Glide Epenthesis as a Repairing Strategy of English Complex Peaks in the Tonga Linguistic Environment: The Distinctive Feature Paradigm

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Abstract

The paper discusses how epenthesis, as a nativisation process, is applied to English words that enter into the Tonga linguistic environment as borrowings. It is generally the habit of speech communities that when they borrow new words from another language into their own systems, they nativise them to suit the linguistic expectations of their languages. This is because of the fact that there is not any language which is a replica of the other. Languages are unique in as much as the speakers of these languages are. As a result the phonological and morphological systems of languages are different. When new words find their way into another language, they are therefore linguistically remodeled to suit the rules of the receiving languages. One of the processes that can be adopted for this particular purpose is epenthesis. It is therefore the scope of this paper to discuss how English words, borrowed into the Tonga language are nativised, using the epenthetic principles. Only languages that are complete and integral can effectively handle loans. It is also within the framework of this discussion to assert Tonga as a complete and integral language or not, depending on how its speakers handle loans. Tonga borrows words from the English language quite often. The discussion is informed by the Distinctive Feature Theory. The theory enables the author to justify certain epenthetic behaviors that take place on English loans in the process of nativisation by the Tonga native speakers.

Introduction

The British invasion of Zimbabwe, in the 1880s, and subsequent colonization resulted in cultural and political domination of the Tonga and other indigenous groups. Education, technology, media and new institutions of administration were also introduced to the Tonga people, among other locals. Tonga therefore, adopts vocabulary used in these new institutions. According to Chikanza (1986:1), media, new

administration and formal education constitute foreign phenomena that further promoted the introduction of English concepts in Zimbabwe.

The political and linguistic contact between the Tonga and the British during this period resulted in the natural interaction of languages in a diaglossic scenario, where English was a high variety and Tonga a low variety (Mheta 2005: 287). In a so called bid to try and 'civilize' the indigenous African people of Zimbabwe, the British then introduced new concepts through institutions of education, technology, public administration, urbanization, social work and so on (Chikanza 1986: 8). The Tonga had to respond by attending formal education in schools. Some were converted to Christianity and were also compelled to conform to the demands of the new forms of governance, technology and to adopt new values of life. They were also compelled to speak English since it was the medium of instruction in schools and other public gatherings. To this Mazrui, (1966:295-311) says "an African in British Africa was regarded as an intellectual if he had acquired some fluency in the English language". The Tonga speakers also regard English speaking as a gateway to success. Tonga was in direct contact with English and borrowing was even expected, since English was a high variety language whilst Tonga was a low variety.

Theoretical Framework
The paper adopts insights from the Distinctive Feature Theory. This distinctive feature argument owes its inception and development to Chomsky and Halle (1968). The major concerns of this idea are the phonological features underlying surface phonetic forms which are called distinctive features. According to Katamba (1989:34), distinctive features are phonological ingredients beyond a phoneme. Each language has a unique inventory of phonetic features, from which different combinations are selected so as to construct a phoneme system. All speech communities world over are endowed with similar articulatory and auditory capabilities such that they are expected to produce and utilize speech sounds built up from a pre-determined set of binary features, according to their biological endowment. This is the basis of all the distinctive features. This theoretical framework adopts Bloomfield's (1933), claim that a phoneme is not the most basic phonological unit but rather can be decomposed into phonetic features

(atomic). This is because phonological behavior of sounds in any language largely depend on the phonetic features. These are mostly distinctive articulator gestures. This implies that phonological segments or phones have internal structures, hence bundles of ordered phonetic properties called features which are very distinct. Chomsky and Halle (1968) provide distinctive features for each of the phonetic features on the International Phonetic Alphabet. The general observation is that all phonetic features are articulator-based. These features are helpful in describing and distinguishing consonants and vowels that exist in different languages. Phonological processes such as epenthesis can best be understood by employing knowledge of distinctive features.

Distinctive features can be defined as sets of phonetic characteristics that when variously grouped together distinguish one sound from another, for instance, the bundle of distinctive features for the phoneme [m] includes [+cons] and [+ nas] while those of [p] are [+ cons] and [-nas]. In other words, distinctive features refer to the phonological pattering of phonetic properties of sounds. These features help to differentiate phones and phonological processes such as vowel coalescence, vowel harmony, elision, epenthesis, metathesis and many others that require knowledge of distinctive features (John 1984: 48). For the native speakers of a language, phonological features are mentally constructed and then assigned to correct representations, for example, Tonga has only one realization of the vowel [i] which is simply [+ high], [+front], whilst English vowels are elastic (i,I etc). The distinctions are made possible by attaching different features such as height and rounding.

