A Contrastive Analysis Of Phonetic Realization Of Consonant Cluster In English And Arabic Languages

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Abstract

The phonetic realization of consonant clusters presents a challenge for studies on speech production. English and Arabic are two dialects that vary enormously in the scope of the syllable structure designs they make utilization of. An immediate conclusion to this is the distinction in the degree to which every language licenses consonant groups. As a rule, Arabic is a language that is poor in group when contrasted with English. Hence incredible impedance is normal when English expect the status of the objective language for the local speakers of Arabic. The issue of consonant groups is, truth is told, a territory deserving of examination at whatever point contrastive Arabic-English investigations are intended.

Key word : contrastive : analysis , phonetic realisation , and consonants clustars

1.1The Statement of the problem

The problem for this research on speech production lies in the phonetic manifestation of consonant clusters. There are significant differences between the syllable structure designs used in the dialects of Arabic and English. The distinction in how each language licenses consonant groupings is an immediate conclusion to this study. Comparing Arabic to English, it is generally a poorer group language. Thus, it makes perfect sense that English speakers would expect Arabic speakers in their community to regard English as the objective language. All things considered, the topic of consonant groups is one that merits research whenever parallel Arabic-English studies are planned.

1.2 Research questions

1-What is consonant cluster complexity, according to the approaches of Arabic and English language?

 2-What are the differences in the approaches of Arabic and English language for Arabic speakers who are learning English or who have learned English find difficult to learn to speak English.

1.3 Aims of the study

1-Eliciting the consonant cluster complexity, according to the approaches of Arabic and English language,

2- Pinpointing the differences in the approaches of Arabic and English language for Arabic speakers to find difficult to learn to speak English.

1.3 Procedures

To achieve the aims of the study and to answer the questions, the following procedures are followed:

1. Selecting the data sources, counting the consonant sounds, taking from Oxford Dictionary.

2. The data selection is not random, but they are selected under investigation. Besides that, the information is matching the event that happened throughout the selected period. The data is selected according to the content and the date of publishing.

3. An eclectic model is adopted to be analyzed phonologically.

4. The overall design is a qualitative method.

1.4 Limits of the Study

This study is based on data selected throughout various consonants and vowels of the English and Arabic Language. As such, The study employs an eclectic model for the analysis which consists of Vennemann (1989) and Abdul-Rauf, (1977).

1.5 Significance of the Study

This study is hopefully supposed to be valuable for those interested in contrastive analysis of Phonological studies and applied linguistic studies. Such studies are supposed to develop our understanding of phonological analysis. Furthermore, it is supposed to reveal how the rules of phonology affect the speaker or writer's image of learning how to use English language correctly. **2.0Literature Review**

2.1 Consonant

When in speech the breath comes through the mouth with some rubbing or hissing or clicking or trilling or stoppage, done with the action of the tongue against, or nearly against, the linings or the teeth or the lips which make up the mouth passage, then this rubbing or stoppage is termed consonantal. These are consonants. The Latin term means con (" with ") son-ant (" sounding ") or "sounding with ", and was meant to indicate that most of these sounds can only be said or sounded together with vowels. (Vowels are the sounds or breaths in speech which come out more or less freely, with very

little stoppage or hindrance.) If you try to say p by itself, you stop up your mouth at the lips. Put the /i:/ sound with it and you can say it: " pea ". However, there are in fact consonant sounds which can be sounded continuously — we may hum /mmmmmmm/ or hiss/sssssss/.

2.2   Phonetic Alphabets

For sounds found only in standardized British or American speech, the symbols will be found only under the column allotted to the area concerned. Where phonetic symbols differ of (UK and USA). UK practice may be used and recognized in the USA, and vice versa. Many USA writers use IPA.

Most words in English contain at least one consonant, and some contain many more. For example, at and she each contain one consonant sound, play contains two, and spring contains four. (Remember that we're counting the consonant sounds, not the consonant letters.) But words don't have to have any consonants at all. For example, the words I, a, and oh have no consonant sounds—only vowels. Phonologists classify consonants by describing these three sets of categories:

a-Voicing, b- Place of articulation…. and c- Manner of articulation.

2.3   Consonant Cluster

The Oxford English Dictionary defines a cluster as 'a collection of things of the same kind, as fruits or flowers, growing closely together; a bunch', 'originally of grapes' [!]. The word is attested in the language as early as the year 800. It is assumed to be a -tro-derivate of the same root that we also have in clot, clout, and cleat, German Klotz and Kloß. In any event, a cluster consists of discrete elements, a consonant cluster of discrete consonantal elements. In traditional phonetics one learns that phonetic objects are continua. Hence a consonant cluster as a phonetic object would have to be a continuum, and that is what a cluster by definition is not. Philip Hoole (p.c.) has assured me that modern phonetics can show that a degree of segmentation already occurs at the articulatory level, rather than only on the mental articulatory retina (for which cf. Tillmann/Mansell 1980), and that within the so-called gestural framework[1] "gestures whose coordination is part of a word's lexical representation bear a close relationship to those conglomerates of gestures that constitute what is traditionally considered to be a 'segment' [2].

 (2) A consonant cluster is a cluster of marginal speech sounds (i.e., a cluster of speech sounds not interrupted by a nuclear speech sound).

With C for marginal speech sounds and V for nuclear speech sounds, and with $ (or a period, ".") for a syllable boundary, CC, C$^\$$C, CCC, C$^\$$CC, CC$^\$$C etc. are consonant clusters, CVC, CV$^\$$C, CVCC, CCVCC, CV$^\$$CC etc. are not.

