



Analyzing the Effects of Sudanese Emphatic Sounds in Pronouncing English Alveolar Sounds

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ABSTRACT:

The study aims at investigating the effects of Sudanese emphatic sounds on pronouncing English alveolar sounds. The researchers assumed that Sudanese Arabic speakers substituted some English alveolar sounds; /t, d, s, and z/ with Sudanese emphatic sounds; /t^ʔ, d^ʔ, s^ʔ, and z^ʔ/ in some circumstances. The study employed the descriptive analytical method in order to elaborate and analyze the cause of the problem. To obtain the necessary data for the study, the researchers designed a diagnostic test that confined to the study hypotheses via audio-recording. Accordingly after the necessary data were collected then it was analyzed using the means of percentages. Based on the analysis and the results obtained, the study revealed that the Sudanese learners of English as foreign language converted English plain Alveolar sounds; /t, d, s, and z/ with their emphatic sounds /t^ʔ, d^ʔ, s^ʔ, and z^ʔ/ whenever preceded or followed by English vowel sounds /ʌ, ɔ:, əʊ, a:, ɒ/.

Key words: Emphatics, Pronunciation, Sudanese Arabic, Phonology

المستخلص:

تهدف الدراسة إلى التحقق من تأثير أصوات الاطباق السودانية على نطق الأصوات اللثوية الإنجليزية. افترض الباحثان أن متحدثي اللغة العربية السودانيين يستبدلون أحياناً نطق بعض أصوات الأحرف الإنجليزية مثل / t , d , s , z / بالأصوات السودانية المطبقة مثل (ض ، ص ، ط ، ظ) استخدمت الدراسة المنهج الوصفي التحليلي. و لتوضيح سبب المشكلة و الحصول على البيانات اللازمة للدراسة. صمم الباحثان اختباراً تشخيصياً و ذلك باجراء تسجيلات صوتية تقتصر على فرضيات الدراسة. و جُمعت البيانات اللازمة ، و من ثم تحليلها إحصائياً باستخدام النسبة المئوية. و استناداً إلى التحليل والنتائج التي حُصل عليها، تكشف الدراسة أن الدارسين السودانيين للغة الإنجليزية كلغة أجنبية حولوا الأصوات الإنجليزية / t , d , s , z / إلى أصوات عربية سودانية مطبقة مثل (ض ، ص ، ط ، ظ) كلما سُبِقها أو تبعها صوت من أصوات العلة الإنجليزية / ʌ , ɔ:, əʊ, a:, ɒ/.

Introduction

Arabic and English languages are entirely two distinct in their linguistic systems. Both languages have common differences, such as in phonology, morphology, syntax and semantics. The phonological system of English is accordingly different from that of Arabic language. The differences on the phonological system cause difficulty to learners in pronouncing the learned language. That is why pronunciation of a foreign language is affected by different factors which make it difficult to grasp pronunciation. All around

the world learners of English as ESL or EFL want to have a good command of English pronunciation because English language pronunciation is a prominent element of language learning, so it's essential for all learners of English language to have good pronunciation. Accordingly Sudanese learners of English are expected to have difficulty in English pronunciation due to the influence of their mother tongue. Thus the subject matter of this study is to investigate the effects of Sudanese Arabic (SA) emphatic sounds, /t^ʔ, d^ʔ, s^ʔ, z^ʔ/, in pronouncing English alveolar sounds, /t, d, s, z/.

1.2 Problem of the Study

Due to the differences between the two languages i.e.; English and SA, Sudanese learners expected to have some difficulty in pronouncing English sounds. The study intends to investigate the difficulty of English alveolar sounds /t, d, s, z/ among Sudanese learners of English as foreign language. Pronouncing English alveolar sounds is considered one of the most challenging tasks that Sudanese learners experienced. It is observed that most of the Sudanese learners of English tend to substitute English alveolar sounds /t, d, s, z/ with Sudanese emphatic sounds /t^ʔ, d^ʔ, s^ʔ, z^ʔ/ respectively in some circumstances according to the vowel sound that comes before or after. The researchers assume that there is difficulty facing Sudanese learners of English in pronouncing English alveolar sounds.

