

Difficulties Faced by British and Iraqi Undergraduate Students of English When Pronouncing Arabic True Gemimates and English Fake Gemimates

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Abstract:

This paper investigates gemination which is a phonetic phenomenon in English and Arabic .It is concerned with true gemimates and fake gemimates phonetically ,true gemimates which are found in Arabic are long segments which contrast with short ones , thus Arabic speakers have a phonemic length contrast since they treat long and short versions of the same sound as distinct categories . In contrast, fake gemimates which are found in Arabic, but in English are called so because they are phonetically long but their length does not serve as a phonetic contrast .The research aims at revealing the difference in the achievement of the Arab and British undergraduate students of English when pronouncing Arabic true gemimates and English fake gemimates .It also aims to point out the effect of the intrinsic difference that concerns gemination in both languages . The third aim of this paper is to find out the type of English fake geminate which has more difference in the achievement of the subjects involved in this research .On the light of these aims three hypotheses were set .To carry out this research ,ten Iraqi (Arab) undergraduate students of English from University of Anbar (4th year students) were chosen besides ten British undergraduate students of English(4th year students) from Essex University .The subjects involved in the study have to participate in two tests .In the first ,they have to pronounce twenty Arabic words (single and geminate),whereas in the second test ,they have to pronounce thirty words about the types of English fake gemimates ,ten words were selected for each type .The study arrives at certain findings and conclusions .

1-Introduction

A geminate is a consonant held in closure for audibly longer period of time than a shorter, or singleton consonant. It is usually defined in terms of sequences of two identical articulations and a prolongation of the articulatory posture .Robins (1964:80) states that " consonants can be long ,or geminate , when the closure or obstruction is held momentarily before release ". Lexically ,the word 'geminate' is defined as " a doubled consonant; and the noun 'gemination ' as " the doubling of a letter in the orthography "(The Oxford English Dictionary , 1933,Vol- 4 ,P.98).Linguistically , the word geminate is defined as " a sequence of identical segments of a sound in a single morpheme "(Crystal ,1980:158)

Watson (2002:232) states that geminate consonants are one of the features of Arabic Language .Intervocalic gemination and word final position are common in Arabic Language. Geminate consonants in initial position are impermissible in Arabic Language. According to Ringen and Vago (2011:160), the patterning of geminate consonants has, somehow,

been a neglected topic in Arabic phonology .There are two views by which the representation of geminate consonants can be clarified: a prosodic length representation where a phoneme is underlyingly linked to two C – slots and a weight representation where a geminate is a phoneme that is underlyingly linked to a mora.

As regards English gemination ,Oh and Redford (2012 : 85) state that although true geminate is not found in English ,long geminates do arise when identical short segments occur in sequence due to affixation which are known as fake geminates . They are called so because they are phonetically long but their length does not serve as a phonemic contrast , as does length in true geminates .For example , the word "unnoticed "is formed by prefixing un- to a word beginning with the same sound . These adjacent sounds of the same consonants are allophones. Gemination as a phonetic phenomenon needs to be investigated to achieve certain aims which are:

- 1- Pointing out the difference in the achievement of the Iraqi (Arab) and British undergraduate students of English when pronouncing Arabic true geminates and English fake geminates.
- 2- revealing the effect of reading the Arabic geminate words in front of the British undergraduate students of English three times in sequence on their pronunciation besides the effect of repeating reading these words by the students themselves in different periods before encoding them .
- 3- finding out the type of English fake geminates which has more difference in the achievement of the British and Iraqi (Arab)undergraduate students of English

The research hypothesizes that

- 1- there is a significant difference in the achievement of the British and Iraqi (Arab) undergraduate students of English when pronouncing the Arabic true geminate words.
- 2- reading out the Arabic geminate words by the researchers and repeating reading these words by the British subjects involved in the present study in different periods does not change the way encoded these Arabic new words since there is an intrinsic difference between English and Arabic geminate.
- 3- There is a significant difference in the achievement of the British and Iraqi (Arab) undergraduate students of English when reading the words of the three types of English fake geminate.

