A Contrastive Analysis between Bangla and English Phonology: Some Pedagogical Recommendations

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Abstract

This study is a contrastive analysis between the phonological patterns of standard colloquial Bangla(an Indo-European language widely used in Bangladesh and the eastern part of India) and British English at both segmental and supra-segmental levels. This study will contrast Bangla phonological system with the English one and will attempt to point out possible difficulties that native Bangali learners might face in learning English as an L2 because according to the contrastive analysis hypothesis, structural features of the target language that are similar to those of the native language will be easy to learn while those that are different will be difficult. This study will use the perceptual assimilation model to delineate how different phoneme-contrasts in English might be perceptually assimilated to Bangla phonemic contrasts by a native Bangali learner. There are distinct points of differences between Bangla and English phonological systems: differences in the vowel and consonant phonemes, syllable structures, and stress patterns. The perceptual assimilation model would be used to categorize relative difficulty levels that a Bangali EFL/ESL learner might face in perceiving and pronouncing different English phonemes depending on how those contrasts with different Bangla phonemes. Such a contrastive analysis might help pedagogical practitioners in Bangladesh to point out the aspects to be emphasized while teaching English pronunciation. In this regard, the study will propose some pedagogical approaches that teachers can use to help native Bangali learners acquire those aspects of English pronunciation that are more problematic for them.

Introduction

This study is a contrastive analysis between the phonological patterns of Bangla and English languages. Bangla is an Indo-European language and of similar linguistic lineage as English and other Indo-European languages although of a different branch (the Indo-Iranian) of the family (Dimock, Bhattacharji & Chatterjee 1976). Although the immediate origins of Bangla language are somewhat obscure, it might originate directly from 'an Eastern variety of an Indic language closely related to Sanskrit' (Dimock, Bhattacharji & Chatterjee 1976, p. ix). Bangla is spoken by more than 100 million people in Bangladesh and in the Eastern part of India, and this language has rich literary heritage (Dimock, Bhattacharji & Chatterjee 1976). Although Bangla has many dialectal variations, this study will focus on the standard colloquial Bangla that is intelligible to and spoken by the educated Bangali people in both Bangladesh and in the Eastern states of India.

On the other hand, English is a more widely spoken language in the world than Bangla, and English is also an international language. Therefore it is natural for Bangali speakers to want to learn English not only for study purposes but also for professional and personal development. A large number of Bangali students come to the English-speaking countries such as U.S.A., U. K., and Australia for higher studies, and a good command in English is also a necessary prerequisite for professional development of Bangali speakers. Although there are many varieties of English including American English, British English, or Australian English, this study will follow the phonological norms of British English, which is widely accepted as the standard variety of English in Bangladesh. A contrastive analysis between the phonological systems of standard colloquial Bangla and British English might be helpful for the pedagogical practitioners in Bangladesh in pointing out the aspects of language they should emphasis on while teaching English pronunciation to Bangali learners.

According to Lado (cited in Gass & Selinker 2008), the contrastive analysis hypothesis is based on the belief that learners transfer the habits of their native language in learning a second/foreign language, and thus, the structural features of the target language that are similar to those of the native language will be easy to learn while those that are different will be difficult. In this hypothesis, the grammatical and phonological systems of two languages are contrasted to predict what kind of difficulties a native speaker of one language might face in learning another as a second language or L2 (Gass & Selinker 2008; Wardhaugh 1970). As this study is a contrastive analysis between Bangla and English phonology, it will contrast Bangla phonological system with the English one and will attempt to point out the possible difficulties that native Bangali speakers might face in learning English as an L2. There are distinct points of differences between Bangla and English phonological systems- differences in the vowel and consonant phonemes, syllable structures, and stress patterns, which might be challenging for native Bangali learners who are learning English as an L2. This project will attempt to point out the difficulties that native Bangali learners might face in learning English pronunciation by contrasting the phonological systems of standard colloquial Bangla and British English at both segmental and supra-segmental levels. This study will also propose some pedagogical approaches that teachers can use to help learners acquire the appropriate pronunciation of the phonemes and stress patterns of English.

Sound Inventory and Descriptions

Sound Inventory of British English

A descriptive account of British English vowels and consonants is given below.