1.3 Objective of the Study

This research aims at investigating the difficulties encountered by Sudanese universities students while pronouncing English alveolar sounds /t, d, s, z/ in different contexts. In order to devote a greater care to this issue, the study will attempt to investigate the extent to which phonological characteristics of Sudanese Arabic interfere when the learners speak English or interact with L1 speakers of English. The aim of this study is to find the difficulty that facing Sudanese learners of English. Also to identify and analyze the linguistic causes of Sudanese learners of English in pronouncing English alveolar sounds. Investigating the extent to which the phonological characteristics of Sudanese Arabic interfere with English language.

1.4 Hypotheses of the study

In order to investigate the difficulty of Sudanese universities students in pronouncing English alveolar sounds /t, d, s, z/, the researchers assume following;

Sudanese universities students tend to substitute English alveolar sounds /t/, /d/, /s/, and /z/ with Sudanese Arabic emphatic sounds /t^ʔ/, /d^ʔ/, /s^ʔ/, and /z^ʔ/ when followed by English vowel sounds /ʌ, ɔ:, əʊ, ɑ:, ɒ/.

1.5 The limits

The study is confined only to the investigation of English alveolar sounds /t, d, s, z/ pronunciation difficulty that encountered by Sudanese undergraduate and post-graduate students. The study will consider the pronunciation difficulties encountered by Sudanese learners of English, who are studying English language as special or a university requirement subject. The observation study consisted of some students from Sudan University of Science and Technology during the academic year (2017 – 2018).

2. Literature Review

2.1 Emphatic Sounds in Arabic

Scholars who dealt with the term emphaticness support one of the two theories of emphaticness coarticulation (quoted from Laufer & Baer (1988). They quoted that one theory is that is realized as velarization while the other theory is realized as pharyngealization. The vast majority of the scholars who believe emphaticness is realized

as velarization stands on the origin of this belief is probably Sibawayhi, one of the greatest Arabic grammarians, who lived in the eighth century. Sibawayhi's famous detailed book has been republished many times (for example, Sibawayhi, 1889 or 1975). He thinks: (1) that emphaticness is a secondary articulation and (2) that it is realized as velarization, namely that the back of the tongue is constricted against the velum as stated in Ghazeli, (1977) and Giannini & Pettorino, (1982)).

The other theory, which stated that emphaticness is realized as pharyngealization, is led by Wallin (1855). He thought that the articulation for emphaticness is deep in the pharynx and larynx and the vocal folds pull during the production of the emphatic sounds. He also theorized that the epiglottis participates in emphaticness. He assumed that the epiglottis falls on the glottis like a lid and partially closes it. According to Wallin the emphatics are the five sounds /t^ʔ, d^ʔ, s^ʔ, ð^ʔ, q /, with /t^ʔ /and /q/ showing the highest degree of emphaticness.

Brucke (1860) describes the same consonants of Wallin, by emphasizing the role of the epiglottis in the production of the emphatics, even noting that for / t^ʔ / and for /q/ the epiglottis completely seal the passage of air. He adds that the vowels adjacent to emphatics are never pure-high or bright: they are rather low and muffled.

Arabic has a set of complex coronals /t^ʔ, d^ʔ, s^ʔ, ð^ʔ/. These sounds are considered to be the emphatic sounds of their plain counterparts /t, d, s, ð/ respectively. Al-Solami (2013), describes emphatics as problematic both phonetically and phonologically i.e.; phonetically, the secondary articulation of these sounds is disputed, while phonologically, they are grouped with the rest of Arabic guttural class in some studies while excluded by others. He points out that some researchers have posited that emphatics phonetically are velarized (Trubetzkoy, 1969), unvelarized as in Jordanian Arabic (Zawaydeh, 1998) or pharyngealized as in Iraqi Arabic (Ali & Daniloff, 1927; Gianni & Pettorino, 1982). Phonologically, some proposals group Arabic emphatic sounds with Arabic gutturals, laryngeals /ʔ and h/, pharyngeal /ʕ and ħ/ and uvulars /ʁ and x/, (Jakobson, 1957; Zawaydeh, 1999), while other proposals posit them as a different subclass, (McCarthy 1994, Bin-Muqbil 2006).