2-Definition of Geminating

Crystal (2003:206) defines geminating as:

a sequence of identical adjacent segments of a sound in a single morpheme. A geminate sequence cannot be regarded as a long consonant

and transcriptional differences usually indicate this ,e.g.[mm] is geminate , [m:] is long .Those long segments cannot be separated by epenthetic vowels. Fake or apparent geminates (identical segments have been made adjacent through morphological concatenation) are contrasted with true geminates. Geminating or consonant elongation in phonetics happens when a spoken consonant is pronounced for an audibly longer period of time than a short one . This term is derived from Latin root (Gemini) which means twinning. (ibid)

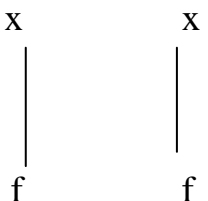
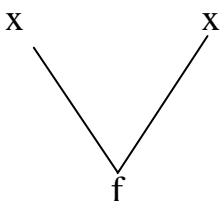
Trubetzkoy (1969:161) states that" Greater muscular tension in the articulators organs" is needed to produce geminates .He states that the geminated consonants occur in many languages .These geminated consonants are distinguished from simple or non – geminated consonants by a longer duration. In most cases, they are characterized by a more energetic articulation that is reminiscent of the correlation of intensity.

According to Nasr(1963:23) ,in English Language, gemination is not phonemic but it is phonetic ,in the sense that ,the length of the consonant is decided by the phonetic surrounding of those consonants .This length is not distinctive since it does not change the meaning of words or expressions .

Khattab (2007:155) defines a geminate in a different way. He states that a geminate is a consonant held in closure for audibly longer period of time than a short, or singleton consonant.

According to Watson (2002:233), the occurrence of geminate consonants in word – medial and word – final position is one of the apparent features of Arabic. There are two contrastive views by which the geminate consonants can be represented : the prosodic length analysis of geminates whereby a geminate is underlying a single consonant phoneme linked to two C- slots . The latter is the moraic weight representation where a geminate is underlyingly a single consonant linked to a mora. Linguists largely support the moraic weight representation.

Delattre(1971:132)clarifies gemination by using the term "syllable structure" .He states that gemination is a process of consonant re-articulation in which the first consonant occupies a syllable coda and the second belongs to the onset of the following syllable .He(ibid) states that the difference between a long consonant and geminate is that geminates have two phases in their articulation while a long consonant is a single segment having two timing slots as in figures (1-a)and (1-b) ,respectively .

 <p>Figure(1-a) Representation of geminates</p>	 <p>Figure(1-b) Representation of long consonants</p>
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Crystal (2003:440) states that C-Slot is used in auto segmental phonology for an element on the skeleton tier. It refers to the segments to which vowels and consonants must associate if they are interpreted structurally, the C – position is the onset where it is realized.

According to Hayes (1989:254), the definition of geminating cannot be understood without defining the term of mora. Mora is a term which refers to a minimal unit of metrical time or weight. It is also used in some models of non – linear phonology (e.g. metrical and prosodic phonology as a separate level of phonological representation). The analysis of segments into moras is usually applied only to the syllabic nucleus and coda (the rhyme) and not to the onset (onset/ rhyme asymmetry). Moraic structure accounts for many of the phenomena described in other models by such notions as the skeletal tier. The symbol that is used for moraic level is μ (mu) Skeletal tier :It is also called CV-tier or skeleton .

He (ibid) states that it is used in auto segmental phonology for the tier in which the speaker represents units as consonants and vowels within syllabic structure .An opposition between heavy (two – mora , or bimoraic) syllables and light (one – mora , or monomoraic) syllables , and the equivalence between various types of heavy syllable can be clarified by mora counting.

3-Double or Long Sounds

Many linguists define 'gemination' as a sequence of two identical articulations and a prolongation of the articulatory posture. This definition indicates the embracement of long as well as geminate consonants. According to Robins (1964:80), consonants can be long or geminate when the closure or obstruction is held momentarily before release. On the other hand, many scholars differentiated between long and geminate consonants saying that articulation of geminates extend over two syllables .The term "double consonants" supports this point of view.

Abercrombie (1967:82) states that "double consonants must also be distinguished from long consonants. A double consonant is one whose duration extends over two syllables ,whereas the duration of a long consonant is confined to a single syllable" .In English language ,double consonants appear at word junctions ,as in , book-case ,etc.

Catford (1977:298) states that the term geminate means holding the articulators and maintaining a longer occlusion for its production.

Mortimer (1977:2) comments on Catford's definition saying that if we accept this definition, English geminate sequences cannot be considered as geminates, since they occur only across word boundaries or in words such as 'unknown' which contains two morphemes. He (ibid) assures that the term double consonant equals the term geminate consonant mentioning expressions as

Nice-cider and black coffee

Hall (1964:99) defines long consonants by saying that "they are interpreted as geminate consonants when they involve a two –consonants cluster consisting of one consonant followed by itself.