British English consonants: Consonants can be classified based on how they are pronounced and in which part of the vocal tract the obstruction is created while articulating a consonant sound. A chart of English consonant phonemes is given below:

Table 1

		Bilabial	Labio-dental	Dental	Alveolar	Palato-alveolar	Palatal	Velar	Glottal
Plosive	Voiceless	p			t			k	ʔ
	Voiced	b			d			g	
Fricative	Voiceless		f	θ	s	ʃ			h
	Voiced		v	ð	z	ʒ			
Affricate	Voiceless					tʃ			
	Voiced					dʒ			
Nasal	Voiced	m			n			ŋ	
Lateral	Voiced				l				
Approximant	Voiceless	ʍ							
	Voiced	w			ɹ		j		

[Source: Adapted from Roach (2000)]

As can be seen in the chart above, in addition to the voiced and voiceless bilabial, alveolar and velar plosives, English also has one glottal plosive /ʔ/, which Bangla does not have. English has more fricatives than plosives. English distinguishes between voiced and voiceless labio-dental and dental fricatives (/f/, /v/, / θ/, / ð/), which are absent in the Bangla language. As can be seen in the chart above, English voiced and voiceless fricatives are in contrastive distribution with each other, and this feature could be different from the phonemic inventory of many other languages such as Bangla that does not have any voiced fricative. English also has two palato-alveolar affricates (/tʃ/and /dʒ/), which are termed as 'complex consonants,' as they 'begin as plosives and end as fricatives' (Roach 2000, p. 48). As can be seen in the chart above, English has the approximants: / j/, /ɹ/, /w/, and /ʍ/. In the pronunciation

of these approximants, the articulators come very close to each other, but there is no touch or contact between them to produce a complete consonant like plosive or fricative (Roach 2000). Such approximants might not be common in other languages of the world such as in Bangla that has no approximants in its phonemic inventory.

The table below provides minimal pairs distinguishing between English voiced and voiceless phonemes:

Table 2

Plosive		Fricative		Affricate	
/p/ and /b/	pan [pæn] ban [bæn]	/f/ and /v/	fan [fæn] van [væn]	/tʃ/ and /dʒ/	chet [tʃet] jet [dʒet]
/t/ and /d/	tin [tɪn] din [dɪn]	/ θ/ and /ð/	wreath [rijθ] wreathe [rijð]		
/k/ and /g/	cot [kɒt] got [gɒt]	/s/and /z/	sip [sɪp] zip [zɪp]		
		/ʃ/ and /ʒ/	mission [mɪʃən] vision [vɪʒən]		

British English vowels: Vowels function as the nucleus of syllables, and in pronouncing a vowel there is no obstruction of the vocal tract (Ladefoged 2001). Roach (2000) divided the British English vowels into 7 short vowels and 5 long vowels. The short vowels are shown in the table below:

Table 3

	Front	Central	Back
High	ɪ		ʊ
Mid	e	ʌ	
Low	æ		ɒ

[Source: Roach, 2000]

Long vowels of British English are shown in the table below:

Table 4

	Front	Central	Back
High	iː		uː
Mid		ɜː	ɔː
Low			ɑː

[Source: Roach, 2000]

Minimal pairs distinguishing long /uː/ and short /ʊ/:
Pool /puːl/
Pull /pʊl/
Minimal pairs distinguishing long /iː/ and short /ɪ/:
Bit /bɪt/
Beat /biːt/

English diphthongs: Diphthongs are sounds that 'consist of a movement or glide from one vowel to another' (Roach 2000, p. 21). There are 8 diphthongs in English (Roach 2000). These are as follows:
Centering diphthongs: There are three centering diphthongs that end with a glide to the central vowel /ə/; these are as follows: /ɪə/, /eə/, /ʊə/ (Roach 2000).
Closing diphthongs: There are five closing diphthongs that end with a movement towards the close (high) vowels /ɪ/ or /ʊ/; these are as follows: /eɪ/, /aɪ/, /ɔɪ/, /əʊ/, and /aʊ/ (Roach 2000).
Example words with these diphthongs are given in the table below:

