

Morphophonemic Interface in BBC English, and Basra Arabic^o: A Case Study of Phonological Conditioning

Hamid M. Al-Hamadi
Dept. of English
College of Arts
University of Basra,

Isra' Mahmood Salman,
Dept. of Translation
College of Arts,
University of Basra

Abstract

This piece of work attempts to examine the morphophonemic interface in both BBC English (henceforth English), and Basra Arabic (henceforth Arabic) in order to see if there are any similarities between the two languages as far as phonological conditioning is concerned.

The study, further hypothesizes that the phonologically conditioned allomorphy, in Arabic, can well be compared to the one in English in order to see whether or not the three types of phonologically conditioned allomorphy which do exist in English; namely, assimilation, vowel harmony, and dissimilation, also exist in Arabic.

Besides, some theoretical background on allomorphs and affixation in English, and Arabic, suppletive and replacive allomorphs are introduced. Moreover, the plural in Arabic has also been discussed.

The presentations and comparisons discussed in the study, whose data are collected from English and Arabic, are hoped to confirm the hypothesis and enhance it.

The investigation ends up with the conclusions and the findings of the study.

^o The researchers prefer to use 'Basra' as a nominal modifier in 'Basra Arabic' instead of the erroneous 'Basri Arabic' which is literally copied from Arabic just to coincide with the erroneous 'Iraqi Arabic', which has been wrongly used for 'Iraqian Arabic'.

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Phonemic Symbols

The following phonemic symbols are based on the International Phonetic Association (IPA) symbols.

1.The Vowel Symbols

A. Mono-thongs

No.	Vowels	Key Words
1	i:	<u>see</u>
2	ɪ	p <u>ity</u>
3	e	g <u>et</u>
4	æ	h <u>at</u>
5	ɑ:	f <u>ather</u>
6	ɒ	p <u>ot</u>
7	ɔ:	c <u>ore</u>
8	ʊ	p <u>ut</u>
9	u:	f <u>ood</u>
10	ʌ	b <u>ut</u>
11	ɜ:	f <u>ur</u>
12	ə	<u>a</u> bout

B. Diphthongs

No.	Diphthongs	Key Words
1	eɪ	d <u>ay</u>
2	aɪ	h <u>igh</u>
3	ɔɪ	b <u>oy</u>
4	ɪə	p <u>eer</u>
5	eə	p <u>ear</u>
6	ʊə	p <u>oor</u>
7	əʊ	g <u>o</u>
8	aʊ	c <u>ow</u>

2. Consonantal Symbols

No.	Consonants	Key Words
1	p	pen
2	b	bag
3	t	take
4	d	desk
5	k	cup
6	g	go
7	f	fat
8	v	very
9	θ	thin
10	ð	there
11	s	see
12	z	zoo

13	ʃ	shut
14	ʒ	measure
15	h	hi:
16	tʃ	church
17	dʒ	jet
18	m	man
19	n	no
20	ŋ	sing
21	l	look
22	w	want
23	r	read
24	j	yes

SOME OF THE ARABIC VOWELS, AND DIPHTHONGS (After At-Toma, 1966, and Al-Hamadi, 2008, with some modifications):

/ee/ a mid to half-close, front, spread, long vowel, as in /ween/

'Where?'

/Λ/a/ below half open, centralized front (neutral lip position),

short vowel, as in / bΛħΛr/ 'sea'.

/e/ between half-open and half close, short, front vowel, as in /weħen/

'homeland'.

/ā/ an open, front, spread, long vowel, as in / nās/ 'people'.

/ō/ above half open, back, long vowel, as in /lōn/ 'colour'.

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Some of the Arabic Diphthongs:

/ ū / as in / ʔebū / ‘my father’

/ Λw / as in / lΛwħΛ / ‘painting’

/ ey / as in / ʔey weled? / ‘Which boy?’, or / mey / ‘Mey’, a female proper name.

iv

Some of the Arabic Consonants:

[!] (A velarized variety of / l /) as in / ʔa!!āh / ‘God’

/ x /	voiceless , as in the Scottish 'loch ', or / xālīd / ‘Khalid’	}	velar, fricative
ğ /	voiced , as in the Parisian French 'route', or / ğeni / ‘rich’		
/ ʃ /	as in / ʃōt / ‘sound’	}	[s]
/ □ /	as in / □eer / ‘bird’		[t]
Pharyngealized varieties of			
/ d̤ /	as in / ʔīd̤āfa / ‘annexation’		[d]
/ d̤ / ^{oo}	as in / d̤ālīm / aggressor and / d̤eʃi:f / weak	}	[ð]
/ q /	voiceless, uvular, plosive	}	as in / qelb / ‘heart’
/ ʔ /	voiced , glottal , stop	}	as in / ʔeħmed / ‘Ahmed’

v

/ ħ /	voiceless , pharyngeal	}	as in / bΛħΛr / ‘sea’
/ ʕ /	voiced , pharyngeal		fricatives as in / ʕeli / ‘Ali’

°/ **ḍ**/ in Iraqi Arabic, including Basra Arabic, is invariably used for both of /**ḍ**/ and /**ḍ̣**/, e.g. /ḍālim/ ‘aggressor’, and /ḍeʕi:f/ ‘weak’.

I- Introduction

1.1 Problem

Morphophonology of present day English is one of the most intensively studied areas in morphology and phonology. Morphology is not the sole inhabitant of the lexicon, rather, there is considerable interaction with phonology (Siegel 37).[®]This can be seen in stress rules. The morphological structure plays a significant role in determining the phonological conditions of a complex word. For instance, the word ‘selective’ can be suffixed with either ‘-ity or -ness’. The attachment of the first suffix affects the stress pattern of the word. Whereas, the second does not. Moreover, the phonological features of words do also affect and determine their morphological structure, for example, the suffix ‘-al’ can only be attached to verbs ending in a stressed syllable, e.g., ‘arrive/arrival’. These sorts of interaction between morphology and phonology show that there must be an interface between the morphological and phonological aspects of words. Accordingly, morphophonology refers to the interaction of word formation with the sound system of language (Spencer 100). A contrastive study between English and Arabic morphophonemics, especially the area of phonological conditioning, can enhance this piece of research a great deal.

[®]The researchers have used the 2009 MLA style for in-text documentations, and the bibliography.

1.2 Hypothesis of the Study

Phonologically conditioned allomorphy as one type of allomorphy exists in both English and Arabic, although the plural in Arabic is not phonologically conditioned as is the case in English.