Jones (1967:116) considers "all intervocalic long consonants as double, on the ground that it is usually possible in precise speech to separate them into two by a diminution of force in the middle attaching the first part to the first syllable and the second part to the second syllable". He (ibid) adds that long consonants are divisible when they occur in compound words and in words formed with either prefixes or suffixes, e.g book-case, oneness, etc. From practical point of view, he prefers to use the term double consonant rather than long one.

Cantineau (1960:214) distinguishes between long and geminate consonants describing geminate consonants as those consonants which are characterized by a prolonged articulation and which are generally transcribed by doubling the consonant symbol.

Lehiste et al (1973:131) state that two different views were presented to answer the question whether there is a phonetic difference between long and geminate consonants. The first one claims that geminate consonants differ from long ones in that the pronunciation of the former involves two phases. One of them forms the occurrence of final syllable while the second commences the following syllable. The other view deals with geminate consonants and long ones as the same and denies the existence of the two phases.

According to El-Saaran (1951:158), the lengthening of Arabic consonants is usually referred to by the term gemination which means doubling the consonant without an intervening vowel.

The two terms "double" and "long" are used by Cowell (1964:23-24). They can occur word-medially between vowels as in /hatta/ 'until' but they occur at the end of words without having contrast short ones.

Mitchell (1956:8) states that the term geminate should be replaced by the term "doubled consonants". A geminate consonant must be pronounced approximately twice as long as a single one, especially when it occurs at the end of words such as /muhiim/ 'important'. In this case, a greater

muscular tension in the articulatory organs characterizes geminate consonant.

4-Gemination in Arabic

El-Saaran (1951:158) mentions that the most common form of gemination is in word –medial position .A small sign like(shada) is placed over the consonant to indicate that this consonant is geminated in written form of language . Al-Khalil used this sign for the first time to avoid confusion between distinctive words such as:

/Kasara/ ' he broke' /kassara/ ' he smashed'

El –Saaran (ibid :162) states that the old Arab grammarians treated geminate consonants as two short segments , the first being " still" " saakin" and the second " moving " " mutaharik". Phonetically ,it is preferable to treat geminate consonants as being double consonant sounds rather than one long sound .

Cantineau (1960:214) defines geminate consonant as did Arab grammarians saying that a geminate consonant can be defined in terms of its syllabic structure. It is still followed by a moving .As a consequence, a geminate cannot occur in initial position .He assumes that geminate consonants occurring in final position of word are non –distinctive in Arabic because contrasting single and geminate consonants in this position is not significant . He also adds that the final geminate in Arabic is characterized by tenseness of articulation as compared with a non –geminate.

Ghlib (1984:41) assures that geminate proper functions to distinguish one word from another. It is the factor by which the contrast between the geminated consonants and their corresponding single cognates can be made. Unlike gemination which occurs by the effect of assimilation, geminate proper is always a basic part of the internal structure of the word .The contrast between geminate and non –geminate in medial position can occur in verbs and nouns. For example:

Single	geminate proper
/rasaba/ 'he failed'	/rassaba/ 'he causes to fail'
/darasa/ 'he studied'	/drarrasa/ 'he taught'
/hamaam/ 'pigeons'	/hammaam/ 'bath'
/falaah/ 'success'	/fallaah/ 'peasant'

Some words in Arabic which contain medial geminates do not have corresponding words with medial single consonants. For example:

/takallama/ ' he talked' , /rassam/ ' painter' , /dzazzaar/ ' butcher'

At the same time, the reverse is true concerning words having medial single consonants.

Forbes(1863:15) argues that the symbol /tashdeed/ (geminate) is employed sometimes for the sake of euphony , when an inert letter is followed by a different letter have a cognate sound , or one which is

capable of coalescing with former .He (ibid) mentions minimal pairs containing word-medial geminate to illustrate the difference as follows :

/ sabab /	' cause '	/sabbab/	' he caused'
/Batal /	' hero'	/battal/	' he ceased'

Erwin (1969:20)states that the distinction between a single consonant and its geminate counterpart in Arabic is as important as distinguishing between [b] and [p] in English because the use of geminate is distinctive .He (ibid) states that the difference between a geminate and a non-geminate consonant is caused by a relative duration .He elaborates that the difference between a single and a geminate consonant is similar to the difference between a short and a long vowel .

Van Ess (1938:5) defines germination as a special sign (علامة الشدة) used in Arabic orthography. It is placed over a consonant indicating double consonant .He (ibid) mentions the name of the prophet "Mohammed " to illustrate medial geminate.

Nasr(1960:210) states that the length of consonant in spoken Arabic is phonemic .He considers length as a segmental feature rather than supersegmental one. He states that the difference between the geminate and non –geminate consonant is that in the first case the geminate consonant takes a relatively longer time to be produced than non –geminate.