Table 5

Centering Diphthongs		Closing Diphthongs	
/ɪə/	fierce [fɪəs]*	/eɪ/	face[feɪs]
/eə/	scarce [skeəs]	/aɪ/	nice[naɪs]
/ʊə/	tour [tʊə]	/ɔɪ/	voice[vɔɪs]
		/əʊ/	home[həʊm]
		/aʊ/	gown [gaʊn]

(* in British English, post-vocalic [r] is not pronounced)

English Syllable Structure

The syllable structure of English language is different from that in Bangla. In English syllable structure, it is common to have consonant clusters in onsets and codas; for example, in the words black [blæk], ask [æsk], and bump [bʌmp], [blæk] has two consonant clusters in onset and [æsk] and [bʌmp] each has two consonant clusters in codas. In English, there can be a cluster of maximum three consonants in a syllable-onset and a cluster of maximum four consonants in a syllable-coda (Roach 2000).

But such complex clusters in syllable onsets and codas are non-existent in Bangla language.

Sound Inventory of the Bangla Language

Bangla consonants. In terms of the manner of articulation, Bangla consonants can be divided in the following classes: stops, nasals, laterals, flaps, and spirants (fricatives) (Dimock, Bhattacharji, & Chatterjee 1976; Islam 1970).

On the basis of the place and manner of articulation, Bangla consonants can be shown in the chart below:

Table 6

		Labial		Dental		Palatal		Retroflex		Velar		Glottal
		un-asp.	Asp.	Un-asp.	Asp.	Un-asp	Asp.	Un-asp.	Asp.	Un-asp.	Asp.	
Stops	Voiceless	p	p^h	t	t^h	c	c^h	ʈ	$ʈ^h$	k	k^h	
	Voiced	b	b^h	d	d^h	ɟ	$ɟ^h$	ɖ	$ɖ^h$	g	g^h	
Nasals		m		n						ŋ		
Laterals				l								
Flaps				ɾ				ɽ				
Spirants/Fricative				s		ç						h

[Adapted from: Dimock, Bhattacharji & Chatterjee 1976]
[Note: Unasp: Unaspirated
Asp: Aspirated]

As can be noticed in the table above, aspiration is a distinctive phonemic feature in Bangla, as aspirated and unaspirated stops have contrastive distribution. This aspect of Bangla language is in contrast to English, as English has aspiration as an allophonic variation of the voiceless stops /p/, /t/, /k/, which are aspirated only when they occur at the beginning of a stressed syllable. In English, as opposed to in Bangla, aspiration is not a phonemic feature because the occurrences of aspirated or unaspirated stops do not make any difference in meaning.

The Bangla stop phonemes are classified below according to their places of articulation with minimal pairs that show contrasts between the phonemes:

Labial: /p/, /b/, /p^h/, and /b^h/ are labial stops.

Minimal pairs: <pata> [paʈa] (stone slab)
< pʰata> [pʰʈa] (to crack)
< bata> [baʈa] (to smash)
< bʰata> [bʰaʈa] (ebb) (Islam 1970).

Dental: /t/, /d/, /tʰ/, and /dʰ/ are dental stops (tongue-tip is pressed against the upper-teeth).

Minimal pairs: <tan> [tan] (musical note)
<tʰan> [tʰan] (bolt of cloth)
<dan> [dan] (gift)
< dʰan> [dʰan] (rice paddy) (Islam 1970).

Palatal: /c/, / ɟ/, /cʰ/, and / ɟʰ/ are palatal stops.

Minimal pairs: <chal> [cal] (custom/fashion)
< cʰhal> [cʰal] (skin/hide)
<jal> [ɟal] (net)
<jʰal> [ɟʰal] (spicy) (Islam 1970).

Retroflex. /ʈ /, /ɖ /, /ʈʰ /, / ɖʰ/ are retroflex stops.
Example words: <tok> [ʈɔk] (sour)
<tʰok> [ʈʰɔk] (cheat)
<dok> [ɖɔk] (dock)
<dʰok> [ɖʰɔk] (a sound) (Islam 1970).

Velar. /k/, /g/, /kʰ/, and /gʰ/ are velar stops.

Example words: <kal> [kal] (yesterday/tomorrow)
<kʰal> [kʰal] (canal)
<gal> [gal] (abuse)
<gʰal> [gʰal] (injury) (Islam 1970).