2.2 SA Emphatic Sounds

SA is one of the dialects of Arabic languages. It has much borrowed vocabulary from the indigenous languages (El Rotana) such as Nubian language. This has resulted in a variety of Arabic that is unique to Sudan, reflecting the way in which the country has been influenced by both African and Arab cultures, Gasim, (1965). In MSA there are 28 consonants sounds while in SA there are 26, that means there are some sounds in MSA unarticulated by SA speakers and vice versa. For Example; the sounds that not articulated by SA speakers are; interdental, fricative, / θ, ð, ð^ʔ/, emphatics, and uvular, stop, voiceless /q/. While the affricate, plato-alveolar, voiceless /tʃ/, nasal, plato-alveolar, voiced, /ɲ/ and stop, velar, voiced /g/ exist in SA but not in MSA.

Therefore, SA has four emphatic sounds /t^ʔ, d^ʔ, s^ʔ, z^ʔ/ while in Modern Standard Arabic (MSA) has /t^ʔ, d^ʔ, s^ʔ, ð^ʔ/. In SA there is one only sound that doesn't exist in SA that is / ð^ʔ / but exist in MSA, thus SA-speakers tend to substitute this sound with alveolar fricative emphatic /z^ʔ/. Thus the emphatics in SA are /t^ʔ, d^ʔ, s^ʔ, z^ʔ/ all of them are emphatic alveolar, two of them are alveolar stops /t^ʔ, d^ʔ/ and the other two are alveolar fricatives /s^ʔ, z^ʔ/ unlike MSA emphatic, two of them are alveolar stops /t^ʔ, d^ʔ/ while in the other two; one is alveolar fricative / s^ʔ /, and the other one is interdental fricative / ð^ʔ /

. SA sounds in comparison to MSA we find that SA lack to some consonant sounds such as / ð, q/ that are not exist.

2.3 Previous Studies

Crystal (2008) defines emphatic consonant in phonology, as a type of consonant, associated particularly with the Semitic languages (and much studied in Arabic), which is articulated in the pharyngeal or uvular regions of the vocal tract, or which has a coarticulation in those regions (such as pharyngealization and velarization). Emphasis often spreads to a string of adjacent segments, and the phenomenon is thus widely analyzed as a prosodic or 'long' component of word structure. It is generally accepted that emphaticness is a distinctive feature in Semitic languages (Arabic, Hebrew, Ethiopic, ...).

Alotaibi, et al (2007) quoted that according to Yousif (2001), the coarticulation effect caused by emphatic phonemes can affect adjacent phonemes especially vowels. The emphatic consonants induce a considerable backing (i.e., relatively moving the tongue back during articulation) gesture in neighbouring segments, which occurs primarily for adjacent vowels. This effect may spread over entire syllables and beyond syllable boundaries.

According to Ouni, et al (2005), Laufer & Baer (1988) and Watson (1999), it is not easy to determine the extent of the coarticulation effect of the emphatic and pharyngeal phonemes on their neighboring consonants and vowels. Zawaydeh (1997), claims that emphasis is a phonetic and phonemic feature that can be characterized in Arabic language as well as other Semitic languages such as Hebrew.

3. The Study Method

The researchers used two major methods in this study: descriptive and analytical. A descriptive method is used to describe what exists at the present. The main characteristic of this method is that the researchers have no any control over the variables. They are only concerned with reporting what has happened or what is happening. On the other hand, analytical method attempts to describe and explain why certain situation exists, by using facts or information already available, and analyzing these to make a critical evaluation of the material gathered.

3.1 Sample of the Study

The sample of the study consisted of 30 Sudanese undergraduate and post graduate students, as a case study sample, which includes both sexes, chosen randomly from Sudan University of Science & Technology.

3.2 Tools of Data Collection

The researchers used a diagnostic test consists of 49 words representing English alveolar sounds /t, d, s, z/ in different spelling contexts. These words contain most of the vowels that are expected to follow in English language. The researchers used audio-recording by allowing the participants to read these words aloud. This will help the researchers to clarify, that in which context Sudanese learners of English substitute English alveolar sounds with SA emphatic one. Audio-recording is one of the techniques of collecting data, so it's useful in linguistics, where the speech itself is the subject of analysis.

3.3 Procedures

The study test took place after all the necessary preparation were done, each of the participants was involved in reading the whole 49 words aloud, while at the same time of recording the researcher was holding the recording device few centimeters from the

participant's mouth. Before the researchers started to listen to the recordings, they had already prepared necessary drafts needed to see the correct and incorrect pronunciations of the study test. The researchers prepared a table which consisted of two axes. One was for the numbers of the participants, vertically arranged as; p1, p2,p30, and the second one for the values of correct and incorrect pronunciations of the targeted sounds, horizontally. After all this was done, then the researchers started to listen carefully by repeating the targeted sounds several times. After the task of listening and reporting the data and the information needed for the analysis were completed, then the researchers calculated the figures using the frequency and its percentage. That means the figures were calculated and computed to see the percentage of correct and incorrect of the target sounds. The collected data and information were analyzed descriptively and statistically to see the percentage of the correct and in correct.

