Difficulties in Consonant Sound Pronunciation for the Undergraduate Learners at Aljouf University, Saudi Arabia

Atalah M Al-Rubaat
Assistant Prof. of linguistics
Aljouf University, Saudi Arabia

Abstract

This study investigates difficulties in pronunciation faced by students of English enrolled in the B.A Programme at Al Jouf University, Saudi Arabia. The study set out to identify and describe difficulties in the pronunciation of selected consonant sounds in English. The study uses Eckman's Markedness Model to troubleshoot causes of the difficulties so that a basis can be formulated for their remedy. Participants in the study were students at their fourth level of study. Data was collected by classroom observation, tape recording and document analysis. Fifteen (15) informants were sampled and presented with words containing problematic consonant sounds in different positions. The results show that the students have difficulties pronouncing consonant sounds which are not in Arabic sound inventory as well as consonant sounds found in Arabic. The students also had problems pronouncing words which feature low or no grapheme – phone correspondence. Findings of this study bear implications for teaching English phonetics and phonology to native speakers of Arabic who learn English as a foreign language.

Keywords: English consonants, difficult pronunciation, markedness, Aljouf university students.

Introduction

Problems with pronunciation of English words among learners of English as Foreign Language is of course already extensively reported in the literature. Previous studies in this second language learning area explain phonetic / phonological difficulties as emanating from two sources: interlanguage and intralanguage.

In almost all literature that exists about pronunciation problems faced by Arab learners of English, posted results invariably make the claim that differences in writing system between English and Arabic pose problems to

learners. Arabic has near perfect one-to-one correspondence between graphemes and phonemes; English sometimes doesn't. Due to overgeneralization, Arab learners of English will most likely override this difference. Secondly, differences in consonant phonotactics between English and Arabic also represent difficulty to Arab learners. As a strategy, learners tend to declusterize English consonant clusters by introducing vowel segments to simplify it. The third claim is that Arab learners of English will usually have problems with some consonant sounds. They therefore resort to phoneme substitution of some kind. For instance, they may quite regularly substitute fortis-lenis sounds. This kind of substitution is sometimes understood as a case of overgeneralization.

Many studies have focused on the errors made by speakers of other languages who speak English. According to O'Conner (2003), the wrong pronunciation of learners of English from different language backgrounds is systematic and not accidental. Other studies done on the errors of pronunciation concluded that the main problem of speakers of other languages who speak English is substitution of sounds. This is especially true for many people who learn English in foreign contexts.

Many previous researches have concluded that errors of second language learners appear consistent and predictable, regardless of their language background. Catford (1977), Swan (2001), Smith (2001), Alkhuli (1983), Brown (2000) and O'conner (2003), found, for instance, that errors made with consonants like /p/, /b/, /ʃ/, / ʒ /, /f/ and /v/ are due to interference.

Alkuli (1983) attributes such problems with consonants among Arab learners of English to sound system differences between Arabic and English. One kind of difficulty triggered by system difference is easy to notice with consonant clusters. According to Al-Shuaibi (2009), difficulties with initial and final consonant clusters that Arab learners of English face are due to processes of reduction, substitution and deletion.

Several second language researchers believe phonotactics of the target language is a problem area for foreign language learners. They argue, for instance, that foreign language learners will employ the strategy of declusterization where the target language phonotactics poses difficulty. Al-Saidat (2010) investigated declusterization process found in the interlanguage of Arab learners and found proof that phonotactics is indeed a problem where system difference is apparent.

As is clear from the foregoing introduction, foreign language learners face pronunciation difficulty due to interference from the first language, sound system differences and phonotactic differences. The previous studies mentioned have therefore been of foundational value to this study. However, more evidence is still necessary to account for the wide variety of difficulties that foreign languages learners face.

Participants of the current study appear to "mixup", confuse or substitute fortis-lenis sounds between Arabic and English in their attempt to learn English. Interesting is the fact that this difficulty appears to characterize the stage during which they learn English and the point at which it can be said they have learnt English. In other words, as they progress in the learning of other aspects of English, they do not seem to make much progress with sounds which are absent in Arabic system.

A case is already made in the literature that there exists substitution of consonants by Arab learners of English. However, not much has been said of the extent to which fortis-lenis substitution is systematic. In the case of participants in this study, one wonders if the substitution is regardless of Arab dialect spoken. The present study therefore identifies and describes difficulties in the pronunciation of selected consonant sounds in English language. It attempts to pick out causes of the difficulties following from the theory.