Minimal pairs of the two voiced flaps: /ɾ/ and /ɽ/:
<pora> [pɔɾa] (“to wear”)
<pora> [pɔɽa] (“to read”) (Dimock, Bhattacharji & Chatterjee 1976).

As can also be noticed in the table above, Bangla has only three fricatives /s/, /ç/, and /h/ all of which are voiceless. Thus, contrary to English, Bangla has no voiced fricative.

Bangla vowels: The vowel sounds used in Bangla are the following:

Table 7

	Front	Central	Back
High	ɪ		u
Mid	e		o
Lower-mid	æ		ɔ
Low		ɐ	

[Source: Dimock, Bhattacharji & Chatterjee 1976]

Each of the above oral vowels has its corresponding nasalized form: /ĩ/, /ẽ/, /æ̃/, /ɐ̃/, /ɔ̃/, /õ/, /ũ/ (Dimock, Bhattacharji & Chatterjee 1976; Islam 1970; Kostic & Das 1972). In Bangla, nasalization is a phonemic feature, as oral and nasal vowels are in contrastive distribution (Dimock, Bhattacharji & Chatterjee 1976; Kostic & Das 1972). For example,

ɐ/ɐ̃
<kacha> [kɐcɐ] 'wash (cloth)'
<kãcha> [kɐ̃cɐ] 'young'
o/õ
<phota> [p^{h}o ʈa] "(to) bloom"
<phõta> [p^{h}õʈa] "mark on forehead"
i/ĩ
<c^{h}hit> [c^{h} iʈ] "printed cloth"
<c^{h}hĩt> [c^{h} ĩʈ] "slightly eccentric"
e/ẽ
<geo> [geo] "singer"
<gẽo> [gẽo] "rustic"
æ/æ̃
<tako> [ʈæko] "bald headed"
<tãko> [ʈæ̃ko] "corner of sari (a kind of dress)"
ɔ/ɔ̃
<boti> [bɔʈi] "pill"
<bõti> [bɔ̃ʈi] "instrument for cutting fish or vegetable"
u/ũ
<kuri> [kuɽi] "twenty"
<kũri> [kũɽi] "bud"
(Dimock, Bhattacharji & Chatterjee 1976; Kostic & Das 1972, p. 34).

However, in English, nasalization of vowels is not a phonemic feature, as nasalization of vowels cannot make a meaning difference.

Although all the vowels of Bangla can be short or long, the length of vowels can make no meaning difference; hence, vowel length is not considered to be phonemic in Bangla (Kostic & Das 1972). This feature of Bangla vowel system contrasts with that in English, as vowel length is a phonemic feature in English; for example, <ship> [ʃɪp] (a kind of vessel) and <sheep> [ʃi:p] (a kind of mammal).

Bangla Syllable Structure

In Bangla language, 'medial consonant clusters are frequent, initial consonant clusters are rare, and final clusters are almost nonexistent' (Ferguson & Chowdhury 1960, p. 45). The onset consonant clusters occur rarely and infrequently in ordinary colloquial Bangla[1]. Bangla syllable structure allows syllable codas; for example:
<jal> [ɟal] (net)
<tok> [ʈɔk] (sour)

In Bangla language, medial consonant clusters are common and frequent (Ferguson & Chowdhury 1960). One characteristic feature of such medial consonant clusters is that almost every consonant in Bangla language can be doubled, which means they can occur geminate (Ferguson & Chowdhury 1960; Dimock, Bhattacharji & Chatterjee 1976). This feature of Bangla language contrasts with that in English, as in English, there is no such geminate words. Minimal pairs with doubled consonants are given below:

<b^hago> [b^hago] '(you) go away'
<b^haggo> [b^haggo] 'luck' (Dimock, Bhattacharji & Chatterjee 1976).

<chokor> [cɔkor] 'a kind of bird,'
<chokkor> [cɔkkor] 'round' (Islam 1970, p. 29).

Therefore, such doubling of consonants is a phonemic feature in Bangla.

