

A Phonological Study of English and Arabic Assimilation :

A Contrastive Study

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Abstract

Assimilation is defined ,by many phoneticians like Schane ,Roach ,and many others, as a phonological process when there is a change of one sound into another because of neighboring sounds.This study investigates the phoneme assimilation as a phonological process in English and Arabic and it is concerned specifically with the differences and similarities in both languages. Actually ,this study reflects the different terms which are used in Arabic to refer to this phenomenon and in this way it shows whether the term 'assimilation ' can have the same meaning of 'idgham' in Arabic or not . Besides, in Arabic , this phenomenon is discussed from the point of view of the modern and classical Arab linguists especially Sibawayh's indication to this natural process in classical Arabic and different views of the tajweed scholars and Qura'an reciters are involved in the discussion where detailed examples are taken mostly from the Qura'an . However ,it is found that kinds of assimilation in Arabic are more varied than in English and the researcher tries to state the major and minor ones briefly. It is hoped that this study can contribute to a better understanding of this phenomenon in both languages .

دراسة صوتية للإدغام باللغة الانكليزية والعربية:دراسة مقارنة

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الملخص

عرّف العديد من علماء الصوت مثل Shane,Roach وآخرون الإدغام بأنه عملية صوتية عندما يكون هناك تغيير من صوت واحد إلى آخر بسبب الأصوات المجاورة. تبحث هذه الدراسة إدغام الفونيم على انه عملية صوتية باللغة الانكليزية والعربية وتهتم الدراسة بشكل خاص بأوجه الاختلاف والشبه في كلتا اللغتين. في الواقع, تعكس هذه الدراسة المصطلحات المختلفة المستخدمة في اللغة العربية للإشارة إلى هذه الظاهرة وبهذه الطريقة تبين فيما إذا كان مصطلح الإدغام له نفس معنى الإدغام باللغة العربية أم لا. إضافة إلى ذلك, نُوقشت هذه الظاهرة في اللغة العربية من وجهة نظر علماء اللغة العربية المحدثين والقدامى وخاصة إشارة سيويوه إلى هذه العملية الطبيعية في اللغة العربية القديمة وتضمنت وجهات النظر المختلفة من علماء التجويد وقراء القرآن والتي احتوت على أمثلة تفصيلية أُخذت في الغالب من القرآن. على أية حال, وجد بان أنواع الإدغام في اللغة العربية أكثر تنوعا من اللغة الانكليزية وحاولت الباحثة أن تذكر الأنواع الرئيسية والثانوية بإيجاز. ومن المؤمل أن تسهم هذه الدراسة إلى فهم أفضل لهذا الظاهرة في كلتا اللغتين.

1. Introduction

It is a fact that the realization of any speech sound differs according to the context in which it is found and attention should be focused on the influences contiguous speech sounds exert upon each other. Assimilation is one of the commonest types of sound change in which two sounds occur close together in speech become more alike . This process needs the effort of all the movements of the speech organs to make the sounds more similar and reduce the amount of movement and effort required (Trask,1996:53;Crystal,2003:138)

1.1 Assimilation in English

Assimilation varies in extent according to speaking rate and style in which it is commonly to be found in rapid , casual speech but it is less found in slow, careful speech. Broadly speaking ,in any assimilatory processes any segment takes on features from a neighboring segment and the consonant may pick up features from a vowel ,a vowel may take on features of a consonant , and one consonant may

influence another ,or one vowel may have an effect on another (Schane,1973:49). Roach (2000:53) defines assimilation as "a process in which the phoneme can be realized differently because of being near some other phoneme belonging to a neighboring word".

Moreover, Lass(1984:171) indicates that the standard assimilation taxonomy includes direction and the assimilating influence may work either to the right or the left. Hence, the direction of the assimilating process can be either progressive or regressive .The progressive assimilation which is also called perseverative assimilation moves from left to right or forward ,i.e, sound affects the following sound as in the word 'dogs' .Here, the voiceless /s/ is changed to voiced /z/ due to the influence of the preceding sound /g/ which is a voiced one.The second direction of the assimilation process is called regressive and it is called also anticipatory assimilation which moves from right to left or backward , i.e , the sound affects the preceding sound like the bilabial /m/ is realized as labiodental nasal / mŋ / in the word like 'comfort' under the influence of the following labiodental fricative /f/ (Gimson,1970:290 ; Crystal ,2003 :247) . Progressive and regressive assimilation can be operated in both directions at the same time and then it is called the mutual or reciprocal assimilation. Sometimes, it is called double assimilation for example in the phrase 'don't you' /dəunt ju/ is pronounced as /dəuntʃu/ when the plosive /t/ and the semi-vowel /j/ are fused to form the affricate / tʃ / (Trask,1996:55; Deshpande et al. , 2007: 43 ; Malmberg , 1963 : 61).

Broadly speaking , Jones (1972:217) mentions two chief kinds of assimilation : historical and contextual assimilation .

- A) Historical assimilation refers to the assimilation which has taken place in the course of development of a language , and by which a word which was once pronounced in a certain way came to be pronounced subsequently in another way like the change of /m/ to /n/ which has taken place in the word 'ant' / ænt/ . In the thirteenth and fourteenth centuries this word was written 'amete' and 'amte' and it is pronounced / æmætə/ and later /æmtə/ and /æmt/ .Thus, the spelling with /n/ instead of /m/ first appeared in the fifteenth century which clearly indicating the change to the modern pronunciation /ænt/.
- B) Contextual Assimilation :refers to assimilation which is occasioned when words are juxtaposed in a sentence ,or in the formation of compounds and by which a word comes to have a pronunciation different from that which it has when said by itself ,e.g, the change of /s/ to / ʃ / in 'horse shoe' to become /ho:ʃ ju:/ (Ibid.).

1.1.1 Phonemic Variations

One can say , in describing an utterance in terms of a sequence of phonemes that adjacent sounds in words , or at word boundaries can influence each other and any valid description should take into consideration their tendencies and describe fully the variations that merge and their qualities.Thus, the assimilation phonemes include fortis/ lenis ,place of articulation and manner of articulation.

1)Fortis / Lenis (voice) Variations :when the word ends with lenis (voiced) fricative followed by a word initial Fortis (voiceless) consonant , speakers pronounce the lenis fricative as a fortis fricative and here we have a regressive assimilation ,e.g :

with thanks /wið θæŋks/ / wiθ θ æŋks/ (Roach,2000:139)

An example of progressive assimilation is the plural phoneme in 'cats' and 'bags' which is realized as /s/ or /z/ depending on the nature of the preceding sound ,thus,it is a voiceless fortis fricative when the preceding sound is voiceless and it is voiced lenis fricative when the preceding sound is voiced (Schane,1973:50).

In this respect, Jones(1972:217) states that both contextual and historical assimilation can happen . An example of the first one is when the sound /d/ in the word 'width' is replaced by /t/ under the influence of / θ / whereas the word in contextual assimilation is reduced to /z/ when preceded by a voiced sound other than /z/ or / ʒ / .Examples are given respectively :

Width /widθ / → /witθ / , Who is there ? /hu: iz ðeə/ → /hu: z ðeə/

2)Variations of Place of articulation :The assimilation of this kind is usually found in regressive or reciprocal assimilation which includes such changes that affect the final alveolar consonants when they are at the end of the word.

A)Regressive Assimilation

1)/p/ replaces /t/ before /p,b,m/ ,e.g :right place ,right man, right book

2)/b/ replaces /d/ before /p,b,m/ ,e.g: good people ,good boy ,good men

3)/m/ replaces /n/ before /p,b,m/ ,e.g: one minute, one bag ,one picture

4)/k/ replaces /t/ before /k,g/ ,e.g: right coat ,right girl

5)/g/ replaces /d/ before /k,g/ ,e.g: good game ,bad king

6)/ŋ/ replaces /n/ before /k,g/ ,e.g: one car ,one girl

7)/ ʃ / replaces /s/ before / ʃ ,j / ,e.g: this shirt ,this year

8)/ ʒ / replaces /z/ before / ʃ ,j / ,e.g: these shirts , these years

9)/mp/ replaces /nt/ before /p,b,m/ ,e.g: don't be angry ,don't miss it

10) /mb/ replaces /nd/ before /p,b,m/,e.g:stand by ,stand back

11)/ŋk/ replaces /nt/ before /k,g/ ,e.g: I don't care ,don't go

12)/ŋg/ replaces /nd/ before /k,g/ ,e.g: stand guard

(Roach ,2000:139 ; Gimson ,1970:294)

B) Reciprocal Assimilation :Crystal (2003:247) uses the term 'coalescence ' and it happens when alveolar consonants /t,d,s,z/ are followed by /j/ ,this may produce sounds which are completely different from the original sound ,e.g:

1)/t+j/ may be replaced by / tʃ / ,e.g : don't you?

2)/d+j/ may be replaced by / dʒ / ,e.g: did you?

3)/s+j/ may be replaced by / ʃ / ,e.g: of course you need it.

4)/z+j/ may be replaced by / ʒ / ,e.g:Has your friend arrived?
(Gimson,lbid.)

Further,Jones(1972:222) states that the reciprocal assimilation as it is shown in the above examples is a kind which belongs to the historical assimilation .