The substitutions focused in this study involved fortis sounds like / p, s, g, f, ʃ, Ɵ, / and their lenis counterparts /b, z, k, v, ʒ, ð/. Contrast in language sound systems is often cited as the basis for errors that occur in acquiring L2 sounds. However, it is not always the case that errors follow this prediction. In some cases, the possibility that a consonant sound will be difficult depends on the environment in which it occurs. This limitation is by itself a source of confusion to the learners in the process of learning English sounds.

Observations made with fourth level English programme students at Al Jouf University add to the fortis-lenis substitution claim. From their speech, it can be made out that they confuse the pronunciation of most of the minimal words which contain fortis and lenis consonants sounds. For instance, they almost invariably confuse words containing problem consonants (see for example *pack for back, fast for vast, breathe for breath*). They also have problems with English words like *church, mission, sing, you, gin, pleasure* that contain sounds that do not occur in Arabic.

American Speech Language Hearing Association provides a helpful inventory of Arabic phonemes including anecdotes on Arabic phonology2. Phonemes in Arabic that are not found in English include /t/, /d/, /+/, /s/, /χ/, /ʁ/, /ħ/, /ʕ/, and /ʔ/. On the other hand, phonemes in English that are not found in Arabic are /p/, /v/, /ɪ/, /ʒ/, /g/, and /ŋ/. From the differences, it is easy to hypothesize that areas of non-correspondence between English and Arabic inventory should pose difficulty to the foreign language learner of English whose native language is Arabic. However, this paper finds inconsistencies in that assumption as will be elaborated in the discussion.

---

2 See Amayreh (2003) for details of differences in phoneme inventory between English and Arabic.

The theory

This study applies Eckman's (1977) Markedness Differential Hypothesis. Eckman claims the model can explain and predict difficulties that L2 learners face while trying to learn the L2 phonology. According to this hypothesis, degree of difficulty in learning a certain sound in an L2 is determined by to what extent that sound feels alien (or difficult) to the learner. In addition, areas of difficulty that a language learner will have can be predicted such that sounds in English that differ totally from those in Arabic system are more marked so they will be difficult to learners who are native speakers of Arabic.

As such, level of difficulty of a given sound therefore depends on how different or marked the target sound is from Arabic. However, those sounds of English which are different from sounds in Arabic, but are not more marked in Arabic will not be difficult. According to this theory, marked structures are more difficult than the corresponding unmarked structures. This means not all differences in the sound system of English and Arabic will occasion same difficulty level.

Markedness model postulates that degree of difficulty involved corresponds directly to relative degree of markedness. This phonological theory considers unmarked common sounds between languages leaving only the less common ones marked. Eckman predicted that for second language learners, the acquisition of an unmarked sound like unaspirated stops would be easier than the aspirated stops which are considered marked (Fellbaum, 1996).

Method

Informants for this study were chosen using their dialect background as criterion. Apart from Standard Spoken Saudi Arabian dialect, three dialects of Arabic are spoken in Saudi Arabia namely, Gulf, Hijazi, and Najdi. This partition of the sample was necessary because students from different dialect areas tend to face different levels of difficulty with some target consonant sounds.

In this study, the researcher depended first on observation of the participants during their Writing One course (LANE 322). Being their usual instructor, it was possible to engage the participants. It is at this stage that the researcher could listen to, isolate and record problem sounds.

In recording samples of consonant sounds, three words were selected for each problematic sound, usually a strong fortis consonant sound occurring at initial, middle or final position (except affricate /ʒ/sound at the initial position). Also isolated for reading were words containing the velar nasal /ŋ/sound at the middle and final positions.