Benhallam (1980:141) distinguishes between two types of geminates depending on deep and surface structure. He calls the first one" underlying geminates" which can be split up by morphological or phonolexical rules . The second one is called "derived geminates ". It can be split up only by phonological rules . He(ibid) mentions that geminate clusters can be split up by morphological or morpholexical rules but not by phonological rules .

Rahim (1980:204) states that plosive and affricate consonants occur geminated when the closure is maintained longer before the release stage of the corresponding single stops . On the other hand, when fricative consonants occur geminated , the friction noise is prolonged slightly more than the corresponding single fricatives .The nasals and laterals behave similarly with geminate flapping the tap of the tongue blade to recur several times .He (ibid:206-207) mentions that gemination in word –final position functions distinctively in very rare cases ,in reverse to word medial position .He concludes that gemination in word –final position affects most Arabic consonants distinctively in very few cases and non-distinctively in most cases .

Odicho (1973:108) distinguishes between two terms " consonant cluster" and "abutting consonants" .The first denotes a sequence of more than one consonant restricted to one syllable .The latter indicates a sequence of consonants that spread over two syllables .He(ibid) adds that the gemination of consonant clusters does not occur word –medially in Arabic

.It occurs in initial position because of the effect of assimilation between the definite article and the consonant initiating the following word such as / al-əaaliə/ 'the third ' becomes/əəaaliə/.

Hassan (1981:245) states that a vowel is shorter before consonant cluster or a geminate consonant than before a single consonant .He supports what he said by mentioning these two words /baSar/ 'human being' versus/baSSar/ ' give good news'. In the above words ,the acoustic duration values of the vowel[a] in the first syllable is longer when this vowel occurs before a single consonant than before a corresponding geminate one .

4-1-Distribution of geminates in Arabic Language

Geminates usually occur in certain phonetic environments .Thurgood (1993:1) states that "the most favored one for long consonants to occur in is intervocalically , following a short , stressed vowel and preceding another short vowel ."

Muller (2001 :12) states that many difficulties occur in representing non –intervocalic geminates . Medial geminates in Arabic are contrastive while the distinctiveness of word final geminate is less common. El Saaran(1951:162) mentions two Arabic words to clarify that . The first is (hadd(حاد)/deviated) and (hadd(حاد)/ sharp).

Geminates in Arabic are phonemic because the re-articulation of the same sound changes the meaning of words as can be shown in the minimal pairs:

/silm/ " peace " /sallam/ " handed"
/samad / " resist" /sammad/ " economize"

All phonemic sounds in the language have geminated counterparts that contrast word medially . Word final phonemic geminates can be clarified in the following

/saar / "walked" /saarr / "pleasing"

Inter-vocalic and word – final position are the most common character in Arabic. Geminate consonants in word – initial position is less common. The following example clarifies this:

/kasir/ "noun of break" /kassar/ كَسَرَ " the past of break"
/pigeons/ [حمام] / hamma:m / " bathroom" حَمَّام

4-2-Representation of Gemination in Arabic

Davis (2011:873-897) states that the prosodic length analysis of geminates goes back to Leben (1980:497-509) who posited an autosegmental representation of geminates in which a single phoneme is linked to two C-slots on the skeletal tier that encodes the prosody of word in terms of C-slots and V- slots . The diagram 2-a represents a geminate consonants, while 2-b represents nongeminate ones

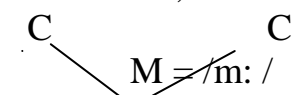


Figure (2-a) Prosodic length analysis of geminates in underlying representation

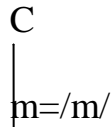


Figure (2-b) single consonant in underlying representation

C C C C C C

ʔ | A \ M | A | M

Figure (3) CV – tier representation of [hamma:m] clarifies an intervocalic geminate of the word [hamma:m]

Hayes(1989:253-270) adopted a different view of representation of geminates in which geminate consonants are considered to have inherent weight. According to the weight approach, the prosodic tier is moraic rather than segmental. Hayes (ibid) states in his theory that a short vowel is underlyingly monomoraic while a long vowel is bimoraic. A geminate consonant differs from a short consonant in that a geminate is underlyingly linked to a mora as in (4) which is symbolized by him as (μ), whereas a nongeminate as in (2-b) lacks a mora underlyingly.

Figure (4) shows the moraic representation of the Arabic word [hammam /bathroom] in which an intervocalic geminate can be represented as shown below.