3) Assimilation of manner of articulation :It can be found only in rapid and casual speech. The regressive assimilation can be happened and the usual change in manner is most likely to be towards an 'easier' consonant ,i.e, one which makes less obstruction to the air flow ,e.g: That side /ðæt said/ → / ðæs said/

4) nasality: nasalization of the sounds is mainly concerned with the alveolars especially adjacent to the negative 'n't' and is very common in the rapid speech, e.g:

/d/ → /n/ 'he would't do it' / /hi wunn (t) du: it/,

'good news' /gun nju:z/

(Gimson,1970:297)

The progressive assimilation of manner of articulation can be seen when a word –initial /ð/ follows a plosive or nasal at the end of a preceding word. It is very common to find that the initial consonant becomes identical in manner of articulation to the final consonant but with dental place of articulation ,e.g: read these / ri:d ði:z/ → /ri:d di:z/ (Roach ,2000:140)

Jones(1972:221-224)and Schane (1973:52) mention three kinds of vowel assimilation .These can operate for both historical and contextual assimilation and they can be summarized as follows:

1) a vowel is affected by another vowel :An example of historical assimilation as in the word 'men' which is derived from an earlier /maniz/. Here ,/a/ was replaced by /e/ under the influence of /i/. Contextual assimilation can occur when the usage of /i/ in the ordinary pronunciation of 'we are ' /wiə/. Here, /i:/ is replaced by /i/ under the influence of /ə /. Gimson (1970:68) mentions that this case is called "vowel harmony and it can be found in English like in words 'mice' and 'swan' and it is often called "internal combinative ". The word 'mice ' contains the vowel /ai/ which results from an earlier /i:/ by means of an isolative change but this /i:/ sound in /mi:s/ changed as a result of a combinative process of vowel harmony or 'i-mutation '. But the more recent change of this type is exemplified by the word 'swan' . This word was pronounced as /swan/ or /swæn/ in about 1600 but the /w/ sound has rounded and retracted the vowel to give the modern form /swɒn/. Thus, we can see that there are many words which include the sequences /w+/a/ and they are pronounced as /w/ + / ɒ/ or /o:/ because of this combinative change affecting this particular sound sequence, e.g (want, quality, war, water, etc.).

2) The vowels are modified by the adjacent consonants .Historical assimilation can be found in the word 'children' / ʧɪldrən/ → / ʧʊldrən/ in which /i/ has replaced /u/ under the influence of the following dark [ɪ] . Contextual assimilation is not common and it can be found in the replacement of /ə / by /u/ under the influence of a following /j/ or /w/ ,e.g, What are you doing /wɒt i ju duiŋ/ is pronounced instead of the normal /wɒt ə ju duiŋ/

3) The consonant is modified by the adjacent vowel . Features of a vowel may be extended onto a consonant as secondary modifications . Palatalization and labialization are common processes of this type .In palatalization ,the tongue position of a front vowel is superimposed on an adjacent consonant .In labialization ,the lip position of a rounded vowel induces a secondary articulation onto the consonant. In English, the alterations exemplified in 'electric' , 'electricity' ,and analogy reflect a historical palatalization followed by a shift in place of articulation (Schane, ibid.). Another influence can be found In English /l/ pronounced with a relatively front vowel resonance, before vowels and /j/ and it is called clear [l], e.g. light /lait/ and there is dark [l] which is pronounced with a relatively back vowel resonance, finally and before a consonant, e.g. all /o:/ .There are two pronunciation of the /l/ in Arabic :clear [l] and dark [l] Gimson (1980:178).

Finally, assimilation can be seen as total or partial . Total or complete assimilation refers to the sound undergoing assimilation has become identical to the influencing sound ,e.g, the phrase 'that place ' /ðæt pleis/ is pronounced as /ðæp pleis/. Here, the alveolar /t/ becomes identical with bilabial /p/ under the influence of the following sound (Ladefoged , 2006 :109) . But most assimilations are partial assimilations in which the assimilated sound becomes only more similar , but not identical , to the

influencing sound. Partial assimilation can also refer to another assimilation which is called contact assimilation in which the two sounds involved are directly adjacent. For example, the phrase 'ten pikes' is pronounced as /tembaiks/ instead of /ten baiks/ in colloquial speech. Here, the alveolar sound /n/ is changed to /m/ which is a bilabial sound under the influence of /b/ which is also a bilabial sound (Deshpande et al.,2007:43 ; Trask ,1996:55)

1.1.2 Dissimilation and Differentiation

It is important to state one major reason behind using the assimilation is that it tends to reduce the differences between phonemes as much as possible .It is clear that if this tendency can act freely ,it can reduce to zero the distinctions between phonemes which are necessary for comprehension and presuppose phonetic differences. But if the effects of assimilation threaten important distinctions so the language reacts in such a way as to reestablish the indispensable differences of the phonemes (Malmberg,1963 : 63) .Hence, dissimilation is the apposition process of assimilation when one or more one of the sounds of one phoneme become unlike or dissimilar to those of another morpheme wherever they are combined (Deshpande et al. , 2007 : 43 ; Trask , 1996: 55) . In this respect , Malmberg (ibid.) defines dissimilation as "a phonetic change which results in a sharpening of the differences between two phonemes " whereas differentiation is defined as "two phonemes that are in contact and are separated by others ".Thus , assimilation may also be categorized to whether the segments involved are in contact or distant assimilation .Trask (1996:53) defines the contact assimilation as two sounds involved which are directly adjacent and distant assimilation as sounds which are separated by other sounds ,i.e , in which either progressively or regressively the influence moves across some intervening segment(s) (Lass,1984:171).Sometimes , dissimilation serves to avoid an annoying repetition of two identical phoneme .the English 'heaven' is the result of a change of /m/ to /v/ because of the final nasal (Malmberg ,1963:63).

1.2 Assimilation in Arabic

The sounds of any language are influenced when they are adjacent to each other in a single word or two words because the speech of any language accords with phonetic harmony .Hence, wherever there are two sounds in one word or two words and they have ,for example, the same place of articulation ,the first sound can affect the second sound and vice versa .It is a process which occurs when the first sound connects with the more alike sound without intervening any vowel between them so that the tongue is raised once time to reduce the muscular effort of the speaker to make the articulation easy since the speaker feels a difficulty in raising the tongue to repeat the same movement in producing the two similar sounds (الموسوي ,137:2007) .In this regard , أنيس (145:1975) indicates that the influence rate is different from one sound to another and there are some of the sounds which are quickly influenced by other sounds more than others in connected speech . The adjacency between the sounds is the major reason behind occurring the assimilation . Additionally, assimilation is called and defined differently in Arabic .Sibawayh has used the term (Al-Mumathala) (المماثلة) whereas those who are coming after him have used the terms (mudharaa) (المضارعة) and (approximation) (التقريب) .Seebawayah states that (Al-Mumathala) (المماثلة) happens when the sounds are influenced by each other and the assimilation (الادغام) occurs when this influence will be utmost between the adjacent sounds (ibid . :164) . likewise , الصبيغ (280:1998) uses the term (Al-Mumathala) which refers to a transformation of the different phonemes into similar ones either partially or completely and it may include many kinds of effects between sounds like small assimilation ,big assimilation ,deviation ,substitution ,manifestation and etc. . عبد الجليل (283:1998) indicates that Brosnahan defines assimilation as "the quality modifications of the sound when it is adjacent to other sounds " . Assimilation is a phonetic phenomenon in speech and its function is to approximate between the two similar or homogeneous sounds in their pronunciation (درار ,186:2007) .العطية (70:1983) adds that these sounds are assimilated according to their agreement in the place of articulation and other features like manner of articulation ,voice ,etc.. Finally,one important thing should be mentioned which is that the assimilation process is regarded as one form of doubling (التضعيف) because in the word(مَدَّ) ,the two similar sounds are pronounced as one geminated sound which

is the sound /d/ and the tongue is raised once time .For this reason ,Ibn Jini defines assimilation as the sound approaches to another in order to be close to it and this means that the articulation of the repeated sound is produced one time and the air is trapped for a longer time than usual to reduce the muscular effort of the speaker. (Ibid.)

1.2.1 Kinds of Assimilation

Generally speaking , الموسوي (139:2007), أنيس (145:1975), الصيغ (240:1998), العظيمة (83:1983), and درار (186:2007) mention that traditionalists classify assimilation , depending on the adjacent sounds and according to the quran reciters , into two kinds :

1.big assimilation occurs when the first sound of the two assimilated sounds is a movent whether the two sounds are similar ,homogeneous ,or approximate ,i.e , there is a short leen sound that separates between the two sounds .For example , when the feminine /t/ assimilated with the sound /s/ or /dh/ and the sound /r/ assimilates with the sound /l/ as in the following quranic verses :

(هُنَّ أَطْعَمَ لِهِنَّ) (العَادِيَاتُ ضَرْبًا) or (وَعَمَلُوا الصَّالِحَاتِ سَرَدْنًا لَهُمْ)

2.small assimilation happens when the first sound is a quiescent (with sukoon). الصيغ (242:1998) mentions that this assimilation refers to the approximation of one sound to another in which the first deviates to bending to become like the other sound .It occurs with many cases like:

- 1.(deviation) (الأمالة) 2.in the verbs whose template are /ʔftaala/ (افتعل) when the second sound is / ʂ, ʦ, ʒ, ɖ /
- 3.in the verbs whose template are /ʔftaala/ in which the second sound is / z , d , ɖ /
- 4.when the sound /s/ is followed by one of the (AL-Astaalaʔ sounds or velarized sounds) (حروف الأستعلاء أو الاطباق)
5. the approximation of one sound to another when they occur with pharyngeal sounds.

Thus, the small assimilation means the harmony between the two sounds either it occurs in one word or two words and it is very necessary to facilitate the process of articulation .Generally,these sounds will be very close in the point of articulation or other features especially when there is a change in the weak sound to the strong one .