Words	Sound target	1	2	3	4	5	6	7	8	9	10	Freq.	%100
park	P	b	P	b	b	b	b	b	b	b	b	1	10
speed	P	b	b	b	b	b	b	b	p	b	P	2	20
Rope	P	b	b	b	b	b	b	b	b	b	b	1	10
vast	v	f	v	v	v	v	f	v	f	v	v	7	79
prove	v	f	f	f	f	f	f	f	f	f	f	0	0
cover	v	f	f	v	V	f	f	V	v	v	f	6	50
church	ʧ	ʧ	ʧ	ʧ	ʧ	ʧ	ʃ	ʃ	k	k	k	10	50
teacher		ʧ	ʧ	ʧ	ʧ	ʧ	ʧ	ʧ	ʧ	ʧ	ʧ	5	50
march		ʧ	ʧ	ʧ	ʧ	ʧ	ʃ	ʃ	ʃ	ʃ	ʃ	1	10
breathe	ð	ɵ	ɵ	ɵ	ð	ɵ	ɵ	ɵ	ɵ	ð	ɵ	2	20
though		ɵ	ɵ	ɵ	ɵ	ð	ɵ	ð	ɵ	ɵ	ɵ	2	20
Worthy		ɵ	ɵ	ɵ	ð	ɵ	ɵ	ɵ	ɵ	ɵ	ɵ	1	10
shy	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	s	ʃ	ʃ	10	100
persian		s	s	s	s	s	s	S	s	s	s	0	0
mission		ʃ	ʃ	ʃ	ʃ	ʃ	s	ʃ	s	s	ʃ	7	70
sing	Ŋ	N	N	Ŋg	N	N	n	Ŋg	N	N	Ŋ	1	10
Singer		Ŋg	Ŋg	Ŋg	Ŋg	Ŋg	Ŋg	Ŋ	Ŋg	Ŋg	Ŋ	2	20
you	J	u	u	u	u	u	u	u	u	u	u	0	0
value		u	u	J	J	u	J	u	u	u	u	3	30
gin	ʤ	g	ʒ	g	ʒ	g	ʤ	g	g	g	ʤ	2	20
ridge		d	ʤ	d	ʤ	ʤ	ʤ	g	g	d		4	40
pigeon		g	g	g	g	g	g	g	g	g	g	0	0
garage	ʒ	ʤ	ʒ	ʒ	ʒ	ʒ	ʒ	g	ʒ	ʃ	ʒ	7	70
pleasure		ʤ	ʒ	ʤ	ʤ	S	ʒ	ʃ	ʃ	ʃ	ʒ	3	30
Red	r	r	r	r	r	r	r	r	r	r	r	10	100
worry		r	r	r	-	r	r	r	r	-	r	2	20
Car		r	r	r	r	r	r	r	r	-	r	1	10
chemist	K	ʃ	ʧ	K	ʧ	K	ʧ	ʃ	ʃ	ʧ	ʧ	1	10
mechanic		ʃ	K	K	K	K	ʃ	K	ʃ	ʃ	ʧ	5	50
stomach		K		K	K	ʃ	ʃ	K	K	ʃ	K	6	60
saw	S	S	S	S	S	S	s	S	S	S	S	10	100
loose		S	S	Z	Z	S	s	S	Z	Z	S	4	40
closing		Z	Z	Z	Z	Z	z	Z	Z	Z	Z	10	100
Frequency		9	15	16	16	15	11	14	8	8	16		
total %		**26**	**43**	**46**	**46**	**43**	**31**	**40**	**23**	**23**	**46**		

Choice of the sounds was especially determined by position of their occurrence in a word. This helped the researcher to determine at which position the sound was most difficult. Since sounds behave differently in different contexts, the participants were presented with a passage containing

words with the target sounds to read. This was necessary to rule out tendency of informants to hypercorrect their pronunciation when reading words in isolation. Each participant was asked to read the selected words twice loudly as the researcher tape recorded their pronunciation. A single reading of the passage was also recorded.

Results and Discussion

From the sample of 15, recordings from 10 informants were subjected to the analysis. The ten informants were recorded as they read 35 selected words in which target sounds occurred in variable positions namely, initial, medial and final. The informants read out these words once from beginning to end. They were then given a passage containing words with the target sounds to read out once.

The table below summarizes variable realizations of each target sound by each informant. From the table, the first column lists 35 words; the second column itemizes the same target sound three times in initial, final and median positions within a corresponding word to the left. The variables representing each respondent are 1 to 10 as shown. The score for each informant in frequency and percentage is found at the bottom of each column.

The reading and recordings were done twice so as to afford respondents their comfort with the procedure. In the table below, the "Freq" column refers to number of informants who pronounced the target sound correctly. "Total %" and "Frequency" rows at the bottom of the table refer to total number of correct pronunciations for each informant (for all target sounds)

Table 1

Target Sound	Position	Difficulty Level	Does sound occur in Arabic Inventory?	Possible positions of occurrence
P	Initial	90%	No	NA
	Medial	80%	No	NA
	Final	90%	No	NA
V	Medial	50%	No	NA
	Final	100%	No	NA
tʃ	Initial	50%	No	NA
	Medial	50%	No	NA
	Final	90%	No	NA
ð	Initial	80%	Yes	Yes
	Medial	80%	Yes	Yes
	Final	90%	Yes	Yes
ʃ	Initial	0%	Yes	Yes
	Medial	100%	Yes	Yes
ŋ	Medial	90%	No	NA
	Final	80%	No	NA
J	Initial	100%	Yes	Yes

