

Aspects of Epenthesis across Different Bangladeshi (Bangla) Dialects: Analysis from Various Phonological Perspectives

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Overview of the topics

- What is epenthesis ?
- Epenthesis in the Bangla Language and exemplification
- Earlier research on Bangla Epenthesis and their limitations
- Methodology and Data collection process
- Results and analysis
- Further Analysis approach 1
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What is epenthesis ?

- In syllable structure when vowels are inserted to break the consonant cluster that comes in a series (Hall 2011), this is called epenthesis. Often the insertion is seen as normalizing the complex series of consonants.
- A very well known method for adapting new loans in a particular language is the vowel epenthesis. (Hall, 2011; Kang, 2011)
- Although vowel epenthesis are common, consonant epenthesis are also possible in many languages.
- It has been suggested in earlier research studies that the epenthetic vowels in a language (the automated inserted one) are found in a high frequent number (Eddington 2001).

What is epenthesis ?

- The purpose of epenthesis in a certain language is nothing but to facilitate a clearer communication process. So as the epenthetic vowels are found in higher numbers, the production and the usage of those vowels would also be higher in the whole processing system.
- Consequently, these epenthesized sequences even can be reproduced, pronounced more efficiently and accurately. (Davidson 2006)
- As a result, the insertion of a vowel or such kinds of epenthesis makes the process of uttering a sound pattern more simplified and ultimately the process of sound production and facilitation becomes a much easier engaging process.

Epenthesis in the Bangla Language and exemplification

- Bengali(Indo-Aryan) is spoken all over Bangladesh and dominantly in the West Bengal region of India. (Dasgupta, 2003) A large majority of Bengali words have their origins in the Sanskrit language. (Thompson, 2012)
- The root of the Bengali language can be found in the traces of Sanskrit (around 1500 BC-600 BC), in the middle of the Indo-Aryan period, dialects like the Magadhi, Apabhrangsha, and then, at last, becoming Bengali(around 10 AD) (Chatterji, 1926).
- Even morpho-phonological changes were crucially found in the middle Bengali period (1200-1800 AD), resulting in different dialects in the Bengali language.

Epenthesis in the Bangla Language and exemplification

- The emergence of several dialects of Bengali had been due to different changes in the phonological process at least some centuries ago
- Apart from changes in the dialects, in the loan process of Bengali, epenthesis seems to occur greatly as exemplified by Karim (2010) as the followings-

Sometimes vowel epenthesis occurs between the two consonants of the consonant clusters. For example:

(1)	ENGLISH	BENGALI
a.	Front: /frʌnt/	/fəʀʌnt/
b.	Flat: /flæt/	/fəlæt/
c.	Cream: /kɹim/	/kəʀim/
d.	Group: /grʊp/	/gəʀʊp/
e.	Floor: /flɔːr/	/fəlɔːr/

(adapted from Islam, 2004)

Epenthesis in the Bangla Language and exemplification

In some cases epenthesis occurs before the initial consonant clusters. For example:

(2)	ENGLISH	BENGALI
a.	Special: /'speɪʃl/	/ɪspeɪʃal/
b.	Spain: /'speɪn/	/ɪspeɪn/
c.	Station: /'steɪʃn/	/ɪsteɪʃon/
d.	School: /sku:l/	/ɪskul/

(adapted from Islam, 2004)

But, when a consonant cluster occurs between two vowels, epenthesis does not occur. For example:

(3)	
a.	Astonish: /ə'stɒnɪʃ/
b.	Continue: /kən'tɪnju/
c.	Monday: /mʌn'deɪ/
d.	April: /eɪ'prəl/

(data source: author)

Earlier research on Bangla Epenthesis and their limitations

- Examples of epenthesis in Bangla can be found in past research studies where English words realized by Bangla speakers (loan words) have been exemplified (Karim, 2010), as already seen. And in most of those examples words with onset clusters had been modified in Spoken Bengali and there were no changes in the Standard Bengali (eg. /frʌnt/ becomes /fəʀʌnt/ in spoken Bengali, but doesn't change in Standard Bengali).
- In a next paper Karim (2011) brings the vowel epenthesis in the word-final position of the Dhaka Dialect (Bangladeshi), and particularly the point should be emphasized that the work don't focus on other different dialects of Bengali where epenthesis also takes place.