Segmental Issues in L2 Acquisition

Issues with Consonants:

1. In Bangla, there is a voiced palatal stop (/ɟ/). But in Bangla, there is no voiced alveolar fricative /z/ or voiced post-alveolar fricative /ʒ /, as Bangla has no voiced fricative phoneme. However, the Bangla palatal stop [ɟ] sounds almost identical to the English voiced palato-alveolar affricate [dʒ] probably because both are voiced palatal phonemes. On the other hand, it might be difficult for Banglai learners to differentiate between English voiced alveolar fricative [z] and voiced post-alveolar fricative [ʒ], which might sound similar to the Bangla voiced palatal stop [ɟ] but actually represent two different phonemes of English (/z/ and / ʒ/). In this case, two separate L2 phonemes (/z/ and / ʒ/) are perceived by native Bangali learners as being similar to the one L1 phoneme /ɟ/, and according to Best's theory of perceptual assimilation model (PAM), 'if the L2 contains a phonemic contrast in which both members are perceived as a single native language sound, establishing different categories for the L2 will be extremely difficult' (Ioup 2008, p. 49). Thus, this type of discrimination, which is known as the 'Single Category Pattern,' would be most problematic for L2 learners where two contrastive target language sounds are mapped onto one native language sound (Major 2008; Strange and Shafer 2008, p. 170).

2. In Bangla, there is no labio-dental fricative /f/ or /v/. The closest Bangla phonemes are the aspirated labial stops /p^h/ and /b^h/, which are quite different in features of articulation from the labio-dental fricatives /f/ and /v/. In pronouncing the stops /p^h/ and /b^h/, the lips are pressed

together to form the stricture, which is then followed by the plosion and aspiration. However, in articulating the fricatives /f/ and /v/, there is no plosion or aspiration, but the upper teeth touch the lower lips, and the air escapes through a small passage. Therefore, it is possible for Bangali learners to mispronounce /f/and /v/ more forcefully as aspirated stops (as they have no fricative /f/ and /v/ in their L1 Bangla), and thus, they can mix up the pronunciations of /f/ and /p^h/ and /v/ and / b^h/. In this case, according to Best's perceptual assimilation model, 'the contrasting L2 phones are perceptually assimilated to separate L1 categories,' which is known as 'two category pattern' (Strange and Shafer 2008, p. 171). In such a case, the 'discrimination' is supposed to be very easy to overcome because the contrasting L2 phonemes (for example, /f/and /v/) are connected to similar (but not identical) L1 phonemes (for example, /p^h/ and /b^h/) (Strange and Shafer 2008, p. 171).

3. Similarly, In Bangla, there are dental stops /t^h/ and /d/, which are similar to the English dental fricatives /θ/ and /ð/. However, in articulating the Bangla stops /t^h/ and /d/, there is plosion, and /t^h/ also involves aspiration while the articulation of English /θ/ and /ð/ involves no plosion or aspiration but only weak fricative noise, as the tongue-tip is placed behind the teeth (Roach 2000). Therefore, the Bangali learners might pronounce the English fricatives /θ/ and /ð/ more strongly as plosives whereas the articulation of /θ/ and /ð/ only involves weak fricative noise. According to Best's perceptual assimilation model (PAM), this is also known as 'two category pattern,' in which two contrastive L2 phonemes (/θ/ and /ð/) are 'perceptually assimilated' to two similar L1 phonemes (/t^h/ and /d/), and such a discrimination is supposed to be easier to overcome (Strange and Shafer 2008, p. 171).

4. It might be difficult for Bangali learners to pronounce the English alveolar approximant /ɹ/ in which the articulators come very close to each other, but there is no contact or touch between them (Roach 2000). In Bangla, there are two similar phonemes both of which are flaps (tongue-tip tapping once on the point of articulation): /ɾ/ and /ɽ /where /ɾ/ is dental and /ɽ / is retroflex, but neither of these is approximants. Therefore, it might be difficult for Bangali learners to pronounce the English approximant [ɹ] sound, and they might mispronounce this approximant [ɹ] as the flaps [ɾ] or [ɽ].

