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Original Research Article

Phonetic Analysis of English Vowel Pronunciation by Highly Proficient L2 English Speakers

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Abstract

The present study aimed to investigate whether linguistic differences and distance have any influence on spoken English proficiency among Bengali speakers. In particular, this study tried to find some probable areas of influence of vowel from Bengali to English. It was found that the L1 influence was present in the highly proficient English as a second language speaker. It was concluded that the pronunciation errors were mainly due to L1 interference.

Keywords: Phonetic analysis, pronunciation error, error analysis, vowel pronunciation, language transfer, interference, ESL.

1. INTRODUCTION

Previous learning experience always affects the present learning, and it may act as a guide either to restrict or to reinforce certain efforts in a learning situation. In a Second Language Learning environment, learners' mother tongue (L1) is likely to play some role in the language learning tasks. With this view in mind, this study intended to find some influence of L1 on the spoken English (L2) proficiency of a Bangladeshi student. In particular, the aim of the study was to investigate the pronunciation errors of an adult highly proficient English as a second language speaker. It was done by comparing the ESL speaker's pronunciation with a native English speaker's pronunciation. In particular, the study focused on errors related to vowels, i.e., L1 - Bengali vowel influence on L2 - English vowels.

1.1 Notable features of Bengali Language

Bengali is an eastern Indo-European language with around 211 million speakers in Bangladesh and the Indian state of West Bengal. Bengali emerged as a new Indo-Aryan language by 900-1000 AD through Magadhi Apabrangsa and Abahatta, two stages of Magadhi Prakrit (600 BC - 600 AD), along with two other Indo-Aryan languages, Oriya and Assamese. Until the 14th century, there was little linguistic difference between Bangla and Assamese (Banglapedia).

The Bengali alphabet is a syllabic alphabet in which consonants all have an inherent vowel. Vowels can be written as independent letters, or by using a variety of diacritical marks which are written above, below, before or after the consonant they belong to. Word order in Bengali is SOV and it is a syllable-timed language.

Vowels and vowel diacritics in Bengali:

অ	আ	ই	ঈ	উ	ঊ	ঋ	এ	ঐ	ও	ঔ
a	ā	i	ī	u	ū	ṛ	e	ai	o	au
[ɔ, o]	[ɑ:]	[i, e]	[i]	[u, o]	[u]	[ri]	[e, æ]	[oj]	[o]	[ow]
ক	কা	কি	কী	কু	কূ	কৃ	কে	কৈ	কো	কৌ
ka	kā	ki	kī	ku	kū	kṛ	ke	kai	ko	kau

2. BACKGROUND

Influence of L1 in learning a second language has largely been addressed in the major research domain of Contrastive Analysis and Language Transfer. The field of language transfer has a long history of research data. According to Lado (1957), as quoted by Gass & Selinker (1994),

"…that individuals tend to transfer the forms and meanings, and the distribution of forms and meaning of their native language and culture to the foreign language and culture--- both productively when attempting to speak the language and to act in the culture, and receptively when attempting to grasp and understand the language and the culture as practiced by the natives"(p.1).

This view of Lado gave to the rise of famous empirical studies in Contrastive Analysis (CA). Gass & Selinker (1994) comment about Lado's definition of Contrastive Analysis. Contrastive analysis is a way of comparing and contrasting various linguistic features of two languages for example sound systems, grammatical structures, vocabulary systems, writing systems and above all cultural aspects of two languages. Results from contrastive analysis provide valuable insights into the differences between two languages but there are difficulties in interpreting this CA hypothesis in relation to learners' behaviours. For example, an English speaking learner of Italian tends to devoice the first member of the clusters [zm zn,zl], and then adjust them to the English clusters [sm sn sl]. Thus the CA hypothesis predicts learners' behaviours depending on some observational data of some learners under certain unspecified conditions. This is the main limitation of the CA hypothesis and according to Gass & Selinker (1994) such prediction of learners' behaviour are made "without careful description and analytical studies of second language learners"(p.2).