Earlier research on Bangla Epenthesis and their limitations

- Another researcher, Chung (2019) however adds Dhaka dialect with the Sylheti Dialect and then discusses the whole issue of epenthesis, which are mostly borrowed from the examples of the study of Karim (2010). The constraint-based analysis gives some further insights on the topic.
- A very interesting fact is that in all of the earlier research works on Bangla epenthesis- the theories, related explanations and their applicability only focus on the loan words or borrowed words [mostly from English] (Karim, 2010) or the realization of the foreign words by the Bengali speakers (Chung, 2019)- thus making the scope of those studies more restricted and narrower, especially for relating the analysis only to the non-native words of Bangla.

Methodology and Data collection process

- Earlier research studies on Epenthesis in different languages adopted the approach of collecting data from certain texts, ongoing conversations, recordings or certain or specified corpus data. Some research even cited data sources from the author himself or referred to other studies(Karim, 2010; Chung, 2019).
- In the present research, a different approach has been taken to collect the data from the participants of native speakers of their own Dialects. The data for epenthesis in dialects was collected from a number of informed participants (N=33) who had been given an overall explanation about the topic of the epenthesis (how sounds change and how the sounds are inserted); additionally, they were also given instructions on the survey form- how does the change take place, how the data should be input in the form etc.

Methodology and Data collection process

- All of these participants were the students of the University of Dhaka, pursuing their undergraduate degrees, who were native Bengali speakers and the data collection process was initiated and finished in December 2020, in a span of one week.
- The data collected from certain conversations or corpus data can sometimes include altered explanations or even get simplified and often depends on the interpretation of the researcher to conform to the theoretical approach of the research. However, the data collection technique in this paper has been made similar to survey data collection, where specific data are collected depending on the variables directly from the participants without having any of those bias.

Methodology and Data collection process

Glimpse of the Data Found

Dialect Words (epenthesized)	Standard Bengali
kaīṭa, baīṭca, haīṭa	kete, bēce, hata
ac ^h ilam , aīṭc ^h a, kaūḷka	c ^h ilam, acc ^h a, kalke
aīṭta, jaīṭaæ, k ^h aīṭaæ, ḍaṛaīṭaæ, k ^h eīḷla	hāta, jeje, k ^h eje, ḍāṛije, k ^h eje

Results and analysis

- After the cleaning process from the data, only 20 dialects from 20 districts were counted from the total 33 respondents' data.

Data Collected from the 20 Different Districts and Dialects	
Brahmanbaria	Jhenaidah
Chandpur	Khulna
Chittagong	Madaripur
Comilla	Magura
Faridpur	Munshiganj
Feni	Narayanganj
Gopalganj	Narsingdi
Jamalpur	Netrokona
Jashore	Satkhira
Jhalakati	Tangail

