talk shows were selected to cater the need of the research.
2. 15 focus groups of six members each were made for this discussion. Each group was given three different topics to discuss. Total nine discussions on different topics were conducted.
3. Interviews with the native Punjabi speakers.

3.5 Sampling technique

Purposive sampling technique is used for the selection of sample. Four native speakers of Punjabi were selected. These four authenticated Punjabi clips and recorded data as samples for its analysis. After the collection of data, words were selected from the data for the analysis of vowel Epenthesis. These Words are selected very carefully to serve the purpose. These words are transcribed according to IPA conventions.

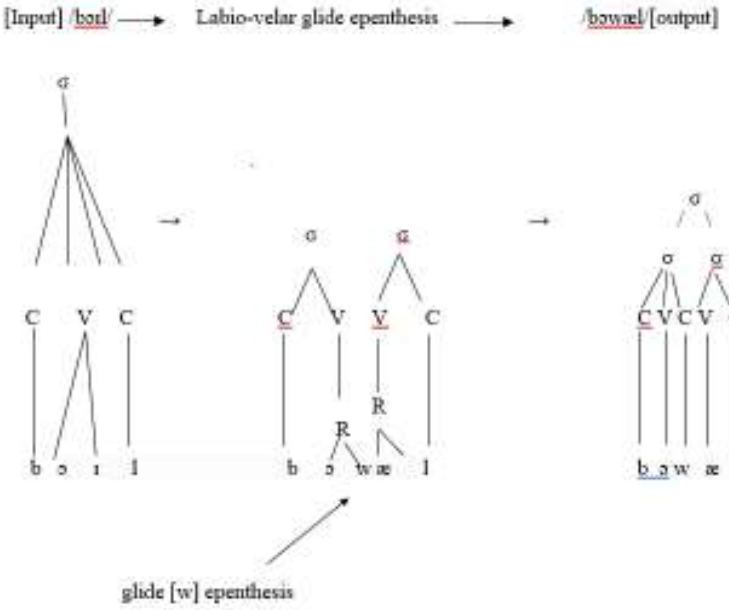
4. Data Analysis

This section handles how the English sounds are altered by the Punjabi speakers to become acceptable to Punjabi Phonology. The words borrowed are modified and this process of modification shows the integration of the English words into Punjabi language. This section deals with the process of Glide-epenthesis. It starts with the description of complex peaks and how Punjabi language handle complex peaks when it is not characteristic of Punjabi phonology**.**

4.1 Epenthesis of the glide

Punjabi speakers use glide epenthesis as a modification process with which they deal diphthongs and triphthongs according to their own phonology. Epenthesis is referred as insertion of a phoneme between two sounds (Crystal 1997). Glides are referred to as semivowels (Hock 1999). According to Kadenge (2008)glides are semi vowels phonetically but phonologically they are consonants. Hence, glide epenthesis is an insertion of semivowel mainly to break the branching rhymes. This insertion is not random but this is a rule-based phenomenon. Semi vowels can only be inserted where they share close features with the vowels either proceeding or following (John, 2000). It can be established in figure 5

Figure 5. Insertion of glide /w/



The labio- velar glide /w/ was used to modify the syllable which is not permitted in Punjabi phonology. The epenthesis of /w/ is accompanied by the change in vowel /ɪ/ to / æ/ since Punjabi does not allow ɪ after /w/ insertion. In this case, the input was the English word / bɔɪl/ which was acceptable in English phonological enviornment: complex peaks as shown by the use of diphthong /ɔɪ/ in the above-mentioned word /bɔɪl/ which is not allowed in Punjabi phonology. To adjust diphthong in Punjabi the labio- velar semivowel /w/ was epithelized by the speakers. Branching rhyme configuration of VV shows that /ɔɪ/ is a diphthong. The process of epenthesis of labio-velar approximant /w/ was natural phonological process as both /ɔ/ and /w/ share alike distinctive features. Distinctive features for both / ɔ/ and /w/ are mention below.