Gass & Selinker (1994) think that in spite of this limitation of the CA hypothesis, it can be a good start to understand all the probable range of transfer from one language to another. But the term 'transfer' is rather controversial due to what it actually means and what it does not mean. Odlin (1989) defines transfer as "the influence resulting from similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired" (p. 27). According to Odlin (1989) transfer is not a result of habit formation and it is not interference or hindrance only, it can also facilitate in learning a second language. When there are more similarities between two languages, the target language can easily be learnt with little effort. For example, Spanish people can learn English more easily than Arabic people since similarity between Spanish and English provides much flexibility in language learning tasks. Odlin(1989) also gave a detailed classification of various outcomes depending on the type of transfer. He asserted that positive transfer facilitates learning of target language depending on its similarities with the native language. And negative transfer is the result of differences between target and native language and can result in errors, underproduction (using very few or no examples of the target language, also termed as avoidance), overproduction (for avoiding tough grammatical rules i.e. relative clause, the learner may create too many simple sentences), miscomprehension due to misperceptions of target language sound or native and target language word order difference.

Corder (1994), again, does not agree to use the term transfer or interference for native language influence. According to him these are the theoretical terms different from native language influence and one should be careful in using them. He claims that the presence of native language features in the use of the target language can be explained without addressing the term transfer. He believes that interference is nothing but the use of L1 rules in the target language which is not accepted or which produces wrong structures. Since there is no inhibiting process in this type of L1 usage, the term interference should not be used in this particular case of L1 influence. Corder (1994) gives details of language acquisition and influence of the mother tongue. He sees language acquisition as creating a body of implicit knowledge which works as a basis for utterances in the language. Language acquisition is a creative process where learners make an internal representation of the language by interacting with the language of the environment. This internal representation consists of the regularities of the language that they discover from the language input and is known as interlanguage competence. This is continuously changing and developing as long as learners continue to learn the language and receive sufficient input.

In Corder's view, the range of similarity or dissimilarity between the target and native language can necessarily make the acquisition of target language easier or harder respectively. The idea is that the more similar L1 and L2 are in their linguistic features, the quicker and easier will be the acquisition of L2 and vice versa. However, in the earlier stage of acquisition in L2, mother tongue influence does not play a crucial role but it does have a significant role in the later development of L2. Some languages are learned more easily and quickly than other languages by the speakers of a particular language. For example, a Bengali speaker can learn Hindi or Urdu more easily than English. This gives us the evidence for language family or language distance. If the target language is more distant from the native language in linguistic aspects, it will take both more time and effort from the learner to acquire it and vice versa. Corder disagrees to the use of the term 'interference' if there is less or no similarity between L1 and L2. He calls this 'little facilitation' but not 'inhibition' or 'interference'.

Two languages may have similar sound system which may vary significantly in their physical characteristics "including both acoustic characteristics (e.g., the pitch of sound) and articulatory characteristics (how widely the mouth is open in producing a sound)" (Odlin1989, p.112). In a longitudinal study, Keys (2002) found that Brazilian students of EFL tended to palatalize the voiceless alveolar plosive /t/. They made this sound more palatalized as /tʃ/ when the /t/ sound is followed by the oral vowels /i/ or /ɪ/. This feature is allowed in the Brazilian Portuguese language and is transferred into English in circumstances when it is allowed (/t/+/j/=> / tʃ/). However these learners also tended to palatalize the /t/ sound when it is followed by a vowel like/ ʊ,u, / which is allowed neither in Brazilian Portuguese nor in English. But it did occur in his study that learners made such errors in both their L1 and L2. For example, they produced / tʃju/ for /tu:/ in their English. Thus the author came to the conclusion that this tendency "contravenes the L1 rule for palatalization". (Keys: 2002). Therefore a phonetic aspect of L2 is influenced by the mother tongue here.

Odlin has also mentioned phonemic differences, segmental errors (i.e. errors concerning vowel and consonant), supra-segmental errors regarding stress, tone rhythm and other factors. According to him stress patterns in pronunciation are essential for listeners to recognize a word "since they affect syllables and the segments that constitute certain nouns and verbs such between COMbine and comBINE". (Odlin: 1989, p.116). Thus he draws the conclusion that if stress patterns of the target language are not maintained in the production of speech, it may result in confusion and misperception of utterances (1989). Odlin also mentions Bansal's (1976) opinion about English in India where unintelligibility and misidentification mostly arises due to errors in the stress patterns in the pronunciation in English.

2.2 Probable areas of influence of L1 Bengali on English

Being a member of a distant language in relation to English, Bengali has different linguistic characteristics from English. This eventually affects learners' performance with 'little facilitation' (Corder, 1994) or 'negative transfer' (Odlin, 1989). There are errors in the use of English of the Bengali speakers which are related to the linguistic rules and aspects of Bengali language.