(3) A head cluster is a consonant cluster entirely within a syllable head.

(4) A coda cluster is a consonant cluster entirely within a syllable coda.

(5) An intersyllabic cluster is a consonant cluster containing both coda and head speech   sounds. CC, CCC, C$CC etc. are intersyllabic clusters.

(6) A contact cluster is an intersyllabic cluster of cardinality two. C$C clusters within VC$CV, VCCCV, VCCCV, VCC$CCV etc. are contact clusters.

2.3.1 What is consonant cluster complexity?

Phonologists have gathered a lot of information on consonant clusters and their structural complexity, and have formulated a number of generalizations. These are well-founded, inasmuch as they find support in the observation of numerous language systems, in which always the less complex structures are favored over the more complex, in the sense that the occurrence of complex structures almost always implies the occurrence of the less complex ones on a given structural parameter. They also find support in the observation of language change, in which always the more complex structures are eliminated before the less complex ones on the same parameter of complexity (cf. Venne-mann 1989).

For example, if a language has consonant clusters of three, it also has consonant clusters of two, but not conversely. Or more generally, cf. (8):

2.4   Difference between Arabic and English

There are numerous differences in the approaches of Arabic and English language. Arabic letters are different from English Letters. They are written in a right-to-left direction, whereas English is written in a left-to-right direction. In the Arabic language, the adjectives come after the noun. In Arabic, there is no stress on words. All words and syllables are spoken in the same manner without any emphasis. Punctuation rules are very flexible in the Arabic language. There is no differentiation of upper case and lower case letters. There is also no sound elision in the Arabic language.

English and Arabic languages originate from two different families of languages. English orginates from the Germanic family, whereas Arabic originates from the Semitic family. The consonants in the English alphabet are twenty. However consonant phonemes in the English alphabet are twenty

four. The vowels in the English alphabets are six. However, vowel phonemes in the English language are twenty. In the Arabic languages, consonant phonemes are twenty eight, and vowels phonemes are eight. Hence, when we compare the English language with the Arabic language, we find that there are four more consonant phonemes and fourteen less vowel phonemes. Hence the Arabic languages is a consonant heavy language as compared to the English language.

2.5 ARABIC:

Alphabet Arabic has 28 consonants (English 24) and 8 vowels/diphthongs (English 22). Texts are read from right to left and written in a cursive script. No distinction is made between upper and lower case, and the rules for punctuation are much looser than in English. Unsurprisingly, these fundamental differences between the Arabic and English writing systems cause Arab learners significant problems. They usually need much more time to read or write than their English-learning peers from the Indo-European language families.

In (Bakalla, 1982), it was stated that the Arabic vowels are voiced and produced with no obstruction or constriction in the mouth. According to Ibn Jinni, who called the vowels ' ħuruuf ' madd wa ?istit ʕ alah are rendered as the sounds of lengthening and prolongation and may be short (ħarakaat) or long (ħuruuf madd).

It will necessarily come to an end at this point… the sounds (ħuruuf) which are produced with open stricture at the places of articulation are three; a, i, and u. However, a is more open (ʔ aw ṣ aa) and softer (ʕ aliyyan) than the others and for this reason it is auditory different from both i and u, and vice versa.

In Arabic, a long vowel can be heard with further prolongation in three cases; if it is followed by a glottal stop (hamza), if it followed by a geminate (ħarf mushaddad), and if it is paused upon for the purpose of recollection.

One of the basic distinctions in Arabic sounds is that between short and long vowels that it may make the difference between: singular and plural; as in colloquial: [djamal] (sg) and [djima:l] (pl.) camels, in formal: [musa:firun] (sg.) [musa:firu:n] (pl.) "traveler."

2.6 Summary of Aims, Problems' Statement and Hypothesis of the Study:

To Analyze the Cluster Consonants in English and Arabic and to minimize the difficulties faced by learners of both (English and Arabic) languages.

The research problem statement is to study the Cluster Consonants in English and Arabic. The problem in analyzing and presenting the Cluster Consonants can be seen in English and Arabic. The research is mainly focuses on the comparison of Cluster Consonants in two languages Arabic and English. The study needs to evaluate the consonants and vowels in English and Arabic. The similarity in the sounds of English and Arabic and difference will be analyzed and presented in the research. The native speakers of Arabic and English are straight in their language by comparing them we are going to evaluate the differences and similarities in it. The research procedures are as follows: The first stage of the research is about collecting the data from English and Arabic language books. The second stage is about the study of Cluster Consonants in English and Arabic. Then, the third stage of the research is analyzing the collected data. The analyzing includes the comparison of Cluster Consonants in English and Arabic. The research limits the analysis of Cluster Consonants of English and Arabic as it is a huge language.

2.7 Consonants of English And Arabic:

Based on the chapter 2 and 3 above, one can clearly say that there are eight plosives in Arabic [b, d, t, k, d, t, q] while there are six plosives in English [ph,b,t,k,d,g]. The English language lacks the equivalents of the Arabic emphatics [ظ,د, ط], the uvular [ق q] and the glottal stop [ء ?]. On the other hand, the Arabic language also lacks some equivalents of the English plosives [ph, g]. The result of such difference results in some difficulties for students and speakers. As we will see later on, the difficulties that faces Arab learners towards pronouncing vowels and consonants.