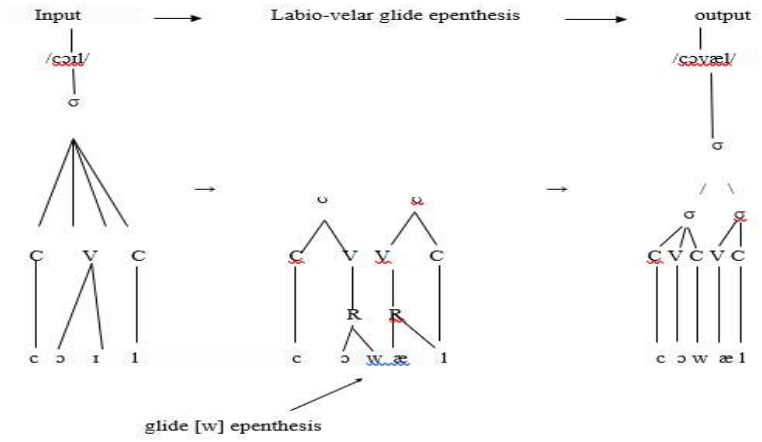
/w/ ⟶ [+sonorant] /ɔ/⟶[+sonorant]
[+ round] [+ round]
[+/ - syllabic] [+ syllabic]

Glide epenthesis changes the monosyllabic word (CVVC) to polysyllabic patterns (CVCVC). The changes occurred only to vowels. The branching rhyme /ɔɪ/ was broken to /ɔwɪ/. From this

we can assume that in Punjabi Phonology complex peak / ɔɪ/ is epenthesis by an approximant /w/.

Condition 1: /ɔɪ/ environment/ɔɪ/ ⟶/ɔwɪ/

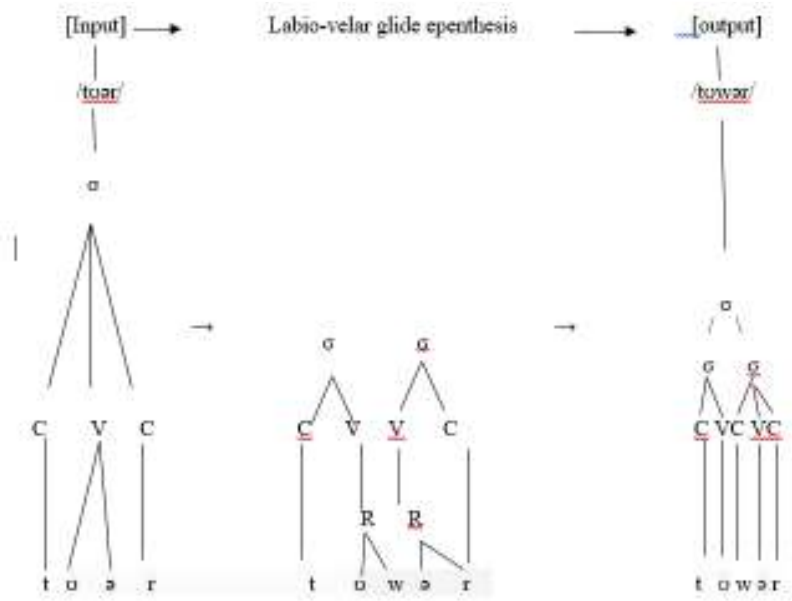
Figure6. Glide /w/ Epenthesis



Condition 2: /ʊə/ envoirment

Figure 7: /ʊə/ ⟶/ʊwə/

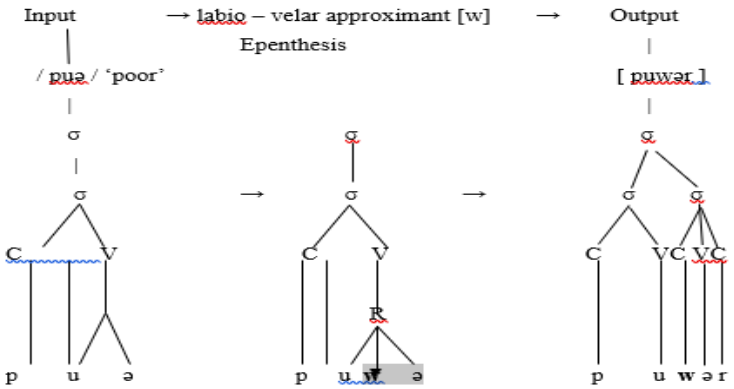
/tʊər/ 'tour'



