The Production of English Affricates by Yemeni EFL Learners of English

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Abstract
The production of English sounds by non-native speakers of English has been extensively discussed in the phonetic literature, particularly in the areas of second language speech production and pronunciation instruction. The current study aims to explore the production of the English affricates /tʃ/ and /dʒ/ by Yemeni EFL learners of English. The production data involved 36 isolated tokens containing the two target sounds embedded in word-initial, word-medial and word-final positions. The elicited materials were gathered from two male Yemeni students in Universiti Utara Malaysia. Both speak Arabic as their first language. The speakers were asked to repeat the randomised tokens three times. The spoken data were analysed auditorily by four raters and then acoustically inspected via Praat. The findings show that the Yemeni EFL speakers of English face some difficulties in producing the English affricates, particularly for the voiceless affricate /tʃ/ in comparison to its voiced counterpart /dʒ/. Word position appears to be a factor that greatly affects the accuracy of the speakers' production of the two target sounds. Deaffrication occurs in the production of /tʃ/ for both speakers, while palatalisation for /dʒ/ is speaker-specific (one of the speakers only) and also environment-specific (word-medial and word-final positions only). The results provide experimental confirmation for the effect of first language on the production of non-native sounds and they accord well with the Language Transfer Theory's prediction. The findings of this study have potential contributions in the pronunciation teaching and learning of English, particularly among EFL learners of English.

Keywords: Speech Production, English Affricates, Deaffrication, Palatalisation, Pronunciation Teaching and Learning

Introduction

Many researchers (e.g., Elmahdi & Khan, 2015) claim that issues in the speech production among Arab speakers of English are mainly due to the sound systems of Arabic and English which are different in many aspects. According to Chouchane (2016), the English language contains 24 consonants, while the Arabic language contains 28 (see also Baagbah, Jaganathan, & Mohamad, 2016). Similarly, Elmahdi and Khan (2015) further emphasise that English consonants differ from Arabic consonants in terms of place and manner of articulation. For instance, the Najdi Arabic consonant inventory - like many other Arabic dialects - lacks six consonant sounds that are available in the English consonant inventory, which are /p/, /v/, /ʧ/, /ʒ/, /ɹ/, and /ŋ/ (Alqarni, 2013).

Elmahdi and Khan (2015) reported that Arab speakers have difficulties with consonants such as /ʧ/, /p/, /v/, /ŋ/, /θ/, /ð/, /l/, and /d/. Certain pairs are confusing for learners such as /ʧ/ and /ʃ/ as in /ʧeə/ 'chair' and /ʃeə/ 'share', /v/ and /f/ as in /fɑːst/ 'fast' and /vɑːst/ 'vast', /ʤ/ and /j/ as in /ʤæm/ 'jam' and /jæm/ 'yam', /p/ and /b/ as in /pɪn/ 'pin' and /bɪn/ 'bin', /ŋ/ and /n/ as in /sɪŋ/ 'sing' and /sɪn/ 'sin', /s/ and /θ/ as in /sɪn/ 'sin' and /θɪn/ 'thin'. The difference between the learner's first language and the target language can cause difficulties in mastering the pronunciation of the target language. Elmahdi and Khan (2015) state that the affricates /ʧ/ and /ʤ/ seem to be problematic for most Arab speakers of English. This is because of the absence of /ʧ/ in Arabic, while the English sound /ʤ/, which exists in Arabic, may have different phonetic realisations among Arab speakers.

The current study aims to examine the production of English affricates /ʧ/ and /ʤ/ by Yemeni EFL learners. As various researchers have confirmed that the /ʧ/ sound is considered as a problematic among Arab speakers of English, most Yemeni EFL learners may substitute /ʧ/ with the most closely related one that exists in Arabic, which is the voiceless postalveolar fricative /ʃ/. This is a phonological process called deaffrication. On the other hand, since the /ʤ/ sound has an equivalent sound in Arabic, Yemeni learners may not have difficulties to produce /ʤ/, though some have claimed that /ʤ/ may be palatalised as /j/.

To date, there have been limited studies that investigate specific issues concerning the production of English affricates /ʧ/ and /ʤ/ among Yemeni EFL learners of English. Thus, the present study seeks to answer the following research questions:

1. How do Yemeni EFL learners of English produce the English affricates /ʧ/ and /ʤ/?
2. To what extent does word position (word-initial, word-medial, and word-final positions) affect the learners' production of English affricates?
3. Do deaffrication and palatalisation take place in their production?

Literature review

As mentioned earlier, /ʧ/ does not exist in Standard Arabic while /ʤ/ has a near-like Arabic sound, which is (ج). There are various phonological processes that Arab learners of English tend to make when they produce a particular phoneme in English. Some studies show that EFL learners sometimes substitute some new phonemes in the target language with phonemes from their native language, which results in a

substitution and transfer processes. When consonants are pronounced with less effort or more weakly, they commonly change into other consonants. This could be the underlying process behind /tʃ/ that is potentially substituted with /ʃ/. Alqarni (2013) suggests that Arab learners may simplify /tʃ/ to /ʃ/. This process is called deaffrication since the target sound changes from being an affricate to being a fricative. It is also predicted that Yemeni EFL learners of English may also deaffricate /tʃ/ to a fricative /ʃ/. However, they may or may not deaffricate /dʒ/ to another sound such as /ʒ/ because /dʒ/ is available in the Arabic consonant inventory.