Phonetics and phonology are the main parts of direct L1 influence on the pronunciation of target language. Starting with phonetics, there are articulatory similarities in the utterance of some English sounds but some particular sounds are different from the target language sound in terms of articulation. There are some sounds in English which are more similar to some sounds in Bengali but which involve different articulatory organs. For example, English has labio-dental sounds like /f/ and /v/ whereas Bengali has the bilabial stops / pʰ/ and /bʰ/ are. It happens that in pronouncing those two English sounds, Bengali speakers use both their lips instead of using the upper teeth and the lower lip. Therefore all the words with these sounds are heard as aspirated bilabial plosives rather than /f/ or /v/. Example words can be given from the conversation like fine, very, fish, etc. However native English speaker may confuse these words as aspirated /pʰ / and /bʰ/. The English sounds like /z/ /ʤ/ and /ʒ/ are similar to two types of /z/ and /ʤ/ sounds in Bengali. But a sound like /ʒ/ often creates problem for all types of learners at the initial level. They cannot often produce the actual /ʒ/ sound in the word like 'vision'. They produce this sound either akin to /ʤ/or akin to /ʃ/. So here also confusion may arise to the listener due to this mispronunciation.

Monopthongs:

The Bengali speaking ESL learners generally find the long monophthongs of the English language seriously problematic, (for example, in the words: sheep, part, bird, short, cool, etc.) since their mother tongue does not have this feature and is not naturally accustomed to differentiating between short and long monophthongs. The contrastive monophthongs, such as /I/ in 'ship' versus /i:/ in 'sheep', /e/ in 'men' versus /æ/ in 'man', /ʌ/ in 'cut' versus /a:/ in 'cart', /U/ in 'full' versus /u:/ in 'fool' often cause substantial problems in the learner's articulation as well as perception of utterances because the difference between them is not that much exercised in the Bengali language.

Then, the Bengali speakers cannot easily and properly pronounce the mid, central and short monophthong schwa /ə/ (as in the first syllables of the words 'ago', 'today' and 'perhaps'), since this phoneme is absent from their first language.

Furthermore, the Bengali speaking learners are subconsciously used to nasalization of vowels without any nasal consonant in their mother tongue, for instance, the first vowel in the word 'kada' (weeping) or the vowel in the word 'chad' (moon) being clearly nasalized. Nasalization of vowels in the Bengali language is a phonological feature as it obviously produces meaning difference and/or differentiates between words. This factor occasionally affects his/her pronunciation of English vowels devoid of nasalization (Islam, 2004).

Diphthongs:

The Bengali speaking learners have difficulties in pronouncing as well as perceiving English diphthongs mainly due to their mother tongue interference. The Bengali language possesses eighteen regular diphthongs which are characteristically different from and shorter than the English ones. As a consequence, learners pronounce only the first part of a

diphthong, and make it identical to a monophthong. For example, 'late'/leIt/ is pronounced like 'let' /let/.

Stress and intonation:

English is a stress-timed language possessing a speech rhythm in which the stressed syllables recur at equal intervals of time. On the contrary, the Bengali language is a syllable-timed language having a speech rhythm in which all the syllables recur at equal intervals of time. This difference between the two languages causes great difficulty to the Bengali speaking learners of EFL, especially in placing stress on the right syllable and using the appropriate tone. The Bengali speaking learners confront considerable problems in assigning stress within English words because English stress placement varies according to grammatical categories e.g., the words 'abstract', 'conduct', 'contract', 'contrast', 'import', 'incline', 'insult', 'perfect', 'present', 'produce', 'rebel' as verbs receiving stress on the second syllables and as nouns on the first. But Bengali speakers are used to assigning stress almost invariably on the first syllable of every word in their first language (Islam, 2004).

Consonant clusters:

Native Bengali words do not allow initial consonant clusters. Many word-initial consonantal clusters are simplified according to Bengali phonotactics. A common tendency is to use a short vowel sound before these initial consonantal clusters. For example:

special /'speɪʃl/	becomes	/ɪspeɪʃal/
Spain /'speɪn/	becomes	/ɪspeɪn/
station /'steɪʃn/	becomes	/ɪsteʃon/
school /sku:l/	becomes	/ɪskul/

In final clusters also, there is a tendency of failing to reduce unstressed vowels. For example:

Literature /'lɪtrətʃə/ becomes /lɪtəretʃar/

National /'næʃnəl/ becomes /næʃonal/

Situation /sɪtʃu'eɪʃn/ becomes /sɪtʃuetʃon/

Generalisation /ʤenrəlaɪzeɪtʃn/ becomes /ʤenaralaɪzetʃon/ (Islam, 2004).