Results and analysis

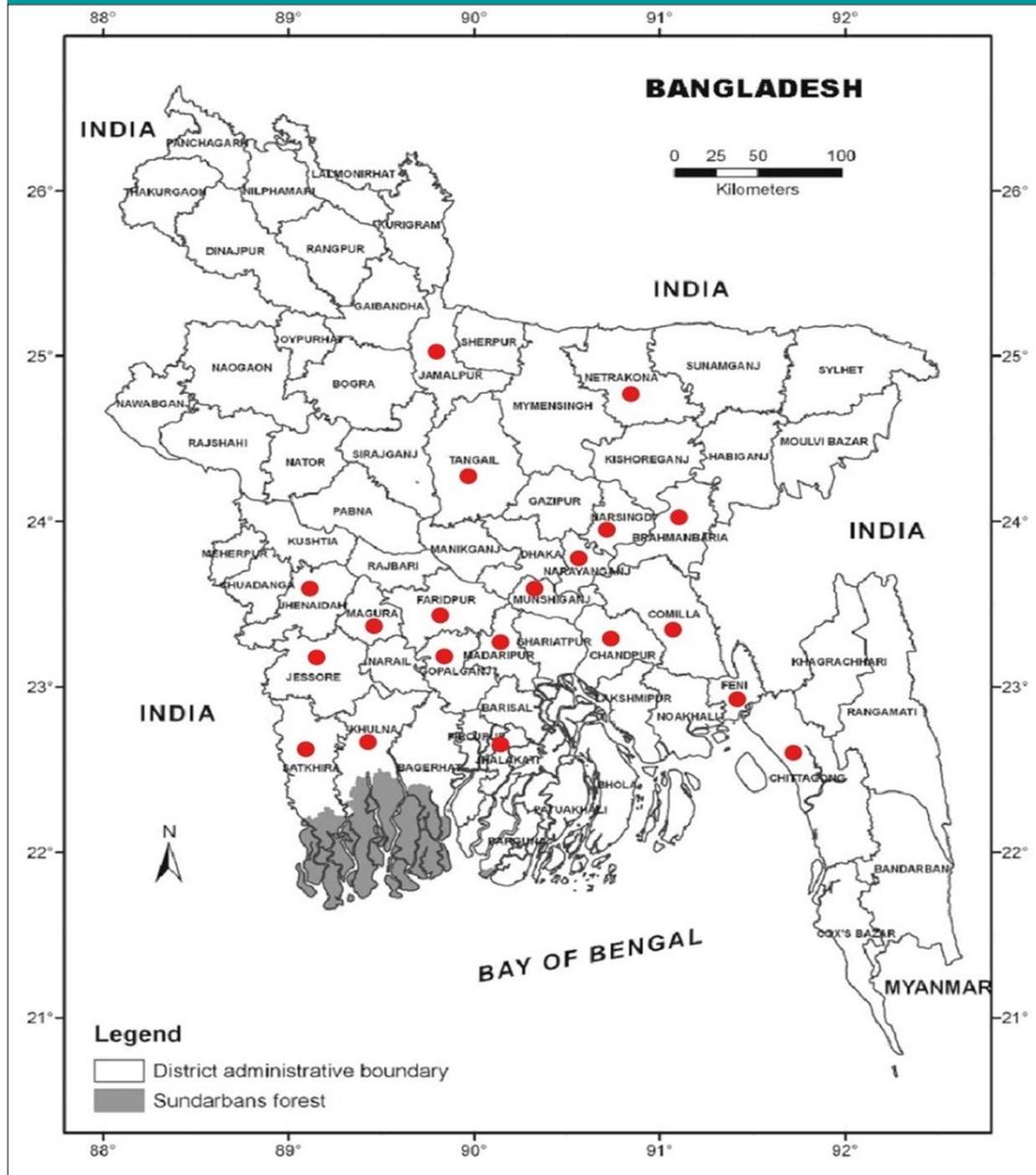


Fig.- The identification of the districts in the map of Bangladesh (Similar to the Dialect Mapping)