4. Statistical Analysis of the Data

The test was about the impact of Sudanese emphatic sounds in pronouncing English alveolar sounds. The results have been statistically analyzed and computed by means of percentage. The followings tables and figures show the results. The findings are explained and discussed accordingly. The tables below (1,2 ,3 and 4) investigate the hypothesis, **SLs of English substitute English alveolar / t /, / d /, / s /, and / z / with Arabic emphatic sounds /t²/, /d²/, /s²/, and /z²/.**

Table (1): The frequency distributions of English /t/ pronunciation

Sentence No.	target words/sounds	Correct	%	Incorrect	%
1.	tin	30	100%	00	00%
2.	tea	30	100%	00	00%
3.	ten	30	100%	00	00%
4.	tank	30	100%	00	00%
5.	cut	03	10%	27	90%
6.	art	00	00%	30	100%
7.	a lot	00	00%	30	100%
8.	talk	00	00%	30	100%
9.	took	30	100%	00	00%
10.	too	30	100%	00	00%
11.	tight	13	43%	17	57%
12.	toy	05	17%	25	83%
13.	tone	04	13%	26	87%

The above Table (1) display the percentages of correct and incorrect pronunciation of English alveolar sound /t/ in different contexts. It's clear that from the table above, most of the participants have difficulty in pronouncing English alveolar /t/, in other words most of the participants replace English alveolar sound /t/ with SA alveolar emphatic /t²/. This process of replacing is due to some vowel sounds that precede or come after /t/ in such words as; 'cut' , 'art' , 'a lot' , 'talk' , 'tight' , 'toy' , and 'tone'. The observable vowel sounds of these words in this process are / ʌ / as in 'cut' / a: / as in 'art' and 'talk' / ɒ / as in 'a lot' , /aɪ/ as in 'tight, and /əu/ as in 'tone'.

The other frequencies of errors are 'art' , 'a lot' and 'talk' show the highest frequency of errors 30 participants (100%), while the words 'tight' is 57%, 'tone' 87%, 'toy' 83% and 'cut' is 90%.

On the other hand, the frequencies of accuracy pronouncing English alveolar /t/ show that the highest frequency is 100% on words such as; 'tin', 'tea', 'ten', 'tank', 'took', and 'too' of almost the 30 participants. The vowel sounds in these words are; /i/, /i:/, /e/, /æ/, /u/ and /u:/ respectively.

Therefore the table and the chart above show variation among SLs in pronouncing English /t/ consonant sounds according to the vowel sounds that follow.

Table (2): The frequency distributions of /d/ pronunciation

Sentence No.	target words/sounds	Correct	%	Incorrect	%
1.	Dent	30	100%	00	00%
2.	Dam	30	100%	00	00%
3.	Done	00	00%	30	100%
4.	Dark	00	00%	30	100%
5.	Cold	00	00%	30	100%
6.	Did	30	100%	00	00%
7.	Doom	30	100%	00	00%
8.	Die	13	43%	17	57%
9.	day	00	00%	30	100%
10.	don't	10	33%	20	67%

The Table (2), show the participants' correct and incorrect pronunciation of English alveolar /d/ in different contexts. As seen from the tables above that most of the participants fail to pronounce English alveolar /d/.

The highest frequencies of the participants' error as shown in the table as read that the words 'done', 'dark', and 'cold', takes almost the 30 participants (100%). The other frequencies of participants' errors are includes the words; 'die' 57%, and 'don't' 20 (67%).

It is observable the replacement takes place wherever one of these vowels /ʌ, ɔ:, əʊ, ɑ:, ɒ/ takes place before or after the target consonant while the other vowels such as; /e/, /æ/, /i/ and /ei/ as in; 'tend', 'dam', 'did' and 'day' respectively show no difficulty among SLs.