2.7.1 FRICATIVES:

The English language has nine fricatives in the labio-dental interdental, dento-alveolar and glottal areas i.e. most of its fricatives are in the front half of the vocal tract, while the Arabic language have thirteen ranging from the labio-dental to the glottal areas. In addition to that, it also has parts of uvular [خ x, ع ʕ] and pharyngeal fricatives [ح، ʕh] as well as two emphatic ones (Eid, 2006).

2.7.2 AFFRICATIVES:

There are two basic affricates in English a voiceless post-alveolar affricate [th] and a voiced post-alveolar affricate [d3] while Arabic has only one affricate, a voiced post-alveolar one [d3] (Hattami, 2010). However, some Arabic dialects, such as the Iraqi one, have [th] sound and this helps

Iraqi learners speak words containing such sound properly. (Andrzej & Rouag, 1993, Hattami, 2010).

2.7.3 APPROXIMANTS

There are three differences between the approximants of Arabic and English. First, English has the nasal sound [g] while it is not found in the Arabic language. Second, [r] in Arabic does not follow the approximants but the un-sustained or R-sound (Odisho, 2003b). Third, the English approximant [r] causes problems for Arab learners.

2.7.4 LATERALS

There is only one lateral sound in English while the Arabic language has two: non-emphatic one and emphatic one [L] (Andrzej & Rouag, 1993, Hattami, 2010).

2.7.5 FLAB

The phonemic system of English language does not have the so-called flap sound. However, the system of the Arabic language may be a source of substitutions for the English / r/'s. (Andrzej & Rouag, 1993, Hattami, 2010).

3. Consonantal Problems Arab Learners Face In Learning English:

Since each language has a sound system and regardless of the similarities between these languages, there, indeed, must be some differences which cause problems for learners of languages. Thus, once the Arab learners are willing to learn the English language, they may make unconscious mistakes resulting from either the interference of the two languages or unawareness of the sound systems of each language or the inexistence of certain sounds. (Hattami, 2010) A list of such problems is outlined below:

/p/ as stated earlier, English has the consonant aspirated sound /p/, and /b/, whereas there is only /b/ ---/ب/ in Arabic. In the result, Arab learners may not be able to differentiate between these two sounds and make mistakes when pronouncing them and replace /b/ in place of /p/. For instance, / picture/ ------ / bicture/.

/g/ the standard Arabic does not consider /g/ as a fixed sound in its sound system, but in some Arabic dialects, this sound is considered such as the Egyptian dialect. Mostly, all Arab learners of English face difficulty in differentiating between them, and they substitute the Arabic /k/ for the English /g/. For example, /game/ ------ / kame/.

/ tʃ/ this sound is not also existed in the sound system of standard Arabic. However, it can be found in some Arabic dialects such as the Iraqi dialect. The counter-consonant in standard Arabic is /k/. Arab learners of English

may have problems in the sound / tʃ/ and they may tend to simplify this sound to / ʃ/ .Consequently, this results in wrong pronunciation of / tʃ/. For example, chair---- shair.

 / ʒ / In some cases, the simplification of / dʒ / to / ʒ / is also found. Some Arabic dialects accept this sound such as Syrian and Lebanese ones. Speakers may simplify / dʒ / to / ʒ / such as / dʒ / ------ /ʒ /. / ŋ/ doesn't exist in Arabic at all, in English, it has a restriction on occurrence: it doesn't occur initially. It only occurs medially and finally. For example, "finger" and "sing".

3.1   Differences in Consonants English and Arabic:

Regarding the differences, let us first focus on some consonants which are present in Arabic but not in English.

1) /ħ/ : sharp /h/ like in the name 'Hasan' in Arabic

2) /x/ (kh) : pronounced from the front of the throat e.g. /xamr/ "wine"

3) / ẓ / : close to /ð/ but sharper e.g. / ẓ arf/ "container"

4) / ḍ / : close to / ẓ / but sharper e.g. / ḍ id/ "against"

5) /Ë/ (ain): Its place of articulation is lower than the consonant /ʔ/ in English. e.g. /Ëuj ū n/ "eyes"

6) /Ğ/ (ghain): the same as the /r/ in French words like "au revoir"

7) /q/ (ghaaf): simply like /Ğ/ but sharper e.g. /qalb/ "heart"

8) /ś/: very close to /s/ but sharper e.g. /śalb/ "tough"

Consonants which are absent in Arabic but present in English are to be learned by Arabic learners of English because not learning or reinterpreting them (giving them a new shape or distribution) will influence the native like accent negatively. This consonants are absent in modern standard and Khuzestani Arabic but present in English.

1)/p/: a bilabial consonant like /b/ in Arabic

2) /g/: a velar consonant close to/k/ in Arabic

3) /v/: a labio-dental consonant close to /f/ in Arabic

4) /Ž/: an alveo-palatal consonant close to /Ĵ/ in Arabic

5) /Č/: an alveo-palatal consonant close to /Ĵ/ in Arabic

6) /ř/: a retroflex alveolar consonant very close to/ř/ in Arabic

7) /t/: an alveolar consonant very close to the dental /t/ in Arabic

8) /k/: a velar consonant very close to the palatal/k/ in Arabic

9) /ŋ/: a velar consonant which is totally absent in Arabic

The absence of these sounds in one language and their presence in another language is problematic for learners. In Contrastive Analysis When

"an item in the native language is absent in the target language" (Brown, 2000) that is under differentiation. On the contrary," a new item entirely, bearing little if any similarity to the native language item, must be learned" (Brown, 2000) that is over differentiation.