According to Chomsky and Halle (1968) phonemes, that exists in a language, maybe similar, on the surface. What makes phonemes of languages different are underlying distinctive features, mentally constructed by the speakers of the language in question. The speakers are responsible for assigning correct phonetic representations to utterances in ways that reflect the native speakers' internalized grammar. The concept of Distinctive Features helps the speakers to use consonants and vowels correctly as required by their phonetic inventory.
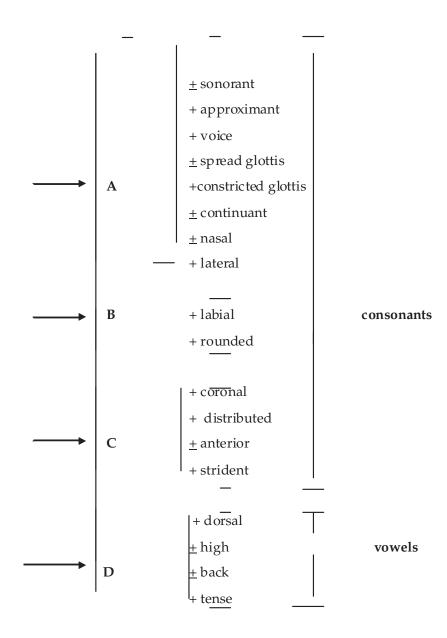
In general terms, sounds that are similar display similar features, making it possible for class categories (of features). However, if these classes are

penetrated further, beyond common binary features, scrutinizing, differences are bound to be established, thereby making each of the features distinct.

According to John (1984:78), distinctive features are categorized as follows:

Categorization of Distinctive Features

A
± sonorant
+ approximant
+ voice
± spread glottis
+constricted glottis
± continuant
± nasal
+ lateral

B
+ labial
+ rounded

consonants

C
+ coronal
+ distributed
± anterior
+ strident

D
+ dorsal
± high
± back
+ tense

vowels

These sub-sets are referred to as natural classes. Those features that define natural classes from A-D are the so-called distinctive features. Each of the natural classes is composed of sounds that share a certain feature or group of features as follows:

Distinctive Feature Matrix for Voiced Obstruents in Tonga

	b	ɓ	d	g	v	z
cont.	-	-	-	-	+	+
strid.	-	-	-	-	+	+
distr.	-	-	-	-	-	+
ant.	+	+	+	-	+	+
lab.	+	+	-	-	+	-
cor.	-	-	+	-	-	+
constr.	-	+	+	-	-	-

The distinctive features specify the phonemic contrast that exists in languages. A change in the value of features can potentially generate new speech. This idea is part of a more general concept that drives a word sequence from feature representation. This means that a word is represented in a lexicon by a sequence of features, for each of the segments existing, (intra-language or inter-language). It is hypothesized that speakers substituting one phonetic segment for another would change only those features necessary, to obtain the target segment rather than substituting the entire phonemesised segment for instance [graund] 'ground' > [girawundi] (from English to Tonga). The target segment differs from the original by varying numbers of distinctive features. This means that speakers manipulate feature seized units during speech production. The English version / graund/ 'ground' is [-approximant), whilst the Tonga version epenthesises the approximant [w]. The substitution of consonants and vowels is governed by distinctive feature matrices, to successfully generate equivalent phonemes in the target language. Different target segments are generated manipulating the distinctive features.

It also follows that establishing the phonemic inventory of specific languages means creating a phonemic grid of possible distinctions.