The Markedness Differential Hypothesis (MDH), formulated by Eckman (1977), is one of the phonological acquisition theories that make a connection between a native language transfer and language universals. Marked structures are difficult to learn, particularly if those in the target language are more marked than those in the native language. Applying this hypothesis can help describe the phonological difference between Arabic and English and how the differences may affect learners' pronunciation. The hypothesis suggests that learners would find it difficult to acquire the English postalveolar affricates /tʃ/ because it is considered to be a more marked sound than /ʃ/. On the other hand, Arab learners may not find any difficulty to acquire the /dʒ/ sound because it is somehow similar to the Arabic sound (ج). So, /dʒ/ can be considered as less marked for most Arab learners of English.

The production of different sounds between a target language and a native language is a common phenomenon for many English learners around the world. Begum and Hoque (2016), who investigated the production of English consonants by Bangladeshi learners, found that the affricate consonants /tʃ/ and /dʒ/ can turn to alveolar consonants /s/ and /z/, respectively. Jing and Yanyan (2011) carried out a study to examine the Chinese EFL learner's acquisition of English fricatives. They found that the speakers have difficulties in making distinctions between /ð/ and /z/ and also between /w/ and /v/. Lengeris and Nicolaidis (2016) conducted a study on the production of English consonants by Greek speakers. The results show that the most problematic English consonants are /tʃ/ (mostly confused with t/), /dʒ/ (mostly confused with /d/), /θ/ (mostly confused with /f/ and /s/), /s/ (mostly confused with /z/ and /ʒ/), and /ʃ/ (mostly confused with /s/). In another related study, Kang (2013) suggests that palatalisation is a reflection of a perceived difference in place of articulation between English and Korean affricates. Similarly, Nakin and Inpin (2017) discovered that Thai speakers substitute /tʃ/ with /t/. Additionally, Tuan (2011) reveals that Vietnamese learners have the most difficulty in pronouncing the English fricatives /ʃ/, /ʒ/ and the affricates /tʃ/ and /dʒ/.

Likewise, Arab learners of English have similar problems in pronouncing the consonants of English, particularly affricates. For instance, Alqarni (2013) aimed to investigate whether Najdi Saudi ESL learners have difficulties in pronouncing /tʃ/ or not. The results indicate that Najdi ESL learners have difficulties with /tʃ/ as they substitute it with /ʃ/, particularly in word-final position. Likewise, Elmahdi and Khan (2015) found that Saudi learners substitute the word-final /ʒ/ with /dʒ/. In a similar study, Ahmad and Muhiburrahman (2013) reveal that Saudi EFL learners face problems in the English sounds /p/, /d/, /v/, /tʃ/, /ʒ/ and /ŋ/. Al Yaqoobi, Ali and Sulan (2016) also found that Omani speakers usually replace /p/, /tʃ/, /g/ and /v/ with /b/, /ʃ/, /dʒ/ and /f/, respectively. They point out that /tʃ/ is usually mispronounced in word-medial position. Jabali and Abuzaid (2017) reveal the most problematic sounds for

Palestinian speakers, which are /p/, /tʃ/, /dʒ/, /ɹ/, and /ŋ/. For this group of speakers, /tʃ/ is sometimes realised as /ʃ/, while /dʒ/ is realised as /ʒ/. Additionally, Hassan (2014) found that the Sudanese speakers of English face similar difficulties in the consonant contrasts such as /ʃ/ and /tʃ/, which could be due to the differences in the sound system between English and Arabic.

Methodology

In order to investigate the production of English affricates by Yemeni EFL learners of English, the current study employed 36 isolated words containing the target sounds /tʃ/ and /dʒ/ in word-initial, word-medial and word-final positions (see Table 1). The participants were two male Yemeni postgraduate students at Universiti Utara Malaysia (UUM) that is located in the northern part of Malaysia. Speaker A was 31 years old, while Speaker B was 27 years old. Both of them were born and grew up in Hadhramout, Yemen. They shared a similar level of English language proficiency since both of them scored Band 6 for the latest English intensive course. They had never been to any English speaking countries, so they did not have any kind of exposure to a native English environment.

Position	Word	Received Pronunciation
Initial [tʃ]	cheap	[tʃiːp]
	cheat	[tʃiːt]
	chief	[tʃiːf]
	cheese	[tʃiːz]
	cheek	[tʃiːk]
	cheep	[tʃiːp]
Initial [dʒ]	jungle	[ˈdʒʌŋgl]
	junk	[dʒʌŋk]
	jut	[dʒʌt]
	jug	[dʒʌg]
	jump	[dʒʌmp]
	just	[dʒʌst]

Position	Word	Received Pronunciation
Middle [tʃ]	lecture	[ˈlɛktʃə]
	fetcher	[ˈfɛtʃə]
	blencher	[ˈblɛntʃə]
	venture	[ˈvɛntʃə]
	denture	[ˈdɛntʃə]
	texture	[ˈtɛkstʃə]
Middle [dʒ]	wager	[ˈweɪdʒə]
	danger	[ˈdeɪndʒə]
	sager	[ˈseɪdʒə]
	major	[ˈmeɪdʒə]
	pager	[ˈpeɪdʒə]
	ranger	[ˈreɪndʒə]

Position	Word	Received Pronunciation
Final [tʃ]	Dutch	[dʌtʃ]
	such	[sʌtʃ]
	much	[mʌtʃ]
	touch	[tʌtʃ]
	lunch	[lʌntʃ]
	hutch	[hʌtʃ]
Final [dʒ]	sage	[seɪdʒ]
	rage	[reɪdʒ]
	wage	[weɪdʒ]
	page	[peɪdʒ]
	cage	[keɪdʒ]
	age	[eɪdʒ]

Table 1: Isolated words with IPA transcriptions.