3.2 Vowels in English and Arabic:

Vowels are described in terms of two phonetic parameters: vowel quality and vowel quantity. Quality refers to differences in the place of articulation of the vowel, including the position of the tongue in the vocal tract, the size of the stricture, the shape of lips, and whether the vowel is nasalized or not.

Quality differences are seen in the acoustic signal in different spectral patterns for different vowels. On the other hand, vowel quantity refers to the duration of the phonetic segment (i.e., the vowel) which is considered an intrinsic part of its phonemic identity. Simply put, the vowels are described as short vs. long. English and Arabic are languages with phonological contrasts based on vowel quality and quantity, respectively. English is a 12-vowel system that contrasts tense long vowels and lax short vowels whereas Arabic is a and Arabic are not only differentiated in terms of the size of their vowel systems but also in the phonetic qualities of the vowels. In studies that describe vowel systems, English is classified as a centripetal vowel system. This means that vowels have the tendency to move to the center of the vowel space.

Other languages, however, are described as a centrifugal vowel system where vowel at the periphery of the acoustic space. The Arabic vowel system falls in between centripetal and centrifugal patterns. These differences alone quality and quantity allow us to describe English and Arabic as languages that have notably distinct vowel systems.

There are a small number of recent phonetic studies of Arabic vowels (al-Ani 1970; Ghazeli 1979, Belkaid 1984; Abou Haidar 1994; Mitle.b 1984, Alghamdi 1998; Newman and Verhoeven 2002, Alotaibi & Hussain 2009).

In spite of providing a preliminary description of acoustic correlates of Arabic vowels, most of these studies have major flaws in methodology or design; thus, making them inappropriate for comparison purposes. For example, some studies include several Arabic dialectal variants (Iraqi, Sudanese, Saudi, etc.) or insufficient numbers of informants who belong to various linguistic backgrounds, grouped together and investigated in a single study (Ghazeli 1979, Abou Haidar 1994). It includes the author(s) name(s),

year the study was published, investigated Arabic dialect(s), and number of participants in each study.

Some Arabic speakers perform oddly on a range of experimental tasks which involve word discrimination. All these tasks involve discriminating words with identical consonant patterns, but differing in their vowels. Some Arabic speakers, it seems, are conspicuously inaccurate in handling vowels in English words, and are much more prone to make errors involving vowels than subjects of other L1 backgrounds.

One possible explanation for these effects is that Arabic speakers may transfer to English a set of psycholinguistic strategies that are more appropriately deployed in processing Arabic words. In Arabic, vowels are of secondary importance both in script and in word building, and the word recognition system depends heavily on the tri-consonantal roots which are the basis of most Arabic words. Word families in Arabic are made up of sets of words which all share a common set of three consonants, but vary in the way vowels are placed within this consonantal framework.

Thus, **katab** *he wrote*, **yiktib** *he writes*, **kaatib** *clerk*, **kitaab** *book*, **maktab** *office*, **maktaba** *library*, etc, are all variations on a single tri-consonantal theme, K-T-B (Mitchell 1962). Such a writing system works well with Semitic languages, but creates problems for readers when they start learning a language which follows different structural rules.

A system which encourages the reader to focus on the consonantal framework of a word does not allow sufficient discrimination between words when it is transferred to the lexical system of English, where consonants are not the only key signals for a reader. Thus r-d-r is an inadequate representation for 'reader', since this consonantal code is shared with several other unrelated words (*raider, rider, rudder, ardour, ordure, order, redraw,* etc...).

It was suggested that a substantial number of Arabic speaking learners of English may be using inappropriate word recognition strategies of this sort. Most Arabic learners will use a system of this sort in the early stages of learning English, although we do not have hard evidence to back this hunch up. Most learners, it seems, succeed in developing a word-handling system that is appropriate to English in the long run. However, a number of learners continue to have difficulties with English words, and continue to make confusions like "dismal numbers" for "decimal numbers". Indeed, some may never get past this problem (Ryan & Meara, 1996).

When teaching pronunciation to Arabic-speaking students, there is a difference in the comparative force of pronunciation of stressed and unstressed syllables in English and Arabic.

In English there is a great difference in force: unstressed syllables can be pronounced very weakly; stressed syllables can be fully pronounced. In Arabic this difference is not nearly so extreme; unstressed syllables can have full vowels and be pronounced fairly clearly.

Sentence stress in Arabic is similar to that in English. Content words are usually stressed, and function words are usually unstressed. However, function words in Arabic do not have two forms. Vowels in words in an unstressed position keep their "full" value, unlike vowels in unstressed words in English, which are reduced to "schwa." (Wahba, 1998).

4. Contrastive Study Between English And Arabic Consonants

4. 1 English consonants

"A consonant is formed when the air stream is restricted or stopped at same point between the vocal cords and the lips" (Todd: 1987:14).

The outward flow of breath is obstructed in various ways by the organs of speech in the production of English consonant sounds. Sometimes the flow of air is stopped completely. Sometimes the stoppage occurs only partially, so that friction occurs. Sometimes the airflow is forced over the sides of the tongue or made to pass through the nose. The most appropriate way of describing a consonant sound is in terms of place and manner of articulation.

4. 1.1 The place of articulation or point of articulation

When the air stream passes through the vocal tract, it is obstructed in some way. Therefore, the most important articulators that may cause obstruction are lips, teeth, vocal cords, and the hard palate (Ladefoged, 2001). When the air passes through the larynx, it comes up and out through the mouth or the nose. Most consonant sounds are produced by using the tongue and other parts of the mouth which determine the shape of the oral cavity, through which the air is passing. The terms used to describe many sounds are those which denote the place of articulation of the sound; that is, the location inside the mouth at which point the constriction takes place. The most common eight places of articulation will be presented below:

- Bilabial:

These sounds are formed by both the upper and lower lips when they come together. They are the initial sounds of "pie, buy, my" represented by the symbols /p/, /b/ and /m/. The /w/sound that is found in the beginning of

"way" is also bilabial.