The distinctive feature theory predicts that a small set of features can describe most if not all natural classes. The theory also suggests that these features are innate rather than learnt, hence sounds of a language are grouped together as a result of phonetically based generalization and distinctive features emerge as generalizations, based on the phonetic properties of sounds.
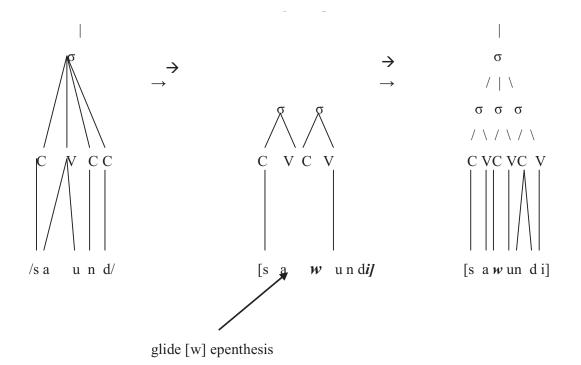
Glide Epenthesis in Tonga to handle Complex Peaks
The syllable nuclears [+sonorant], is said to be complex, when instead of having pure vowels, it is found to have either diphthongs or triphthongs. Diphthongs entail a V – element characterized by a double sequence of vowels. This is because the English language allows diphthongs and triphthongs as V – segments in a syllable. This means that the English language has two kinds of peaks, namely, the simple (CVC) and the complex peaks (CVVC). While complex peaks are realized by the existence of more than one vowel in a sequence, simple peaks have only one vowel making the nuclears on the V – element of the CV – tier. The English language therefore has diphthongs, triphthongs and monophthongs. English loans in the Tonga languages characterized by diphthongs and triphthongs are therefore handled by inserting glides between the vowels.

Epenthesis of the glide [w]
Glide epenthesis is a phonological process with which diphthongs and triphthongs were dealt with in Tonga. Crystal (1997:45) defines epenthesis as the intrusion or insertion of an extra sound, medially in a word. Hock (1999:10) refers to these glides as semi – vowels. Glide epenthesis is demonstrated as follows:

Input   Output

    | |

/ saund / 'sound' →   Labio – velar glide epenthesis   →

/ sawundi /

σ   →   σ
| →   / | \
σ   σ σ σ
                                                          / \ / \ / \
C   V C C   σ   σ   C VC VC V
                   /\   /\
                  C V C V

/s a   u n d/   [s a   **w** u n d**i]**   [s a**w** un d i]

glide [w] epenthesis

The labio – velar glide [w] was epenthesised to break the diphthong [au]. The input in this process was an English word /saund/ with English phonological rules, (complex peaks) as demonstrated by [au] in the word [saund]. That scenario is not permissible in Tonga. To deal with the diphthong, the Tonga speakers epenthesise a labio-velar approximant [w] as demonstrated on the diagram above. The fact that the input / saund/ had a diphthong on the V – element meant that [au] is not permissible in Tonga.

Epenthesis of the labio-velar approximant [w] breaks the complex peak /au/ to a simple peak /wu/ which is permissible in Tonga, as shown above.

Epenthesis of the labio-velar approximant [w] was necessitated by the phonological observation that /u/ and [w] share similar distinctive features, as shown below: →

[u]'!   [+ sonorant]
         [+ syllabic]
         [+ round]

→

[w]   [+ sonorant]
        [- syllabic]
        [+ round]

Glide [w] epenthesis, results in a change from a monosyllabic pattern, (CVC), to a polysyllabic one (CV CV CV). The Change has only been realized on vowels, where the diphthong [au] has been broken to [wu]. Apart from that, epenthesis of the glide [w] introduces an extra syllable [wu], such that a polysyllabic pattern results as the output (Tonga). In Tonga, the labio-velar approximant [w] is epenthesised in the [au] complex (peak) environment:

                                                        →

  This phonological environment where the two rules (/au/'! [awu] and /ua/'! [uwa]) are applied are characterized by a combination of a low, central and unrounded vowel [a] and a back, high and rounded vowel [u] in the sequence /ua/ or /au/. In this scenario, epenthesis of the labio – velar approximant [w] is therefore possible since it shares similar feature configurations with [u]. The rule is that the sound which can be epenthesised should share similar feature configurations with any one of the vowels in the sequence /VV/. This can be demonstrated as follows:

                                →

        a) [u] and [w]: ´! [+ round]
                        [+ sonorant]

This is applicable to both environments /au/ and /ua/. This means that [u] and [w] share similar distinctive features, hence [w] can be epenthesised.

Rules 1: ua>uwa and Rule 2: au>awu, so far illustrate that the labio velar approximant [w] is epenthesised when either preceding or following a back, rounded vowel [u]. The reason for that is that they share the same feature configurations [+ back], [+ round] and [+ sonorant]. The only difference is that [u] is [+ peak], [+ syllabic] whilst [w] is [- peak], [- syllabic].