5. Bangla 'has complete series of aspirated and unaspirated stops both voiceless and voiced' whereas 'aspiration in English is connected for the most part with voiceless stops, and non-aspiration with voiced stops' (Dimock, Bhattacharji & Chatterjee 1976, p. 7). It might be difficult for Bangali learners to learn the rule that the English voiceless stops (/p/, /t/, /k/) are aspirated only on a certain occasion (in the beginning of a stressed syllable) because in Bangla, the unaspirated stops /p/, /t/, /k/ and their aspirated forms /p^h/, /t^h/, and /k^h / are all distinct and separate phonemes, which can occur at any position in a word (initial, medial, or final). Therefore, it might be difficult for Bangali learners of English to learn to aspirate the English voiceless stops /p/, /t/, and /k/ at the appropriate environments. Even if they are successful in producing such aspirated forms, they might over-generalize the rules of aspiration and might end up producing aspirated forms of /p/, /t/, /k/ even in situations when they do not aspirate (for example, in a cluster with the phoneme /s/ or in word-final positions) (Dimock, Bhattacharji & Chatterjee 1976).

Issues with Vowels:

1. The length of vowels is not a phonemic feature in Bangla (Kostic & Das1972). But in English, vowel length is a phonemic feature. Therefore, it might be problematic for Bangali learners to perceive the differences between the English long and short vowels and pronounce those appropriately in words to make it clear to a listener whether a long or short vowel is being pronounced in a specific context (for instance, "ship" or "sheep"), as their native language Bangla does not have any such feature.

2. Pronouncing the English vowels [ə] and [ɜː] could be problematic for Bangali learners of English, as these vowels do not have any exact equivalents in Bangla (although [ə] is not a phoneme but an allophone for unstressed vowels in English, it is heavily used in English pronunciation and sounds like a mid-central vowel). Although Bangla vowel inventory does not have any mid-central vowel such as [ə] or [ɜː], Bangla has one low-central vowel /ɐ/ (Dimock, Bhattacharji & Chatterjee 1976).Therefore, Bangali ESL learners of English might possibly have difficulty in pronouncing English words with vowels like [ə] and [ɜː], as they might pronounce [ə] and [ɜː] as [ɐ], the only central vowel in Bangla vowel inventory. According to Best's PAM theory, this can also be an example of 'single category pattern' where two L2 sounds ([ə] and [ɜː]) are perceived as 'equally good exemplars' of a single L1 sound (/ɐ/), and it is supposed to be very difficult for L2 learners to discriminate between those sounds (Strange and Shafer 2008, p. 171).

3. Pronouncing the English diphthongs might be problematic for Bangali learners of English because the vowels of Bangla, for example, '/i/, /e/, /o/, /u/ are pure vowels—that is, they are pronounced without an off-glide' (Dimock, Bhattacharji & Chatterjee 1976, p. 48). Therefore, pronouncing the English diphthongs (for example, /ɪə/, /eɪ/ etc.) where there is 'a movement or glide from one vowel to another' might pose difficulties for Bengali learners of English, and they might very well substitute monophthongs for diphthongs (Roach 2000, p. 21).

Syllable structure: The differences between Bangla and English syllable structures can create problems for Bangladeshi learners of English. As discussed before, English syllables can have complex consonant clusters in onsets and codas. On the contrary, in Bangla, onset consonant clusters are rare, and coda consonant clusters are non-existent (Ferguson & Chowdhury 1960). Therefore, English words with clusters of more than two consonants in onsets or codas (for example, "Next" [nekst], "Lapsed" [læpst], "String" [stɹŋ]) might be problematic for Bangladeshi learners of English to pronounce because of their unfamiliarity with such complex onset and coda clusters in their L1.

Prosodic issues in L2 acquisition: Stress

According to Roach (2000, p. 134), English has 'stress-timed rhythm,' that means, 'stressed syllables will tend to occur at relatively regular intervals whether they are separated by unstressed syllables or not.' Roach (2000, p. 96) identified three levels of stress while describing English stress system: primary stress (the 'strongest type of stress'), secondary stress (weaker than the primary stress but stronger than unstressed syllables) and absence of any stress. English stress system is complex, and stress on a particular syllable can be dependent on whether that syllable is heavy (having a long vowel, or diphthong, or a vowel followed by a coda) or light (having a short vowel without any coda), whether a word is morphologically simple or complex (having one

or more affixes or a compound word), or what the historical origin (French, German, Latin etc.) or the grammatical category of a particular word (noun, verb, adjective etc.) is (Roach 2000).