1.3 Objectives of the Study

- 1- To examine the phonologically conditioned allomorphy in English, and in Basra Arabic; namely, assimilation, vowel harmony, and dissimilation.
- 2-To shed light on other types of allomorphy .

1.4 Limits of the Study

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This study is limited to one type of allomorphy which is phonologically conditioned allomorphy, in both English and Arabic .

II- Theoretical Background

2.1 An Overview of Allomorphs and Affixation in English

Various theoretical accounts of certain aspects of morphophonology have been proposed in recent years. The most famous of which are the following; lexical phonology and morphology, autosegmental phonology , template morphology, prosodic morphology, and Optimality theory. These theories are illustrated in 2.5, below.

Although these theories and analyses are important in characterizing certain aspects of the interaction between phonology and morphology, they are neither exhaustive nor do they necessarily exclude other approaches.

Traditionally, Gleason (80) calls the elements or the 'variants' of one morpheme as its allomorphs. Crystal (20) considers the allomorph as "one or two or more complementary morphs which manifest a morpheme in its different phonological or morphological environment ".

Allomorphs have three features; namely, they are semantically similar, either phonologically or morphologically conditioned, and occur in complementary distribution. For example ,the /z/ allomorph of the plural morpheme {-Z } in English does not occur in the same environment where /Iz/ does. Moreover, these elements have the same functional value in the grammatical structure of the language. For instance, 'oxen' in English is represented by the constructions in which /-ən/ occurs while 'cows' is represented by the constructions in which / -z, -s, and -Iz/ occur. They are parallel in the sense that they occur in a similar environment with the lexical feature <+animal> (Gleason 81).

All these variants are called 'Allomorphy' of the plural morpheme {-Z}. Accordingly, many of the morphemes in English appear in different forms, depending on the context in which they occur. Allomorphy in English falls into three major types namely; phonologically conditioned Allomorphy, morphologically conditioned Allomorphy, and lexically conditioned Allomorphy.

In dealing with allomorphy, it is important to distinguish between these terms; root, base, stem, and affixes. Crystal (402) defines root as "the base form of a word which cannot be further analyzed without total loss of the identity". In other words, it is that part of the word which is left when all the affixes are removed. For example, in the word 'meaningfulness', the root is 'mean'. Roots are of two types; either a 'free root', which can stand alone or a 'bound root' which cannot stand alone, like '-ceive' in 'receive'. Moreover, roots can be either simple, i.e., compositionally unanalyzable terms of the

morphemes, or complex compound as in 'black bird'. Semantically, the root generally carries the main component of meaning in a word. The word 'base', on the other hand, is often used as an alternative to 'root', or 'stem'. It refers to any part of the word seen as a unit to which an operation can be applied (48).

Affixes are bound morphemes which are limited in number. They are of three types depending on their position with reference to the root or stem of the word. Those which are added to the beginning of the word are called 'prefixes', like 'un-' in 'unhappy', and those which follow the root are called 'suffixes', like '-ness' in 'happiness', and those which occur within the root are called 'infixes', like the replacive /æ e/ in /mæn/ /men/, or more accurately, the addition of the scond /l/ in /kelleme/ 'talked to' in Arabic. The morphological process whereby the grammatical or lexical information is added to a stem is known as 'affixation'. Suffixes can be divided into two types inflectional and derivational (15).

Plag (90) defines an affix as a bound morpheme that attaches to the base. He adds that suffixes like '-ity, -ation, -ee' have an effect on the stress pattern of their base words in that they either shift the main stress of the base to the syllable immediately preceding the suffix '-ity' or attract the stress to themselves as is the case with '-ation, and -ee'. Affixes are limited in number.

Suffixes are of various types, they can be either nominal, verbal, adjectival, or adverbial. Nominal suffixes are often employed to derive abstract nouns from verbs, adjectives, and nouns. For instance,

'-age', as in 'courage'

'-al' as in 'arrival'

'-ance' (ence-ancy-ency) as in 'riddance', 'dependency'(109).

Affixes can be classified into two types regarding their relation with morphology; those that trigger allomorphy (often highly idiosyncratic) including stress shift, and those that have no real effect on the phonology of the base (McMahon 38).

Class I suffix : stress shift as in

'-a(t)ion, -al, -ic, -ous, -ive, and -y'

Examples: modernization, description, rebellion, grammatical, acidic, porous, corrosive, and democracy.

Class I prefixes : 're-, con-, de-, sub-, ex-, en-, and be-'

Examples : 'retract, contract, detract, subtract, extract, enslave, and behead'.

Class II suffixes : '-ness, -less, -hood, -ful, -ly, and -like'

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Examples: ‘slowness, hairless, boyhood, truthful, slowly, child-like.

Class II prefixes : ‘re-, un-, non-, and semi-’

Examples : ‘re-write, unknown, non-negotiable, semiconductor’.

It is worth mentioning that some of the prefixes that appear in the two classes, above, however, have different morphological properties in that ‘re-’ of a verb, in class I, like ‘retract’, is always either unstressed or pronounced as /rə/ while, in class II ‘re’ as in ‘re-write’, is pronounced as /ri:/ with a secondary stress. Moreover, the class II ‘re-’ means ‘again’ while in class I, it generally, has no meaning .

Furthermore, there are four main points that distinguish class I from class II affixes. First, class I is often attached to bound root forms that do not exist as independent words like, ‘re-’ in ‘receive’, while, class II is attached to words as in ‘re-consider’. Second, the effect of class I is non –automatic allomorphy, the affixes often alter the stress pattern of the word as in ‘porous’ which becomes ‘porosity’, or trigger other alternation as in ‘electric’, the /k/ becomes /s/ in ‘electricity’. Third, class I often lacks any obvious meaning (i.e., semantically it is non-compositional), while in class II, it can usually be associated with a fairly constant meaning. Finally, class I is closer to the root than class II, as in ‘formlessness’.

To sum up, affixes are not like lexemes having lexical entries. A given root or affix may appear in more than one phonological shape depending on the context in which it occurs, and affixation is sensitive to the phonological shape of the base.

2.2 Suppletion

Suppletive allomorphy is an important type of phonological effect in morphology which is a well-attested phenomenon (Carstairs 23). Crystal (446) defines Suppletion as "cases where it is not possible to show a relationship between morphemes through a general rule because the forms involved have different roots". In other words, a suppletive is the grammar's use of the unrelated form (with different roots) to complete a paradigm as in the past tense relationship, ‘go-went’, and the comparative form like, ‘better’ in relation to ‘good’. Therefore, suppletion is the total change in the paradigm of the verb/adjective.