The recordings were conducted in a quiet room. All the recordings were done on the same day. At the beginning of recording, the speakers were informed that their identity would be kept confidential. Each speaker was given an information sheet and a consent form to read and sign. Each speaker was given ten minutes to read the isolated items three times. The words were presented randomly.

Using IPA symbols, the recorded speeches were phonemically transcribed and then compared with the target language in order to decide the level of correctness (see the evaluation form in Table 2). Four raters, who had teaching experiences in English, judged the speeches. All rater were postgraduate students at UUM majoring in Applied Linguistics. The errors in producing the target sounds were tested by the four raters by choosing one answer from five scales. The data were then analysed statistically using the Statistical Package for the Social Sciences (SPSS 24) and Excel. The findings were also supported by the visual inspection of waveform using Praat version 6.0.28 (Boersma & Weenink, 2017).

			Correct ◄				Wrong ►	
Position	**Word**	**Received Pronunciation**	**Completely Correct 100%**	**Slightly Correct 75%**	**Unsure 50%**	**Slightly Wrong 25%**	**Completely Wrong 0%**	**Substitution**
Initial [ʧ]	**cheap**	[ʧi:p]						
	cheat	[ʧi:t]						
	chief	[ʧi:f]						
	cheese	[ʧi:z]						
	cheek	[ʧi:k]						
	cheep	[ʧi:p]						
Initial [ʤ]	**jungle**	[ˈʤʌŋgl]						
	junk	[ʤʌŋk]						
	jut	[ʤʌt]						
	jug	[ʤʌg]						
	jump	[ʤʌmp]						
	just	[ʤʌst]						

			Correct ◄				Wrong ►	
Position	**Word**	**Received Pronunciation**	**Completely Correct 100%**	**Slightly Correct 75%**	**Unsure 50%**	**Slightly Wrong 25%**	**Completely Wrong 0%**	**Substitution**
Middle [ʧ]	**lecture**	[ˈlɛkʧə]						
	fetcher	[ˈfɛʧə]						
	blencher	[ˈblɛnʧə]						
	venture	[ˈvɛnʧə]						
	denture	[ˈdɛnʧə]						
	texture	[ˈtɛkstʃə]						
Middle [ʤ]	**wager**	[ˈweɪʤə]						
	danger	[ˈdeɪnʤə]						
	sager	[ˈseɪʤə]						
	major	[ˈmeɪʤə]						
	pager	[ˈpeɪʤə]						
	ranger	[ˈreɪnʤə]						

			Correct ◄				Wrong ►	
Position	**Word**	**Received Pronunciation**	**Completely Correct 100%**	**Slightly Correct 75%**	**Unsure 50%**	**Slightly Wrong 25%**	**Completely Wrong 0%**	**Substitution**
Final [ʧ]	**Dutch**	[dʌʧ]						
	such	[sʌʧ]						
	much	[mʌʧ]						
	touch	[tʌʧ]						
	lunch	[lʌnʧ]						
	hutch	[hʌʧ]						
Final [ʤ]	**sage**	[seɪʤ]						
	rage	[reɪʤ]						
	wage	[weɪʤ]						
	page	[peɪʤ]						
	cage	[keɪʤ]						
	age	[eɪʤ]						

Table 2: Evaluation form.

Results

The overall pattern of the production of English affricates by Speaker A and Speaker B is presented in Table 3. The rows represent the two target sounds in three different word positions, while the columns provide the scores given by the raters for each speaker. A refers to Speaker A, while B refers to Speaker B.

Target Sound	Completely Correct		Slightly Correct		Unsure		Slightly Wrong		Completely Wrong		Substitution	
	A	B	A	B	A	B	A	B	A	B	A	B
Initial [ʧ]	13	17	9	6	0	0	1	0	0	0	1	1
Middle [ʧ]	13	15	6	6	1	1	3	2	0	0	1	0
Final [ʧ]	16	13	5	6	0	2	0	0	0	0	3	3
Initial [ʤ]	10	7	6	2	0	1	3	3	3	2	2	9
Middle [ʤ]	4	5	6	4	2	2	3	2	2	2	7	9
Final [ʤ]	9	4	6	5	1	1	5	1	1	4	2	9

Table 3: Overall results by Speaker A and Speaker B.

As observed for the target sound /ʧ/, there are a lot of CORRECT productions in comparison to the target sound /ʤ/. On the contrary, there are more WRONG productions of the target sound /ʤ/ as compared to the target sound /ʧ/. Note also in the final column, there are many substituted sounds for /ʤ/, which will be shown in detail later. These results show that the Yemeni EFL learners in the current study have difficulties in pronouncing the English postalveolar affricates /ʧ/ and /ʤ/. Moreover, the results reveal that /ʤ/ is more difficult to produce than /ʧ/ since most of the errors occur in the words that include the target sound /ʤ/.

