

***The English and Arabic Vowel Systems Dynamics:
A Comparative Descriptive Analysis***

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Abstract:

This paper aims fundamentally at establishing a sound distinction between vowel sounds along the line of the phonetic and phonological contrast which constitutes a major premise for the development of the overall pedagogical approach to teach/learn pronunciation. It attempts to display the primordial importance of the vowel sound contribution to the morphology of the word and indeed, word meaning. On the basis of the vowel description of the two phonetic parameters notably vowel quality and vowel quantity, Arabic and English seem to have two extremely different vowel sounds systems not only in the number of contrastive vowels that each system has but also in the dynamics that govern the two systems. Ultimately, an understanding of the vowel's complementary distribution in terms of vowel position and meaning making would in all probabilities, be helpful in solving out the existing difficulties between contrasted two language systems to further narrow the sphere of differences in the field of translation.

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Teaching the English vowel system to EFL learners is believed to be a far more challenging task than teaching its consonantal system. The difficulty lies partly on the extensive quantitative and qualitative vocalic differences, mainly between two contrasted linguistic systems and the *dynamics* that control them, and to the significant roles that the vocalic system plays in shaping the type of rhythm of each language.

It is generally acknowledged that languages differ in the size and organization of their vowel inventories. Therefore, cross-linguistic investigations reveal that the most common organization of vowel inventories seems to be governed by different auditory and articulatory constraints and changes governed by specific internal dynamics.

This paper calls for an urgent need to reconsider the vowel sound systems analysis, taking into account the deep-seated systems and structures of the native and target languages and the dynamics that govern them to secure a better understanding of the learners' problems and professional developments to design more effective techniques to support them. Furthermore, difficulties in pronunciation and sound articulation include the suprasegmental features namely intonation and prominence in speech sound and word morphology as well. In this vein, theoretical studies endeavour to predict the effect of vowel systems on the morphology of the word and word meaning. Taking into account the fact that vowels in general, as opposed to consonants, are difficult to describe; they are neither *contact sounds* nor *close approximation* ones, the difference between the Arabic vowel system and the English one plays an

important role in creating serious difficulties in the way of mastering each other's system. In other terms, the description of vowels is based more on the tongue and lips configuration than a defined localized contact approximation. This nature of vowels makes their teaching/learning more challenging than consonants. In this line of thought, it is worth mentioning that a study of vowel quantity and quality without giving ample consideration to the phonetic and phonological features is believed to be very deficient and highly ineffective. Therefore, one needs to consider carefully the fact that the Arabic and English phonological systems vary extensively, as English has about three times as many vowel sounds as Arabic, not only in the range of vowel sounds used, but also in the relative importance of vowels and consonants in building and expressing meaning. The Arabic vowel system differs from the English one in that they do not exhibit significant allophonic lengthening as a result of post-vocalic consonant voicing. This study focuses the attention on those areas through the identification and recognition of the dichotomy of the centrifugal and centripetal vowel systems. In English, vowel quantity and vowel quality fall to a larger extent under the influence of *stress* and this interface is one element of the dynamics of the vowel system. The placement of stress and its strength within a word or sentence greatly manipulate vowels both quantitatively and qualitatively. For instance, in syllables containing primary stress, vowels quantity (length) reaches its maximum and quality is very distinct. In syllables with a secondary stress or a weak stress, both quality and quantity of vowels are considerably reduced.

In almost all English unstressed syllables, vowels are reduced to either [ə] or [ɪ]. Dalbor (1969).

To use Odisho's (2005) words, such a quantitative and qualitative vowel reduction in English is labelled "*schwaization*"; i.e., the schwa is a typical characteristic feature of English and very uncharacteristic in Arabic. This leads us to the conclusion that schwaization in English pull all vowels to the centre and thus, reduces their tenseness and length to the minimum. Therefore, it is important to consider that English has a system that tolerates a wide variety of vowels ranging from very lax (short) to very tense (long). Based on the work of Mac Kay (1978), the idea may be better identified as *centripetal* wherein vowels have a strong tendency to move to the centre of the vowel area where schwa is placed. The following figure designates a schematic plotting of vowels of English.