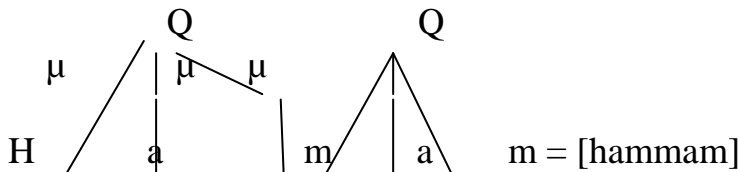


Figure (4) surface syllabification with moraic structure (Q =syllable)

In moraic theory, the distinction between a heavy syllable and a light one can be manifested by using bimoraic for the first one and monomoraic for the second. In the above example, the first syllable is heavy (bimoraic) while the second is light.

Hayes (ibid) states that the weight of a geminate coda is language specific. Such a coda can be made moraic by a specific rule which he called 'weight by position'. The formulation of this rule is as follows:



Figure (5) Weight by position

This rule can be applied in Arabic but not in word – final position. The effect of this rule can be attracted to a penultimate syllable that ends in a consonant, as in [ka.tab/ katabti]

5. Gemination in English

Phonetically, true geminates are long segments that contrast with short segments in a phonemic inventory, while fake geminates are long segments that are not contrastive. Although English does not have true geminates, long segments do arise when identical short segments occur in sequence

due to affixation. True geminates mean that the speakers treat long and short versions of the same sound as distinct categories rather than as variants of a single category. Linguistically, two sounds that are separately categorized are known as distinct phonemes. True geminates are represented as a single feature bundle that is linked to two timing units, whereas fake geminates are represented by a sequence of feature bundles with each bundle linked to its own unit (McCarthy, 1986:17)

Absolute timing differences at the phonetic level cannot manifest the differences between true and fake geminates since both are associated with two timing units. Since absolute consonant duration was the same for true and fake geminates, the preceding vowel duration differences translate into relative duration differences between true and fake geminates such that true geminate were longer than fake geminates. Lahiri and Hankamer (1988:322-338) state that a word boundary would trigger boundary-adjacent syllable lengthening, which would explain the longer preceding vowel durations that they observed for fake lengthening. If true and fake geminates do not differ in preceding vowel duration or in absolute consonant duration, then they will also have the same relative durations. According to them (ibid), word boundary fake geminates will differ from word-internal fake geminates even though both types emerge from morpheme concatenation. Fake geminates that cross a word boundary are represented as a sequence of identical consonants, consistent with the traditional view of these segments. Boundary-adjacent lengthening results in fake geminates having shorter relative durations than true geminates. Word-internal fake geminates are represented as long consonants in the speech plan, in the same way as true geminates. Phonetically, this representation is indicated by relative durations that are longer than those associated with word-boundary fake geminates and by a lack of phonetic boundary cues.

Hay (2007:42-51) suggests that not all word-internal fake geminates have the same speech plan representation and so they may not all have the same phonetic signature. Word internal fake geminates that emerge in highly decomposable words may be represented as sequence of two consonants, and so should pattern with word boundary geminates. Fake geminates that occur in less decomposable words may be represented as a single long consonant, and so should pattern differently from word boundary fake geminates.

Klatt (1974:51) measures the duration of the phonetic [s] in a list of more than one hundred words. In this list, this segment is appeared in several different phonetic contexts. Words containing a single and double [s] were compared to measure its duration. The results indicate that the double [s] is approximately %25 longer than a single [s] if it is followed by a plosive such as // misspell versus misplace // and misstep versus mistake //.

Mortimer (1977:18) notices that students of English as a foreign language experiences difficulty in hearing auxiliary verbs when these are signaled by a single consonant sound .The difficulty is greatest if this sound is identical with that at the beginning of the verb root . Paired utterances , such as He sold it / He's sold it , He dropped it /He 'd dropped it , and He let it /He'll let it , are recorded by the investigator to find out whether there are measurable ,consistent durational differences in the acoustic structure correlatable with the geminate /non-geminate distinction at the critical point of juncture. Scrutiny of spectrograms indicates that all geminate members of a pair have a greater acoustic segment duration than do their non- geminate partners in that pair. The geminates [ss] and [ll] tend to be about a third longer than the non – geminates [s] and [l] ,but [dd] is found to be usually longer about 75% than [d].Listening tests concerning the same sample indicates that non-geminate items are better discriminated than geminate ones .