The production of the target sound /ʧ/ according to word position is presented in Figure 1 (Speaker A) and Figure 2 (Speaker B). Figure 1 clearly shows that Speaker A produces /ʧ/ differently in word-initial, word-medial, and word-final positions. First, he produces /ʧ/ completely correctly in word-initial and word-medial positions (both 54%) and also in word-final position (67%). Second, he produces /ʧ/ slightly correctly with different percentages across word positions: 38% in word-initial position; 25% in word-medial position; and 21% in word-final position. Third, Speaker A produces /ʧ/ slightly wrongly with the percentage of 4% in word-initial position, 13% in word-medial position, and 0% in word-final position. As for Speaker B, Figure 2 reveals a similar trend. First, he produces /ʧ/ completely correctly with the percentage of 71% in word-initial position, 63% in word-medial position and 54% in word-final position. Second, he produces the target sound /ʧ/ slightly correctly with a similar percentage of 25% across all word positions. Third, Speaker B produces /ʧ/ slightly wrongly with the percentage of 0% in word-initial position, 8% in word-medial position, and 0% in word-final position.

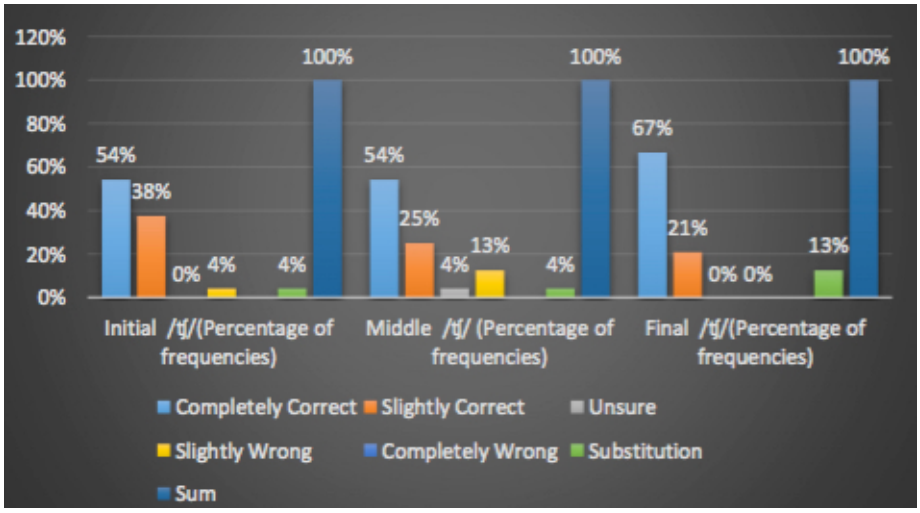


Figure 1: Production of /tʃ/ by Speaker A according to word position.

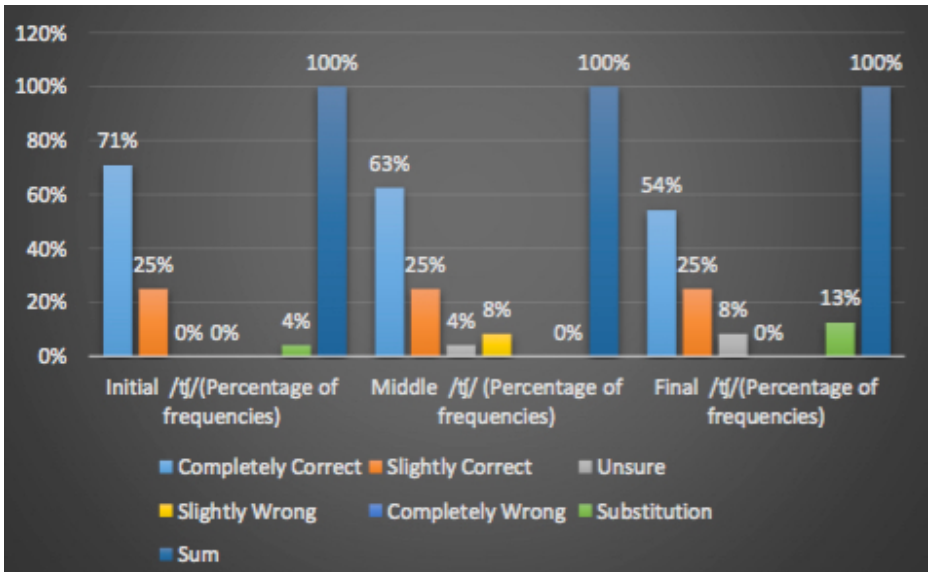


Figure 2: Production of /tʃ/ by Speaker B according to word position.

The production of the target sound /dʒ/ according to word position is presented in Figure 3 (Speaker A) and Figure 4 (Speaker B). Figure 3 clearly shows that Speaker A produces /dʒ/ differently in three different word positions. First, he produces /dʒ/ completely correctly with the percentage of 42% in word-initial position, 17% in word-medial position, and 38% in word-final position. Second, he produces /dʒ/ slightly correctly with the percentage of 25% in all three word positions. Third, Speaker A produces /dʒ/ slightly wrongly with the percentage of 13% in word-initial and word-medial positions, and 21% in word-final position. Fourth, he produces /dʒ/ completely wrongly with the percentage of 13% in word-initial position, 8% in word-medial position, and 4% in word-final position. As for Speaker B, Figure 4 reveals a similar trend. First, he produces /dʒ/ completely correctly with the percentage of 29% in word-initial position, 21% in word-medial position, and 17% in word-final position. Second, he produces /dʒ/ slightly correctly with the percentage of 8% in word-initial position, 17% in word-medial position, and 21% in word-final position. Third, Speaker B produces /dʒ/ slightly wrongly with the percentage of 13% in word-initial position, 8% in word-medial position, and 4% in word-final position. Fourth,

he produces /dʒ/ completely wrongly with the percentage of 8% in word-initial position, 8% in word-medial position, and 17% in word-final position.