Broadly speaking, assimilation can be classified into complete and partial assimilation . The complete assimilation occurs between the two similar sounds which have participating features like in the following example: ربطت → ربطت

Here,the sound /t/ is influenced by the velarized sound / ʦ / that comes before it and it is changed to the geminated sound / ʦ / ,whereas the partial assimilation occurs between the two close or approximate sounds like in the words : فحصط → فحصت

فزد → فزت

Here,the sound /t/ is influenced by the preceding sound which is the velarized sound / ʂ / and the voiced sound /z/ in which they have been changed to the velarized sound / ʂ / and the voiced sound /d/ respectively(الشايب,192:2004)

Moreover,assimilation can occur between

1. the consonants
- 2.the consonants and vowels
- 3.the vowels

1)Assimilation of the Consonants

(244:1998) الصيغ (أنيس, (145:1975) الموسوي, (139:2007) , and درار (186:2007) mention that modernists classify assimilation of the consonants into three kinds regarding the direction of the assimilation process:

1. regressive assimilation : it means the first sound affects the second sound. Ibn Jini called this assimilation as a small assimilation ,for example ,the changing of the second sound if it is /w/ into the sound /t/ (ت) in the verbs whose template is /ʔfta'ala/ as in : يتطهر ← يطهر ← , اتعد من وعد
يتناقل ← يناقل ← , اناقل , اطهر

as in the following quranic verses :

(وما يُدريك لعله يزكى أو يذكر فتتفعه الذكرى) , (يأيتها الذين آمنوا ما لكم إذا قيل لكم أنفروا في سبيل الله أنافلتُمْ إلى الأرض)

2. progressive assimilation :it means the second sound affects the first one .

(الصيغ , 244:1998)

The first kind is more commonly found in Arabic language than the second kind. العطية (70:1983) and عبد (الجليل (283:1998) add a third kind :

3. compound (coalescent) assimilation :the sounds are influenced by each other .It occurs in a word when the sound is preceded and followed by a similar sound in which the features are influenced by the features of these two sounds and this depends on the speaker's desire to assimilate these sounds to obtain easy articulation like :

زلزل, ططق, طبطب

Generally, assimilation is subdivided into four types:

A)fortis vs. lenis (الجهر والهمس) :it happens when the second sound of the verbs whose form / ʔfta'ala/ (أفتعل) changes into one of the sounds /z,d, ɖ / like :أزدان ← أزدان

أزداد ← أزداد, أذتكر ← أذتكر , أذتجر ← أذتجر ,

Here, progressive assimilation happens and we find the sound /z/ voiced and fricative whereas the sound /t/ is voiceless and stop ,hence the sound /t/ has changed to the sound /d/ since the latter has the same point of articulation of the sound /t/ and the same voice feature of the sound /z/ (العطية ,75:1983) . Sometimes, the words (أذتكر,أزداد) become as (أذكر ,أزداد) and here the progressive assimilation which happened also because the second sound changed to the first one .However,it is commonly used a word like (أذكر) in which the first sound is influenced by the second one and here regressive assimilation happens in this case .Hence ,both progressive and regressive assimilation can be happened with this case (أنيس) (47:1975) .One important thing should be mentioned here is that the assimilation can occur if the first sound is a quiescent (sakin) and there is no vowel (haraka) separates between the two sounds . However,in Arabic language ,there is no voiced sound adjacent to its counterpart voiceless sound like /d/ and /t/ , /z/ and /s/,etc.otherwise one of the two sounds must be changed to the other sound in which both of the two sounds must be either voiced or voiceless sounds.But the assimilation will not occur if there is a voiced sound followed by non-counterpart voiceless sound otherwise the two sounds are different completely in their features ,e.g,in the verb (أزداد) ,the sound /t/ changed to its counterpart voiced sound /d/(د) which is also voiced like the sound /z/ and the word becomes (أزداد) .while in the word (أغتصب) ,the assimilation can not occur because the friction of the sound / ʁ / is less than the friction of the sound /z/ in the previous example and this is why this rule restricted to the verbs which begin with the sounds /z, ɖ / because they are the most voiced friction sounds (ibid.:149).

B) plosion and friction (الشدّة والرخاوة): This kind of assimilation can happen when there is a changing in the feature of the sound from the plosion to the friction or friction to the plosion (أنيس 150:1975). It occurs when the fricative sound /s/ in the word (سدس) is preceded by the stop sound /d/ and it has changed to the sound /t/ which is the counterpart of the sound /d/ and the word became as (سدت). In this respect, Ibn Jini assures that this case is called approximation without assimilation (تقريب لغير ادغام) but later on the assimilation occurs when the sound /d/ is assimilated to the sound /t/ and the word changed into (ست) in order to be close to the fricative sound /s/. It is the regressive assimilation that happened here. (Ibid.)

(سدس) ← سدت ← ست

C) Velarization and non-velarization (الأطباق والانفتاح): AL-Saygh (1998:244) assures that both the progressive and regressive assimilation can happen in this kind. He mentions Ibn Jini's example about the changing of the second sound /t/ in the verbs whose template /ʔ ftaala/ (افتعل) into one of the velarized sounds /ʂ, ʈ, ʒ, ɖ / and here the sound /t/ assimilates to its velarized counterpart because it is influenced by the adjacent velarized sounds as in :

أظلم ← أظلم ← أضرب ← أضرب ← أصتبر ← أصتبر

أنيس (174:1975) indicates that the sound /t/ is changed to the velarized sound /ɖ / and the traditionalists called the modern /ɖ / as the sound /ʈ / and here the word can be pronounced as (أظلم) and sometimes it can be pronounced as (أظلم). Then, this word became as (أظلم) and also it is found that word (أظلم) is used and it is the regressive assimilation which happened.

D) vocal tract transition (انتقال مجرى الصوت): It means the air passage changes from the mouth to the nose and from the nose to the mouth. It includes two kinds :

1) This kind happens by assimilating a nasal sound like /n/ to its nasal counterpart /m/. Sibawayh called this kind of assimilation as (Meem assimilation) as in :

شنياء وعنبر ← اشمياء وعمبر, من بك ← ممبك

Here, the sound /n/ is assimilated to the sound /m/ because the latter is very close in the point of articulation to the sound /n/ (ibid.)

2) This kind happens when one of the oral sounds change to a nasal sound as a result of the assimilation process. For instance the sound /b/ is changed to the sound /m/ because both of them are bilabial sounds like :

أصبح مطر ← أصبح مطرا, أركب معنا ← أركمنا

The changing of the nasal to the oral sound can be found when /n/ changes to /l/ because both of them are similar to leen sounds and tongue tip production as in the following quranic verses : **فَأَنْ لَّمْ تَفْعَلُوا** ← **فَأَلَمْ تَفْعَلُوا** (أنيس 150:1975)

E) point of articulation change: It occurs when the point of articulation of sound changes to that of other sound whose point of articulation is very close to it, e.g. the sound /t/ changes to the sound /k/ when the tongue moves towards the back of the palate because these two sounds are voiceless plosive sounds (عصيت) used to be (عصيكاً) in some ancient dialects (ibid.).

In addition to that, العطية (84-82:1983) and الموسوي (137:2007) assert that the regressive and progressive assimilation can happen between two kinds of sounds:
1. similar sounds
2. approximate sounds

1) the first kind is called similar assimilation (ادغام المتماثلين او المثليين) and it happens between two adjacent sounds which are similar in the point of articulation and features of the sounds ,i.e, manner of articulation ,voice ,and movement of the tongue .It can happen in one word whether the first sound is a quiescent(sakin) like the first sound / t̤ / in the word (قَطَعَ) or the first sound is a movent like the sound /d/ in (مَدَّ , شَقَّ) . Also,it occurs in two words and here the first sound is a quiescent(sakin) and the second sound is a movent(muthrak) so the first sound assimilates to the second one as in the following quranic verses : (أَضْرِبْ بِعَصَاكَ الْحَجَرَ) (قُلْ لَا أُجِدُ فِيهَا أُوحِيَ إِلَيَّ)

Moreover, درار (187:2007) mentions six cases about the assimilation between the two similar sounds.It is clear that the hidden case is used instead of the assimilation process whenever there are two similar in one word or two words and there is a quiescent sound before them in order to avoid the adjacency between the two quiescent sounds in the individual and structural forms.

Briefly,these cases are summarized as follows :

1) well assimilation (حسن الادغام):the well assimilation happens when there are two movent similar sounds which are either followed or preceded by a quiescent long soft (leen)sound like (يد داود ← يداود) .

2) Permissibility of assimilation(جواز الادغام):the assimilation may or may not happen when there is a movent sound before the first sound and the assimilation may not occur when the second sound can be separated from the first word as in (جعل لك) or (جعلك)

3) well manifestation(حسن الاظهار او البيان):it is better to manifest the two similar sounds when there is a soft (leen) sound /w/ before the first sound because what is formed is a structure includes two quiescent sounds which are unacceptable in Arabic like (ثوب بكر) .

4) Impossible assimilation (امتناع الادغام):The assimilation must not happen with the terms that have the template /faalal/ if the first sound is with fatha or kasrah like in (قردد) since the result will be a structure contains two quiescent sounds .The hidden case can be used in this case which means the articulation of the quiescent sound without germination ,i.e, the articulation is between the assimilation and manifestation

5) what is substituted because of inflexibility(ما يبديل استنقالا):it occurs with the pharyngeal sounds when there are two adjacent sounds that must be changed into another sound like(اقطع هلالا ← اقطحللالا).

2)The second kind is called approximate assimilation (ادغام المتقاربين) that can not happen between the two adjacent sounds which are very close in the point of articulation and different in the features .It occurs when the two approximate sounds assimilate into similar sounds which have the same or approximate point of articulation and features of these sounds . (الموسوي ,140:2007)

The kinds of the approximate sounds with their assimilation are too long that it may take too long pages,and since this study generally compares assimilation in Arabic and English ,the researcher tries to state briefly the kinds of the approximate sounds and the major reasons behind occurring the assimilation or not of these sounds . Besides, the researcher will mention only the assimilation of the definite article and quiescent /n/ and tanween (nunation) when adjacent to other letters since they can not be summarized and they are important to be mentioned.