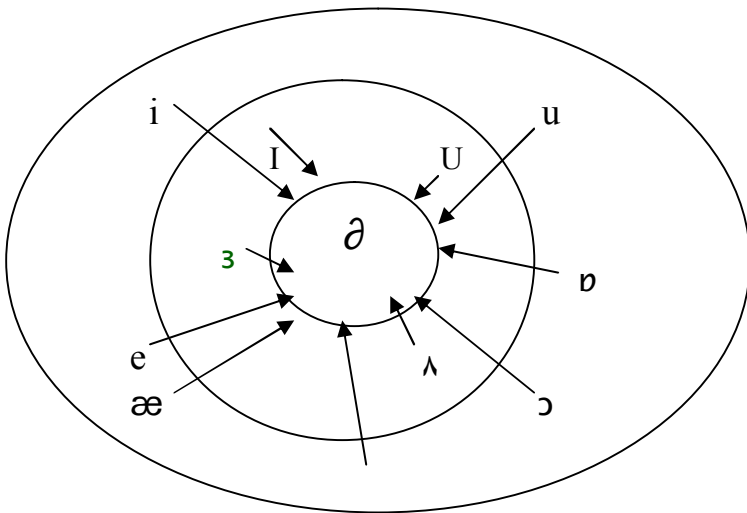


Figure 1. English Vowel System Adopted from Odisho (1991)

Within the English vowel system, as a typical centripetal system, vowels of different quality and/or quantity move between the periphery and the centre of the vowel area. The arrows illustrate drastic internal movement.

By contrast, characterized by variation in vowel quantity, the Classical Arabic vowel system is consistent with a centripetal vowel system, whereas, the restricted variation in vowel quality and the absence of schwaization is consistent with a *centrifugal* system where vowels are located near the periphery of the vowel area and resist any movement to the centre. The figure below may better demonstrate that the Arabic vowel system is best labelled as belonging to both *centripetal and centrifugal* vowel systems. To put it in a nut shell, Classical Arabic seems to prevent vowel reduction or schwaization, and rather tolerate the quantity feature (length) to double its /i, a, u/ vowels allowing this aspect to be shared with English.

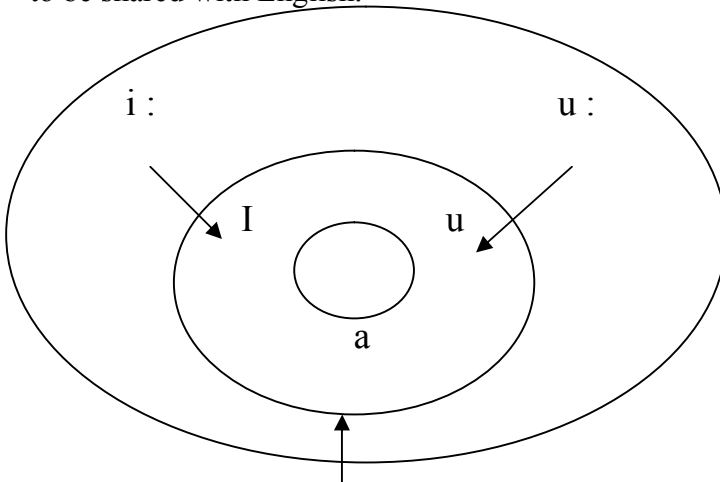


Figure 2. Arabic Vowel System Adopted from Odisho (1991)

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The above comparison of Arabic and English brings to light few similarities and a number of discrepancies between the two languages, demonstrating two diametrically opposed vowel systems that are subject to diverse dynamics further enhancing the differences. Knowing that the vowel systems of Arabic and English are considerably different in quality and quantity, one may consider another equally important dimension related to the dynamics that impact and modify both quality and quantity within the overall system and even help determine the rhythm of each language, i.e., those dynamics do not only determine the nature of the vowel system (as a centrifugal-oriented or centripetal-oriented), but they also impact the nature of the overall rhythm type (as syllable-timed or stress-timed).