	Medial	70%	Yes	Yes
ʤ	Initial	80%	Yes	Yes
	Medial	0%	Yes	Yes
	Final	60%	Yes	Yes
ʒ	Medial	70%	No	NA
R	Initial	90%	Yes	Yes
	Medial	80%	Yes	Yes
	Final	90%	Yes	Yes
K	Initial	90%	Yes	Yes
	Medial	50%	Yes	Yes
S	Initial	0%	Yes	Yes
	Medial	0%	Yes	Yes
	Final	60%	Yes	Yes

It is clear from the table that variability in scores depended on position of occurrence of the sound within a word. For instance, all respondents had no problem with [ʃ] sound word initially, but pronounced the same sound incorrectly medially. We notice similar trend with [v], [j] and [s].

As can be seen from the table, most of the target sounds were problematic to the respondents. Below is a summary of sounds the respondents found difficult by 50% or more by position of occurrence within a word. Cases of Zero percent are however included in the table where contrast in difficulty would be explained in position terms more than in other terms. (Not Applicable (NA) is used in the final column to show redundancy of possible position of occurrence when the sound is absent in Arabic inventory.

Discussion

From the data, voiceless bilabial plosive [P] was difficult at the level of between 80 to 90 % in initial, medial and final positions because it does not occur in Arabic as a phoneme. The same was evident with nasal velar [Ŋ]**.**

Voiced labiodental fricative and voiceless palate-alveolar affricate [V and ʧ] likewise do not occur in Arabic inventory. However, while these sounds were difficult at the level of 90 to 100% word finally, they were only difficult at 50% in middle position of a word. According to markedness model, degree of difficulty in learning a sound in an L2 is determined by to what extent that sound feels strange to the learner. Accordingly, these two sounds ought to have been difficult to a high degree. Clearly, the data does not suggest so, meaning position of occurrence of the phoneme within a word is an important determinant of level of difficulty.

Since voiced dental fricative [ð] is present in both Arabic and English phoneme inventories as shown from the table, it is surprising that respondents found the sound difficult at between 80 and 90% in all positions of a word as the data shows. This is contrary to findings from previous studies that came to

the conclusion that errors of second language learners are consistent and predictable, regardless of their language background (see Catford, 1977; Swan, 200; Smith, 2001; Alkhuli, 1983; Brown, 2000; and O'Conner, 20030). Similar inconsistency was observed with voiced palatal approximant [j] and post alveolar approximant [r]

Yet another inconsistency with previous studies was found with voiceless palato-alveolar fricative [ʃ]. While the articulation of this sound posed no problem at all to the respondents word initially, it was difficult at the level of 100% word medially despite being present in both Arabic and English inventories. Other sounds in the data with similar result are voiced palato alveolar affricate[dʒ] and voiceless alveolar fricative [s].

These inconsistencies beg explanation. Clearly, not all differences in the sound system of English and Arabic will occasion same difficulty level. Besides, sometimes difficulty does not occur at all when it would have been predicted. We have also shown cases where the reverse is true. Eckman (1996) offers an explanation for this state of affairs in the notion of markedness. According to this model, degree of difficulty corresponds directly to relative degree of markedness. The theory does not lay out characteristics that underlie markedness other than presence or absence of a phoneme between L1 and L2 systems. From our study, position of occurrence of a phoneme within a word is as much a determinant of difficulty level as presence or absence of a phoneme is in the system of a language.

This phonological theory considers as unmarked sounds that are common between languages. Uncommon sounds between them are therefore understood as marked. Eckman predicted that for second language learners, the acquisition of an unmarked sound such as unaspirated stops would be easier than the aspirated stops which are marked (Fellbaum, 1996).

Following the theory, we can suppose that sounds like voiceless palato-alveolar fricative [ʃ] that caused no problem at all to the respondents word initially is unmarked in that position. Accordingly, respondents faced no problem with [ʃ] at the beginning of a word since this sound occurs in Arabic only word initially. However, the respondents had problems with the voiced palato alveolar affricate[dʒ] and voiceless alveolar fricative [s] even when they are unmarked in Arabic3. From the data, 80% of the respondents found [dʒ] difficult to pronounce at the beginning of a word while 60% found mispronounced the sound word finally. To what then can we attribute this inconsistency, especially considering that no respondent mispronounced the sound word medially? Similarly, there seems to be no explanation from the theory for why [s] posed no problems word initially and medially but was problematic at the level of 60% word finally. Yet from the data, voiceless

---

3 The sound occurs in Arabic in all the positions identified as initial, medial and final.

alveolar fricative is unmarked since it occurs in all positions identified within Arabic system.