Tuggy (7) believes that we can have what is called ‘suppletion’ when we produce different phonological forms of the morpheme in question. For instance, the verb ‘be’, in English has the suppletive forms ‘is, was, were , be, being, been, and am’. Moreover, the suppletive allomorph's use may be conditioned by the grammatical context, for example, ‘am’ occurs in the present tense with the first person singular subject, or by the phonological context as in ‘an’ which occurs prevocally, and ‘a’ which occurs perconsonantly or by the combination of both .

In brief, Suppletion is of two types; either total or partial. The former, occurs when certain inflected forms are phonologically unrelated to the rest of the inflected paradigm as

in 'go-went'. The latter, occurs when allomorphs are only partly similar as in 'bring-brought', and 'man-men'. In Arabic some of the broken plural forms are dealt with as being suppletive, e.g. /hIṣān/ 'horse' /xeel/ 'horses' (total), and /redʒul/ 'man' /rIdʒāl/ 'men' (partial).

2.3 Replacive Allomorphy

Most of the past tense forms of the verbs in English are formed by adding the '-ed' suffix to the base. But, sometimes we have verbs whose past tense forms are formed without the addition of that suffix (i.e., the irregular verbs), instead, there is a replacement of sounds as in the replacement of / I / of 'sing' by / æ / of 'sang' to form the past tense. This is symbolized as follows:

/sɪŋ/ → /sæŋ/ , where / I / → /æ/.

Some of the replacive allomorphs are called infixes because they are positioned within the word (Stageberg 109-110). Moreover, seven common nouns form their plural by a replacive allomorph , they are 'man, woman, goose, tooth, louse, and mouse' (135). , e.g.,

/ gu:s/ → /gi:s/ , where /u:/ → / i: /.

An example of a replacive allomorph in Arabic is /mekteb/ 'office' /mekātīb/ 'offices'.

2.4 The Interface between Phonology and Morphology

The Interface between phonology and morphology lies in the area which is covered by the term 'morphonemics', or 'morphophonology'. These terms have been used in a variety of ways. The uses recognize a level or an analysis of language that differs from pure phonology in that it involves lexical and syntactic information mixed with phonological information. Before giving an account on the relationship between phonology and morphology, it is important to distinguish between two terms; 'interface', and 'interaction'

For Booij (154) 'interface' means that different kinds of information about linguistic constructions can depend on each other. To understand the notion of 'interface', one must consider what kind of information on words the grammar needs to provide, i.e., phonological form, morphological structure, and semantic information. For example, the word 'dog' consists of one syllable, then, it is a phonological word .

Booij (155) defines 'interface' as that which "refers to the ways in which the properties of one kind of structure relates to those of another structure". While Crystal (238) defines interface as "a term describing the status of two levels of representations recognized in the approach logical form (LF) and phonetic form (PF)". Their role is to connect linguistic representations to interpretation elsewhere . "LF" interface with the conceptual system of cognitive , and PF interface with articulatory and perceptual systems of speech production/perception.

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‘Interaction’, on the other hand, is not the same thing as ‘interface’. In it we look at something different; namely, at the constraints on the formal structure of complex words more specifically whether pieces of syntax can form parts of complex words (Booij 184). Crystal (238) states that the term ‘interaction’ is generally used in sociolinguistics to refer to the study of speech in face-to-face communication. It deals with the norms and strategies of every day conversation .

A typical example which indicates the relationship between phonology and morphology forms is the suffix ‘-er’. This suffix forms one domain of syllabification with the stem to which it has attached. This kind of suffixes is called ‘co-hering’ suffixes "that do influence the way that a complex word is syllabified. For instance, ‘-less’, in ‘helpless’. Whereas, the ‘non-cohering’ suffixes do not affect the stem to which it is attached (Booij156).

Katamba and Stonham (89) agree with Booij's suffixes distinction saying that the distinction between co-hering and non-cohering suffixes is important for proper account on the relationship between phonology and morphology . However, the naming of the suffixes are different. They classified the English suffixes on the basis of their phonological behaviour. One type is ‘neutral affixes’ and the other is ‘non-neutral affixes’. Neutral affixes, just like, ‘-ness’, in ‘abstractness’ or ‘-less’, in ‘homeless’, have no phonological effect on the base to which they are attached but non-neutral ones like, ‘-ee’, as in ‘detainee’, or ‘-ic’,as in ‘strategic’, etc., do affect the base, in some way, the consonant or the vowel segment or the location of stress in the base to which they are attached. Moreover, neutral suffixes tend to trigger changes in the shape of the vowels to which they are attached (90).

Katamba and Stonham (99) present the suffixes that do not change the stress pattern .They are listed as follows :