- Labiodental:

These sounds are formed by the lower lip and the upper teeth; they are found in words like "friend, vie" when the lower lip rises until it nearly touches the upper teeth. These sounds are represented by the symbols /f/ and /v/.

- Dental:

Dental sounds are formed with the tongue tip behind the upper front teeth. These sounds are available in words like "there, thin" and they are represented by the symbols / ð / and/ θ /.

- Alveolar:

These sounds are formed as a result of having the front part of the tongue touching or pointing up to the alveolar ridge .They are the initial sounds in "top, dip, sit, zoo, nut". They are represented by the symbols /t/ /d/ /s/ /z/ /n/. Other alveolar sounds are /l/sound in the beginning of words like "lap" and /r/ sound at the beginning of "rip, right".

-Alveopalatal:

To produce these sounds the tongue touches the roof of the mouth behind the alveolar ridge near the hard palate. Examples involving such sounds are: "ship, child, measure, jeep". These are represented by the symbols /ʃ / ,/ tʃ /, /ʒ / and /dʒ / respectively.

- Velar:

Velars are the sounds produced using the back of the tongue and the soft palate .They are the sounds /k/, /g/ and /ŋ/. These occur at the end of "hack, hag, hang".

- Palatal:

The sound produced with the front of the tongue and the hard palate .We have only one English palatal sound which occurs at the beginning of the word "you". This sound is presented by the symbol /j/.

- Glottal:

One sound is produced when the glottis is open, but there is no manipulation of the air passing out through the mouth. The sound produced is presented by /h/, which is the first sound in "who" and "whose".

- Retroflex:

Ladefoged (2001:7) mentioned the sound that is produced with the tongue blade touching the alveolar ridge. It occurs initially in words such as "rye, row". If this sound is pronounced at the end of words by the same

speakers, we may also have retroflex sound like "air" .This sound is represented by the symbol /r/.

4. 1.2 The manner of articulation or degrees of occlusion

The manner of articulation refers to the way the airstream is configured during the production of consonant sounds. As we have just seen, sounds of English are distinguished by their place of articulation. However, we need to differentiate between some sounds which we have placed in the same category. For instance, the sounds /t/ and /s/ are both alveolar sounds. How do they differ? They differ in the way they are pronounced; that is, their manner of articulation, i.e. the manner of the air stream. There are different manners of articulation in English.

- Stop/plosive:

The consonants produced this way are called so because the air stream in the vocal tract is completely stopped at some point. The closure can be made by the two lips, producing the bilabial plosive /p/ and /b/. It can be made by the tongue pressing against the alveolar ridge, producing the alveolar plosive /t/ and /d/, and it can be made by the back of the tongue pressing the soft palate producing the velar plosives /k/and /g/.

- Fricative:

The sounds here are produced as a result of incomplete closure at some point in the mouth. This manner of articulation is used in producing a set of sounds which include the labiodental fricatives /f/ and /v/, the dental fricatives/θ/ and /ð/, the alveolar fricatives /s/ and /z/, the alveopalatal fricatives /ʃ / and /ʒ /, and the glottal fricative /h/.

- Affricate:

Affricates are a combination of sounds which start with complete closure then it is followed by a slow release of air with friction. It includes the alveopalatal affricates /tʃ / and /dʒ /.

- Nasal:

Unlike other consonants, Nasals have a complete closure of the mouth. The velum is lowered and air stream is allowed to flow out through the nose producing the bilabial nasal /m/, the alveolar nasal /n/ and the velar nasal /ŋ/.

- Lateral:

Laterals also involve partial closure in the mouth, that is, the air stream is blocked by the tip of the tongue but allowed to escape around the sides of the tongue. /l/ sound is alveolar lateral sound.

- Glides (semi-vowels):

These sounds are vowel-like because they are made without closure in the mouth. Gildings occur in the beginning of a word or syllable (Todd 1987). Semi- vowels are the palatal glide /j/ and the velar glide /w/.

In addition, the production of /r/ leads to an assumption that it is a semi-vowel.

	B	LD	D	A	AP	V	P	G	R
Stop	P, b			t, d		k, g			
Fricative		f, v	θ, ð	s, z	ʃ , ʒ			h	
Affricate					tʃ , dʒ				
Nasal	m			n		ŋ			
Lateral				l					
Glide						w	j		R

4. 2 Arabic Consonants

Arabic has twenty-eight letters and three notations; nominative, accusative and genitive cases. This gives thirty one sounds. Consonants are found to differ in their place and manner of articulation. The following points will cover the articulation system of the Arabic consonants in terms of the point of articulation and the state of the air stream, i.e. place and manner of articulation.

4.2.1 The place of articulation or point of articulation

The points that are responsible for producing sounds are called articulators and the sounds are related to them.

Therefore, points of articulation are formed by the movement of an active organ towards another constant organ (Masloh, 1980).

- Bilabial:

Bilabials are produced when the lips come together as in the initials of "baṭṭah بطّة , madrasah مدرَسة, wisam وسام" and they are represented by the symbols /b/ ب , /m/ م , and /w/ و .