Delattre (1971:43) examined vowel sounds preceding geminate and non geminate consonants to know whether the geminates would be preceded by shorter vowels than their single cognates .The results indicate that they are not shorter. He mentions that the duration of the preceding vowel is a negligible factor .He measures the duration of the preceding vowels in the following samples and the results support his speech:

I've seen Nelly.	10(12.5)
I've seen Elly.	11(6)
We see Nelly.	9.9 (7.5)
The race sends.	19 (22)
The race ends.	18.2(12)
The ray sends.	20.1(17)

Delattre(ibid :112) points out that vowels are not shorter before a geminate consonant than before a non – geminate counterpart ,and the duration of the preceding vowel is not a factor in the perception of consonant gemination .These results are unexpected because " vowels are shorter before a voiceless consonant than before a voiced one – an analogical condition with respect to the anticipation of a great effort."

6-The Tests

6.1.The Subjects

Ten undergraduate students of University of Essex(4th year students of English) as English native speakers and ten undergraduate students of University of Anbar(4th year students of English) as Arabic native speakers participated in two tests to find out how they pronounce true geminates in Arabic and fake geminates in English .These twenty students were divided into two groups .The first group (group A)included the British students and the second group (group B) involves the Iraqi (Arab) students .The

students of both groups participated in the first and second tests which are about the pronunciation of Arabic and English words .See (6.2)below.

6.2. The Data

The data included twenty Arabic words ,ten of these words are geminates and ten are non-geminates .These words represent the first test which aims to validate or invalidate the first and second hypotheses of this research as shown in table(1.a)below .The data also included thirty English words which are distributed over three tables ,each one included a certain type of English fake geminates .These words are concerned with the second test which intends to validate or invalidate the third hypothesis of this paper .See tables (2.a,3.a and 4.a)below.

6.3. The Procedures

As regards the first test which is concerned with Arabic words ,the researchers kindly asked one⁽¹⁾of their colleagues who study English at Essex University in Britain ,the same university at which the British subjects study ,to get Ph.D.to be responsible of administering this test in which the British students are engaged .Since the ten British students involved in this study did not study Arabic before ,he was asked to read these words loudly in front of them three times in sequence .Then ,according to the instructions given to him ,he asked them to read these words after two hours and at last to read the same list of words the day after in order to encode their pronunciation .The above steps were not applied to the second test that concerns the thirty fake geminate words since encoding the pronunciation of words started directly .Concerning the ten Iraqi (Arab)undergraduate students of English ,the researchers asked them to pronounce the Arabic and English words to be encoded directly .Spectrogram apparatus was used in analyzing the words produced by both groups to measure the duration of geminate and non –geminate sounds besides the length of double sounds in English fake geminates . Depending on Lahiri and Hankamer (1988:330) who state that the duration of all word-internal fake geminates was greater than that of singleton but the difference between word-internal geminates and word boundary geminates was not significant ,the researchers corrected the subjects' answers. After that the researchers analyzed the data to know the number of correct answers (which have accurate pronunciation)of each group when pronouncing the words since the researchers are native speakers of Arabic besides being teachers of phonetics and phonology at the department of English .

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6.4 The Scoring Scheme and the Statistical Tool used

When checking up the correct (accurate) answers of the subjects in each group which consists of ten participants, each correct answer is given 1 mark and each incorrect answer is given 0 . The results are shown in tables (1a),(2a),(3a)and (4a)below .As regard the analysis of these results statistically ,the tool used is t-test to find the computed and tabulated t-value on the level of significance (0.05).See tables (1b,2b,3b and 4b)below.

7. Discussion of Results

On the basis of the analysis of the results of the first test ,the number of correct answers of groups (A) and (B)is mentioned as clarified in Table (1a)below .

Table (1a) The scores of the participants of groups (A) and (B) which concern the first test about the single and geminate Arabic words

No of items	The Arabic words		Correct Answers of Group A	Correct Answer of Group B
	Single	Geminate		
1	/rasaba/ 'he failed'	/rassaba/ 'he caused to fail '	5	8
2	/rahala/'he departed'	/rahhala/ 'he cause to depart'	4	9
3	/kataba/ 'he wrote '	/ kattaba/ ' he made to write'	4	9
4	/lamaha/ 'he saw'	/lammaha/ ' he indicated'	3	8
5	/halaqa/'he shaved'	/hallaqa/ 'he flew'	2	7
6	/darasa/'he studied'	/darrasa/ 'he taught'	4	7
7	/Batal / 'hero'	/battal/ ' he ceased'	3	6
8	/hamaam/'pigeons'	/hammaam/ ' bath'	2	9
9	/falaah/ 'success'	/fallaah/ 'peasant'	1	9
10	/Salm/ " peace "	/ sallm/ " handed"	3	9
Total (20)			31	83