‘-ness’, as in ‘remoteness’,

‘-ly’, as in ‘severely’,

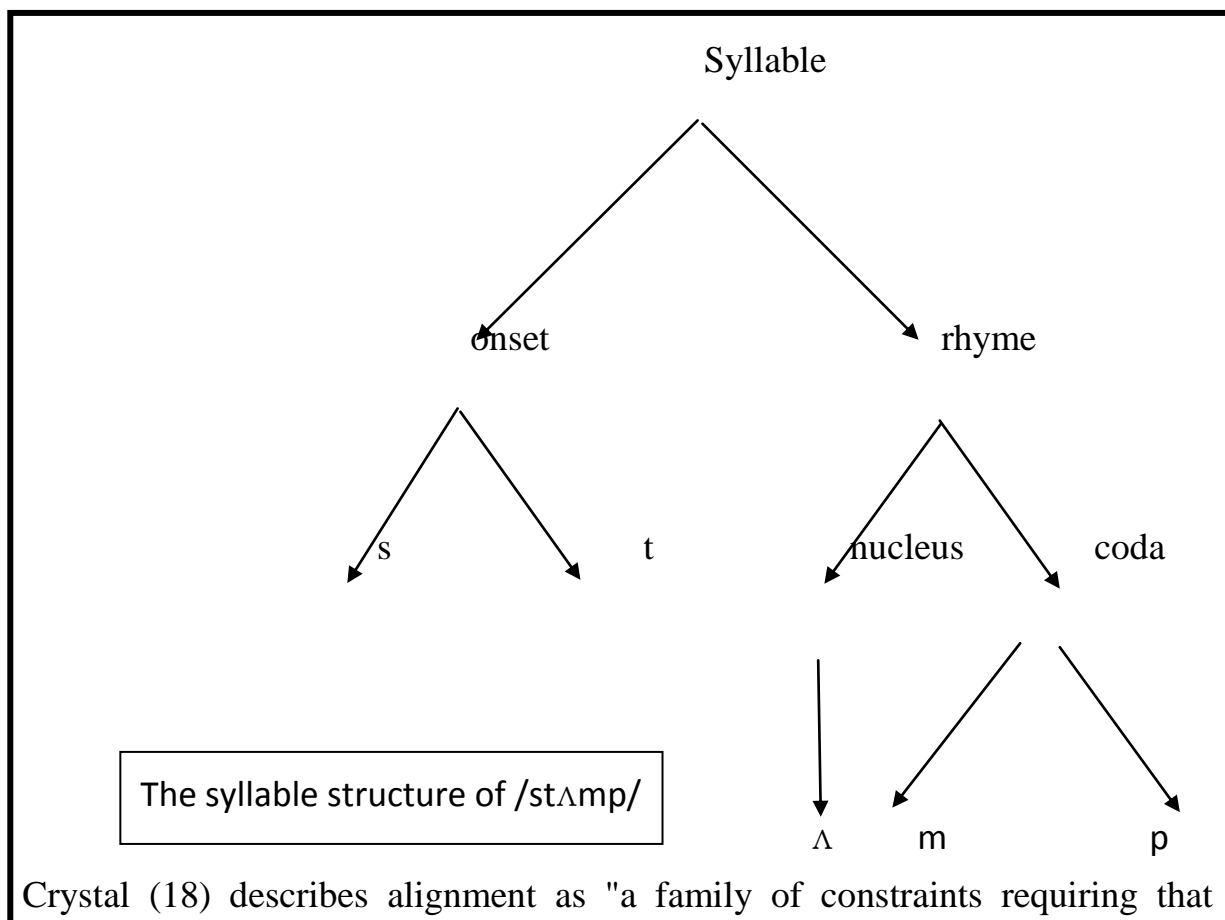
‘-wise’, as in ‘moneywise’,

‘-ful’, as in ‘purposeful’,

‘-y’, as in ‘velvety’,

‘-less’, as in ‘powerless’

Alignment constraints show the potential asymmetry between morphological and phonological structure. If the two types of structure are to be isomorphic, the edges of the stems have to be aligned with the edges of the phonological constituents such as the syllable ‘stump’/stʌmp/ (Booij 160), as is shown in the following figure:



Crystal (18) describes alignment as "a family of constraints requiring that the domain of a feature extends to the edge of a constituent either to the right edge, or to the left edge, or both". In relation to morphology, it handles the orders of morphemes, requiring that the edge of one constituent coincides with the edge of another, such as the right edge of reduplicant with the left edge of the base.

Clitics are small words of functional non-lexical categories such as pronouns, determiners that "lean on" a preceding or following host word and cannot appear as phonological words by themselves. The word 'clitic' helps us to understand the relationship between phonology and morphology. It is derived from the Greek verb 'klinein' preceding or following the host word and cannot appear as phonological words by themselves. They take the accent word as their host and form one prosodic constituent with that word (Booij 166).

The on-going discussion shows that phonology makes use of the morphological information concerning words. Reversely, morphology also makes use of phonology. A simple example is the case in which the use of a particular affix is phonologically conditioned. The English suffix '-er', can only, with some minor exception, be attached to monosyllabic adjectival stems, and to disyllabic stems ending in a light syllable. For example, green-greener; silly-sillier (177). Moreover, the morphological use of the phonological pattern is a prominent feature in the 'reduplicant'. For instance, in the perfect forms of Latin and Greek, the perfect stem is formed by prefixing a copy of a part of the base, the copy is

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called ‘the reduplicant’. This kind of reduplication is called partial reduplicant because it is not the whole word (178).

In addition, the hypocoristic (i.e., the endearment) forms of proper names through truncation exemplify the morphological uses of phonology, as in the following examples (161) :

Patrick Pat/Patty

Elizabeth Liz/Lizzy

The above examples show the use of phonology in morphology which is the use of the tonal morphemes (181). This is a morphological operation which uses tone to signal particular morphological categories. The Liburgian dialect of Maasbracht (the Netherlands) is an example of a language that makes use of tone contrast for morphological purposes. The contrast is between a dragging tone (high-low-high) versus a falling tone (high-low) either of which occurs on the stressed syllable of a word. For instance, the neutral and feminine forms of a number of adjectives differ in that the neutral form has a dragging tone, and the feminine form has a falling tone.

In brief, the morphological structure appears to influence the phonetic forms of words and vice versa.

2.5 Theories of Morphophonology

Some theoretical accounts of morphophonology have been proposed. As mentioned earlier, the most famous of which are the lexical phonology and morphology, autosegmental phonology, template morphology, prosodic morphology, and optimality theory.

In Lexical phonology and morphology, the interaction between morphology and phonology has been modeled in terms of the levels of interaction in the lexicon. The assumption underlying the model is that morphological processes, e.g., affixation are interleaved with phonological operations like stress assignment, and that items exhibiting different behaviour may be associated with different levels. As an example, the kind of morphologically conditioned allomorphy seen in : 1- between ‘finality’ and ‘finalness’, as compared with ‘final’, arises from the difference in affixation relative to stress assignment, with affixation of Class I affixes at Level 1 and Class II affixes at Level II. The affixation of ‘-ity’ occurs before stress assignment while the affixation of ‘-ness’ occurs after stress assignment. The result is different stress placement on the two words and a consequent difference in vowel qualities. Mohanan (49) states that:

In addition to modeling interaction between word formation and the sound system explicitly, lexical phonology also makes claims and predictions about aspects of language adjacent to morphophonology. For example, morphological productivity and restricted vs. across-the-board application of phonological rules.

Autosegmental phonology is typically attributed to Goldsmith (65). The fundamental notion is that there is no necessary one-to-one correspondence between a phonological feature and a segment. That is, adjacent segments may share a single phonological feature or conversely, two values for the same phonological feature may be associated with a single segment. As an example of the first, English vowels occurring in syllables closed by nasal stop are nasalized, as in 'teen'. The example of the second case can be seen in words like, 'church', in which two values for the feature <continuant> associated with single segment, it consists phonetically of a stop plus a fricative, i.e., non-continuant sound together with continuant sound. The application of autosegmental phonology to the morphological processes of vowel harmony and phonological feature spread is both straightforward and insightful.