However,According to درار (207- 192:2007) ,the kinds of the approximate sounds assimilation can be summarized as follows

1) The assimilation of prolongation and soft sounds /a,w,j /

2)The assimilation of the pharyngeal sounds / x , ʕ ,ħ , ʕ ,a , h , ʔ /

- 3) The assimilation of the uvular sounds (الاصوات اللهوية) /q,k/
- 4) The assimilation of orificial sounds (الاصوات الشجرية) /j, ُ, dʒ /
- 5) The assimilation of liquid sounds (الاصوات النلقية) /r,l,/
- 6) Bilabial and labiodental sounds (الاصوات المذلقة) /b,f,m/
- 7) The assimilation of the tippy and lateral sounds

According to Seebawayah ,this can be classified as follows:

- 1) Alveolar sounds (الاصوات النطعية) / ٤ ,t,d/
- 2) Apical sounds (الاصوات الاسلية) / ٤ ,z,s/
- 8) Dental sounds /z , ð , θ/
- 9) Assimilation of the quiescent /n/ and tanween (nunation) when adjacent to other letters

Gradually ,the following are the major reasons why sometimes assimilation of the approximate sounds may occur or not :

1) It is noticed that some sounds neither assimilate with others nor other sounds assimilate with them such sounds are /a,w,j / .Concerning the sounds /w/ or /j/ ,if there is fatha before /w/ or /j/ ,these two sounds can not assimilate with the adjacent sounds since they have the feature of prolongation and softness which will disappear in the assimilation , besides, assimilation needs that the second sound must be a quiescent and assimilate with the second sound .Hence,in this way this feature will vanish because the strength and intensity of the sound will increase in the assimilation. Also, they can not be assimilated with the adjacent sounds even if they are corresponded with the preceding vowel ,i.e, dhamma before /w/ and kasrah before /j/ ,because they are prolonged (madd) sounds and in this way they are similar to (أ) (alif) in which there is fatha before them as in (ظلموا مالكا) and (اظلمني) (جابرا).Gradually , some of the sounds have features that must be kept without change and assimilation can not happen in this case like

A) the spread feature (التفشي) of the sound /ُ/ as in the quranic verse: (قَدْ شَغَفَهَا حُبًّا) ,

B) AL-Ta'afeef (التأفيف) feature of the sound /f/ since it is produced through the mouth as in (→ اذهب في ذلك) (اذهفي طريقك) ,

c) the feature of ghunna (nasalisation) for the sounds /m,n/ which gives the sound a nice resonance as in (اصح مطرا) → (اصح مطرا)

d) the feature of velarization (الاطباق) like the sounds /z, ٤ , t/ as in

(احبصابرا) → (احبس صابرا)

(except that some sounds like must be changed to the most close sound for the velarized sounds / z , ٤ , ٤ , ٤ / like the sound (ذ) as in the quranic verse :

(هَلْ أَتَاكَ حَدِيثُ ضَرِيفِ ابْنِ الْوَاهِمِ الْمُكْرَمِينَ) & (وَمَنْ يَفْعَلْ ذَلِكَ فَقَدْ ظَلَمَ نَفْسَهُ)

e) the trill feature of the sound /r/ as in (أسألك) → (أسألك) .

2) Sometimes, it is better to manifest the two sounds without assimilation because what is the result it is difficult in pronunciation like the sounds /ħ, h/ as in (امدح هلالا)

3) In the assimilation of the voiced and voiceless sounds, the voice feature overcomes the voiceless feature like in the two sounds /x, ʁ/ as in (افرغ خاتما)

4) Sometimes there are some sounds that can not assimilate with each other like /h, ʕ/ but they must change to another sound like /ħ/ as in: (مع هولاء—محولاء)

In addition, another different /l/ can be found in Arabic which is called the definite article (ال). This sound is the most common sound that tends to assimilate with other sounds because it is quickly influenced by the adjacent sounds. The big assimilation here occurs in which there is a movent (haraka) before the assimilated sound.

Moreover, الموسوي (141:2007) mentions two cases of the assimilation of the definite article 'أل' /ʔal/ :

A) In Arabic, there are certain letters called 'sun-letters' which are thirteen

/أ, ؤ, ð, ð, d, n, z, t, ð, s, z, Ø, t, r/ , and the definite article 'أل' assimilates in pronunciation with them as one sound that has one point of articulation because both of them are very close in the point of articulation. Thus, here (laam) is called the (sun laam) when it assimilates with the sounds of the front of the mouth, e.g: الرجل /'arrajula/ instead of /'alrajulu/ , الشمس /'ashshamsu/ instead of /'alshamsu/

According to the traditionalists, the definite article 'أل' /ʔal/ assimilates completely with the sun letters and the point of articulation of the definite article 'أل' /ʔal/ will be similar to the sun letters and this is why it is called "sun laam". While modernists state the contrary view and the definite article 'أل' /ʔal/ does not assimilate completely with the sun letters because the features of the definite article 'أل' /ʔal/ in such words like (اللغة, اللاعب, اللباس, الخ) have the same features as in the words (الباب, الحديد, الخ).

In this regard, Sibawayh indicates the following:

1) The sound /l/ assimilates with the sounds /ð, ʔ/ as in (الضوء والشراب) when the definite article (ال) comes before one of these sounds. Here, /ð/ deviates to one of the two edges of the tongue or both of them and during its movement between the two edges of the tongue it touches the point of articulating /l/ and gets mixed with it. The same thing is with /ʔ/ whose sound scatters and spreads in mouth until it reaches /l/.

2) The definite article (ال) with thalqee sounds /r, n, l/ :

the definite article (ال) assimilates with /r, n, l/ as in the following examples: (الرجل والركبان) (النعمان والنسيان).

3) The definite article (ال) can assimilate with alveolar sounds (الاصوات النطعية)

/ʔ, d, t/ and apical sounds (الاصوات الاسلية) / ʂ, z, s /.

4) the definite article (ال) can assimilate with the dental sounds but its assimilation is weaker than the assimilation of the alveolar sounds and apical sounds.

In brief, the following are cases of the assimilation of the definite article (ال) with other sounds:

1.weak assimilation with the sounds / / d, j /

2.strong assimilation with the sounds / z , ð , ð /

3.the assimilation will be more stronger with the sound / ʔ / and its sisters /t,d/ and the sound / ʃ / and its sisters /s,z/ .

4.simile assimilation with the sounds /n,r/

B)There is another group of letters called 'moon-letters' .These are /k,m,w,ʔ ,d ,l,f, q , ʕ , ʕ , x , ħ , h ,b ,j , dʒ / and have no effect on the definite article 'أل' /ʔal/. Here, the (moon laam) keeps its point of articulation without assimilation because the moon letters and the definite article 'أل' /ʔal/ are different in the point of articulation ,e.g :

البَابُ /'albaabu/ , الكُرَّةُ /'alkura/ , القَمَرُ /'alqamaru/

It is important to mention the assimilation of the quiescent /n/ and tanween (nunation) when it is adjacent to other letters.Tanween is a quiescent /n/ which makes a special resonance in its articulation and it adds in final position of the noun in a condition that these nouns are not resistant to tanween .It is pronounced in connected speech without stopping and it is never written (noonan) in the handwriting.It is found that the quiescent /n/ and tanween are influenced by the adjacent sounds especially the sounds that come after them . The sound /n/ is considered as the most important one since it is related to the many tongue sounds except the pharyngeal sounds and the quiescent /n/ does not change and keeps its features when it is adjacent to the pharyngeal sounds / x ,ʕ ,ħ , ʕ , h ,ʔ / because both of them are different in the point of articulation and features . Tajweed scientists assure that the quiescent /n/ and tanween should be pronounced here cursorily without nasalization (ghunna) and manifesting the sound that comes after it . Quran reciters define nasalization (ghunna) as "a sound which is produced through the nasal chambers "and according to modernists it is defined as " lengthening the noon sound with musical frequency and the time of ghunna production is almost double than the production time of the manifested noon" as in the following quranic verses : (مَنْ أَمِنٌ)(كُفُوا أَحَدٌ)(أَمْوَاتٌ غَيْرٌ أَحْيَاءُ)

الصنغ (240:1998) and الموسوي (144:2007) classify the assimilation of nasalization (ghunna) into incomplete and complete assimilation.However,the cases of the quiescent /n/ and tanween are as follows:

A)Nasalization (ghunna) assimilation and it is also called incomplete assimilation.It refers to a sound that does not vanish totally but leaves a sound after vanishing an effect that is felt.It means the assimilation of the quiescent /n/ and tanween with the sounds /n,m,w,j/ These can be summarized as follows :

1) the sound /n/ with sounds /w , j / : the nasalization (ghunna) must be manifested in the sounds /w,j/ since these are two liquid sounds and the remnant must be kept without change as an indication of assimilating the sound /n/.Hence, this assimilation occurs when the first sound assimilates partially with the second sound in which some of the features are kept without change like nasalization (ghunna) feature. According to Sibawayh ,the sound /n/ can assimilate with or without nasalization like in (من يعمل) and here the nasalization (ghunna) of the sound /n/ is not produced through the nasal chambers but it is the consonant/j/ which absorb nasalization (ghunna) . It is important to mention that the sounds /w,j/ can not assimilate with the sound /n/ because they can not assimilate with other sounds nor other sounds can assimilate with them .The following quranic verses are given respectively:

1.(وَمَنْ يَعْمَلْ— وَمِيْعَمَلْ) 2.(مَنْ وَرَائِهِمْ— مَوْرَائِهِمْ جَنَاتٌ وَعَيْونَ—جَنَاتِوَعْيونَ)

We can see in the above examples, the sound /n/ is not produced when it is followed by the sounds /j,w/ but the nasalized /j,w/ sounds that are produced in which the air passes through both the mouth and the nose.In this respect,qura'an reciters indicate that this is the only case can be found in which the

air passes through both the mouth and nose and the quiescent /n/ and tanween are inverted into /j,w/ which then are called nasopharynx sounds (الاصوات الخيشومية). أنيس (150:1975) calls this case in Arabic as (الانفمية) (nasalization) and it could be found in French and Judaism languages when their speakers tend to produce these sounds through their nose and they are called the nasal speakers (خنف). It is so called incomplete assimilation because the "noon" sound does not invert completely but it is produced in nasalization (ghunna) in which the air partly passes through the nasal cavity. Actually, nasalized sounds are also found in English when the sound is followed by a nasal sound like camp, calm, can, ran, etc.