From another stand point, and within a new state-of-art methodology, a new field of research appears within the interface between phonology and morphology related to the area covered by the terms ***morphophonemics, morphophonology or morphonology***. Each seems to recognize a level of analysis of language that differs from pure phonology in that it involves lexical and grammatical information mixed with phonological information, i.e., a combination of phonological and lexical knowledge.

M[orpho] P[honological] R[ule]s MPRs may be put as rules with lexical or grammatical conditioning. For those who recognize the distinction between MPRs and P[honological] R[ule]s, the only grammatical conditioning allowable for PRs is boundaries. The adherents of Natural Generative Phonology (e.g. Hooper 1976) did not allow even boundaries as positive

conditioning factors. An example of extreme lexical conditioning is found in English plurals of the type *wife*, *wives*. This also involves grammatical conditioning, since it specifically the plural morpheme that conditions the change of /f/ to /v/. In this respect, Kaisse (2005: 25) claims that “***the morphological make-up of a word has considerable influence on its pronunciation***”. This is a very essential claim as to how morphology interacts with phonology.

The distinction between morphophonology and morphology is harder to draw. When one deals with ablaut systems such as that of Arabic, it is difficult to decide whether to use rules to change base forms into derived forms, or rather to use non-linear morphology of the type suggested by McCarthy (1981). This noticeable consideration to the Arabic language, in general and its morphonological and phonological structures in particular, is fundamentally attributed to its non-concatenative nature, infixation and other linguistic aspects that are purely specific to this language.

Here are illustrations of both English and Arabic language systems. As far as English adjectives are concerned, they are transformed into verbs by adding the suffix -en: “*black--blacken, white--whiten; bright--brighten; red--redden; ripeô ripenö*. Other adjectives can take on the function of verbs without adding the suffix: “*yellow, blue; cheer, mellowö*. Here both morphology and phonology play a role. The division is phonetically based: obstruent stems take -en and vowels and sonorants do not.

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However, concerning the Arabic language vowel system, the following examples may better sample the vowel dynamics:

	Short		Long	
i	/ʔidd/	promise	/ʔi :dun/	feast
u	/ʔudd/	come back!	/ʔu :dun/	lute
a	/ʔadda/	counted	/ʔa :da/	came back

Another example of how the verb “to write” is written in Arabic, i.e., **كتب** which is equal to “ktb” in Latin alphabet. But one does not read it like “ktb” but as “kataba” or “kutiba” or even “kutub” depending on the contexts in which it is involved, since short vowels are not usually written in normal text, they can be marked by diacritics *above* and *below* the consonants they follow,

e.g. الجَنَّةُ، الجِنَّةُ، الجُنَّةُ

The above examples explain how a vowel change characteristics both in Arabic and English accompanies a change in the semantic and grammatical functions as in “Kasara” \Rightarrow كَسَرَ and “Kusira” \Rightarrow كَسِرَ .

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At a pedagogical layer of analysis, it is widely recognized among teachers that some Arab learners may face serious problems in pronouncing some English sounds, seeing that such sounds do not exist either in their dialects or in their standard Arabic. These differences create serious problems for Arab learners of English sounds; as such sounds do not exist either in their native dialects or in the Modern Standard Arabic. Such difficulties in pronunciation encompass the segmental features in both consonants and vowel sounds in which EFL Arab learners pronounce a number of sounds that exists in their L1 phonetic system and which appear to them sound *equivalent* to a particular sound in English.

Furthermore, difficulties in pronunciation include the suprasegmental features such as intonation and prominence in speech. This negative transfer may be conceived as barriers in speaking English for Arab learners. For instance, if one were to make a general statement as the relative difficulty of each vowel or consonant systems to learners of the other language, then English learners would encounter more difficulty in learning the Arab consonantal system, whereas Arab learners would stumble upon more difficulty with the English vowel system. The nature of problems of Arab learners of the English vowel system is typical of a transition of speakers of non-centripetal vowel system.