Templatic morphology and prosodic morphology is another important theoretical account. Word formation in some languages involves patterns of consonants associated with some meaning which are interleaved with patterns of vowels, themselves associated with some meaning or encoding grammatical information. Noting these recurring patterns and applying autosegmental principles of association, McCarthy (1979) proposed associating specific segments with positions in a template. The recurring patterns are represented as fixed sequences of 'Cs' and 'Vs' onto which specific consonants and vowels are mapped.

In related work, McCarthy and Prince (1986) extended and refined the concept of templates to include not just sequences of 'Cs' and 'Vs', but prosodic constituents such as syllables or phonological words as well. The relevance of both 'CV' templates and prosodic constituents templates to morphophonology is especially clear in reduplication .

In Optimality Theory, Prince and Smolensky (1993) have proposed a non-derivational theory of Linguistics, relying on putatively universal constraints on linguistic representations to ascertain the well-formedness of those representations. Optimality Theory has two points regarding the morphophonological analysis; first, the constraint hierarchies themselves constrain both phonological and morphological expression. Second, the interaction of prosodic and morphological constraints allows the analysis of certain kinds of allomorphy.

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While the theories and analyses sketched above have been important in characterizing certain aspects of the interaction between phonology and morphology, they, as mentioned earlier, are neither exhaustive nor do they necessarily exclude other approaches.

III-Types of Allomorphy in English

3.1 Types of Allomorphy

There are many factors that determine the occurrence of one allomorph rather than another. Some of these factors are either phonological, or morphological, or lexical conditioning. What is important is that the different allomorphs do not stand for different morphemes, rather they are different realizations of one and the same morpheme.

3.1.1 Phonologically Conditioned Allomorphy

Stageberg (108) defines phonologically conditioned allomorphy as the case where the selection of allomorphs is determined by the phonological environment in which they are in complementary distribution and determined by the nature of the preceding sound. Crystal (300) states that when allomorphs result from the phonetic influence of the sounds with which the singular forms of the word terminate, we have what is called phonologically conditioned allomorphy .

A typical example of a phonologically conditioned allomorphy can be seen in the regular plural {-Z} – thus , [-Iz] is used when the plural morpheme is preceded by one of these consonants /s , z, ʃ, ʒ ,tʃ , dʒ / as in (horse, rose, ash, garage, church, and judge). But , when the preceding sound is voiceless (excluding /s , ʃ, and tʃ/)as in ‘cat’, ‘rock’, ‘cup’, the [-s] allomorph occurs. And the [z] allomorph occurs when the preceding sound is voiced (excluding /z, ʒ, and dʒ/). Fromkin, Rodman, and Hyams (277) explain this as follows:

It turns out that the conditioning of the English regular plural allomorphs relies on just two phonetic properties of the preceding segment ...All of the segments that condition the [z] allomorph are voiced sounds that are not sibilants. All the segments that condition the [s] allomorph are voiceless sounds that are not sibilants. And all those that condition the [Iz] are sibilants.

Moreover Booij(257) presents an example of the Dutch nouns that are variant in their phonological shape, such as : ' hud' which has two different shapes [hud] and [hut]. What applies to {-Z} also applies to the third person singular, and the possessive phrasal affix ‘-s’ .They are phonologically conditioned, too (Spencer 18).

McCarthy (An Introduction 202) gives another example on the phonologically conditioned allomorphy which is the regular form of the past tense and past participle where we have three different alternating forms: [d], [t], and [ɪd] as in (cleaned, asked, decided) respectively. These forms can be said to be phonological allomorphs as they are related to each other phonologically. This alteration is subject to phonological conditioning; it is based on the nature of the final phoneme of the stem as in the case of the plural morpheme .

It is worth mentioning that phonologically conditioned allomorphy is not really a morphological phenomenon but a phonological one. It is the result of the application of regular phonological rules of the language. For instance, the use of the comparative suffix ‘-er’ is also phonologically conditioned. It is almost always attached to mono-syllabic adjectival stems. For instance, green-greener (Booij 177). Another example of a purely phonologically conditioned allomorphy can be taken from derivational suffixes like ‘un’ when it is attached to adjectives depending on the speech rate and style, the /n/ tends to be assimilated to the point of articulation of the following consonant into /m/ before a labial and /ŋ/ before a velar. E.g., ‘unpleasant’ /ʌmpleznt/, and ‘uncommon’ /ʌŋkɒmən/ (Spencer 149).

Phonologically conditioned allomorphy can be classified into three main types which are found in most languages, namely; assimilation, vowel harmony, and dissimilation .

3.1.1.1 Assimilation

Gleason (23) states that “the phoneme is more nearly like its environment than the phoneme sound in the base”. In other words, it is conditioned by the sounds around it. Therefore, the influence exercised by one sound segment upon the articulation of another, so that the sounds become more alike, or identical, is called assimilation (Jones 217; Crystal 38; Roach 139).

Assimilation can be classified into three divisions (140) according to:

- a- The direction in which assimilation occurs.
- b- The result of the influence of the adjacent sound.
- c- Partial or total assimilation.

Three types of assimilation can be recognized according to the direction namely; ‘regressive’ (anticipatory assimilation) in which the sound changes because of the influence of the following sound, for example, ‘ten bikes’ becomes /tem baɪks/ where the /n/ changes into /m/. The second type of assimilation is called ‘progressive’ assimilation in which the sound changes because of the influence of the preceding sound, for instance, in ‘lunch score’ /lʌntʃ skɔː/, we get [lʌntʃ ʃkɔː], where /the /s/ becomes /ʃ/. The third type is known as ‘reciprocal’

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assimilation which involves a mutual influence or fusion of the sounds upon each other as in 'don't you' /dɒnt ju/ which is pronounced [dɒntʃʊ]. Where The /t/ and /j/ have fused to produce an affricate /tʃ/ (Crystal 39).

Moreover, assimilation can also be classified according to whether the change of the sound involved is the result of the influence of an adjacent sound or of one further away. This is called 'contiguous' or 'contact' assimilation, which is opposite to 'non-contiguous' or 'distant assimilation', where in vowel harmony which occurs in phrases like 'turn up trumps' the /n/ of turn is articulated as /m/ under the influence of later sounds. In languages having vowel harmony, like Turkish or Arabic, one can notice distant assimilation where a vowel in one part of a word may influence other vowels to be articulated similarly, even though there may be other sounds between them (Crystal 38). Roach (139-141) states that assimilation can be classified according to:

1-place of articulation as in 'that person' where the /t/ becomes /p/ /ðæppɜːsn/; or /k/ in 'that case' /ðækkeɪs/; or /ŋ/ in 'that thing' /ðæŋɪŋ/,

2- manner of articulation as in 'that side' /ðæsaɪd/; 'good night' /gʊnnaɪt/,

3- and voicing as in 'cats' /kæts/.