- Labiodental:

In Arabic there is only one labiodental sound .This is formed with the upper teeth and the lower lip. The sound is available in the initial of "fina`a فناء " and this sound is represented by /f/ ف .

- Interdental:

These sounds are formed by the tongue between the upper and the

lower teeth .They are the initial sounds of "θawr ثور, ðalik ذلك, ðafạrْ ظَفَر ", and they are represented by the symbols /θ/ث, /ð/ ذ and/ ð̣/ظ.

- Alveolar:

These sounds are formed with the front part of the tongue on the alveolar ridge. Examples of the alveolar sounds are available in the words "rashid راشد, Laakin لكن, nour نور " and they are represented by the symbols /r/ ر, /L/ ل and/n/ ن.

- Dental:

They are sounds produced by the tongue tip behind the upper front teeth. They are initial of "ṭ alib طالب , tamshi تمشي, domiah دمية, ḍ abiṭ ظابط / , saif سيف, ṣ abir صابر , zahar زهر" and they are represented by the symbols /t/ ت, /z/ ز , /ṣ/ ص , /s/ س , /ḍ/ ض, /d/ د , /ṭ / ط.

- Palatal:

Palatals are sounds which are pronounced by the front of the tongue and hard palate. They are found in the words "shams - ش،yawm يومي, jamil جميـل" and they are represented by symbols /ʃ/ ش , /j/ي, and /ʒ/ ج.—

- Velar:

Sounds produced with the back of the tongue against the velum. Velars are found in the beginning of "xadim خـادم, g hali غـالي, kamalكامـل" and they are symbolized by /x/خ, / g/غ, and /k/ك.

Glottal:

They are the sounds produced when the glottis is open and there is no manipulation of the air passing out through the mouth.
The sounds appear in the words "hunaak كانـه , insaan نإنسا", and they are represented by the symbols /h/ and /ʔ/ ء.

- Pharyngeal:

Pharynx is involved in the production of pharyngeal sounds with the back of the tongue and the pharynx. They appear in the words "ʕ ddadaعدداد, ḥ addaad حداد"and they are represented by the symbols/ḥ /ح, and /ʕ/ع.

- Uvular:

There is only one Arabic consonant uvular, which is produced by the back of the tongue with the uvula. This sound occurs in the beginning of the word" qafila" and it is represented by the symbol /q/ ق.

Manner of articulation or the state of the air stream

Sounds in Arabic like the sounds of other natural languages are produced by the organs of speech, which we call place of articulation that give characteristics for every sound (Omar, 1981). However, we may face

some sounds which have the same point of articulation. Thus, we can differentiate between them by looking at the state of the air stream, that is, their manner of articulation. For more explanation, consider the manner of articulating the Arabic consonants below:

- Stop:

Arabic stop consonants are the result of a complete closure at some point in the mouth. The pressure builds up behind the closure, and then the air is suddenly released. /b/ب is a bilabial stop, /t/ ت, /ṭ / ط, /Ð/ د and /d/ض are dental stops, /q/ق is a uvular stop , /k/ك is a velar stop.

- Affricate:

If you combine a brief stopping of the air stream with an obstructed release, which causes some friction, the resulting sound will be the palatal affricate /ʒ/ ج.

- Fricative

Producing these sounds involves blocking the air stream and having the air pushed through the narrow opening. In Arabic we find the labiodental fricative /f/ف, the Interdental fricatives/θ/ث, /ð/ظ and/ð/ذ, the dental fricative /s/ س, /s/ص,/z/ ز ;the palatal fricative /x/ش, the velar fricatives /x/ خ, / g/غ, the pharyngeal fricative /h/, the glottal fricatives /h/ هـ, /h/ ء.

- Nasal:

Most Arabic consonants are produced orally with the velum raised. However, when the velum is lowered and the air stream is allowed to follow out through the nose, the resultant sound is called a nasal sound. Arabic nasal sounds are the bilabial nasal /m/م and the alveolar nasal /n/ن.

- Lateral:

/l/ ل sound is an alveolar lateral consonant in Arabic. It is made by the front of the tongue pressing against the center of the alveolar ridge without contact with the sides of the hard palate, so the air stream escapes freely on the sides of the tongue.

- Trill:

It involves intermittent closure. This sounds can be produced by tapping the tongue repeatedly against appoint of contact. In Arabic we have the alveolar trill/r/ ر .

- Glide:

Glides are made without closure in the mouth. In Arabic, we have two glides; the bilabial /w/و, and the palatal glide /j/ي .

	B	LD	I	A	D	P	V	G	Ph	U
Stop	ب(B)				ض،د،ط (d,ht) ،ت t (t)		ك (K)		ع ʕ	ق (Q)
Affricate						ج				
Fricative		ف f	ظ.th ذ،ث		(s.z) ز،ص،س s	شّ	خ/x ،غ ḡ	ه،ء	ح ḥ	
Nasal	م m			ن n						
Lateral				ل l						
Trill				ر r						
Glide	و w					ي j				

4. 3 English and Arabic Sounds Contrasted

After describing the English and Arabic consonants in terms of their place and manner of articulation, it is evident that there are a number of differences between the sounds of the two languages. English has some sounds which are not available in Arabic, similarly, Arabic has a number of sounds that have no existence in English.

One of these differences is in the production of some consonants:

-/p/ does not occur in Arabic as a phoneme except in some loan or foreign words. Arab learners usually have difficulty with English contrasts such as /pæn/ pan and /bæn/ ban; /kæp/cap and /kæb/ kab.