Results and analysis

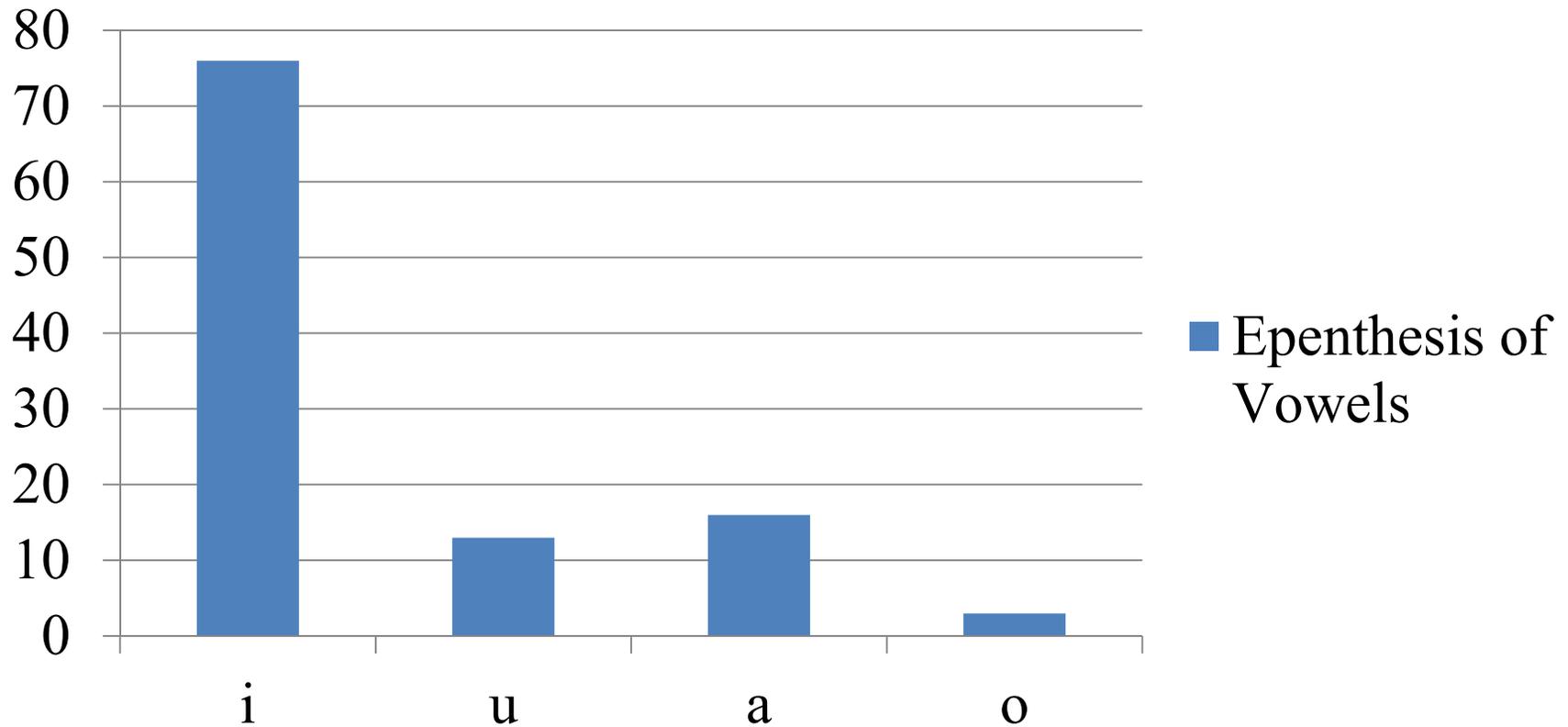
Epenthesis number of times (N)

Vowels (n) in the epenthesis process in the surveyed data	
i	76
u	13
a	16
o	3

The highest occurring vowel is /i/, which occurs about 76 times (70%). When in the second place comes the vowel /a/, which occurred about 16 times (15%), which occurs actually one-fifth times of the first vowel /i/. Then in the third place comes the vowel, /u/- which occurs about 13 times (12%).