3.1.1.2 Vowel Harmony

Vowel harmony refers to various types of vowel assimilation, typically within words. Typological variables include the features that are involved (e.g., advanced tongue root and roundness), the existence of opaque and transparent neutral vowels, and stem to affix spreading dominant/recessive feature systems. Interesting issues of computation and representation arise, including locality of harmony effects, underlying underspecification of targets and iterative rule application (Encyclopedia of Language & Linguistics, 2006, Pages 212-215). In vowel harmony, vowels of successive syllables must be more or less similar. This varies according to different languages.

Vowel harmony is the requirement in certain languages that all vowels in a particular domain share particular phonological features, such as rounding, backness, height, etc. Vowel harmony may involve stems alone or stems and affixes. (International Encyclopaedia of Social and Behavioural Science, 2001).

Crystal (214) defines harmony as "the way the articulation of one phonological unit is influenced by (is in harmony with) another unit in the same word or phrase". Gleason (84) considers vowel harmony as a sort of 'non-contiguous' assimilation.

There are two main processes of harmony; consonant harmony and vowel harmony. The latter is found in Turkish and Hungarian in which all the vowels in a word share certain features. In the case of the Hungarian language, the vowels of a word are all either front vowels or back vowels. This implies that many suffixes have two allomorphs one with a front and one with a back vowel (Booij 162). In Hungarian, for example:

‘toward’ means /-hɔz/, -hez, -hœz/
 /-hɔz/ after back vowels, e.g.,
 /apɑ:rthɔz/ ‘toward the shore’,

/-hez/ after unrounded front vowels, e.g.,
 /akerthez/ ‘toward the garden’ and

/-hœz/ after rounded front vowels, e.g.,
 /afœlthœz/ ‘toward the earth’.

Moreover, vowel harmony can be used in two different senses. It may refer to any type of vowel harmony that is both progressive and regressive, or, it may refer only to progressive vowel harmony (Bakovic 20).

3.1.1.3 Dissimilation

Crystal (144) defines dissimilation as "the influence exercised by one sound segment upon the articulation of another so that the sounds become less alike, or different". For instance, ‘pilgrim’ is borrowed from the Latin ‘peregrinus’, with the first /r/ dissimilating to /l/. Gleason (85) states that "when the affected phoneme becomes less like the conditioning sound that it might otherwise be we have what is called dissimilation". Moreover, Crystal (144) believes that avoiding sequence of identical sound can be regarded as ‘dissimilation’ like the difficulty of tongue-twister". An example of easing pronunciation through dissimilation is found in some varieties of English where there is a fricative dissimilation rule. This rule applies to sequences like /fɹ/ and /sɹ/ changing them to [ft] and [st]. The /ɹ/ becomes dissimilar to the preceding fricative by becoming a stop, for example, ‘fifth’, and ‘sixth’ are pronounced /fift/, and /sikst/ as if they were spelled ‘fift’, and ‘sikst’, respectively (144). In Egyptian Arabic /hArɹ/ ‘plowing’ becomes /hArt/, and /nefɹ/ ‘puffing’ becomes /neft/.

The liquids /l/ and /r/ are sometimes interchanged to create dissimilarity. English adopted the French word ‘marbre’ meaning ‘marble’ dissimilating the second /r/ to /l/ (Fromkin, Rodman, and Hyams 306).

3.1.2 Morphologically Conditioned Allomorphy

In this kind of allomorphy, the morphological environment decides the selection of the allomorphs. In other words, the allomorphy may be the result of the purely morphological factors, or the presence of a particular affix. For instance, we may find a root or a stem which shows allomorphy when one particular type of affixes is added to it and not with other affixes.

The ‘readability’ example illustrates one of the commonest forms of the morphologically conditioned allomorphy found in English which is ascribed to stress shift. The placement of word stress in English is conditioned partly by phonological or lexical or even morphological factors (Roach 30). The reason for stress shift in ‘readability’ is that the suffix ‘-ity’ has the morphological property of forcing the previous syllable to bear the main stress.

Paster (268) states that the allomorphy of the stem in ‘written’ and ‘broken’ is different. These are still phonological allomorphs, but the conditioning is not phonological, instead, they are conditioned by a morphological property of being a past participle form; hence this is called morphological conditioning .

Stageberg (109) states that morphological conditioning is shown by the ‘-en’ of ‘ox-oxen’ and by the zero ‘∅’ suffix of ‘sheep-sheep’, where the two allomorphs [-en] and [∅] do not overlap and occur in complementary distribution. Other cases in which stress induces allomorphy are shown in the following examples:

‘-y’ as in ‘photography’

‘-ic’ as in ‘specific’

‘-se’ as in ‘Japanese’

The preference of morphological over phonological conditioning can be seen at various stages in the development of morphologically conditioned alternations. Evidence shows that alternations that are associated with morphology are parrot oriented (Arnoff and Fudeman 3).

A parrot oriented schema generalizes over forms of a specific category but does not specify how to derive that category from another. For instance, in the verb form ‘swim’, ‘swam’, ‘swum’, the first verb form has a short /ɪ/, the second /æ/, and the third has /ʌ/. There is not a rule which says that every short /ɪ/ as in ‘swim’, becomes a short /æ/ to change the verb into past tense. Accordingly, the parrot oriented schema is the form of the past tense in this specific category (7).

Thus, morphologically conditioned allomorphy may behave distinctly in terms of their morphology and phonology, for instance, two classes of affixes (i.e., class I and class II), involve a phonological change in the stem relative to an unaffixed

stem, e.g., change in stress placement, vowel quality, stem final consonant, as in ‘final- finality’, ‘magic- magical’.

3.1.3 Lexically Conditioned Allomorphy

One more type of conditioning is the lexical one. It may also be called ‘Lexeme-Morpheme-Based’. A model of affixal morphology which gives superiority of place to the separation between derivation and affixation and to show the differences between lexemes and morphemes (McCarthy 183).