On the contrary, in Bangla language, 'all syllables of a multi-syllabic Bengali word are, for all practical purposes, stressed equally' (Dimock, Bhattacharji & Chatterjee 1976, p. 54). Bangla seems to have a 'syllable-timed rhythm' in which all syllables 'tend to occur at regular time-intervals' (Roach 2000, p. 135). Thus, in Bangla, there is no distinction between syllables with primary, secondary, or no stress. Therefore, it might be difficult for Bangali ESL learners to master the accent of English with correct stress pattern, as their L1 lacks such stress-timed rhythm, which is a characteristic of English. Therefore, Bangali learners might end up stressing all English-syllables equally while speaking in English, thus, having a strong foreign accent. Additionally, Bangladeshi ESL learners might also have difficulty in hearing the unstressed syllables (for example, the initial unstressed syllables in words like 'around' [ə ˈɹaʊnd] or 'about' [əˈbaʊt]) in casual native speech, which might hinder their ability to successfully communicate with native English speakers.

Possible Pedagogical Approaches to Facilitate Bangali Learners' Acquisition of English Pronunciation

1. To teach learners the correct pronunciations of English fricatives such as /f/, /v/, /θ/, /ð/, /z/, and /ʒ/, teachers can explain learners how these phonemes are pronounced. For example, teachers can explain that the upper teeth should be in touch with lower lip in pronouncing /f/ and /v/ (explaining that the lips should not be pressed together as in Bangla /p^h / and /b^h/). Teachers can act as role-models in this case, as they can model the correct pronunciations of those phonemes to learners; if possible, learners should also be exposed to native speakers pronouncing those sounds so that they can build up the accurate mental models of those sounds. Teachers can also use visual illustrations to show learners the differences in articulation between, for example, /f/ and /p^h /, /v/ and /b^h/, /θ/ and / t^h/, /ð/ and /d/,/z/ and /ɟ /, and /ʒ / and /ɟ /. Such use of pictures or visual illustrations of articulators could help learners perceive how those Bangla and English phonemes, which sound similar (but are actually different), are pronounced differently. Thus, such "explicit instruction" of the pronunciation of non-native sounds could help, as learners need to spend their effort to acquire those sounds (Bradlow 2008, p. 287).

Teachers can also use minimal pairs to help learners perceive the differences in the pronunciation of different English phonemes. For example, teachers can use minimal pairs to help learners practice the correct pronunciations of the target sounds [z] and [ʒ]. In this regard, presenting these sounds in a variety of phonetic contexts (beginning, middle, end of words) would be helpful for learners because when learners are presented with the target sounds in variable or different contexts, they can develop their sensitivity to perceive necessary contrasts in those sounds. Some of these minimal pairs could be like the following:

Composer [kəmpəʊzər] (a person who composes)
Composure [kəmpəʊʒər] (calmness)
Rues [ruz] (to feel sorrow or regret)
Rouge [ruʒ] (a kind of cosmetics)

Such minimal pairs could also be placed in the context of longer texts to facilitate learners' successful acquisition of the target sounds because practicing 'contextualized speech samples' (for example, 'full sentences and lager discourse units') rather than 'isolated words' are more helpful in this regard (Bradlow 2008, p. 301).Thus, teachers can use tongue-twisters like the following:
"A composer composes in composure."
"She rues the loss of the rouge."

Minimal pairs can also be used to help learners perceive the differences between English long and short vowels. In this regard, teachers can use minimal pairs like the following:
Still [stɪl] (motionless)
Steel [sti:l] (a form of iron)
Bid [bɪd] (to command/direct)
Bead [bi:d] (an ornamental part of necklace)

Additionally, recordings of multiple native speakers pronouncing multiple words or sentences with the target sounds such as the fricatives [z] and [ʒ] can be used with learners so that they can perceive the exact pronunciations of those phonemes in different contexts and can attempt repeatedly to produce those themselves. Such 'high variability approach' (as it involves multiple words/sentences produced by multiple speakers) can help learners perceive those target sounds when used by any other speaker, and such perceptual ability could ultimately assist learners in accurate production of the target sounds (Bradlow 2008, p. 299). As classroom activities, learners can be asked to identify (from among a given sample of minimal pairs) which words are pronounced with which phoneme (for example, /z/ or /ʒ/), and they can also be asked to discriminate between different words (containing the target sounds) by pronouncing those correctly. While designing such activities, care should be taken so that learners are gradually introduced from easier to more difficult stimuli (Bradlow 2008).