Results and analysis

Epenthesis of Vowels



Results and analysis

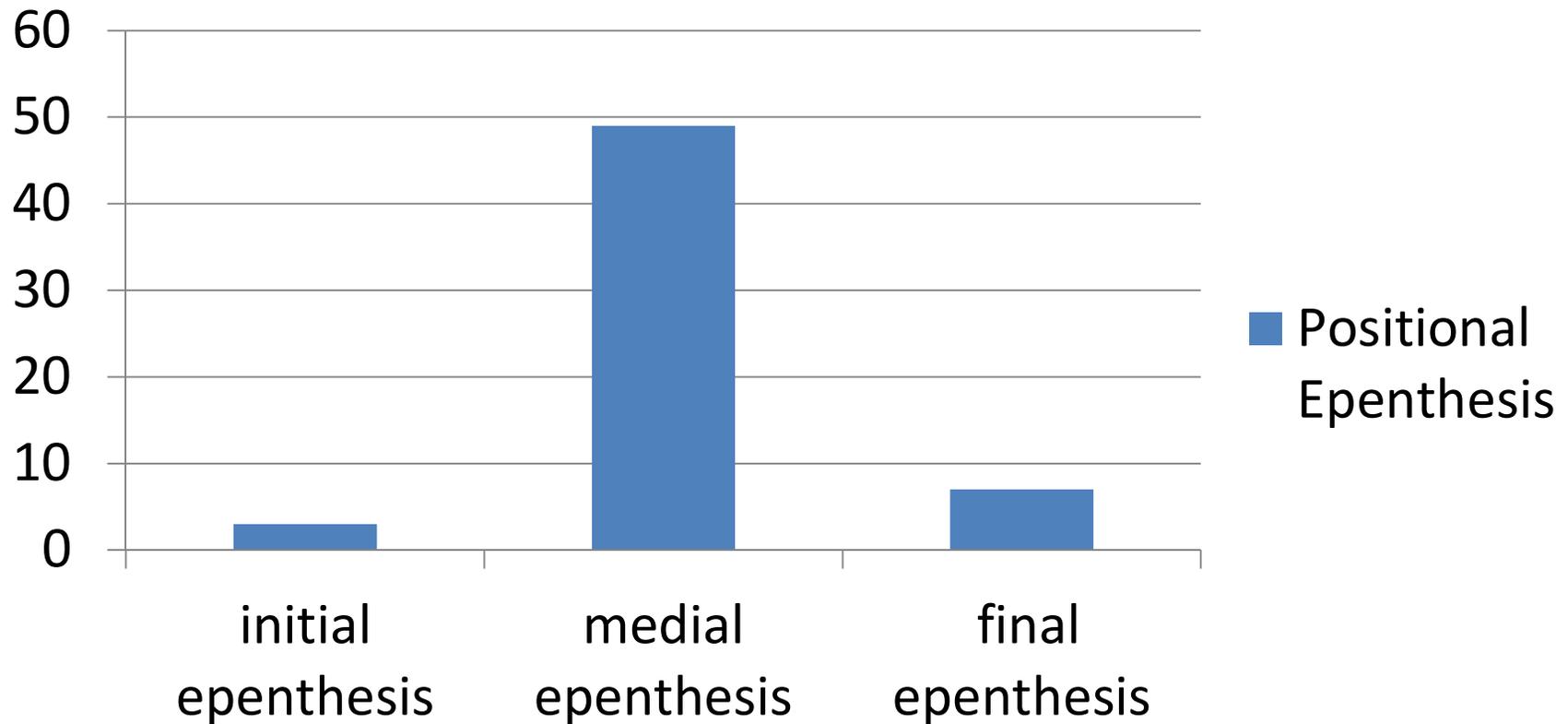
Positional Epenthesis

Epenthesis at Different Positions (n) in the Data	
Initial epenthesis	3
Medial epenthesis	49
Final epenthesis	7

After quantification of the data, medial epenthesis was found the most dominant amongst all, happening about 49 times (83%); the final epenthesis coming about 7 times (12%), and the initial epenthesis occurs only about 3 times (5%)- which is the least occurring phenomenon in these positional epenthesis.

Results and analysis

Positional Epenthesis



Further Analysis approach 1

So, if we show the changes schematically with every sound changes inside the dialect words, then this representation would be more correct in the following way-

Standard Orthographic Bangla (SOB)	>>>	Dialect Words
kati ^j a		kaṛita

The changes in these dialect words actually come in two stages, at first stage, the dialect data changes from the Standard Colloquial Bengali /sadhu vasha/ and the /i/ vowel comes before the /t/ sound, this is an epenthesis process actually because of the vowel insertion and the latter sound /i^ja /which is a glide associated with a vowel, gets deleted here or simply dropped. Then again happens epenthesis with the insertion of /a/ vowel at the last position.