Booij (169) states that lexical conditioning applies to a fixed set of lexical items. It applies, for example, to a number of mono-syllabic Dutch nouns where in the plural form the stem vowel is lengthened, as in d[a]g ‘day’ which is singular and d[a:gen] ‘days’ which is plural. The suffix ‘-en’ in English can sometimes be used to form the past participle as in ‘driven’ and to form verbs like ‘redde’, and ‘widen’ (Haspelmath 30). Moreover, the singular-plural pairs like ‘knife-knives’, and ‘loaf-loaves’, where the final form is voiceless in the singular, while in the plural it is voiced. Indeed, this type of root/stem allomorphy is not found with all words ending in fricatives .

Lexically conditioned allomorphy can be found in derivation as well as inflection. For a very restrictive set of adjectives, it is possible to form a property nominalization with the suffix ‘th’ as in :

long-length

strong –strength

deep-depth

wide-width

broad-breadth

This kind of conditioning can also be seen in conversion. For instance,

house - house / s / - / z /

calf-calve / f / - / v /

half-halve / f / - / v /

breath-breathe / ð / - / ð /

advice-advise / s / - / z /

To sum up, the selection of affix allomorphs in lexically conditioned allomorphy depends on other properties of the base, for instance, the semantic properties, or where the selection of the allomorph cannot be deduced from any

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general rule and must be learned individually. The choice of a particular allomorph is determined by the lexeme involved .

3.1.4 Grammatically Conditioned Allomorphy

Grammatically conditioned allomorphy can be well illustrated in the following examples:

- 1- The pianist **performs** in the local hall every week.
- 2- Mary told us that this pianist **performed** in the local hall.
- 3- The **performance** last week was particularly impressive.

All the bold words contain suffixes ‘-s, -ed, and -ance’, however, the suffixes ‘-s, and ‘-ed’ depend upon the grammatical context in a way that the suffix ‘-ance’ does not. It expresses function. The reason why the verb ‘performs’ in the first sentence has ‘-s’ because the subject of the verb is singular ‘the pianist’, and the verb needs to agree with it in form (i.e., by concord). On the other hand, the reason why the same verb has an ‘-ed’ in the second sentence, because it is uttered in the past, therefore the verb must express an event in the past .

Consequently, we can describe the difference between ‘performance’, in the third sentence, on the one hand, and ‘performs/(ed)’ on the other hand, by saying that the latter pairs are grammatically conditioned variant forms of the verb ‘perform’ while ‘performance’ is not a variant, rather, it is a noun derived from it (Mc- Carthy-An Introduction: 30).

3.1.5 Historically Determined Allomorphy

Allomorphy as a reflex of history is found in word pairs such as :

deduce-deduction,

induce-induction.

This allomorphy is a reflex of the system of different stems from Latin verbs. Moreover, historically determined allomorphy is found in the formation of the French de-adjectival adverbs in ‘ment’, e.g.,

<u>Masc.adj.</u>	<u>Fem.adj.</u>	<u>adv.</u>
<i>Lent</i> ‘slow’	<i>lente</i>	<i>lente-ment</i>
<i>Fou</i> ‘mad’	<i>folle</i>	<i>folle-ment</i>

(Booij 170)

3.1.6 Paradigmatically Governed Allomorphy

Paradigmatically governed allomorphy means the correct form of the adjectival stem which is determined by referring to that of paradigmatically related form (e.g., the feminine form) (171). This is the effect of the suffix ‘ment’ . It derives from the ablative form of the Latin feminine noun ‘mens’ that requires the feminine form of the preceding adjective as in *Claramente* ‘clear’ ABL ‘with clear mind’,

Masc. adj.	Femin	Adv.
<i>Beau</i> ‘beautiful’	belle	belle-ment
<i>Blanc</i> ‘white’	blanche	blanche-ment

Moreover, this type of allomorphy is found in the compounds where the first element may have a form that cannot be used when it is used as a word of its own. Linking elements in Germanic languages is a good case, for instance, in Swedish *lands-ting* ‘city council’.

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4.1 Assimilation

Assimilation in Arabic can be defined as putting one of the sounds beside the other and pronouncing them as one geminated sound (Abu Zeyd 53). There are three types of assimilation in Arabic, namely; Identical assimilation إدغام المتماثلين, approximate assimilation إدغام المتقاربين, and homogeneous assimilation إدغام المتجانسين .

a. Identical assimilation إدغام المتماثلين

It occurs when the two sounds agree in their features as well as their manner of articulation (i.e., they are geminated), as in:

/b/ + /b/ /ʔilʕeb bi□□ōba / ‘Play with the ball’
 الباء مع الباء ‘إلعب بالطوبه

b. Approximate assimilation إدغام المتقاربين

It occurs when the two sounds approximate each other in some of their features such as place of articulation and/or manner of articulation, as in:

/d/ + /s/ /fed sālfe/ /fes sālfe/ ‘one/certain story’

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الذال مع السين (فذ سالفه)

‘فس سالفه’

c. Homogenous Assimilation إدغام المتجانسين

It occurs when the two sounds are unified in their output and differ in their underlying features, as in :

/l/ + /r/ / gu:l rAbbi:/ /gu:r rAbbi:/ (قل ربي) ‘Say: O’my Lord !’

اللام مع الراء
‘قول ربي !’
‘كور ربي !’

In comparing English to Arabic as far as assimilation is concerned, one can find out that assimilation exists in both languages and it is phonologically conditioned. For instance / dʒ/ becomes / tʃ / before /t/, and /b/ becomes /p/ before /t/, too, e.g.

/l|ttihād/ from /Idʒ+tihād/ ‘perseverance’ ‘إجتهد’

/lptIkār/ from /Ib+tiKār/ ‘invention’ ‘إبتكار’

The /n/ becomes / ŋ / before /k/, e.g.

/IŋkIsār/ ‘breaking’ from /In+kIsār/. ‘إنكسار’

Both of progressive and regressive assimilations exist in Arabic. The above examples give very good instances of regressive assimilation, while the following ones are instances of progressive assimilation:

/qʊfʊ!/ ‘pad’, which indicates the effect of the back vowel /ʊ/on /l/, which becomes dark [!] or velarized.

/rIdʒil/ ‘leg’, which indicates the effect of the front vowel /i/ on /l/, which becomes clear [l].

/gɑ:l/ ‘said’, which indicates the effect of the pharyngealized/velar /g/ on /ā/, which becomes back [ɑ:].