2) the sound /n/ is adjacent to another sound /n/ and here it is the similar assimilation which happens and nasalization (ghunna) means the lengthening of the geminated sound and we can hear a nice musical note when it is produced like in

(مَنْ نُطْفَةٌ ← منطفة, حُطَّةٌ نَغْفَرُ لَكُمْ ← حطتغفر لكم).

3) the sound /n/ is adjacent to the sound /m/ and the sound /n/ assimilated completely to the sound /m/ because the latter is also a nasal sound in which the air passes through the nose. There is no agreement upon whether nasalization (ghunna) is related to the sound /n/ or the sound /m/ but generally it is noticed that nasalization (ghunna) is ghunna /m/ because as Sibawayh assures that sound /m/ (م) rarely assimilated to any adjacent sound but here it is assimilated to the sound /n/ and ghunna is produced through the nasal chambers. In this case, the sound /n/ vanishes totally with the sound /m/ and ghunna here is called the ghunna of the geminated /m/ (غنة الميم المشددة) (أنيس, 65:1975).

The assimilation is incomplete because nasalization (ghunna) happens after the assimilated sounds as in : (مَنْ مَالُ اللَّهِ ← ممال الله, صِرَاطًا مُسْتَقِيمًا ← صراط مستقيماً) (الموسوي 16:2007).

B) Assimilation without nasalization (ghunna) and it is also called the complete assimilation. It means that there is no trace for one of the two sounds after vanishing and this occurs when there is after quiescent /n/ the sounds /l/ or /r/. الصيغ (240:1998) indicates that the assimilation occurs between the two sounds in which the first sound completely assimilates with other sounds as in the following quranic verses :

(هُدًى لِلْمُتَّقِينَ ← هدا للمتقين) (مَنْ رَبِّهِمْ ← مربهم)

We can see that in the above examples, the sound /n/ is completely inverted into the sounds /l,r/. It is clear that the most important feature of the sound /r/ is the trilled feature (التكرير) so when it assimilates with other sounds like the sound /n/, this sound will disappear and it happens here complete assimilation in which there is no nasalization (ghunna) happened after this assimilation.

It is important to note that Sibawayh indicates that the quiescent /n/ and tanween can be happened with or without nasalization (ghunna) when it assimilates with the sounds /l,r/. Thus, the sound /n/ can assimilate with sound /l/ like (ملك) → (من لك). The assimilation can occur with or without nasalization (ghunna) and in this way the sound /n/ can be regarded as one of the tongue sounds because the sound which follows it can not be produced through the nasal chambers. However, the assimilation of the sound /l/ with the sound /n/ is possible like (هنرى) → (هل نرى). It is noticed that the sound /n/ can assimilate with the sound /l/ and vice versa and also with other sounds but other sounds can not assimilate with it and here Sibawayh did not mention any clear reason behind this and this may be due to avoid converting the sound /n/ from its original position in the assimilation. However, both complete and incomplete assimilation can happen in the assimilation of quiescent /n/ and tanween with the sounds /l,r/ (ibid.:147).

3) the quiescent /n/ and tanween are inverted to the sound /m/ if they come before the sound /b/ because the sound /n/ and the sound /b/ are different in the place of articulation and the sound /m/ is a bilabial sound like the sound /b/ and at the same time it is nasal sound like the sound /n/ as in the following quranic verses:

أَتَّبَعْتَهُمْ, إِنَّ اللَّهَ سَمِيعٌ بَصِيرٌ, عَلِيمٌ بِذَاتِ الصُّدُورِ

4)the quiescent /n/ and tanween are hidden when they come before the fifteen oral sounds /q,k, dʒ, ʃ,s,z, ɖ,ʒ,ʒ,d,f,t, θ, ð/ and these sounds are produced through the nasal chambers as in following quranic verses:

سَمِيعٌ قَرِيبٌ، فَصِيرٌ جَمِيلٌ، قَوْلًا سَدِيدًا، وَكَأْسًا دَهَاقًا، جَنَاتٌ تَجْرِي مِنْ تَحْتِهَا الْأَنْهَارُ، خَالِدًا فِيهَا

Moreover, There are three cases of the sound /m/ assimilation :

1)the sound /m/ assimilates to another sound /m/ and they become as a geminated /m/ that are produced with ghunna and it is called a bilabial assimilation as in the following quranic verse: **وَادْعُوا مَنْ اسْتَطَعْتُمْ مِنْ دُونِ اللَّهِ (.....استطعتم.....)**

2)the sound /m/ is hidden when it is adjacent to the sound /b/ produced with nasalization (ghunna) and it is called bilabial hiding as in the following quranic verse : **(ثَرْمِيمِهِمْ بِحَجَارَةٍ)**

3)the sound /m/ must manifest when it is adjacent to the other sounds especially the two sounds /w,f/ and it is called bilabial manifestation as in the following quranic verse : **وَلَا أَنْتُمْ عَابِدُونَ عَلَيْهِمْ وَلَا وَهُمْ لَا يَسْتَكْبِرُونَ، وَالضَّالِّينَ قُمْ فَأَنْذِرْ (ibid.:150)**

2) Assimilation of the Consonants and vowels

The assimilation here means the impact of the vowels on the consonants by changing their point of articulation to regulate their features and the impact of the consonants on the vowels by changing the vowels to other vowels which corresponded with their natures .

A)The Impact of the vowels on the consonants

Vowels affect consonants when they are connected with them in speech in which they regulate their point of articulation or features ,or both of them .Hence,the consonants are changed according to the kind of the adjacent vowel like the point of articulation of the sound /s/ in (سين) becomes more forward than the sound /s/ in (سَل). Also, both of them are also more forward in comparison with the sound /s/ in (سَم) and this is due to that consonants tend to change or regulate the point of articulation according to the accompanying vowels ,i.e,the preceding and following vowels.

Palatalization

The palatalization phenomenon is commonly found between the consonants and vowels.The dental and velarized sounds are influenced by the neighboring vowels,e.g ,in most of the languages , the sounds /k/ and /g/ are uvular when they are adjacent to 'dhamma' /u/ or ' declensioned fatha ' /e/ and more velar with kasrah and it will be moderate with fatha.Palatalization has an important role in forming the affricate sound / dʒ/ which is the same sound (ج) in Arabic .Hence,the original sound of the Arabic / dʒ/ (ج) is /g/ .Likewise ,when the sound /k/ comes with the adjacent 'kasrah' ,the point of articulation becomes more front in which it is formed a palatalized affricate sound /tʃ/ which is the voiceless counterpart for the Arabic sound / dʒ/ and also for another sound / tʃ/ and they are known in Arabic as 'AL-Kashkasha and AL-Kaskasa phenomenon '(ظاهرة الكشكشة والكسكسة) .One important point should be mentioned here is that /g/ disappeared in standard Arabic because of the palatalization of the sound /g/ in which it is substituted by the affricate sound / dʒ/ and it is called "AL-Geem AL-Faseeha" whereas the palatalization of the sound /k/ gives a new sound which is either /ts/ (تس) or /tʃ/ (تش)but these two sounds are regarded as two bad sounds which can not be used in the Arabic language and hence the sound /k/ is still as a basic sound in the standard Arabic language. Linguists could not justify why the palatalization phenomenon happens and the reason behind it and they even could not understand it very well and this may be due to that

linguists are not convinced about the impact of the vowels on changing the articulation of the consonants. (الشايب,251:2004)

However, it is noticed that 'AL-Kashkasha and AL-Kaskasa phenomenon ' is a phonetic phenomenon in the language and it happens when sound /k/ tends to make its point of articulation like the point of articulation of the front sounds when it is followed by kasrah which affects the velarized sound that makes it a little forward in which this velarized sound changes into its counterpart velarized sound . 'AL-Kashkasha' is like /tʃ/ in English word 'church' and 'AL-Kaskasa is like the German word (zahn). Another phenomenon of the impact of vowels on the consonants is the dark and clear (الترقيق والتفخيم) consonants like /l/ and /r/ according to the accompanying vowels. The sound /l/ is dark when it comes after 'dhamma' or 'fatha' especially in the name of 'Allah' and it is clear when it comes after 'kasrah' as in the following examples : رسل الله , أخذ الله , شهد الله :

The sound [r] is also dark when it comes with 'fatha'and 'dhamma' and it is clear when it comes with 'kasrah'.All the "AL-Mustafala consonants" (الحروف المستقلة) are clear except the sound /l/ and it is dark in the name of 'Allah' after 'fatha' and 'dhamma' but some believe that it can be dark after emphatic sounds .In addition to that ,most believe that 'AL-Raa'a AL-Madhmooma or Maftooha ' can not be dark whereas others believe that the 'quiescent raa'a' can not be dark .(ibid.:256)

B)The Impact of Consonants on Vowels

Consonants have an important influence on the adjacent vowels in which they change their point of articulation to a way that corresponds with their natures .