Table (3): The frequency distributions of /s/ pronunciation

Sentence No.	target words/sounds	Correct	%	Incorrect	%
1.	sit	30	100%	00	00%
2.	seat	30	100%	00	00%
3.	sent	30	100%	00	00%
4.	sand	30	100%	00	00%
5.	sun	03	10%	27	90%
6.	thought	06	20%	24	80%
7.	star	14	47%	16	53%
8.	sort	00	100%	30	100%
9.	sight	16	53%	14	47%
10.	so	30	100%	00	00%
11.	saw	00	100%	30	100%
12.	house	30	100%	00	00%

The Table above (3) reflect the participants' correct and in correct pronunciation of English alveolar /s/in different contexts. As seen from the table that English alveolar /s/ shows pronunciation shows variation in different contexts according to the participants' pronunciation.

The highest frequency of the participants' error in pronouncing the English sound /s/ in the words 'sorts' and 'saw' is 30 (100%) as shown in the table and the chart. The other frequencies of participants' error of the same sound in such words as; 'sun' 27 (90%), 'thought' 24 (80%), 'star' 16 (53%) and 'sight' 14 (47%)

On the other hand the table and the chart display the accuracy of participants, which shows that the participants are confined to English alveolar sound /s/ in some contexts as in words such as; 'sit', 'seat', 'sent', 'sand', 'so' and 'house' 30 (100%).

Now it is clear that /s/ according to the words in the table above we can notice that English alveolar /s/ is pronounced incorrectly by SLs of English SA emphatic wherever one of these vowels /ʌ, ɔ:, əʊ, ɑ:, ɒ/ takes place before or after.

Table (4): The frequency distributions of /z/ pronunciation

Sentence No.	target words/sounds	Correct	%	Incorrect	%
1.	Zinc	30	100%	00	00%
2.	Thee	30	100%	00	00%
3.	Them	30	100%	00	00%
4.	Than	30	100%	00	00%
5.	Was	02	07%	28	93%
6.	Mother	00	00%	30	100%
7.	weather	30	100%	00	00%
8.	father	00	00%	30	100%
9.	dose	30	100%	00	00%
10.	does	00	00%	30	100%
11.	their	30	100%	00	00%
12.	those	30	100%	00	00%
13.	dogs	00	00%	30	100%

The Table (4), show the frequency of participants' accuracy and errors in pronouncing English alveolar /z/ in different contexts. The above table and chart show variation in pronouncing English alveolar /z/. As seen from the table, it appears that the frequencies of error of the words, 'saw' 28 (93%), 'mother', 'father', 'does' and 'dogs' 30 (100%).

On the other hand, the table and the chart above show that the participants' accuracy in pronouncing English alveolar /z/ as in such words; 'zinc', 'thee', and them', 'weather', 'their' and 'those' 30 (100%).

The English sounds sound /z/ shows variation that according to the vowel sound that precedes or comes after the target sound /z/.

Result and Discussions:

The Tables (1, 2, 3 and 4) above display the participants' accuracy and error in pronouncing English alveolar consonant sounds. As seen from the tables and charts above that the highest percentages of the participants' errors occur when English alveolar sounds /t, d, s, z/ come before or after English vowel sounds /ʌ, ɔ:, əʊ, ɑ:, ɒ/. In this matter participants tend to substitute these plain alveolar sounds with their emphatic alveolar sounds /t^ʔ, d^ʔ, s^ʔ, z^ʔ/. On the other hand the participants' accuracy when these sounds come before or after English vowel such as /i, i:, e, æ, ə, ei, uə/.

Conclusion

In conclusion we can say that SLs of English have difficulty in English pronunciation due to mother tongue interference. Referring to the results above, we find that the results support the hypothesis of the study in accordance with the results of the study test, showed that SLs experience difficulty in pronouncing English alveolar sounds /t, d, s, z/ wherever followed by English vowel sounds /ʌ, ɔ:, əʊ, ɑ:, ɒ/.

Recommendations

Based on the result and the findings of this study the researchers come out with the following recommendations:

1. SLs of English should pay more attention of their pronunciation by trying to produce English speech sounds correctly try to avoid mother tongue interference.
2. SLs of English are advised to listen to English native speakers via listening to news, watching movies and so on, to improve their intelligibility for practicing pronunciation.
3. Sudanese teachers of English are advised to apply the phonological rules of English in teaching.
4. Future researchers should pay more attention to the similarities and the differences between English and Arabic in general and SA in specific.
5. More studies in the area of phonetics and phonology is needed.

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