2. To help beginner or intermediate level learners master the rules of aspiration, teachers can introduce them to the following English sounds: [p], [t], [k], [p^h], [t^h], [k^h]. Then, teachers can prepare a list of example words (possibly accompanied with images) with the phonemes /p/, /t/, and /k/ at different positions of words (initial, medial, and final), and they can show learners which of the above-mentioned six sounds should occur when. For example:

Pan	Spin	Hoop
Top	Stop	Light
Car	Scar	Back.

Teachers can model the correct pronunciation of these words by showing that "Pan" should be pronounced as [p^hæn], but "Spin" and "Hoop" should be pronounced as [spɪn] and [hʊp] respectively, and they can do the same with other words in the list. Learners can imitate teachers (follow the correct pronunciations of the voiceless stops) while reading such word-lists aloud. Such word-lists should contain as many words as possible so that learners can get enough opportunities to practice producing the aspirated and unaspirated stops of English in appropriate environments without being introduced to the complex rules of aspiration. However, advanced level learners

could be introduced to the rules of aspiration of English stops, as according to Bradlow (2008), instruction and effortful learning can help L2 learners acquire the non-native sound contrasts.

3. For young learners, stress can be taught as a property of individual words, and thus, learners would learn to pronounce English words with the correct stress pattern at the same time they are learning the meanings and use of those words (Roach 2000). The more learners can practice speaking English words with the correct stress pattern, the better their accent will be, as after puberty, adults have to learn a foreign language 'through a conscious and labored effort' (Gass and Selinker 2008, p. 406).

Computer-based technologies and videos can also be used to help learners perceive the pitch contour or stress patterns of English speech because 'visual display of a pitch contour' can more effectively facilitate learners' production of English accent than 'auditory-only input' (Chun, Hardison & Pennington 2008, p. 330). Thus, computer software can be used to provide learners with visualization of the pitch contour of their own speech (words/sentences or longer discourse), which can help both learners and teachers assess how their accents approximated to that of a native speaker, and then, teachers can provide learners with necessary feedback to improve their perception and production of stress patterns of English .Such visual input can also help learners improve their use of stress and intonation patterns in longer discourse, as in natural contexts, more often they have to produce connected speech than isolated words/sentences (Chun, Hardison & Pennington 2008). However, successful use of technology in classroom depends on several variables such as availability of technological resources, availability of time, proficiency of instructors, and so forth. Learners can also be encouraged to watch English movies, listen to English news or other programs (such as talk shows) on radio/television or You-Tube , which can help them perceive the stress patterns in rapid English speech. If possible, learners should be given the opportunity to interact with native English speakers that can help improve their ability to comprehend casual native speech and to make their own speech comprehensible to a native speaker. Thus, the aim or focus of pronunciation teaching should be to 'promote intelligibility' of learners' speech and to improve their comprehension level of casual native speech so that these can ultimately have positive impacts on their ability to communicate successfully with native or proficient non-native speakers of English (Munro 2008, p. 197).

Conclusion

This project discusses the differences between Bangla and English phonology, which could create problems for Bangali learners of English as an L2. This study also proposes some pedagogical approaches for facilitating Bangali learners' acquisition of those aspects of English pronunciation with which they are unfamiliar in their L1 Bangla. In proposing the pedagogical approaches, the focus is on increasing the comprehensibility or intelligibility of learners' speech that can help them in successful communications with others in English. However, this study considers the phonological patterns of only the standard colloquial Bangla. But there are many dialectal variations of Bangla (with rich literature) based on different districts of Bangladesh (for example, Chittagong and Sylhet), which follow quite different phonological patterns than the standard colloquial Bangla. Investigating what kind of issues the speakers of Chittagonian Bangla or Sylheti Bangla might have in

pronouncing the English phonemes might be an interesting area of research for future studies.

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