-/t/ and /d/ are dental in Arabic but alveolar in English. This difference is usually unnoticed by Arab learners of English, but it does not interfere with intelligibility.

-/v/ also does not occur in Arabic. Arab learners may have difficulty with English contrasts such as /væn/ van and /fæn/ fan.

-/ θ / and /ð/ do not usually occur in dialectal Arabic but they occur in standard Arabic. Instead /s/and /z/ are used respectively. A common error is that some Arab learners of English use /s/ and /z/ for the English / θ / and /ð/. Therefore, English consonants such as /pa: θ /path and /pa: s/ pass; /briið/ breathe and /briiz/ breeze are troublesome. Very often Arab learners make the same mistake when they learn standard Arabic. Therefore, the occurrence of /ð/ and / θ / in standard Arabic and in English but not in dialectal Arabic

causes a problem when pronouncing words with these two sounds.

There are some consonants that do not occur in standard Arabic. Such as / ʒ /, / ʧ / and / ŋ/. Standard Arabic and some other dialects use /d ʒ / instead of /ʒ / and some other dialects (e.g. Egyptian) use /g/. The choice of one form or another depends on the kind of dialect used. This causes some difficulty in the production of the English /ʒ / which is often replaced by /dʒ /. Because the contrast between /dʒ / and /ʒ / in Arabic does not affect meaning (i.e. not phonemic), either one or the other is used by Arab learners in pronouncing English words having these two sounds. Usually /dʒ / is wrongly used for /ʒ /. For example, words such as (occasion), (measure) and (explosion) are pronounced */ əkeid ʒ ən/,*/medə ʒ / and */iksplou ʒ in/ instead of /əkei ʒ n/, /me ʒ ə/ and /iksplou ʒ ən/.

Moreover, / ʃ / and/ ʧ / cause more problems as they are often confused especially in initial position. / ʃ / is wrongly used for / ʧ /. For example (cheap) and (sheep) are pronounced */ ʃ ip/ instead of / ʃ ip/ for the first and / ʃ ip/ for the second.

Also / ŋ / does not occur in Arabic but it occurs as an allophone of /n/ before stop consonants such as /sin/ sin and /siŋ/ sing; /sinə/ sinner and /siŋə/ singer; /ræn/ ran and /ræŋ/ rang. The clear and dark realizations of the sound /l/ occur in both English and Arabic but the dark / ɫ / is restricted in Arabic to such words as /ə ɫ ɫ a:h/. Therefore, a common mistake by Arab learners in pronouncing the lateral approximant /l/ is the excessive use of the clear /l/ in Arabic which is used in all positions: initial, medial and final, whereas in English the clear /l/ is used in initial and medial positions, and the dark / ɫ / is used in final positions and after consonants.

On the other hand, the sound /r/ is entirely different in the two languages. Arabic /r/ is a tongue tip trill, whereas English /r/ is a back alveolar. The initial problem is that Arab learners replace the Arabic /r/ for the English one.

Secondly, English /r/ is replaced by a schwa /ə/ in final positions, e.g. /riidə/ reader but Arab learners tend to use /r/ in all cases, e.g. /riidər/reader.

Another difference between English and Arabic is consonant cluster. Consonant cluster is a group of consonants coming together without a vowel sound between them such as spin, skin, and steam. In English two, and three, four or even more consonants can follow each other to form consonant sequences or clusters, for example:

Two consonants: sphere, sleep, cuts, dogs.

Three consonants: street, risked, plunged, fix this.

Five consonants: mixed sweets.

Six consonants: first stream.

Seven consonants: tempts strangers.

Consonant clusters may come at initial or final positions in English words. The following are the commonest cases:

1. Two consonants at the beginning of words:

/s/ followed by /p, t, k, f, m, n, l, w, j/ as in spare, steam, sky, sphere, smile, sneer, slow, swear and suit.

/p/ followed by /r, w, j/ as in trim, twin tune.

/k/ followed by /l, r, w, j/ as in clip, crime, queen, queue. /b/ followed by /l, r, j/ as in blame, bright, beautiful.

/d/ followed by /r, w, j/ as in dry, dwell, duty. /g/ followed by /l, r/ as in glare, gross.

/f/ followed by /l, r, j/ as in flare, frame, few.

/ θ / followed by /r, w/ as in three, thwart.

/ ∫ / followed by /r/ as in shrink.

/v, m, n, h/ followed by /j/ as in view, mute, news, huge.

2. Three consonants at the beginning of words:

/spr/ as in spray, spread, spring.

/str/ as in straggle, straw, stress, strict.

/skr/ as in scream, screen, screw, script.

/stj/ as in student, stupid.

/skj/ as in skew, (this sequence is rare in English).

/spl/ as in splash, splendid, split. /skw/ as in squad, square, squash, squeezes.

3. Two or more consonants at the end of the word:

a. /s/ and /z/ at the end of nouns to form the plural as in facts, fields, books, dogs.

b. /s/ and /z/ at the end of verbs in the third person in the present tense: eats, gives, risks, yields.

c. /t/ and /d/ at the end of verbs in the past tense: as in wished, raised, risked, plunged.

d. / θ / at the end of nouns and numbers: as in width, strength, seventh.

f. / θ / followed by /s/ at the end of plural nouns and numerals as in breadths, sevenths.

4. Three or more consonants at word boundaries as in Best man, long skirt.

5. /n/ and /l/ are sometimes syllabic; that is, each of them occupies the place at the centre of the syllable which is usually occupied by a vowel. In this way, they create a consonant cluster. For example lesson is pronounced /lesən/ with a vowel /ə/ between /s / and /n/, or /lesn/ without a vowel. /n/ means /that /n/ is syllabic. Similarly, the word level is pronounced /level/ with a vowel or /levl/ without a vowel. In this case, /l/ is syllabic.