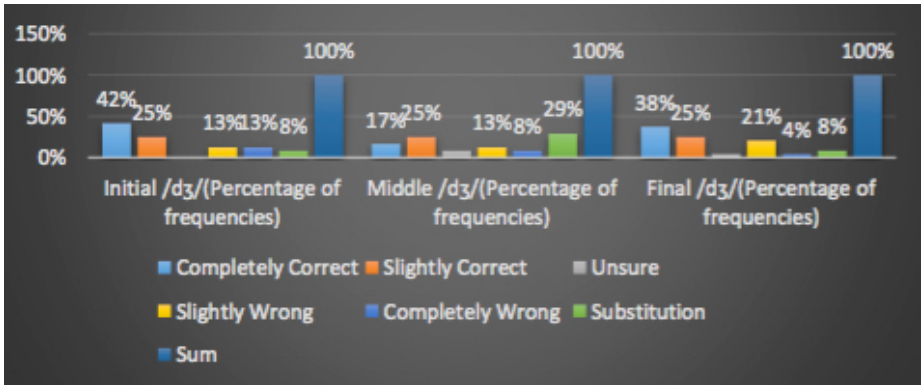


Figure 3: Production of /dʒ/ by Speaker A according to word position.

Figure 4: Production of /dʒ/ by Speaker B according to word position.

The substitution of /tʃ/ with /ʃ/ is illustrated in Figure 5 (Speaker A) and Figure 6 (Speaker B). Figure 5 shows that, for Speaker A, /tʃ/ is substituted with /ʃ/ only once (4%) in word-initial and word-medial positions, while he substitutes /tʃ/ with /ʃ/ with the percentage of 13% in word-final position. As for Speaker B, Figure 6 shows that he substitutes /tʃ/ with /ʃ/ once only with the percentage of 4% in word-initial position. Meanwhile, he substitutes /tʃ/ with /ʃ/ with the percentage of 13% in word-final position. The substitution of /tʃ/ with /ʃ/ or with any other sounds does not take place in word-medial position.

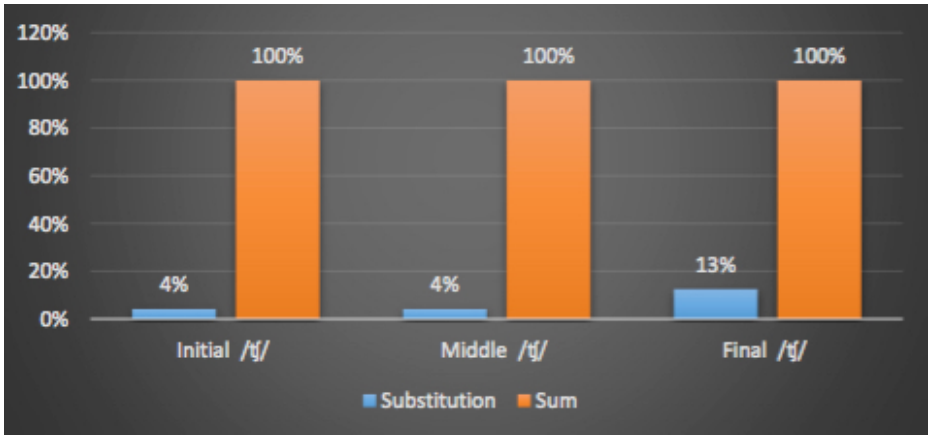


Figure 5: Substitution of /tʃ/ with /ʃ/ by Speaker A.

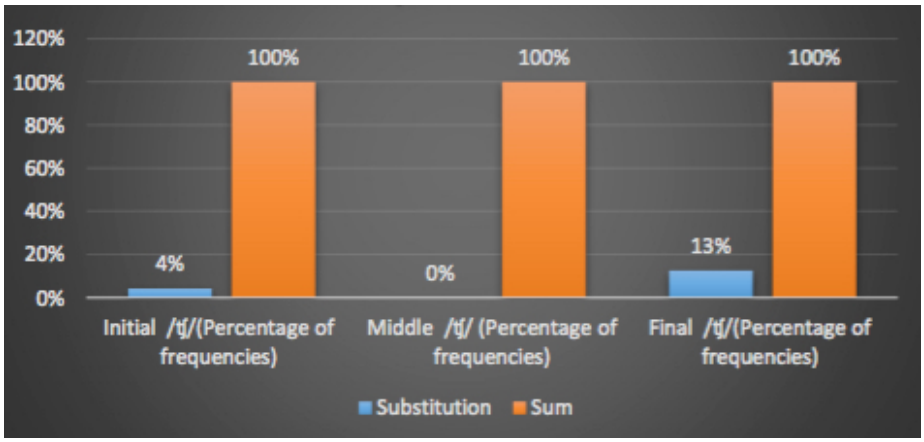


Figure 6: Substitution of /tʃ/ with /ʃ/ by Speaker B.