In /ʊə/ environment the similar kind of changes can be seen. Change has been realized on the vowel where Labio-Velar

/w/ is epenthesized in the branching rhyme /ʊə/. The diphthong /ʊə/ has been fragmented to / ʊwə/ which results in the breaking of a monosyllabic word into polysyllabic word. As seen above the monosyllabic word with branching rhyme is broken in to disyllabic word with simple rhyme. The complex peak is converted into simple peak which accords Punjabi phonology.

Figure 8: /ʊə/ ⟶ /ʊwə/
/pʊər/ 'poor'



The /uə/ environment (/uə/→/uwə/) the rounded, back, high vowel /u/ combined with unrounded, low and central vowel /ə/. Approximant /w/ can be epenthesized here as it shares common features configuration with /u/.

The feature configuration for condition 1 and 2 make the insertion of the labio-velar approximant /w/ possible to adjust. It follows the rule that the only those sounds can be epenthesised which share the similar feature configuration with either of the two vowels. In this regard the diphthongs /ɔɪ/, /ʊə/and /fulfils this condition as /ɔ/ and /ʊ/ are back and rounded vowels and share common distinctive features with the labio-velar approximants /w/. Therefore, /w/ can be epenthesised in place of the vowels /ɔ/and /ʊ/. This can be shown as follows:

a)/ʊ/and /w/:→[+ round]

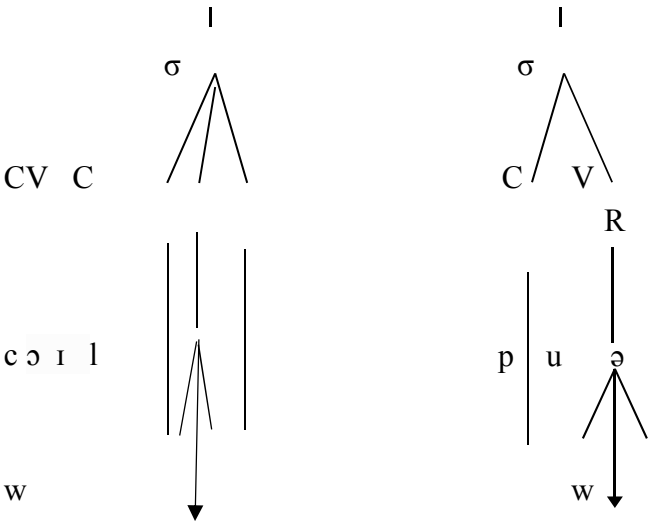
[+sonorant]

b) / ɔ / and /w/: → [+ round]
[+ sonorant]

It is, therefore, concluded that the approximant/w/ is inserted when either prior or following a back, rounded vowel/ɔ/and /ʊ/. The plausible answer for this process is that they share the same feature configurations. The point of departure between the two is that the vowel /u/is [+peak], [+syllabic]while the approximant /w/is [-peak],[-syllabic]. This epenthesis of labio-velar glide effects the syllable structure of the word and results in the formation of either consonant-vowel (CV) or vowel-consonant (VC) assimilation. This assimilation can be presented in the following construction:

Figure 9.Epenthesis ofthelabio-velar[w]

Input



4.2 Output

The insertion of glide /w/ follows a methodical pattern. This epenthesis allows the Punjabi speaker to convert the unrecognizable complex peaks to recognizable simple peaks. The diphthongs /ɔɪ/ and /uə/ determine the complex peaks stated as (VV) configuration.