Further Analysis approach 1

Process of Changes in the epenthesis Process

<u>Process</u>	<u>Sound</u>	<u>Changes taking place</u>
Medial Epenthesis	i	kaitiʃa
Deletion	iʃa	kait
Final Epenthesis	a	kaṛṭa

A majority portion of the data can be analyzed with the same explanations where the data can be shown to be related to the previous Standard Orthographic Bangla /sadhu vasha/ Language which has close similarity in the phonetic form.

Further Analysis approach 1

In another dialect (Narsingdi), the same word changes in quite different manner (but with the same phonemic distribution), however, some other changes and processes happen to the word. Let's first represent the word's schematic changes to the dialect form as the follows-

Standard Orthographic Bangla (SOB) >>> Dialect Words

katī'a

>>>

kaītta

This time the changes are not so simple, rather a complex process is involved in the process. Previously, there were only two processes- Epenthesis and Deletion took place. However, this time there are four processes involved- Epenthesis, Deletion, Diphthongization and the Partial Reduplication of sounds

Further Analysis approach 1

The changes are found in many of the dialect words which involve the epenthesis process and the pattern would be the same as the changes with this very word. Let's represent the changes schematically as the previous case-

Process of Changes in the epenthesis Process

<u>Changes taking place</u>	<u>Process</u>	<u>Sound</u>
kaiti ^j a	Epenthesis	i
kait	Deletion	i ^j a
kai ^t	Diphthongization	ai ^t
kai ^{tt}	Partial Reduplication	t
kai ^{tt} a	Epenthesis	a

Further Analysis approach 2

Evaluating Different Dialects Data involving Optimality Theoretic Approach

- The analysis of the epenthetic vowels in the present study would be very similar to the analysis of Karim (2010) and thus the constraints that he chose for his study would be same here.
- At first let's take the example from the dialect of Narsingdi, from Narsingdi district under Dhaka division. The chosen word is- /siri/ which means beauty, diligent, nice etc. in the Standard Bangla and in Standard Bangla the word is considered as /sri/ with the same meaning.
- So, this word has been chosen for a particular reason and that is the initial consonant cluster with the same pattern is found several times.

Further Analysis approach 2

Examples of Bangla Epenthesis with [s]-clusters found across dialects (from the surveyed data)

[s]- clusters	[sibilant + rhotics sounds]		
Main Word	After epenthesis	Inserted Vowels	Meaning
sri	siri	i	beauty
sriti	siriti	i	memory
sromik	soromik	o	labourer
sradkho	seradkho	e	death ceremony
srosta	sorosta	o	creator
sraon	seraon	e	a bangla season name

Further Analysis approach 2

Evaluating Different Dialects Data involving Optimality Theoretic Approach

- Another word which would be analyzed with the Optimality Theoretic approach is the word /kelanto/ which comes from the dialect of Magura, from Magura district under Khulna division. The meaning of the word is 'to be tired' and in Standard Bengali the word is realized as /klanto/ (without any epenthesis inside the syllable).
- This word is also chosen for a specific purpose, it is because the word is not only the one, rather the same initial consonant cluster /stop+liquid/- with the same pattern is found several times. Thus giving us a chance to analyze the data with the intended theoretical approach.

Further Analysis approach 2

Examples of Bangla Epenthesis with [stop+liquids]-clusters found across dialects (from the surveyed data)

[stops+liquid sounds' clusters]			
Main Word	After epenthesis	Inserted Vowels	Meaning
kroy	koroy	o	to buy
klanto	kelanto	e	tired
kromagoto	koromagoto	o	chronological

Further Analysis approach 2

Reasons for Choosing those Patterns for OT analysis

- Particularly, choosing the two examples- /siri/ and /kelanto/ has very basic reasons for the current study. As Karim (2010) in his study states that he differentiates between the rising sonority clusters (where vowel is inserted between two consonants) and the falling sonority clusters (e.g. clusters with s-stops, where vowels inserted before the cluster).
- So, according to Karim (2010)-the insertion of vowels take place at two different places. However, in my gathered data I found evidences across dialects that the vowel insertions occurs only at the same place, and that is only in the rising sonority clusters of the dialect words in Bengali (i.e., insertion of vowel between two consonants).