In fact, Arabic speakers are “struggling” to pronounce English words using the same phonetic methodology. For instance, in a study of Arabic speakers learning English, Munro (2006) finds that learners attempt to produce English vowels with spectral values that were intermediate to those found in native English vowels and

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similar to Arabic vowels, but generally use duration as a more prominent feature than native English speakers to mark the tense/lax distinction.

Additionally, and because of the complexity of the phenomenon of translation and the very few attempts to apply general pedagogical principles to translation teaching, it is believed that the efficiency of basing translator exercises on textual criteria seems to be doubtful.

The strong shift in learning habits to a more visual culture should lead translation pedagogy to include more challenging studies in solving out the existing difficulties between two contrasted language systems to further narrow the sphere of differences in the field of translation. Seeing that “automatic” translations by humans or machines did not prove enough effectiveness because correspondences are not as simple as one might assume and *idiomaticity* is central to natural languages. It is, therefore, of extensive necessity to draw attention to ways of exploiting how one may benefit from contrastive studies of different languages for the sake of translation.

Inasmuch as this study is concerned, it is not enough to simply compare and contrast vowel systems and the units they encompass. It is absolutely essential to grant consideration to the internal dynamics that govern the units especially in regards to vowel quality and vowel quantity changes in different linguistic context.

Differences in the phonetic system in a learner’s L1 and foreign language may in all probabilities result a ***non-target-like production*** of these sounds in the target language, which can lead to misperception of these sounds by listeners. In this line of thought, and in order to

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learn how to produce and perceive English's speech sounds like a native speaker, one needs to develop new phonological categories and a new phonological system for new phonemes that do not exist in their native language adjusting at the same time the categories that exist in both the L1 and the FL to be structured more similarly to those categories in the L2.

It would seem that, although linguists usually treat phonology and morphology as completely separate levels of linguistic function, real language doesn't always oblige the linguists in this separation. Phonology, the general ability to influence meaning, and morphology, the study of forms with specific meaning, actually constitutes a gradable continuum rather than two separate levels.

A better understanding of the underlying differences between two vowels systems namely that of the native and the target languages may in all probabilities help the instructional techniques and methodology. This comparison demonstrates two diametrically opposed vowel systems that are subject to different dynamics further enhancing the differences.

Bibliography

DALBOR, J. (1969). *Spanish pronunciation: Theory and Practice*. New York: Holt, Rinehart & Winston.

FLEGE, J.E., and Port, R., (1981). *õCross-Language Phonetic Interference: Arabic to English,ö* Language and Speech 24, 125-146.

KAISSE. E., (2005). *Handbook of English Word-formation* in *Word Formation and phonology* edited by Pavol Štekauer and Rochelle Lieber.

<http://www.skase.sk/Volumes/JTL03/03.pdf>

ODISHO. E. Y. (1991). *Anatomy of Pronunciation: When Sounds are Seen and Sensed*. Paper presented at the 18th Annual Illinois Convention of TESOL/ Bilingual Education. Chicago. Illinois.

ODISHO. E. Y. (1995). *Techniques of Teaching Comparative Pronunciation in Arabic and English*. First Congress Press Edition. In:

http://books.google.fr/books?id=6YNohRnQ6j8C&printsec=copyright&dq=schwaization&source=gbs_toc_s&cad=1

ROACH. P. (1983). *English Phonetics and Phonology*. Cambridge: Cambridge University Press.

MACKAY, I. R. A. (1978). *Introducing Practical Phonetics*. Boston: Little Brown and Company.

MUNRO, M.J., DERWING, T.M., MORTON, S.L. (2006). *õThe Mutual Intelligibility of L2 Speech,ö* Studies in Second Language Acquisition 28, 111-131.