4.2 The Plural in Arabic

The plural in Arabic refers to more than two things .Three types of plural can be distinguished in Arabic : Unbroken Masculine Plural

Unbroken Feminine Plural , جمع المؤنث السالم , and Broken plural جمع التكسير , جمع المذكر السالم .

a. Unbroken Masculine Plural جمع المذكر السالم

It is a noun that refers to more than two persons. It occurs when adding /i:n/ ‘ين’ at the end of the noun , it is called ‘unbroken’ because its singular structure remains safe from any change in the plural, as in :

‘patient-patients’ /sābīr –sābri:n/ ‘صابر- صابرين’

b. Unbroken Feminine Plural جمع المؤنث السالم

It is a noun which refers to more than two (female) persons or things. It occurs when adding /āt/ ألف وتاء ميسوطة at the end of the noun, it is called ‘unbroken’ because its singular structure remains safe from any change in the plural as in :

(female) ‘teacher-teachers’ /muʕellimə-muʕellimāt/ ‘معلمه – معلمات’

‘table-tables’ /ʔablə - ʔablāt/ ‘طبله – طبلات’

c. Broken Plural جمع التكسير

It is a noun which refers to more than two persons or things. It occurs where there is a change in the shape of its singular when changed into the plural. The change of the singular form into plural in this kind of plural happens in two ways either by increasing the number of sounds as in:

‘روح – أرواح’ /ru:h - ʔarwāh/ ‘spirit – spirits’

or decreasing the number of sounds as in:

‘رسول - رسل’ /resu:l – rusul/ ‘messenger – messengers’.

This kind of plural includes both animate and inanimate, feminine or masculine persons or things (Al Hafith 133).

When comparing the plural in English to the plural in Arabic, one can notice that in English the plural is phonologically conditioned while in Arabic it is not .

4.3 Sound Harmony in Arabic

Sound harmony in Arabic is of two types; vowel harmony as in /jIɣɪd/ ‘to sit’ يَجِدُ , /jIdrɪs/ ‘to study’ يَدْرُسُ , /qʊfʊl/ ‘pad’ قُفْلُ , /bʊʂʌl/

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‘onion’ بُصل . Vowel harmony can be considered as a kind of phonological conditioning.

The other type is consonantal harmony, as in the pharyngealization of the /l/ sound in /qʊfʊ!/, due to the pharyngealization/velarization of /q/ at the beginning of the word.

4.4 The Dialectal Influence on the Pronunciation of Standard Arabic

It is a commonplace fact that each dialect of Arabic has its own phonological conditioning and as a result its own variations. Consequently, the dialectal (mother tongue) interference varies from one dialect to another in the speech of Standard Arabic according to the region and social and intellectual class. For instance in the North of Iraq (Mosul), one may hear [z] instead of [s] in [ʔɪzbu:ʕ] ‘week’, and [ʒ] instead of [dʒ] in [ʒemāl] ‘beauty’, in Syria, Lebanon, and Palestine. Incidentally, people in some southern areas of Iraq use the same pronunciation of [ʒ]. In Egypt, we can hear [g] instead of [dʒ] even in the speech of Standard Arabic.

Many people from Palestine, Syria, Jordan, and Lebanon say [kefɪl], or [gefɪl] ‘pad’, where the [ɪ] is clear due to the absence of [q] which exists in Standard Arabic (i.e. there is consonant harmony of non-velarization of [k] and [ɪ], and vowel harmony of frontness of [e] and [ɪ]. This way of pronunciation has its effect on the Standard pronunciation of Arabic in these countries.

In Iraq, in some people’s pronunciation (especially in Mosul), we may hear [ʒ] instead of [ʔ] before or between voiced sounds, as in [ʒdɪʕwa] ‘what’s wrong?’, or [ʔɪzbu:ʕ] ‘week’ .

Naturally, these dialectal variations have their influence on the speech of Standard Arabic. This serious influence must be taken into account by Arab grammarians and phoneticians.

V- Conclusion

The morphophonemic interface has been discussed in this paper throughout the comparison which is held between English and Arabic with special reference to phonologically conditioned allomorphy with its different types. It has been found out that phonologically conditioned allomorphy exists in Arabic throughout assimilation processes; namely, Identical assimilation إدغام المتماثلين , approximate assimilation إدغام المتقاربين , and homogeneous assimilation إدغام المتجانسين . Thus, the hypothesis of this piece of work has proved its correctness. However, the plural in Arabic is not phonologically conditioned as is the case in English. Besides, vowel harmony and consonantal harmony do exist in Arabic. These processes can be grouped under the cover umbrella of phonological conditioning .

As mentioned in (4.4) above, the dialectal or colloquial variations have special effect on the speech of Standard Arabic. Therefore, in order to decrease the influence of slang and colloquialism on Modern Standard Arabic, we would suggest remedial notes in an attempt to narrow the gap between colloquial and Standard Arabic and to gradually reach a level of one standardized version of Arabic through both the spoken and the written forms:

1. Unifying the Standard language of the means of media and education, all over the Arab countries.
2. Eliminating illiteracy and encouraging the use and practice of a simplified form of Standard Arabic both at the spoken and written levels.
3. Educating the people all over the Arab world in order to read and speak this simplified form of Modern Standard Arabic.
4. Encouraging people to mix and exchange views and knowledge all over the Arab countries.

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التداخل الصرفي - الصوتي في الإنجليزية[®] (لهجة ال بي بي سي) والعربية (اللهجة البصرية): دراسة حالة الإشتراط (التأثير والتأثير) الصوتي

الخلاصة

يحاول هذا البحث دراسة وتحليل التداخل الصرفي - الصوتي في اللغتين الانجليزية (لهجة ال بي بي سي) والعربية (اللهجة البصرية) من أجل بيان التشابه بينهما بخصوص حالة الإشتراط الصوتي يفترض البحث أنه يمكن مقارنة الإشتراط الصوتي في العربية بنظيره في الانجليزية لتوضيح وجود هذا الإشتراط من عدمه فيما يخص تشابه الاصوات وتناغمها وتباينها تماما كما هو موجود في الانجليزية .

ويتناول البحث دراسة نظرية لعلم الصرف واللواحق والسوابق في اللغتين ، فضلا عن دراسة الجمع في العربية.

تمكن الباحثان من توضيح تطابق العروض والمقارنات الانجليزية والعربية التي تناولها البحث مع الفرضية وتأكيدهما .

ينتهي البحث بالخاتمة والاستنتاجات التي توصلت لها الدراسة .

[®] يفضل الباحثان استعمال لفظة "الإنجليزية" على لفظة "الإنكليزية" لأنها مستعملة في أغلبية البلدان العربية.