The insertion of/w/ shifts the (VV) configuration into (VCV) configuration. Thus, converting into simple /ɔwɪ/ and /uwə/ configurations. The change in the complex peak is shown below

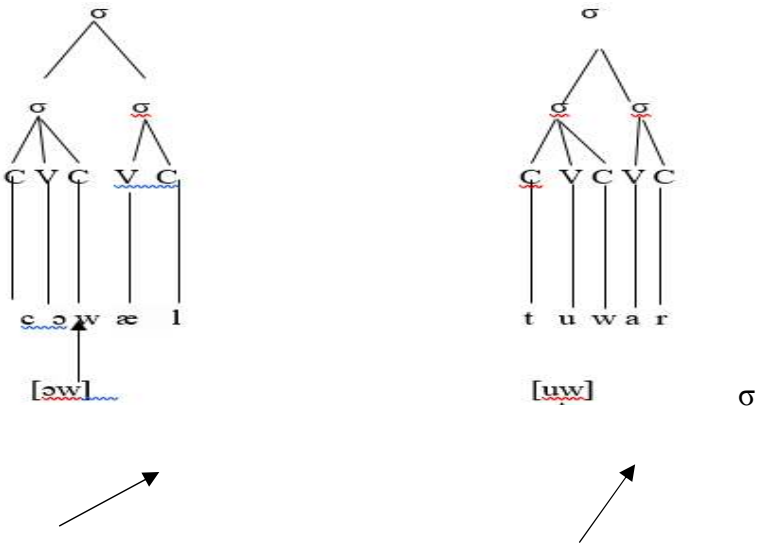
Input (CVVC) ⟶ labio – velar approximant/w/ ⟶ output (CVCVC)

The figure presents the rules for the insertion of glide /w/ in a complex peak. The results show that Punjabi speakers converted the monosyllabic word with complex peak into a disyllabic word with simple peaks thus, converting (CVVC) into (CVCVC) structures. Both (CV) and (CVC) structures are acceptable in Punjabi phonology.

4.3 Assimilation of Features

The insertion of glide epenthesis /w/ is a rule-governed process which states that the approximant /w/ can only be inserted if the feature values of /w/ assimilates with either the proceeding or the following vowel. In the case of Punjabi, we can establish the progressive assimilation where the approximant /w/ shows similar feature values with both /ɔ / and /u/ vowels. Therefore, approximant /w/ assimilates its feature with both the vowels and create (VC) assimilation as mentioned in figure 14. This assimilation is shown in the figure 15.

Figure 9. VC Assimilation



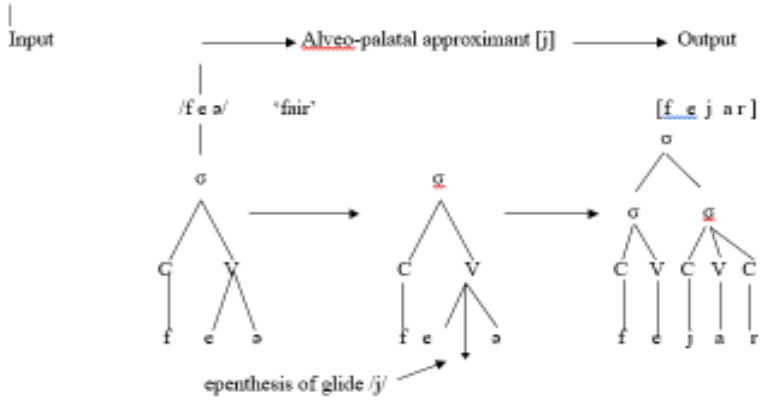
The two scenarios discussed figure 15 asserts the fact that the assimilation of glides and vowels is not done randomly. It is a rule-governed activity which permits the assimilation of the features of/w/ with both the vowels permissible in Punjabi phonetic environment.

4.4 Epenthesis of the palatal approximant /j/.

As discussed earlier, Punjabi language does not allow diphthongs with present coda. One of the ways of breaking this VV configuration is to add /w/ glide thus making it /VwV/ environment. Similarly, in order to break complex peaks palatal glide /j/ is inserted. The process thus, integrates the English loan words having diphthongs, in Punjabi language. It follows same rule that for the epenthesis of the alveolar palatal glide /j/, either proceeding or following element V should share similar feature matrices with the sound /j/.