Word stress:

In some supra-segmental sectors as well, the Bengali influence is strongly present especially in the word stress. Bengali speakers are unable to produce English word stress and if their speech has any stress, those are more similar to Bengali. For example:

Tourist /'tu:rɪst/	becomes	/turɪst/
People /'pi:pl/	becomes	/pɪupol/
Carpet /'ka:pɪt/ /	becomes	karpet/
Culture /'kaltʃə(r)	becomes	/kaltʃar/

(Islam, 2004)

The present study aimed to investigate whether linguistic differences and distance have any influence on spoken English proficiency among Bengali speakers and specifically, through this study I tried to find some probable areas of influence of vowel from Bengali to English.

My hypothesis for this study was that there is influence of Bengali (L1) vowels on the spoken English (L2) pronunciation among Bangladeshi learners. In particular, the hypotheses are:

a) The Bengali speaker will not have difficulty / not make errors in pronouncing monopthong schwa /ə/.
b) The Bengali speaker will have difficulty / make errors in pronouncing diphthongs.
c) The Bengali speaker will have problem assigning stress and intonation in some English words.
d) And some vowels of the Bengali speaker will be nasalized.

3. DESIGN AND METHOD

This aim of study was to find some probable influence of Bengali vowels on highly proficient L2 English speaker, and this was done by comparing the L2 speaker's pronunciation with a native English speaker's pronunciation and by means of examining the acoustic quality (transfer of pitch) and stress pattern.

Participant: The participant of the study is a Bangladeshi adult highly proficient English speaker enrolled in the PhD program in Applied Linguistics at a Canadian University.

Instrument: The English fable "The North Wind and the Sun".

4. DATA COLLECTION AND ANALYSIS

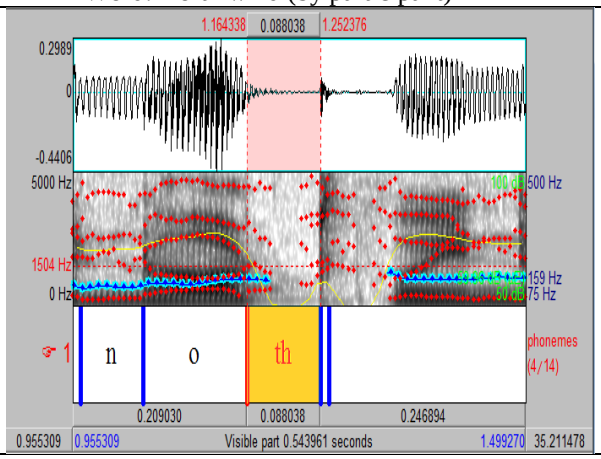
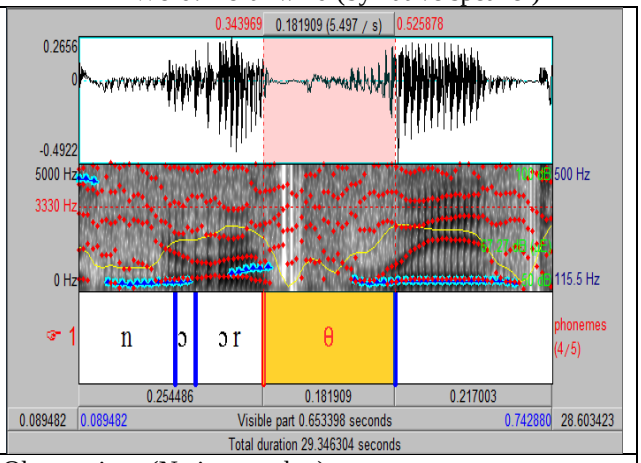
The English fable "The North Wind and the Sun" was used as the text which was recorded in the participant's voice using the software program AUDACITY at the university's Linguistic lab. Participant's recorded speech was compared with the Californian version of "The North Wind and the Sun". Data was transferred into another software program PRAAT to do further analysis, i.e., to look for the similarities and differences in pronunciation with regards to vowels. In particular the following phrases and words were examined: North wind, right away, around, day, about, & agreed.