The previous examples show how consonant clusters are available in English. They can occur at the beginning, medial, or at the end of word. However, this possibility is not available in Arabic, as consonants clusters in Arabic and English differ greatly.

As mentioned above, in English, two, three four or even more consonants can follow each other to form a cluster unit, e.g. sphere, street, next Sunday, etc., whereas in many forms of Arabic, there are no sequences of three or more consonants. The following table summarizes English and Arabic consonant clusters or sequences (c= consonants):

	initial	Medial	final
English	c	C	c
	cc	Cc	cc
	ccc	Ccc	ccc
	-	Cccc	cccc
Arabic	c	C	c
	-	Cc	cc

As seen in this table, Arabic has no sequence of more than two consonants, which occur in medial and final positions but not in an initial position. English, on the other hand, has sequences of two or even more consonant clusters in all three positions. Furthermore, in connected speech the sequence may be even longer where one word may end with a consonant sequence and the next word with another.

As a result, we can have sequences like /bæŋks klouzd/ banks closed. This causes problems to Arab learners who often follow Arabic patterns of speech and add a vowel, which is called an intrusive vowel to break the consonant cluster.

For example:

/sprIŋ/ spring becomes */sIprIŋ/

/grændfa: ðə/ grandfather becomes /grændIfa:ðə/ /bə: nt/ burnt becomes */bə:rnIt/ or /bernIt/

The first example shows an intrusive vowel at an initial position, the second example at a medial position, and the third example at a final position.

A similar breaking of the consonant cluster is found with the simple past tense of verbs ending in a voiceless consonant such as /wišt/ wished, /dropt/ dropped and /pa:st/ passed.

These and similar verbs are often pronounced by Arab learners as * /wišt/, * /droped/ and */pa: sed/ respectively.

The other difference between English and Arabic is represented in gemination. In Arabic a consonant may be doubled. This doubling of consonantal sounds in Arabic is accompanied by greater muscular tension. For example, the word ?ad l which means "yes, indeed!" , or "certainly" or "appointed date" is pronounced with one /d / sound.

However the word ağ ğ alaa, which means "postponed" is pronounced with two /ğ / sounds rather than one. This process is called gemination or consonant doubling. In English, there is no such doubling or gemination of consonant sounds, but in writing English; however, many letters are doubled, for example, allow, attack, beginning. Although such letters are doubled in writing, they are not geminated or doubled in pronunciation.

Because of these facts, i.e. gemination in Arabic pronunciation and doubling of letters in English orthography, Arabic learners of English tend to wrongly lengthen some English consonants.

For example:

  /ğ u:ləri/ jewelry becomes /ğ u:lləri/

  /əlau/ allow becomes /əllau/

  / Ətæk/ attack becomes /əttæk/

So, Arab learners face some difficulty in pronouncing these words. The differences between English and Arabic in consonants and consonant clusters along with the traditional methods of teaching are assumed to be the cause of various errors students of both languages commit.

Conclusion

The study has evaluated the consonants and vowels in English and Arabic. The similarity in the sounds of English and Arabic and differences are also analyzed and presented in the research. The native speakers of Arabic and English are straight in their language by comparing them we are going to evaluate the differences and similarities in it. The research concludes that, there are eight plosives in Arabic [b,d,t,k,d,t,q, ?] while there are six plosives in English [ph,b,t,k,d,g]. The English language lacks the equivalents of the Arabic emphatics [d ظ, t ط], the uvular [q ق] and the glottal stop. On the other hand, the Arabic language also lacks some equivalents of the English plosives [ph, g]. The result of such difference results in some difficulties for students and speakers. As we saw, the difficulties that faces Arab learners towards pronouncing vowels and consonants. The IPA table in chapter4 summarizes the difference between Arabic and English plosives with IPA symbols.

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Sentence stress in Arabic is similar to that in English. Content words are usually stressed, and function words are usually unstressed. However, function words in Arabic do not have two forms. As a researcher, it is found out that the sounds of standard and colloquial Arabic are almost available in most world languages sounds.

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تحليل تقابلي للإدراك الصوتي لمجموعة الحروف الساكنة في اللغتين الإنجليزية والعربية

جميله مال اللّه منسي
الجامعة المستنصرية / كلية التربية الاساسية

المستخلص

الادراك الصوتي للمجموعات الساكنة يمثل تحديا للدراسات حول الكلام انتاج الانكليزية والعربية لهجتان التي تختلف بشكل كبير في نطلق المقطع تصاميم الهيكل التي يستفيدون منها، ان الاستنتاج الفوري لهذا هو التميز في الدرجة التي تلخص بها كل لغة الحروف الساكنة مجموعة وكقاعدة عامة ، اللغة العربية هي لغة فقيرة في المجموعة عند مقارنتها باللغة الانكليزية ، لذلك مقاومة لا تصدق عند اللغة الانكليزية توقع حالة اللغة الموضوعية ل المتحدثين المحليين باللغة العربية، مسالة الساكنة والحق ان المجموعات هي منطقة تستحق ذلك الامتحان أي نقطة المقارنة العربية وتهدف التحقيقات الانكليزية

الكلمات المفتاحية : التحليل المقارن المعرفة الصوتية والمقاطع الصحيحة
بحث مستل من رسالة الماجستير