A)The point of articulation of dhamma in (مَد) is more front than in (جُد) but in (عُد) it is more back than in (جُد).Likewise, kasrah in (مِن) is more front than (جِد) which is more front than in (اِن). Here,the impact is in the point of articulation of the vowels.

B)Consonants have an influence not only on the point of articulation but also on the features of the vowels.Fatha is dark after the emphatic sounds/ ʃ, ʦ, ʒ, ɗ / and it is between the darkness and lightness with the sounds /q, x ,ʕ/ and it is clear with the rest of the sounds .Hence,fatha in (صَبْر) is dark because it is influenced by the emphatic sound / ʃ / and it is between the darkness and lightness in (قَبْر) and it is clear in (سَبْر) .The long fatha is also dark when it is between the darkness and lightness in (قَام) and it is clear in (سَار) . Thus,darkness(التفخيم) with vowels is regarded as a contextual phenomenon which does not have a function role in distinguishing between the words that have similar meanings and spellings ,so it is a prosodic phenomenon rather than phonemic phenomenon. (ibid.:259)

c)Consonants affect vowels not only in their point of articulation and features but they may change the vowel completely to another one which will correspond with their natures and features .It is commonly found that fatha and kasrah in Arabic change into dhamma before the bilabial sounds as in : إِم → أَم → لِب , ظَفْر → ظِفْر , لَب

The emphatic sounds and the sounds/q, x ,ʕ/ tend to change fatha in order to make it back fatha or dhamma ,i.e ,back close vowel or declensioned dhamma (الضمة الممالئة) as in (الصلوة).

So,we can say that the adjacency of the emphatics to dhamma prevents it to bending and in this way it is pronounced in more front way in which its point of articulation will be more close to the point of articulation of kasrah .The features of these sounds are contrary to the features of kasrah and this is the reason why these sounds can not be inclined because they are emphatics and they are raised towards the soft palate whereas kasrah is clear and it is lowered towards the bottom of the mouth.

There are many reasons why inclination can not happen and the "AL-Huroof AL-Musta'alea" (الحروف المستعلية) can not be inclined because they are produced when the tongue is raised towards the soft palate and the tongue must be lowered in the inclination which requires that fatha must be changed and the emphatic sounds need that fatha keeps its original so, it is preferable to consider the origin .

d)The pharyngeal ,glottal and emphatic sounds tend to fatha more than kasrah and this is due that the tongue moves backwards in the articulation of these sounds which need that oral cavity to be more wide and in this way fatha is the most suitable soft (leen) sounds for them as in the following quranic verse:

(حملته امه وَهَنَّا عَلَى وَهْنٍ) (أن الله مبتليكم بنَهْرٍ) (الشايب,263:2004)

E)When the third and fourth sound of the present tense /jafa'al/(يفعل) is one of the pharyngeal sounds ,these sounds must be with fatha,e.g: يصهل , يقرأ

F)Many of the words are formed when there is assimilation of the vowel (haraka) to the semi-consonants that come after it ,e.g: قُدوة ← قِدوة , سُرورة ← سِرورة , مُدِيَة ← مِدِيَة , خُفِيَة ← خَفِيَة

G)Another vowel assimilation to the semi-consonants when there is third person pronoun /haa? / (هـ) with dhamma after the semi-consonant /j / and that dhamma must be changed to kasrah,e.g: عليهم → عليهم , عليهن → عليهن

Actually there is no agreement upon putting dhamma or kasrah to the pronoun /h / (هـ) when it is preceded by /j / .Both of them are correct since the first means the original form and the second is used by most of the linguists to make the articulation very easy (ibid.,:268).

3) Assimilation of the Vowels (Vowel Harmony)

(الأتباع الحركي) 'AL-Atbaa? AL-Haraki' (العطية 78:1983) indicates that Sibawayh calls this assimilation as 'AL-Atbaa? AL-Haraki' because the vowels tend to assimilate to each other and according to modernists it is called vowel harmony,e.g:

(منتن) instead of (منتن) (kasrah is followed by kasrah)

(أنا أجوك) instead of (أجيبك) (kasrah is followed by kasrah)

(أنبوك) instead of (أنبك) (kasrah is followed by kasrah)

(السُلطان) (dhamma is followed by dhamma)

(هو منحدر) instead of (منحدر) (dhamma is followed by dhamma)

الشايب(241:2004) mentions two cases of the assimilation between the vowels :

1)Assimilation can be found in the adverb of time like (مُنذ) .The original word of this adverb is : (من + ذو) ,i.e ,it is composed of two words : preposition (من) + relative pronoun (ذو) in which both of them are formed to produce (منذو) .The last long vowel /w/ becomes short vowel (haraka) because of moving the stress to the first syllable and it becomes (مُنذ) and then by assimilation it becomes (مُنذ) .

2)Another example can be found with third person pronoun /haa? / (هـ) when kasrah is substituted by dhamma like: بهُ → به

Here, assimilation occurs between haraka of the preposition and the pronoun because kasrah is followed by dhamma which makes a difficulty in the pronunciation /h / (هـ) .Thus, this assimilation can happen for the whole third person pronouns (singular, plural , feminine,masculine,etc) whenever the pronoun is

preceded by kasrah or /j/. Dhamma is substituted by kasrah or /ay/ when it is found in accusative and genitive pronoun (هو), masculine plural (هم), feminine plural (هن), like: (هما) المثنى, عليهن, قاضيهم, رجله, قاضيهم, عليهن

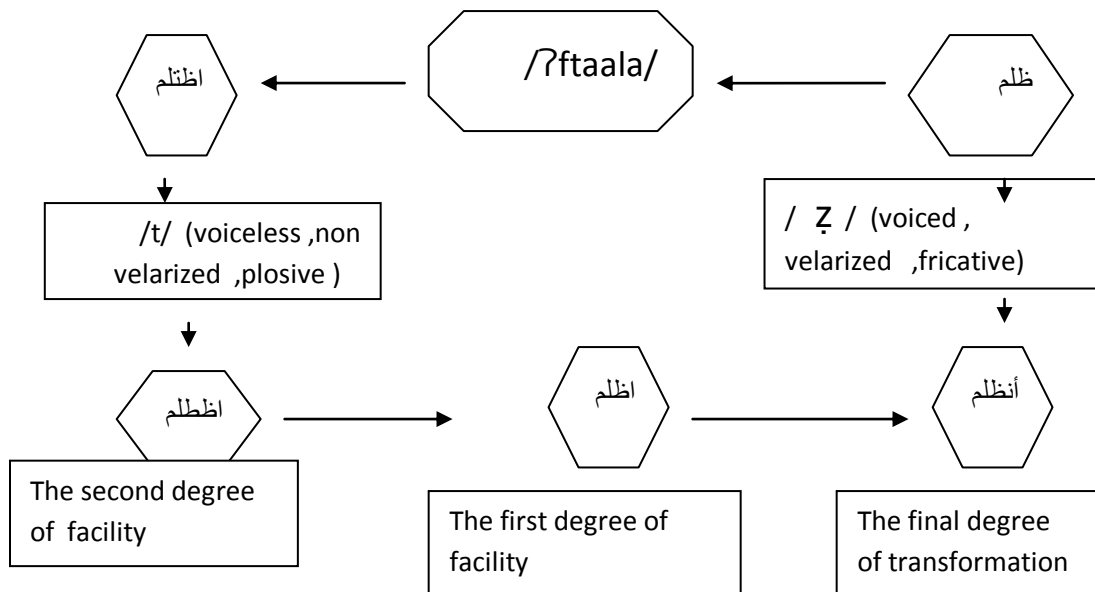
1.2.2 Dissimilation (المخالفة) in Arabic

Phoneticians look to dissimilation as an important and indispensable process because it aims to reduce the differentiation between the sounds. أنيس (18:1975) defines dissimilation as "a process which is used to differentiate between two similar sounds when they are found in a word. الصيغ (257:1998) clarifies that dissimilation is a process in which the sound is influenced by the adjacent sound and here it is a reversal process to the assimilation process that leads to increase the differences between the two sounds. Brosnahan assures that dissimilation occurs almost with the nasal and trilled sounds /m,n,l,r/ in order to achieve an easy articulation and harmony in the spoken language. While prof. S. Hurwitz mentions that some of the linguistic units which form the nasal and trilled sounds /m,n,l,r/ are part of their structural frame and it may be this is the reason behind their ability to differentiate between the similar sounds like: حجل → فطح, قرمط → قَمَط, عرقب → عرقب, عكب → عكب, جمد → جمد, حرجل → حرجل

Moreover, الصيغ (Ibid.) mentions that Dr. Ahmed Mukhtar clarifies on one hand the process of assimilation aims to facilitate the articulation of the sounds without taking into consideration the semantic side which may be influenced when the two sounds approximate to each other. On the other hand, the dissimilation process is the reversal process which aims to facilitate the semantic side by differentiating between the sounds without taking into consideration the articulation side which may be influenced because of the differentiation between the sounds like the following examples:

العباس ← والعنبا (الاسد), الرس ← والرسم (الدفن), تحدس ← وتحندس الليل (أذا اظلم), تشفر ← الشنفير (السيء الخلق)

Thus, assimilation aims to approximate between the two adjacent sounds in which they assimilate to each other; whereas dissimilation aims to reduce the muscular effort in which one of similar adjacent sounds is changed either to the long vowel or to the sound which is similar to it like /l,n/. The following diagram shows the two processes of assimilation and dissimilation.



Here, dissimilation happens when the sound /z/ is changed to the sound /n/ and this is due to the difficulty that can be found in the articulation of the emphatic sounds and hence the dissimilation usually occurs when there are two adjacent similar sounds which are either emphatic or fricative sounds.