Rule 1 and capture the process of glide [w] epenthesis, so as to break English diphthongs, [au] and [ua], that entered into the Tonga vocabulary. This was done to create either [awu] as in [gilawundi] 'ground' or [uwa] as in [+"uwa] 'sure'.

Epenthesis of the labio – velar approximant [w] results in the creation of onset-vowel (OV), [wu] and vowel-onset (VO),[uw] assimilation. This implies assimilation in the following patterns:
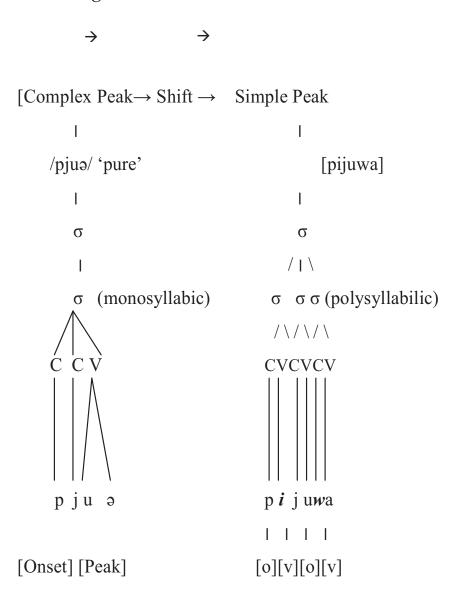
OV and VO Assimilation

English version	Epenthesis	Tonga version	Direction of Assimilation
Scenario A			
/saund/	[awu]	[sawundi]	OV
/graund/	[awu]	[gilawundi]	OV
/paund/	[awu]	[pawundi]	OV
Scenario B			
/pjuə/	[uwa]	[pijuwa]	VO
/fjuˑ/	[uwa]	[fijuwa]	VO

Scenario A) [wu] demonstrates regressive assimilation (OV), in which the labio – velar takes characteristics of [u]. On scenario B), [uw] illustrates progressive assimilation (VO), in which the labio velar assimilates feature configurations of [u]. The Tonga rule is that the approximant [w] assimilates feature values of a segment that precedes or follows in a CV – sequence, hence [OV] and [VO] assimilation.

This follows that in Tonga glide epenthesis is not done randomly but rather systematically, being guided by distinctive features. In other words, it is only permissible in [au] and [ua] phonetic environments.

When the glide [w] is inserted, there is a shift from a complex peak to simple peaks on the V-element of the CVsyllable, [au] to [awu] and [ua] to [uwa]. The phonetic environments [ua] and [au] demonstrate complex peaks whilst the presence of the glide [w] breaks the diphthong, resulting in a simple peak [awu] or [uwa], as follows:

Syllable Change

→   →

[Complex Peak→ Shift →   Simple Peak

| |

/pjuə/ 'pure'   [pijuwa]

| |

σ   σ

| / | \

σ (monosyllabic)   σ σ σ (polysyllabilic)

/ \ / \ / \

C C V   CVCVCV

p j u ə   p *i* j u*w*a

| | | |

[Onset] [Peak]   [o][v][o][v]

[O]: → [+High]

[+ Front]

[+ round]

[+ sonorant]

[i]: → [+ high]

[+ front]

[- round]

[+ sonorant]

The other notable phonological change is an increase in the syllable nodes. The English word /taun/ has only one syllable (monosyllabic) but epenthesis of the glide [w] opens up two more syllables [tawuni], hence three syllable nodes (polysyllabic). These phonological changes are interpreted as changing from complex to simple peaks.

The introduction of the glide [w] brings in an onset (O) in the place of a peak (V), which creates a new CV syllable. The introduction of a new CV – pattern changes the English CVC typology to a CV typology, acceptable in Tonga.

Epenthesis of the palatal approximant [j].
In order to break diphthongs and triphthongs, not necessarily having [+ round], [u], the alveo–palatal [j] is epenthesised. The reason that diphthongs of any nature are not recognized in the Tonga linguistic environment applies. To nativise English words with such complex peaks, breaking the diphthongs and triphthongs is done.