5. FINDINGS

It was fond that the Bangladeshi English speaker

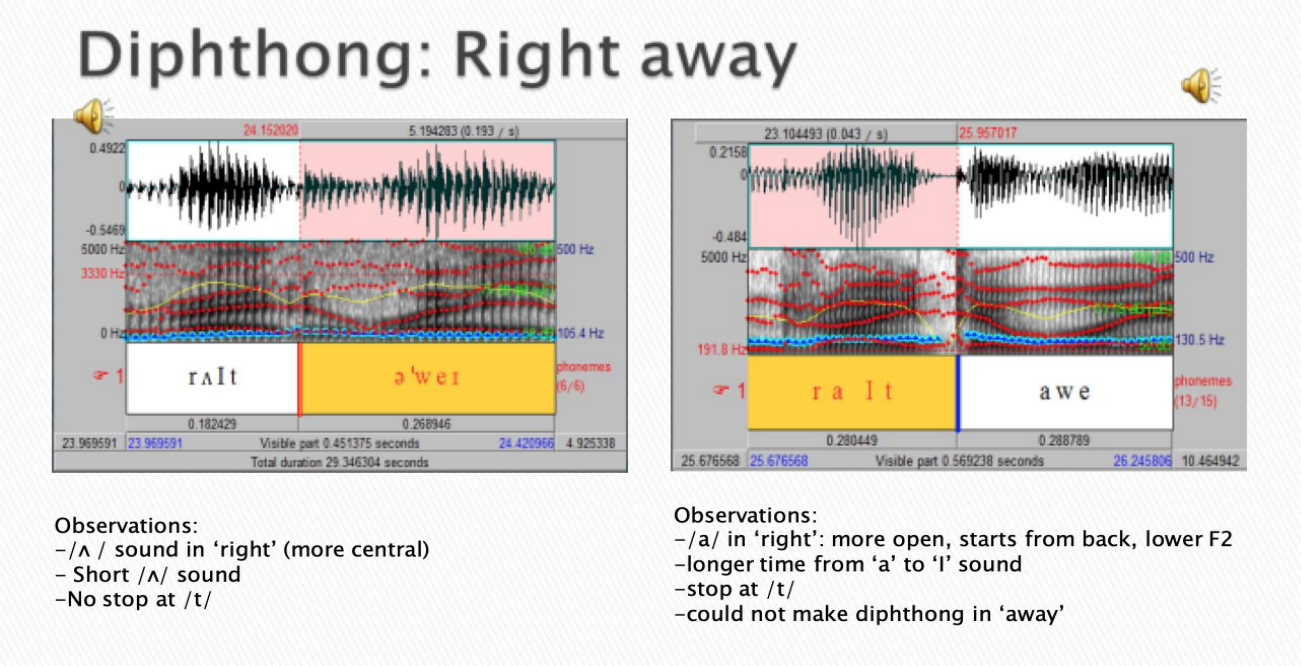
- could not produce long vowels correctly
- had difficulty/ made errors in pronouncing schwa
- nasalized vowels
- had severe difficulty /errors in pronouncing diphthongs
- made errors in stress and intonation

5.1 Errors pronouncing long vowels, in stress and intonation, and nasalization of vowel

Word: North wind (by participant)	Word: North wind (by native speaker)
	
Observations (Participant): The participant pronounced North Wind as: /n o θ/ /wɪnd/ . The participant's vowel /o/ is short as predicted. The participant's vowel /o/ is nasalized as predicted and backed. The vowel /o/ does not have rhotic r effect. The participant made a stop (there is a release) before 'wind'. The pitch is level. Put more vocal energy on 'o'vowel. Participant's 'I' of 'wind' is short.	Observations (Native speaker): Pronounced North wind as: /n ɔ r θ/ /wɪnd/ -vowel /o/ is long -vowel /o/ has 'r' effect early -vowel /o/ is not nasalized -no stop before 'wind' -more energy on 'wind' - "I" of Wind is long