The substitution of /dʒ/ is illustrated in Figure 7 (Speaker A) and Figure 8 (Speaker B). Figure 7 shows that Speaker A substitutes /dʒ/ with the percentage of 8% in word-initial and word-final positions, while he substitutes /dʒ/ with the percentage of 29% in word-medial position. As for Speaker B, Figure 8 shows that he substitutes /dʒ/ with the percentage of 38% across all word positions.

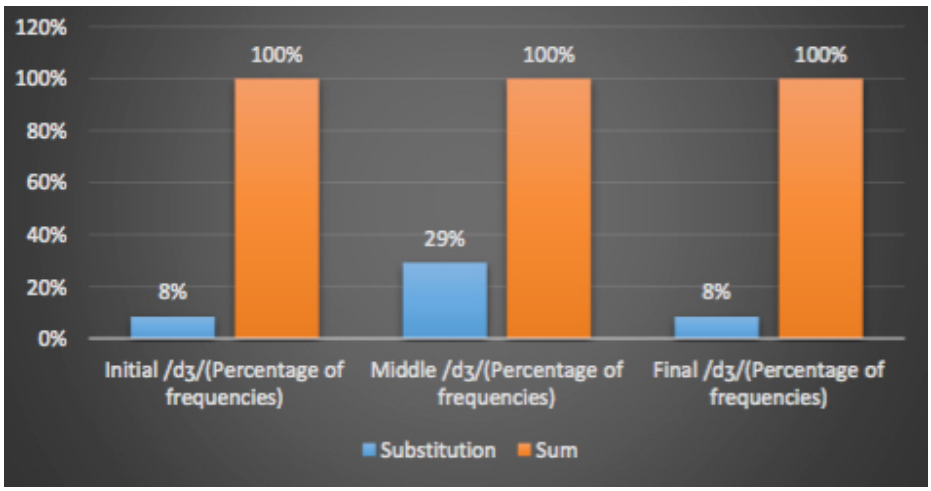


Figure 7: Substitution of /dʒ/ by Speaker A.

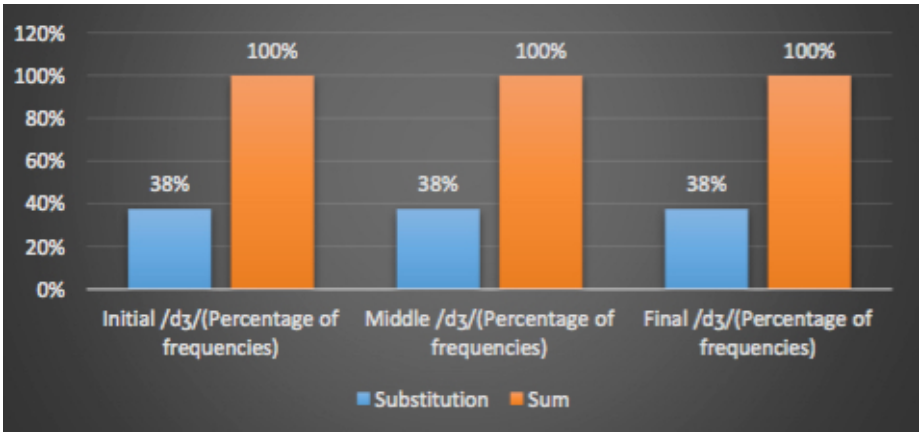


Figure 8: Substitution of /dʒ/ by Speaker B.

Discussions

The findings provide strong evidence that the two target sounds, /tʃ/ and /dʒ/, does cause some difficulties to Yemeni EFL speakers of English in this study. In general, the results are in line with the Markedness Differential Hypothesis (MDH) which claims that marked structures are difficult to learn, particularly if the sounds in a target language are more marked than those in a native language. Applying the hypothesis can help describe the phonological difference between Arabic and English and how the differences may affect learners' pronunciation. The hypothesis proposes that Arab learners may find it difficult to acquire the English postalveolar affricate /tʃ/ because it is considered as more marked than /ʃ/. On the other hand, Arab learners may not find any difficulty in acquiring /dʒ/ because it is somehow similar to the Arabic sound ج(). In this study, the participants deaffricated /dʒ/ in some words and pronounced it as /ʒ/. As a matter of fact, many researchers have pointed out that the Arabic sound (ج) is similar to the English /ʒ/ (Elmahdi & Khan, 2015).