The rule that supersedes all processes is that epenthesis of the alveo-palatal approximant is done when there is a V element that has the same feature configurations with the glide [j] (John 2000:14). The second rule also applicable is that the V element which shares similar feature matrices
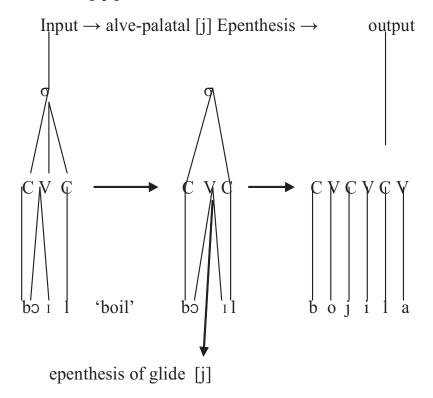
with the glide [j] should either precede or follow the glide [j], in the CV sequence. This rule denotes the point of epenthesis.

The /ɬI/>[oi] phonetic environment disallows epenthesis of the glide [w]. This is because epenthesis of the glide [w] is only permitted in the phonetic environment [ua] or [au]. The scenario /ɬI/>[oi] rather accepts epenthesis of the glide [j] between [o] and [i] vowels in the sequence [oi]. The vowel /i/ and glide [j] have the following feature value:

<p style="text-align:center">[j]/[i]:   [-round]</p>

From the two sounds, the glide [j] demonstrates similar feature configurations with the vowel [i]. This means that the vowel [i] should be either before or after the alveo– palatal approximant [j] epenthesised. Epenthesis of the alveo-palatal is rather systematic, as demonstrated below:

Epenthesis of the Alveo-Palatal [j]

Rule 1: / ɔ ɪ/>[oji]

Input → alve-palatal [j] Epenthesis →   output

epenthesis of glide [j]

Rules 1 demonstrates breaking diphthongs by inserting the alveo–palatal approximant [j] when [j] is preceded by [i]. The general pattern is that [j] can be preceded or followed by [i], as in the following complex peaks / aji/, /eji/, /ij/ and /ij/.

Other examples are as follows:

English version	rule applied	Tonga version
Scenario A		
/bɔ ɪ l/	OV	bojila
/tɔ ɪ/	OV	toji
Scenario B		
/kII/	VO	kiji
/tII/	VO	tiji

During epenthesis of the alveo-palatal [j] in scenario A and B, the trend is that it is only possible when the glide [j] is followed or follows vowel /i/ and that way the English complex peaks are broken. This means that the long vowels are altered, leading to simple vowel. The English diphthong /II/ as in /kII/ 'key' has a complex peak, VV sequence, but epenthesis of the alveo–palatal approximant [j], result in short vowels [i] and [i], characterized by simple peaks, [k*iji*]. The other noticeable change towards resyllabification is the change from the English monosyllabic syllable /kii/ /CVV/ to a double syllable [CVCV] word [kiji].

This means that in phonetic environments where the alveo-palatal [j] is preceded or followed by the high front vowel [i], thus [ij] or [ji], epenthesis is possible. When the glide [j] is followed by [i] assimilation is regressive, but when it is preceded by vowel [i], the assimilation is progressive. Above all, resyllabification by breaking diphthongs demonstrates how CVC syllabic words (English) are changed to CV syllabic (Tonga) words. This is because Tonga does not recognize CVC or monosyllabic words and the insertion of the glide [j] enables the breaking of diphthongs but the process also affects the number of syllables from English to Tonga. Epenthesis of

the glide [j] also creates vowel-onset (VO), [iji], or onset-vowel (OV), [ji] assimilation. In the word [peja] 'pair', vowel [e] precedes the glide [j] and the two share similar distinctive features [-round], hence the phonetic environment [ea] which permits epenthesis of the glide [j].

[OV] is realized on words such as [k*iji*] 'key', [f*eja*] 'fair', [f*oji*la] 'fail', [f*aja*] 'fire' and so on, where the alveo-palatal approximant [j] assimilates to vowels [i] and [e] that follow or precede glide [j], hence [-high], [-back]. The only difference is that [j] is [-syllabic] whilst [i] and [e] are [+ syllabic]. From the illustrations above, epenthesis of the glide [j] is possible when it is followed or preceded by any vowel other than [u].

Conclusion
The paper has established that the Tonga speakers epenthesise glide [w] and [j] to handle complex peaks that exist in the English syllables. In situations where the glide [w] is epenthesised two rules apply as follows: /ua/>[uwa] and /au/>[awu]. The glide /j/ is also epenthesised when it is either followed or follows the front, high vowel /i/. In so doing, they manage to handle all the complex peaks with diphthongs and triphthongs and that is evidence of the notion that Tonga is a complete and integral language.

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