As we have seen in case of glide /w/, the epenthesis is only possible when either preceding or following a back, rounded vowel/ɔ/and /ʊ/. Similarly, the glide epenthesis of the sound /j/ is only possible when /j/ is either proceeding or following the vowels /e/, /a/, /i/ or /o/. The explanation for the process can be provided by rule that the glide /j/ shares similar distinctive features with the vowels /e/, /a/, /i/ or /o/. The only difference is that vowels are [+syllabic] and the glide /j/ is [- syllabic].

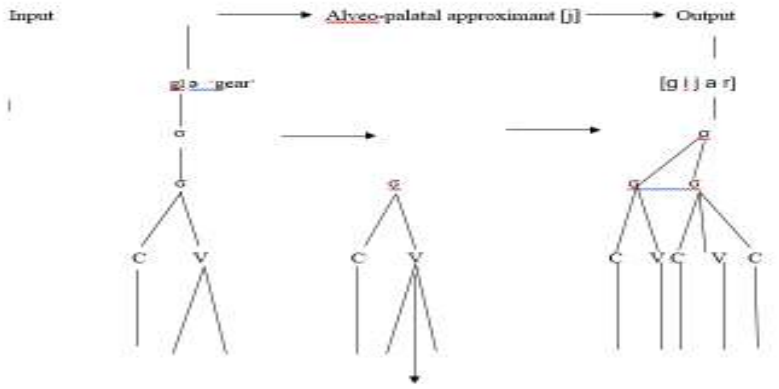
Condition1: /e ə />[e j ə]



The phonetic environment /eə/ accepts the epenthesis of the glide /j/ between the vowel /e/ and /ə/ because /j/ exhibits similar feature configuration with the sound /e/.

[j//[e]: [+sonorant],[-round], [-round]

Condition 2: /ɪ ə />[ɪ j ə]



g ɪ ə g ɪ ə g I j ə r epenthesis ofglide[j]

Condition 2 explains the insertion of the glide /j/ in the / ɪ ə/environment.

It demonstrates that alveolar-palatal approximant can be inserted in the diphthongs where /j/ is preceded by the vowel /i/ and followed by any vowel. Both condition 1 and 2 demonstrates the insertion of alveo-palatal approximant /j/ to handle the complex peaks. The pattern for the insertion of /j/ is that it is either proceeding or following the /i/ vowel or /e/ vowel. The reason for this epenthesis is the rule that they share similar distinctive featuresor following the vowels: [e], [a], [i] or [o]. the process of insertion of /j/ can be explained in terms of similar feature sharing condition. Both glide and mentioned vowel share [-round] and [+ coronal]. The difference is only in syllabicity of bot as glide is [-syllabic] and the front two vowels are [+ syllabic].

4.5 Assimilation of Features

The insertion of glide /j/ is similar to the insertion of labio-velar approximant /w/. The epenthesis of /j/ on one side

changes the complex peak (VV) configuration into simple peak configuration. On the other hand, it assimilates the feature with the /e/ and /ɪ / vowels. As mentioned earlier, the glide epenthesis is a case of progressive assimilation in which the vowel is assimilated with the proceeding glide possessing similar features. In the similar way, the glide /j/ is also a case of progress assimilation where the approximant /J/ shows similar feature values with both /ɪ / and /e/ vowels. Therefore, approximant /j/ assimilates its feature with both the vowels and create (VC) assimilation.

5. Conclusion

This paper examines the use of glide epenthesis by the Punjabi speakers in order to integrate English loan words in Punjabi language. Glides are epenthesised to break the complex peaks (VV). Punjabi generally, does not allow complex peaks in the closed syllables but on the contrary English use complex peaks frequently in both open and closed syllables. As a result, words having complex peaks in English, when integrated in Punjabi, get altered. One of the ways of changing the (VV) configuration is inserting the glide /w/ and /j/ which breaks the complex peaks. Hence monosyllabic words are changed into disyllabic words. Hence the (VV) configuration will be change into simple (V) configuration.

English $\longrightarrow V_1V_2 \longrightarrow$ glideepenthesis $\longrightarrow$ m[V] $\longrightarrow$ Punjabi

Thus, creating the structural changes in the VV configuration to conform to the vowel configuration, is acceptable in the Punjabi Phonological environment.

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