Elmahdi and Khan (2015) assured that the consonants /p/-/b/, /f/-/v/, /tʃ/-/dʒ/-/ʃ/ seem to be problematic for most Arab speakers of English. This is because of the absence of these oppositions in Arabic. While some English sounds such as /tʃ/, /v/, /p/ do not exist in Arabic, the other consonants which exist in Arabic have different phonetic realisations. Similarly, Elmahdi and Khan (2015) confirmed that English and Arabic consonant sounds are different in number, as well as in place and manner of articulation. Another related hypothesis is the Contrastive Analysis Hypothesis (CAH) that predicts the difficulties in learning L2 by comparing two languages. For example, there is no equivalent sound in Arabic to the English /tʃ/. Therefore, it is predicted that Yemeni EFL learners may face difficulties when producing it. They may reduce or simplify it (deaffricate) and pronounce it as /ʃ/ in order to make it more similar to their L1 sound which is as discovered in the current study ,)ش(. On the other hand, it could be predicted that Yemeni EFL learners may not have difficulty to produce the English /dʒ/ since it is somehow similar to the Arabic sound (ج). The results of this study show that the sound /tʃ/ is difficult especially when it occurs in word-final position. On the other hand, Yemeni EFL learners of English have the greatest difficulty in pronouncing /dʒ/ across all three word positions. A general explanation of the speakers' productions in the two sounds is L1 transfer. Since Arabic lacks the exact sounds of English, they are somehow different in place and

manner of articulation (Elmahdi & Khan, 2015). The other consonants of English that exist in Arabic may have different phonetic realisations.

The finding concerning the effect of the environment (position in a word) on the accuracy of learners' pronunciation was also found in the study by Alqarni (2013); it was discovered that the pronunciation of /tʃ/ is more difficult in word-final position than in word-initial position. However, Al Yaqoobi, Ali and Sulan (2016) found that /tʃ/ is mispronounced more regularly when it occurs in word-medial position. The first type of mispronunciation found in this study is deaffrication. The two speakers produce /ʃ/ instead of /tʃ/, and /ʒ/ instead of /dʒ/ in some words. The second type of mispronunciation found in this study is palatalisation. Speaker B produces /dʒ/ as /j/. This finding supports the Language Transfer Theory which assumes that, if a learner's first language and the target language are similar, the first language will actively aid the foreign language learning. If there are similarities between the mother tongue and the target language, the transfer functions positively. But if there are many differences, it functions negatively. The theory suggested that Yemeni EFL learners of English may not produce the English voiceless postalveolar affricate /tʃ/ because of the interference (negative transfer) from their first language. The first language interference would be clearly shown if learners produce the Arabic voiceless postalveolar fricative /ʃ/ instead of producing the English voiceless postalveolar affricate /tʃ/. This was found in this study in some words that the speakers produce, although they are able to pronounce the English voiceless postalveolar affricate /tʃ/ slightly correctly in some words. This could be because they have been exposed to this sound during their study of English. At the time of the study, both speakers were undergraduate students in Malaysia.

On the other hand, the Language Transfer Theory suggests that the voiced postalveolar affricate /dʒ/ may be easily produced by Yemeni EFL learners since their first language has a similar sound to the English sound /dʒ/, though it is not the same. Another negative transfer was found in the speech production of Speaker B who produces /j/ instead of /dʒ/. In some areas of Yemen, some people pronounce the Arabic (ج) in a way similar to that of the English /j/. In short, this theory proposes that English sounds will not be easily produced by Yemeni EFL learners since their first language, Arabic, does not have the same sounds like those of the English language. Such substitutions of the English postalveolar affricates /tʃ/ and /dʒ/ found in this study were also found in previous studies. Jabali and Abuzaid (2017) examined the pronunciation errors committed by Palestinian speakers of English at An-Najah National University and found that the English affricate /tʃ/ is sometimes realised as /ʃ/. Besides, the sound /dʒ/ is problematic because the Palestinians either use /dʒ/ for /dʒ/ and /ʒ/, or they use /ʒ/ for both. According to them, "strange" and "garage" may be pronounced either as /stɾeɪndʒ/ and /gəɾædʒ/ or as /stɾeɪnʒ/ and /gəɾæʒ/. Likewise, Alqarni (2013), in addition to Al Yaqoobi, Ali and Sulan (2016), found that the sound /tʃ/ was replaced with /ʃ/.

Luviya (2016) discusses some of the mispronunciation of English consonants by Javanese students in the English Literature of Sanata Dharma University. The findings show that mispronunciation often happens to some sounds such as the voiced affricate /dʒ/ turning into /j/. The fricative /ʃ/ and affricate /tʃ/ are not difficult enough to be articulated by the speakers. The findings of the current study reveal that Yemeni EFL learners of English had difficulties in pronouncing the /tʃ/ and /dʒ/ sounds of the

English language. In addition, it proves the difficulty of producing the /tʃ/ sound especially in word-final position and the difficulty of producing /dʒ/ in all the three word positions. The results of this study have implications for both students and teachers of the English language. Recognising the sources of difficulties in speaking could assist and help students to be more cautious about their pronunciation. Careful pronunciations of problematic sounds can help communication and also aid non-native speakers to be better understood (Binturki, 2008).