As is demonstrated in the background to this paper, previous studies proved that foreign language learners face pronunciation difficulty due to interference from the first language, sound system differences and phonotactic differences. From this study, that wasn't possible to confirm beyond reasonable doubt, meaning more evidence is still necessary to account for the wide variety of difficulties that foreign languages learners face.

According to O'Conner (2003), for instance, the wrong pronunciation of learners of English from different language backgrounds is systematic and not accidental. We found inconsistencies instead. And so we disagree with claims to the effect that errors of second language learners appear consistent and predictable, regardless of their language background. Catford (1977), Swan (2001), Smith (2001), Alkhuli (1983), Brown (2000) and O'conner (2003), found, for instance, that errors made with consonants like /p/, /b/, /ʃ/, / ʒ /, /f/ and /v/ are due to interference. We argue this is not necessarily the case with some cases.

Some instances from the data exemplified another kind of difficulty respondents had with the selected sounds. In reading some words, respondents appeared to fail to recognize graphemes representing phonemes they probably knew. For example, voiced dental fricative [ð] occurs in Arabic system as it does in English. So, respondents had no problem with this sound from its occurrence in the noun "worth". However, they mispronounced the adjective "worthy" due to addition of the grapheme "y" to the word. Similar problems occurred with [ʃ] and [k]. The respondents recognize each of these sounds in isolation but not in context. They can say "share" and "chair" without mispronouncing the initial sounds in these words. When it comes to reading the word "mechanic", they replace [k] with [ʃ]. Interestingly, they pronounce the "mechanic" correctly when they repeat it after dictation, meaning the mispronunciation that happens when they read is as a result of problems with grapheme-phoneme correspondence. We have pointed out further above that Arabic bears closer grapheme-phoneme correspondence than English does. Similar difficulty was noticed with [Ŋ],[ʤ] and [ɹ] sounds.

Some difficulties also oc]curred as a result of some kind of swopping between fortis and lenis segments. Replacement of the fortis plosive /p/ and lenis fricative/v/ by their counterpart /b/ and /f/as well as the strong dental fricative /Ɵ/ with the weaker / δ/ were found in the data as well like (breathe and worthy) end of /Ɵ/ instated of/ δ/.

Conclusion

The paper considered difficulties in pronunciation faced by students of English enrolled in the B.A Programme at Al Jouf University and found,

among other things, that difficulties in pronunciation of selected consonant sounds in English result first and foremost from sound system inventory differences between Arabic and English. However, the students also had problems pronouncing words which feature low or no grapheme – phoneme correspondence. Also attested from the data were cases of swopping between fortis and lenis consonants. Findings of this study bear implications for teaching English phonetics and phonology to native speakers of Arabic who learn English as a foreign language.

References:
Richards, J.C. and Schmidt, R. (2002) the Longman Dictionary of Language Teaching and Applied Linguistics, London: Longman.
Roach, P.(1991) English Phonetics and Phonology, (2nded.) Cambridge: Cambridge University Press.
Swan,M. and Smith, B. (eds.) (2001) Learner English, Cambridge: Cambridge University Press.Emad M
Al-Saidat. Phonological Analysis of English Phonotactic: A Case Study of Arab Learners of English. The Buckinghum, Journal of Language and Linguistics, V 3, 121 to 134, 2010.
Baker, A. (1981). Tree or Three? Cambridge University Press.
Brown, H. D. (2000). Principles of Language Learning and Teaching (4th ed.). Longman: Sanfrancisco State University.
Carter, J. C. (1977). Fundamental Problems in Phonetics. Edinburgh: Edinburgh University Press.
Carter, R., &Nunan, D. (2001). The Cambridge Guide to Teaching English to Speakers of Other Languages.
Cambridge: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511667206
Gimson, A. C., &Crutteden, A. (1994). Gimson's Pronunciation of English. London: Edward Arnol.
Jones, D., Roach, P. J., & Hartman, J. (1997). Daniel Jones English Pronouncing Dictionary (15th ed.).Cambridge: Cambridge University Press.
Ladefoged, P. (2001). A Course in Phonetics, 4th ed., Heinle and Heinle. Los Angles: University of California.
O'Connor, J. D. (1980). Better English Pronunciation (2nd ed.). Cambridge: Cambridge University Press
Cambridge: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511667121
Yule, G. (1996). The Study of Language (2nd ed.). Cambridge: Cambridge University Pres.