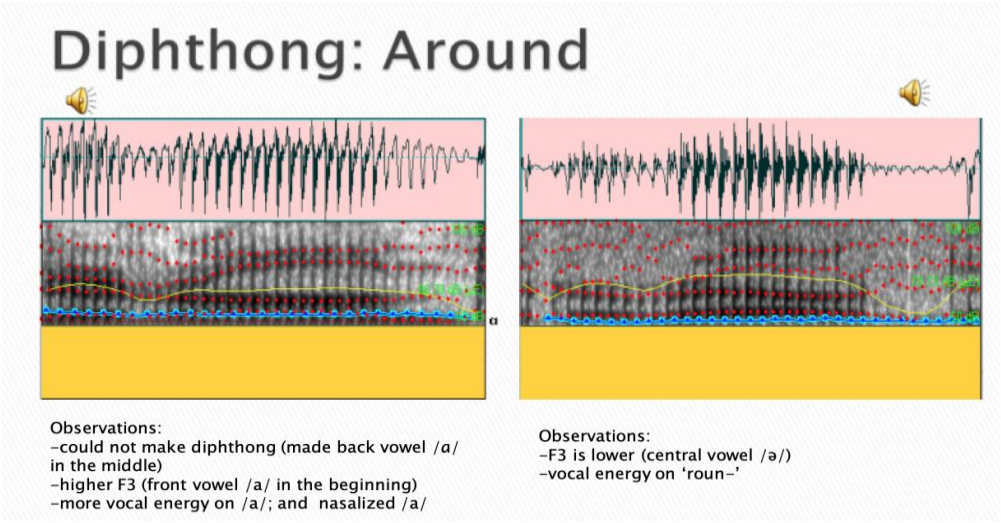
5.2 Errors pronouncing long vowels and Diphthong

1.



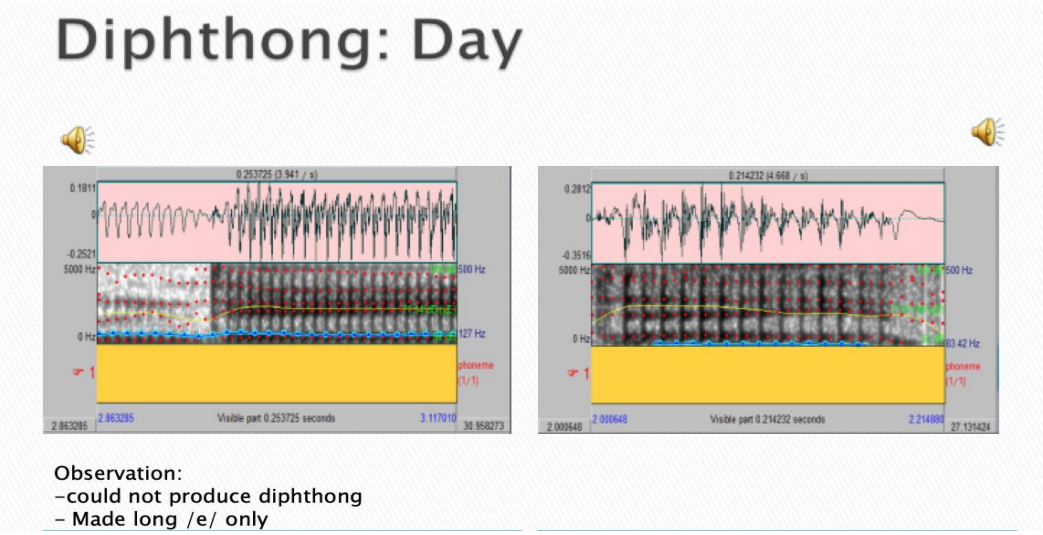
(Native Speaker) (Non-native speaker (participant))

2.



(Non-native speaker) (Native speaker)