أنيس (1975: 168) indicates that dissimilation occurs rarely between the

Plosive sounds like: لعن → لعل دنبوس → دبوس انجاص → اجاص

And this is called contact dissimilation (تغاير المخالفة). The speaker feels a difficulty in pronouncing between the doubling of the sounds and the successive vowels. Hence, dissimilation occurs when there is a doubling consonant because it is difficult when the tongue is raised and lowered in the articulation of the doubling sounds as in : تسريت في تسررت, أمليت في املتت

AL-Mubrad gives other examples in which kasrah in (قراطينار) is substituted by the sound /j / as in (دينار, قيراط) and when there is a separation between the doubling sounds ,it must belong to their origin like: (دنانير , قراريط) (عبد الجليل, 1998:298)

Here, أنيس (1975:169) mentions examples about the doubling sounds in the word in which one of these doubling sounds is substituted by a long soft (leen) sound either /j / or /w/ ,so the articulation will become easy for the speaker :

انغمس(انغمس) → غس, الجوب (القطع) → الجب, عوس(طوفان الليل) → عس

Traditionalists feel a difficulty in articulating the doubling sounds and they tend to substitute them by one of the vowel sounds because they are easy in the pronunciation and the tongue is difficult when it is raised and returned to the same point to produce the same sound.

Another kind is called distant dissimilation (المخالفة المتباعدة) which occurs with the words that include two similar sounds in which there is a sound that separates between them that is not similar to them ,e.g:

اخضوضر اصلها اخضرضر, اعشوشب اصلها اعشيشب, ايهات اصلها هيهات, بغداد اصلها بغدان

(عبد الجليل, 1998:298)

In brief, أنيس (1975:172) assures that dissimilation is a process which is used to differentiate between the emphatic or friction sounds. It is rarely that dissimilation is used to differentiate between the two plosive sounds or leen sounds because they are easy in the articulation even we can find such word like: اجاص → انجاص

1.3 Comparison of Assimilation in English and Arabic

It seems that the assimilation varies more in Arabic than in English . However, assimilation in both languages can be summarized as follow:

1)The assimilation of consonants

a) Mainly, there are two major types of assimilation which are historical and contextual assimilation .Both of them are found in English and Arabic language .Historical assimilation refers to the assimilation in which the word has changed in the course of development of a language . Examples are given respectively:

'ant' / ænt/ → / æmætə/ → /æmtə/ → /æmt/ → /ænt/. لصت ← لسط ← لص

While contextual assimilation is the most common than the historical assimilation and it means an assimilation which is occasioned when words are juxtaposed in a sentence , or in the formation of compounds and by which a word comes to have a pronunciation different from that which it has when said by itself ,e.g, the change of /s/ to /ʃ/ in

'horse shoe' → /ho:ʃ u:/ (Ibid.). عن ما ← عمايشاء لون أصطير ← أصتير

b) Concerning the direction of assimilation process ,there are three types of assimilation :1)progressive (left -to- right) 2)regressive (right -to- left) 3)reciprocal (both directions at once).All of them can be found in both languages but the regressive assimilation is the most common than others in both languages.Examples are given respectively for both languages:

bags/bægz/ , right place /raip pleis/ , did you?/didʒu:/

زلزل, يتطهر ← يطهر ← اطهر , أرتاد ← أزداد

c)Unlike English ,there are two major kinds of assimilation in Arabic language and they are classified according to the ancients and they are called the big and small assimilation. These two kinds are not found in English since the latter lacks harakat ,i.e, fatha ,kasrah,dhamma and assimilation happens in a condition that these harakat must be involved .Thus, assimilation happens in the first kind when the first sound of the two assimilated sounds is a movent whereas the second one happens when the first sound is a quiescent.Examples are given respectively:

وَأَذِيبُنْ رَبِّكُمْ لَنْ شَكَرْتُمْ لَأَزِيدَنَّكُمْ , وَالْعَادِيَاتِ ضَرْبًا

d) There are two types of assimilation which are classified according to another mode of classification : total and partial assimilation . Actually , there is no clear evidence that these categories can happen only for consonants and thus it may also happen for vowels.In both languages , complete assimilation happens between two identical sounds which have participating features in which the assimilated sound becomes similar to the influencing sound like in the following examples : /ðæt pleis/ → /ðæp pleis/ ربطت & → ربط

whereas partial assimilation happens between two close or approximate sounds in which the assimilated sound becomes only more similar to the influencing sound like in the following examples:

فزد → فزت فحصط → فحصت & /ten baiks/ → /tembaiks/

e)Concerning the minor categories of assimilation ,there are four phonemic variations in English language :voice(fortis vs. lenis (الجهر والهمس)), place of articulation , manner of articulation(plosion and friction (الشدة والرخاوة)) and nasality (vocal tract transition (انتقال مجرى الصوت)). In addition to the above kinds , Arabic has another variation which is not found in English and it is called velarization and non-velarization (الأطباق والانفتاح).Besides, in Arabic ,there is no voiced sound adjacent to its counterpart voiceless sound like /d/ and /t/ , /z/ and /s/, etc. otherwise one of the two sounds must be changed to the other sound in which both of the two sounds must be either voiced or voiceless sounds.Examples are given respectively in both languages: with thanks /wið θæŋks/ / wiθ θæŋks/

/ʃ/ replaces /s/ before /r,j/, e.g: this shirt /ðiʃ ʃɜ:t/

That side /ðæt said/ → / ðæs said/

'good news' /gun nju:z/

فكلاً مَنْ حَيْثُ شِئْتُمْ ← .. حَيْثُ شِئْتُمْ , أدنكر ← أدنكر

أصتير ← أصطير , أركب معناً ← أركم عن (سدس) ← سدت ← ست

F)It is noticed that in Arabic assimilation occurs between two kinds of the sounds ,i.e, similar assimilation (ادغام المتمثلين او المثلين) and approximate sounds. Actually, assimilation of the first kind is not found in English since the assimilated sound which is formed through the assimilation process is a geminated sound ,i.e,two sounds becme as one sound ,besides,the occurrence of assimilation depends on the inflections (harakat) while the second one can be found in both languages.However, in

Arabic, there are six cases that happen between similar sounds that have the same point of articulation and features of the sounds, i.e., manner of articulation, voice, and movement of the tongue.

These six cases can be summarized as follows:

- 1) Assimilation can happen whenever there is a moving sound before or after the quiescent sound.
- 2) It can not happen in one word or two words whenever there is a quiescent sound before the two similar sounds and it can be substituted by the hidden case in which the sound is articulated without germination, i.e., the articulation is between the assimilation and manifestation.
- 3) The two similar sounds are substituted by a third sound to avoid difficulty in articulation and this case happened with pharyngeal sounds only.

Concerning the assimilation of the approximate sounds, it is usually happened between the sounds which have a close point of articulation and features of these sounds. One important thing should be mentioned here is that the major reason behind the impossibility of the assimilation according to Sibawayh is that each sound has a feature which is regarded as a minor part of the basic sound and this minor feature will vanish as far as the basic sound assimilated with its approximate sounds like the trill feature in the sound /r/, spread feature in the sound /f/, etc.. In addition, the researcher tries to state the differences and similarities of the approximate sounds assimilation between the two languages but unfortunately these sounds are not explained in detail in English like in Arabic except some sounds like the bilabial, velar, palatal, alveolar. However, the assimilation of the approximate sounds in English may summarize as follows:

1) voice feature: it can be represented in the following patterns:

- a) progressive assimilation: $vless. \rightarrow vd.$
- b) regressive assimilation: $vless. \leftarrow vd.$

2) place of articulation

It is the regressive assimilation which can be happened in the place of articulation when the alveolar sound is changed into bilabial, velar and palatal-alveolar sounds /dʒ, tʃ/ sound if the alveolar sound is followed either by bilabial, velar or palato-alveolar and palatal sounds /j, ʃ/. It can be represented as follows:

bilabial, velar, palatal-alveolars \leftarrow alveolars

3) manner of articulation

It seems that it is the reciprocal assimilation which happens when the alveolar sound is changed into palatal-alveolar sound if it is followed by alveolar and palatal sound. It can be represented as follows:

alveolars \leftrightarrow palatal-alveolars (regressive and progressive)

4) Nasality feature: it can be represented as follows:

nasal \leftarrow alveolar (regressive)

plosive or nasal \rightarrow dental (progressive)

Gradually, the following table summarizes the assimilation of the approximate sounds in Arabic as they are classified according to Sibawayh.

Table(2) The assimilation of the approximate sounds in Arabic

		The Sounds	Assimilation with other sounds	Assimilation of Other sounds with each one
1	Prolongation and soft Sounds	/a/ (ا)		
		/j/ (ي)		
		/w/ (و)		
2	Pharyngeal Sounds	/h/ (هـ)		/ ħ /
		/ ħ/ (ح)	/h/	/ ʕ /
		/ ʕ / (ع)	/ ħ, h /	
		/x/ (خ)		/ x /
		/a/ (ا)		
		/ʔ/ (ء)		
3	Uvular Sounds	/q/ (ق)	/k/	/k/
		/k/ (ك)	/q/	/q/
4	Orificial sounds	/dʒ/ (ج)	/ /	/t,d, ð/
		/ʃ/ (ش)		/ dʒ,d, θ ,t,s/
		/j/ (ي)		
5	Liquids or tippy sounds	/l/ (ل)	/r/	
		/r/ (ر)		/l,n/
6	Definite article	ال /ʔal/	// ʃ, ð , ʂ,d,n, z ,t, d,s,z, θ,t,r/	/d, ʔ ,h,j,k,m, w, l,f, q,b, dʒ, ħ , x , ʕ, ʕ /
7	Bilabial and Labiodental Sounds	/b/ (ب)	/f,m/	/f/
		/f/ (ف)	/b/	/b/
		/m/ (م)		/b/
8	Tippy and Lateral sounds	/t/ (ط)	/ θ, ʂ /	/d,t/
		/t/ (ت)	/d,θ , dʒ, d,s, ʂ ,z, ð , t, d /	/d, ð/