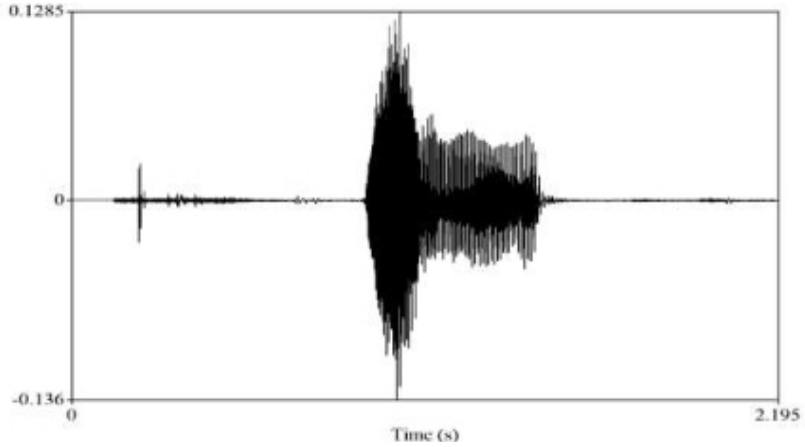
Additionally, English language teachers should be attentive to the similarities and differences between L1 and L2. This knowledge can assure better understanding of problems and hence they will be better prepared to address their students' needs. Furthermore, understanding the phonetic inventory of the students' first language can help teachers predict the source of mispronunciations by identifying the difficult sounds as shown in this study concerning the two investigated sounds /tʃ/ and /dʒ/. By acknowledging the problematic sounds, teachers can prepare instructions and tasks to better address them. When teachers are aware of the exact environments of difficulties with the sounds of the target language, this will enable them to deal with the problem in a proper way. When an instruction is required, teachers will be able to focus on certain sounds and environment and address them accordingly (Binturki, 2008). The findings of this study can positively benefit teachers of the English language when they teach Yemeni EFL learners.

Conclusions

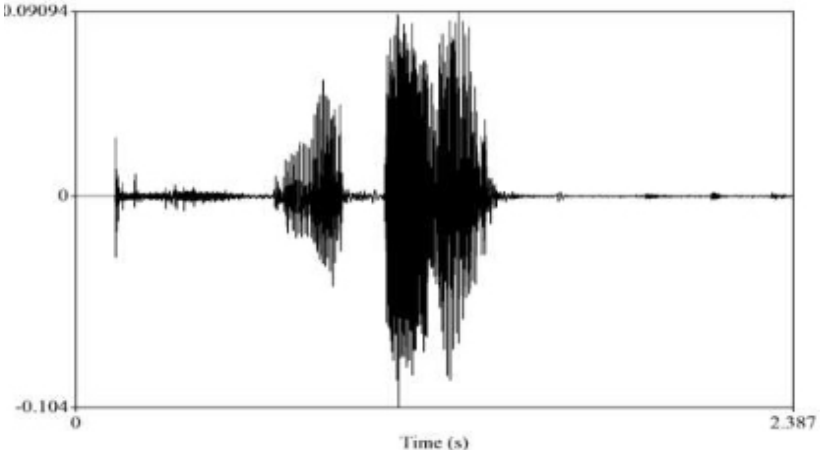
The findings of this study have demonstrated the difficulties of the English postalveolar affricates /tʃ/ and /dʒ/. More specifically, they have shown the potential difficulties of the sound /dʒ/ in all three word positions, with the difficulty of /tʃ/ observed especially in word-final position. In general, it has been observed that Yemeni EFL speakers of English have difficulties in producing the postalveolar affricates /tʃ/ and /dʒ/. The results of this study show several patterns: (1) The two speakers mispronounce the two investigated sounds several times, with /dʒ/ sound being more challenging than /tʃ/; (2) The environment greatly affects the accuracy of the speakers' productions of the two target sounds since they always show different pronunciation of each of the target sounds when it occurs in word-initial, word-medial, and word-final positions; (3) Deaffrication takes place in the two target sounds of this study by both speakers, while palatalisation occurs only in the production of Speaker B in two words (in word-medial and word-final positions).

A more comprehensive study is vital to confirm the findings of this study and to provide more evidence to account for the ambiguities regarding some of the findings. It would be very interesting to conduct a similar study targeting more subjects using a mixed-methods approach. This would help to establish the common difficulties of pronunciation among Arab EFL speakers of the English language. Further research in investigating the postalveolar affricates /tʃ/ and /dʒ/ is recommended using a larger number of speakers. This study employed a quantitative research design, and for future research, a mixed-methods design is recommended by interviewing the participants of the study or EFL/ESL teachers who have enough experience in teaching English so that they can support and strengthen the findings of the current study.

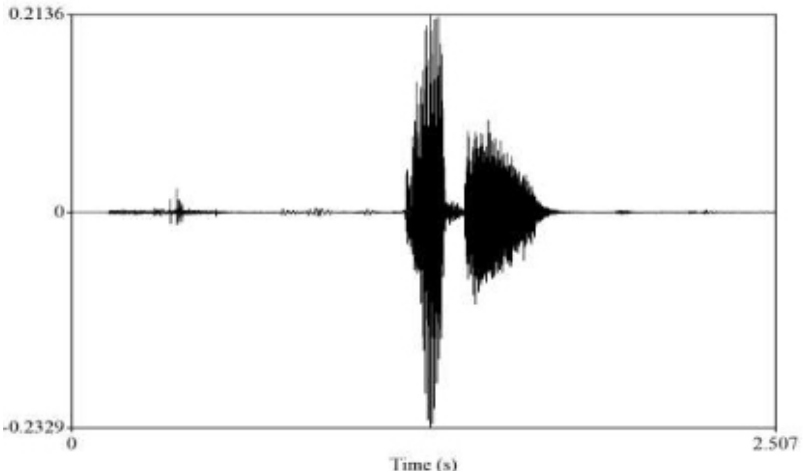
Appendix



Praat illustration of the target sound /tʃ/ in word-initial position (“cheap”)



Praat illustration of the target sound /tʃ/ in word-medial position (“lecture”)



Praat illustration of the target sound /tʃ/ in word-final position (“touch”)

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