To validate or invalidate the first hypothesis of the present study, t-test is applied to the numbers of scores of the subjects of group (A) and (B) to get the data shown in table (1b)below

Table (1b) shows the results of the first test which is about the single and geminate Arabic words

Group	Number	Mean	Standard Derivation	D .F	Computed T - test	Tabulated t- test	Level of Significance
A	10	3.1	1.433	18	9.723	2.101	0.05
B	10	8.1	1.211				

According to the data given in table (1b) , it is found that the computed t-value which is (9.723) is higher than the tabulated t-value which is (2.101)on the level of significance (0.05).This indicates that there is a significant difference in the achievement on behalf of the Group (B) since most Iraqi (Arab)graduate students of English pronounce the single and

geminate Arabic words accurately. This validates the first hypothesis. The results also indicate that the lack of an effect of repetition on the competence of the native speakers of English (Group A) affirms the second hypothesis of this research that there is an intrinsic difference between English and Arabic geminates. The repetition of reading the Arabic words does not change the way the British speakers encoded them. The Iraqi (Arab) undergraduate students of English reproduced a length contrast, whereas the British ones did not. This difference is due to the difference of the competence between English and Arabic speakers.

The data of table (2a) below show the scores of groups (A) and (B) which regard the first type of English fake geminates, i.e., words-internal singleton. These scores were mentioned in the light of the analysis of the words pronounced by the subjects.

Table (2a) The scores of the subjects of group (A) and (B) concerning the first part of the second test about the first type of fake geminate in English

No of fake words	Words-internal singleton	Group (A)	Group(B)
1	Ammonia	9	7
2	Immensely	8	8
3	Immunity	8	7
4	Immigrational	10	8
5	Annex	8	8
6	Innate	9	9
7	Annoyed	9	8
8	Correct	8	7
9	Cabbage	7	9
10	Dinner	10	9

The use of t-test in the statistical analysis of the scores of groups (A) and (B) in (2a) above resulted in the data shown in the table (2b) below.

Table (2b) shows the results of the first part of the second test about the first type of fake geminate in English

Group	Number	Mean	Standard Deviation	D.F	Computed T - test	Tabulated t- test	Level of Significance
A	10	8.6	0.933	1	1.503	2.101	0.05
B	10	8	0.66	8			

The data mentioned in table (2b) verify the first part of the third hypothesis of this research which states that there is a significant difference in the achievement of the British and Iraqi (Arab) undergraduate students of English when reading the words of English fake geminates. It is found that

the computed t-value which is (1.503), is less than the tabulated t-value which is (2.101) on the level of significance (0.05). This indicates that there is no significant difference in the achievement between English and Arabic speakers according to the variable of the first type of fake geminate.

Table (3a) below shows the number of scores of groups (A) and (B). These scores were mentioned depending on the results of the analysis of English fake geminate words pronounced by subjects who participated in this test.

Table (3a) the scores of the participants of groups (A) and (B) concerning the second part of the second test about the second type of fake geminate in English

No of fake words	Word internal –Geminates	Group (A)	Group(B)
1	Immoveable	9	6
2	Immoral	8	5
3	Immemorial	8	4
4	Immeasured	9	4
5	Unnoticed	9	3
6	Unnamed	9	3
7	Unnail	8	4
8	Unknown	9	2
9	Immature	8	2
10	Immortal	8	3

Based on the results shown in table (3b) below after the use of t-test to get the statistical analysis of the scores written in the above table, it is found that the computed t-value which is (11.31) is higher than the tabulated t-value which is (2.101) on the level of significance (0.05). This indicates that there is a huge difference in the achievement on behalf of the subjects of group (A) according to the variable of the second type of fake geminate. This result is expected when we take into consideration the scores of Iraqi (Arab) students when pronouncing English word-internal geminates.

Table (3b) shows the results of the second part of the second test about the second type of fake geminate in English

Group	Number	Mean	Standard Derivation	D .F	Computed T – test	Tabulated t- test	Level of Significance
A	10	8.5	0.277	18	11.31	2.101	0.05
B	10	3.6	1.6				

The third type of fake geminates in English is the concern of the third part of the second test in which the subjects of groups (A) and (B) were asked to pronounce ten of words boundary geminates. The scores given to each group specifying the correct answers are shown in table (4a) below.