		/d/(د)	/ġ, ð, ʒ, z, t, d, s, θ, t, dʒ /	/t/
9	Apical Sounds	ṣ/(ص)	/s,t/	/s,z, t, d, ð/
		Z(ذ)	/ ʒ ,s,t/	/s,t, ð/
		S(س)	/ ʃ ,ġ ,t /	/d , θ , ð/
10	Dental sounds	/ θ /(ث)	/ ġ, d .s/	/ ʒ , ð ,t,d/
		/ð/(ذ)	/ ʒ ,θ ,t,d,s,z, dʒ /	/t,d/
		/ ʒ /(ظ)	/ θ /	/ð/
11.	Al-Mustatt eel sound	/d/(ض)	/t/	/ θ /

Moreover, the cases of the sound /n/(ن) and tanween and the sound /m/ when they assimilate with other sounds are as follows:

1)The quiescent /n/ and tanween are hidden and they are produced through the nasal chambers when they are adjacent with the fifteen oral sounds / q,k, dʒ, ġ,s,z,d, ʒ,z,d,f,t, θ, ð /.Concerning the sound /m/ , it is hidden when it came before the sound /b/ when produced with nasalization (ghunna).In English ,it is the sound /b/ which is not produced when it comes after the sound /m/ to avoid difficulty in pronunciation since both of them are voiced and bilabial like in 'lamb' which pronounced as /læm/

2)The oral sound is produced with nasalization (ghunna) when the sound /n/ is adjacent to the sounds /w,j/.They are called nasalized sounds and this case can be found also in English in which the air can pass through both the nose and mouth as the sound became nasalized sound when it is followed by the nasal sound like calm /kæɫ/

3)The oral sound is produced with or without nasalization (ghunna) when the quiescent/n/ and tanween are adjacent to the sounds /r,l/

4)The sound /n/ and tanween are produced with a lengthening geminated sound when they are adjacent to the sound /n/. The same thing can happen with the sound/m/ .

5)The sound /n/ is a manifest when it is adjacent with the pharyngeal sounds.Concerning the sound /m/ , it must be manifested when it is adjacent to the other sounds especially the two sounds /w,f/ .

6)The sound /n/ and tanween are inverted to the sound /m/ when they come before the sound /b/ and here it will be produced without ghunna but they are produced with nasalization (ghunna) when they are adjacent to the sound /m/ .

2)The assimilation of Vowels and Consonants

A)The consonants in both languages can be influenced by the adjacent vowels whose features can extend onto a consonant as secondary modifications.Two phenomena are found in English and they are called ' Palatalization' and ' labialization' whereas in Arabic only the first one can be found. Actually ,the Palatalization means that the tongue position of a front vowel is superimposed on an adjacent consonant like (electric ,electricity) and in Arabic,this case can be found as the dental and velarized sounds influenced by the neighboring vowels,e.g , the sounds /k/ and /g/ are uvular when they are adjacent to

'dhamma' /u/ or 'declensioned fatha' /e/ and more velar with kasrah and it will be moderate with fatha. In labialization, the lip position of a rounded vowel induces a secondary articulation onto the consonant. Moreover, it has been shown that English has clear /l/ when it comes before a vowel and dark /l/ when it comes after a vowel, before the consonants, and in final position. In Arabic, there is also dark /l/ when it comes after 'dhamma' or 'fatha' especially in the name of 'Allah' and it is clear when it comes after 'kasrah'. The sound /r/ is also dark when it comes with 'fatha' and 'dhamma' and it is clear when it comes with 'kasrah' but in English, there is no dark and clear /r/.

B) The vowels are influenced by the neighboring consonants in both languages. In English, the vowel is completely changed into another one like : /tʃildrən/ → /tʃuldrən/

whereas in Arabic, it is found that the consonants can affect the vowels in the following features :

- 1) point of the articulation like dhamma in (مُد) is more front than in (جُد)
- 2) fatha is dark after the emphatic sounds / / ʃ, t, z, ɖ / and it is between the darkness and lightness with the sounds /q, x, ʁ/ and it is light (clear) with the rest of the sounds .
- 3) the vowel may change completely into another vowel like ظفر → ظُفر
- 4) the pharyngeal, glottal, and emphatic sounds tend to the fatha like (حملته امه وَهَنَا على وَهَن)
- 5) When the third and fourth sound of the present tense /jafa'al/ (يفعل) is one of the pharyngeal sounds, these sounds must be with fatha, e.g: يَصْهَل , يقرأ
- 6) The vowel follows the semi-consonant that comes after it like سُروة ← سِرْوة
- 7) Third person pronoun /h / (هـ) with dhamma is changed to kasrah when it is preceded by /j / like : عليهن : عليهن → عليهن
- 3) The assimilation of vowels (vowel harmony) : The vowel is influenced by another vowel in both languages like :

'we are' /wiə/. Here, /i:/ is replaced by /i/ under the influence of /ə/ . به → بهُ

3) Dissimilation is a process that can be found in both English and Arabic language and it is the opposite of assimilation process. Actually, both assimilation and dissimilation aim to reduce the muscular effort that makes the articulation process more easily but the first one aims to approximate between the two sounds whereas the second one aims to differentiate between the two sounds especially the trilled, emphatic and fricative sounds. Gradually, contact and distant dissimilation can be found as the first one (تغاير المخالفة) aims to differentiate between the two similar sounds like (تسريت في تسريت) whereas the second one (المخالفة المتباعدة) aims to change the sound that separates between the two similar which is not similar to them into a similar sound to them like (اصلها اخضر اخضر). Finally, in English, it is found that dissimilation process can happen only for consonants whereas in Arabic, this process can happen for both the consonants and vowels.

Conclusions

In the light of the previous explanation of both English and Arabic assimilation, the researcher may summarize the findings as follows:

1) The term 'assimilation' in English is not exactly equivalent to the Arabic term 'idgham' even though it is the most commonly used approximation and 'AL-Mummathala'. Besides, the terms like 'AL-Mummathala'

and 'AL-Mudharaa' may refer to the term germination since assimilation is regarded as one form of doubling sounds..

2) Generally speaking, assimilation is a process which happens in both languages for both the vowels and consonants in which both of them can influence each other or each one can be affected by itself. Consonant assimilation is more common than vowel assimilation

3) Concerning the assimilation of the consonants and vowels, it can be summarized as follows:

a) The historical and contextual assimilation are two main types which happen in both languages and the second one is found more commonly than the other. Besides, according to the traditionalists, there are other two main types of assimilation which are found in Arabic not in English and they are called the big and small assimilation. The English language lacks these two kinds of assimilation since it lacks inflections (harakat).

b) Total and partial assimilation are two types of assimilation which are found in both languages for both the consonants and vowels. Besides, there are four minor phonemic types which are voice (fortis vs. lenis (الجهر والهمس)), place of articulation, manner of articulation (plosion and friction (الشدّة والرخاوة)) and nasality (vocal tract transition (انتقال مجرى الصوت)). All these kinds are found in both languages except the category velarization and non-velarization (الأطباق والانفتاح) which is found only in Arabic not in English. It is important to mention that in Arabic, there is no voiced sound adjacent to its counterpart voiceless sound otherwise; one of the two sounds must be changed to the other sound in which case sounds must be either voiced or voiceless sounds.

c) Progressive, regressive, and reciprocal assimilation are three kinds which are concerned with determining the direction of the assimilation process and they are found in both languages.

d) Assimilation can happen between two kinds of the sounds which are similar and approximate sounds. The first kind is found only in Arabic language because the result is a geminated sound which is not found in English whereas the second one is found in both languages. Besides, other processes can happen in Arabic between the two similar sounds like hidden or substitution if the assimilation can not be happened. Concerning the approximate sounds, according to Sibawayh, the assimilation can not happen with some sounds that have features which are a basic part of them and they will be lost in the assimilation process.

e) There are many cases of the quiescent /n/ and tanween. It is found that the nasalized case which happens with the sound /n/ is the only one found in both languages. Besides, concerning the case of /m/ assimilation, the hidden case in both languages will happen with the sound /m/ when it comes before the sound /b/ as follows:

1- In Arabic, the sound /m/ is hidden

2- In English, it is the sound /b/ which is hidden and the sound /m/ must be produced

However, other cases like the geminated, manifestation, and inverted cases are found only in Arabic not in English.

f) Concerning the assimilation of vowels and consonants, it is found that the consonants are influenced by the neighboring vowels in both languages and vice versa. However, there are two major phenomena which are palatalization and labialization in which the former is found in both languages whereas the

latter is found only in English. Actually, there is no clear evidence about the labialization case and whether it is found or not in Arabic because there are some examples about this case but even this case is not mentioned directly in Arabic references like the clear and dark /l/ and /r/. However, clear and dark /l/ and /r/ can be found in Arabic language whereas only the first one, i.e, clear and dark /l/ is found in English. In addition, the vowels are also influenced by the consonants in both languages and it is noticed that Arabic cases are more varied than English cases like changes in some of the features and sometimes the vowel is completely changed.

g) The vowels are influenced by other vowels in both languages. This is called vowel harmony.

4) In both languages, dissimilation is a reverse process to assimilation process despite both of them make the articulation process more easily since the first one aims to approximate the two sounds whereas the second one aims to differentiate between the two difficult sounds. However, in English, dissimilation can happen only in consonants whereas in Arabic this process can happen for both the consonants and vowels. Moreover, dissimilation is subdivided into contact dissimilation (تغاير المخالفة) and distant dissimilation (المخالفة المتباعدة) in which the first one differentiates between the two similar sounds whereas the second one changes the sound that occurs between the two similar sounds into one that is similar to them.

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