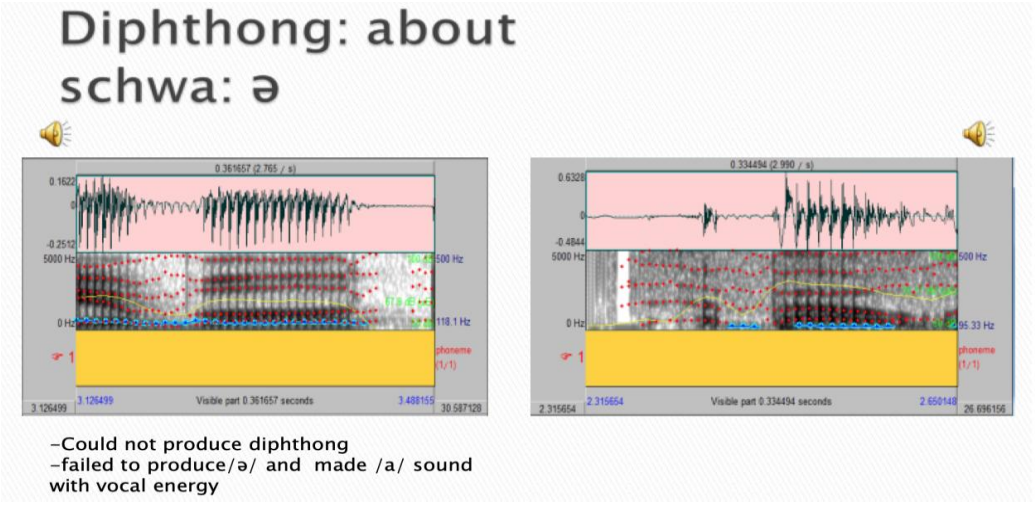
3.



(Non-native speaker) (Native speaker)

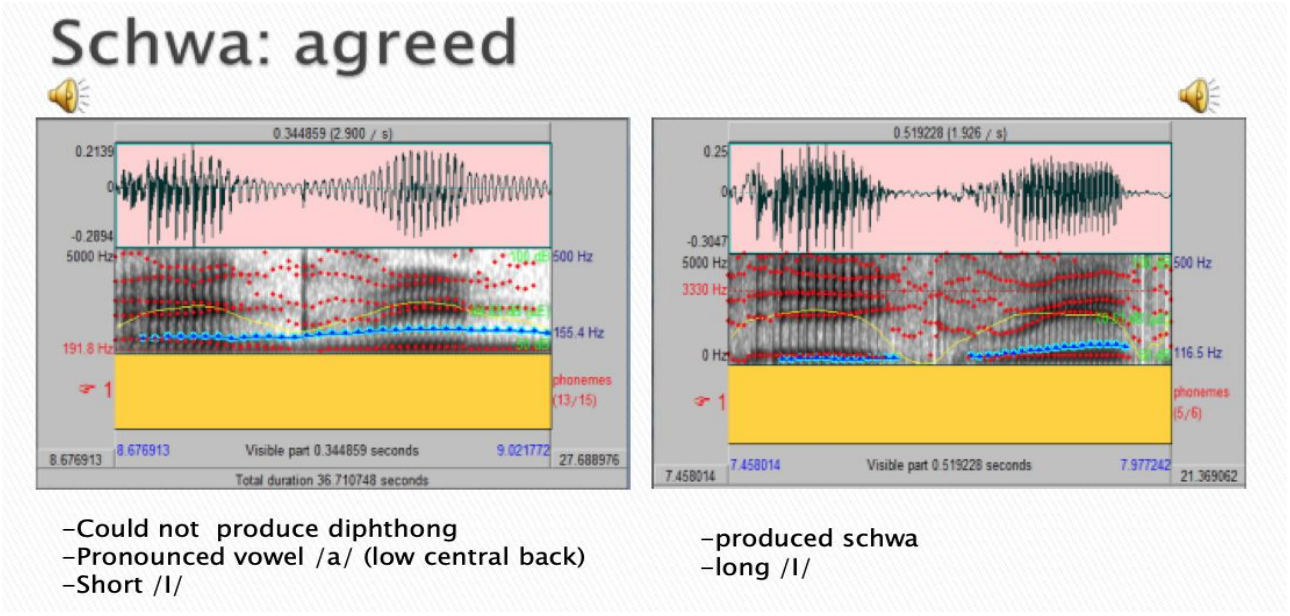
5.3 Errors in pronouncing schwa

1.



(Non-native speaker) (Native speaker)

2.



(Non-native speaker) (Native speaker)

6. DISCUSSION AND IMPLICATION

The study found that the L1 Bengali influence is present in the highly proficient English as a second language speaker. As the participant is an adult and at his stage of high English proficiency the errors are mainly due to L1 Bengali influence/interference. I also concluded that the L1 Bengali features are interfering in producing English properly also as the pronunciation errors of the participant were not corrected (or those were ignored) at the right time as learner by the teachers. Cross-linguistic influence of phonetic and phonological features is evident even at the high proficiency level of L2. If errors are not corrected timely, they can be fossilized. This was a very small scale study. Samples of English speech from both the native speakers of English and the Bengali ESL learners can be compared for more widespread recognition of these results.

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