Table (4a) The scores of groups (A) and (B) concerning the third part of the second test about the third type of fake geminate in English

No of fake words	Word boundary –Geminates	Group(A)	Group(B)
1	Dim morning	9	8
2	Grim magic	9	8
3	Prim memorial	8	7
4	One nail	8	8
5	Fun name	9	5
6	Fun noise	9	7
7	Nice cider	9	8
8	Black coffee	8	6
9	Cool larger	8	6
10	Book-case	9	6

The statistical analysis of the scores mentioned in table (4a) depends on the use of t –test as shown in table (4b) below.

Table (4b) shows the results of the third part of the second test about the third type of fake geminate in English

Group	Number	Mean	Standard Derivation	D .F	Computed T – test	Tabulated t- test	Level of Significance
A	10	8.6	0.266	1	4.423	2.101	0.05
B	10	6.9	1.211	8			

The data mentioned in (4b) above verify the third part of the third hypothesis about the difference in the achievement of the British and Iraqi (Arab) undergraduate students of English when pronouncing words concerned with the third type of English fake geminate .It is found that the computed t-value which is (4.423) is higher than the tabulated t-value which is (2.101) on the level of significance (0.05).This indicates that there is a puny difference in the achievement on behalf of English speakers according to the variable of the third type of fake geminate in English .

8-Conclusions

The present study arrives at the following conclusions:

1- The British undergraduate students as native speakers of English face difficulty in producing (pronouncing)the Arabic true geminate words since most of them fail to produce a length contrast ,whereas the Iraqi (Arab) undergraduate students as native speakers of Arabic reproduced a length contrast which characterizes Arabic geminate words .This conclusion is supported by the significant difference between the two

languages as clarified in the results mentioned in tables (1a) and (1b) above. This conclusion verifies the first hypothesis.

2- There is no effect of reading the Arabic true geminate words three times by the researchers and repeating these words twice during two different periods by the British undergraduate students on the way they produce them. This may be due to the intrinsic difference which concerns gemination in English and Arabic and the different competence which the native speakers of the two languages have. This verifies the second hypothesis.

3- Both British and Iraqi (Arab) undergraduate students of English do not face any difficulty in producing word-internal singletons which represent the first type of English fake geminates. This conclusion is based on the results shown in tables (2a) and (2b) above. These results indicate that there is no significant difference in the achievement of Arabic and English students engaged in this study. This proves that this part of the third hypothesis is invalid.

4- The Iraqi (Arab) undergraduate students of English faced a great difficulty in pronouncing the English word-internal geminate properly. This is concluded from the results of the second type of English fake geminate as shown in tables (3a) and (3b). This conclusion verifies the second part of the third hypothesis.

5- The Iraqi Arab undergraduate students of English face a puny difficulty in producing the third type of English fake geminate which is word-boundary geminate. This deduction depends on the results mentioned in tables (4a) and (4b) which reveal that there is only a puny difference in the achievement of the students of English and Arabic involved in the present study (research) in producing the words of the above type of English fake geminate.

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التشديد في اللغة العربية والانكليزية دراسة مقارنة

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الملخص:

تتحرى هذه الدراسة التشديد باعتباره ظاهرة صوتية موجودة في اللغة العربية والانكليزية. يهتم هذا البحث بالتشديد الموجود في اللغة العربية وذلك لان تشديد الحرف يعني تغيير معنى الكلمة الى معنى اخر واعتبارها جزء اخر من اجزاء الكلام وهذا يغاير التشديد المزيف الموجود في اللغة الانكليزية لان تكرار الحرف لا يغير معنى الكلمة ولكن يغير من لفظها فقط . يهدف هذا البحث الى اكتشاف الفرق في اداء طلبة البكالوريوس في المرحلة الرابعة في جامعة الانبار وجامعة اسكس عند لفظهم التشديد الموجود في اللغة العربية والتشديد الزائف الموجود في اللغة الانكليزية وإيضاح الفرق الجوهرى الموجود بينهما .تهدف الدراسة ايضا الى تمييز نوع التشديد الزائف الاكثر اختلافا عن بقية الانواع .وبناءً على هذه الاهداف ، ثلاث فرضيات وجدت وجريت على عشرين طالبا في المرحلة الرابعة في مرحلة البكالوريوس (عشرة في جامعة الانبار وعشرة في جامعة اسكس البريطانية) حيث شاركوا في اختبارين ،الاول يتضمن كلمة عربية (عشر كلمات غير مشددة مع نظيراتها المشددة) وتضمن الاختبار الثاني ثلاثين كلمة انكليزية بما فيها عشر كلمات لكل نوع زائف من انواع التشديد الموجود في اللغة الانكليزية هذا وقد توصلت الدراسة الى نتائج واستنتاجات معينة