Further Analysis approach 2

Analyzing Dialects Data (1) with Optimality Theoretic Approach

Tableau A.

<u>/sri/</u>	*CCONS	SYLLABLE CONTACT	MAX-IO	CONTIG-IO	DEP-IO
a) <u>sri</u>	*!				
☞ b) <u>siri</u>				*	*
c) <u>si</u>			*!		
d) <u>isri</u>		*!			

The above analysis have been done with the scheme of Karim (2010) as already mentioned, however, the data here comes from a dialect of Bengali, and which completely conforms to the previous scheme and the ranking order of Karim's study which was only applicable to loan words in Bengali.

Further Analysis approach 2

Analyzing Dialects Data (2) with Optimality Theoretic Approach

Tableau B.

	<u>/klanto/</u>	*CCONS	SYLLABLE CONTACT	MAX-IO	CONTIG-IO	DEP-IO
	a) <u>klanto</u>	*!				
☞	b) <u>kelanto</u>				*	*
	c) <u>kanto</u>			*!		
	d) <u>eklanto</u>		*!			

The above analysis have been done with the scheme of Karim (2010) as already mentioned, however, the data here comes from a dialect of Bengali, it is another consonant cluster found in the Bengali Dialects as already been discussed.

Further Analysis approach 2

Alternative analysis to the Dialect Data in Bengali [Adapted from Karim (2010)]

- In the paper of Karim (2010), he further illustrates the epenthesis process with a different scheme and quite different candidates and constraints. In the present study, also the alternative analysis of Karim (2010) would be tested with the dialect data.
- Firstly, representing the data is necessary which are going to be analyzed for an 'alternative analysis' similar to Karim (2010) in the current approach. The data comes from the 'Puran (Old) Dhaka Dialect (local) from the Dhaka City under the Dhaka Division in Bangladesh. The word chosen for the alternative analysis is the word- /piriti/ (available in data) which means love or affection in the standard Bengali. Many words show this pattern with [stop] clusters in the dialect data.

Further Analysis approach 2

Examples of Bangla Epenthesis with different stop clusters found across dialects

[stops+ rhotic] clusters		
Main Word	After epenthesis	Meaning
[p- clusters]		
<u>priti</u>	<u>piriti</u>	love/affection
<u>prapok</u>	<u>parapok</u>	receiver
<u>prerok</u>	<u>pererok</u>	sender
<u>prostut</u>	<u>pɔrostut</u>	be ready
<u>pranto</u>	<u>peranto</u>	margin/horizon
[t- clusters]		
<u>trif</u>	<u>tirif</u>	thirty
[g- clusters]		
<u>grahok</u>	<u>gerahok</u>	retainee/consumer
<u>graf</u>	<u>geraf</u>	devour/destruct
<u>grazzo</u>	<u>gerazzo</u>	to care about

Further Analysis approach 2

Alternative analysis with the Dialect Data [adapted from Karim (2010)]

Tableau C.

	/pri ti/	*CCONS	*OR	MAX-IO	CONTIG-IO	*OO	DEP-IO
	a. pri ti	*!	*				
☞	b. pi ri ti				*		*
	c. pi ti			*!			
	d. ipri ti		*!				*

The alternative analysis is done with the scheme of the Karim (2010) with no changes at all, yet the dialect data correctly selects the optimal candidate with no apparent problems in the ranking.

Concluding remarks

- The most occurring epenthesis in the sounds is the /i/ sound inserted in the majority of the cases
- There are 3 different types of positional epenthesis- initial, medial and final epenthesis; however, the medial epenthesis is the most dominant.
- The epenthesis is not a linear process, rather a mixture of multiple process involved like deletion, partial reduplication etc.
- In Optimality theoretic analysis, the scheme postulated for the Bangla loan words in epenthesis completely works fine for the native Dialect words in Bengali for the epenthesis.