A Comprehensive Study of the Linguistic and Prosodic Functions of Short Arabic Vowels (ʔl-ħerekat)

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الملخص:

لقد كانت دراسة الحركات القصيرة في البحث اللغوي العربي القديم منصرفة إلى جعلها ملحقة بدراسة الأصوات الصوامت، وكان تعريفهم للحركات القصيرة مبنياً على أسس كمية، فالحركات، من وجهة نظرهم، أبعاض أصوات المد. ولذلك توزعت دراستها في أبواب متفرقة شتى مما قلل من بيان أهميتها الجوهرية في دراسة اللغة والشعر العربيين. وكان على نحاة العربية القدماء أن يقدموا دراسة تنطلق من القيمة المركزية للحركات القصيرة في كل مستوى من مستويات دراسة الأداء الكلامي في اللغة والشعر، وهو ما لم يتحقق. ويشمل أثر الحركات الجوهري في المستويات اللغوية الآتية:

(أ)   الصوتي الوظيفي.

(ب) الصرفي المعجمي.

(ت) النحوي التركيبي.

(ث) المعنى والدلالة.

وقد تتداخل هذه المستويات فيكون هناك أثر تغيير الحركات المحدد في أكثر من مستوى في الوقت نفسه. وفضلاً عن ذلك، فإن الدور الأساسي للحركات القصيرة، في تشكيل المفاهيم الأساسية في دراسة عَروض الشعر والقافية العربيين، ظلَّ بعيداً عن النظرة البحثية الموحدة للحركات القصيرة التي تظهر أهميتها القصوى ودورها الجوهري في بنية الشعر العربي. وقد نهض هذا البحث بمهمة معالجة ما يكتنف هذه النظرة الجزئية، في الجانبين اللساني والشعري، المشار إليها أعلاه من نقص، فأكَّدَ الباحث على أهمية الانطلاق من دراسة الحركات وأدوارها المهمة والأساسية في كل مستويات التحليل اللغوي والشعري لبيان الدور الأساسي للحركات القصيرة في اللغة والثقافة الشعرية العربية. ثم تصدى الباحث لتقديم تعريف يستند على الخصائص النطقية للحركات مبيناً مواضع قصور التعريف التقليدي المبني على أسس كمية.

الكلمات المفتاحية: حركات قصيرة، حركات طويلة، صوامت، أصوات، التعريف الكمي، التعريف النوعي، مستويات التحليل اللغوي، الصرف، النحو، الدلالة، عروض الشعر العربي، التفعيلة، القافية.

Abstract

The study of the short Arabic short Vowels in the old Arabic linguistic Treatises was done by ancient Grammarians of Arabic by treating them as a supplementary topic when they had studied consonants. Moreover, their definition of short vowels was based on quantitative bases. Therefore, the of short vowels had been distributed in various sections of studying the consonants, thus reducing their essential importance in the study of Arabic language and poetry. The ancient Arabic grammarians had to present a study based on the central value of short vowels at each level of the study of verbal performance in language and poetry, which had not been realized. The is noticed that the fundamental impact, or the role, of the short vowels can be traced in the following linguistic levels:

a. Phonology,

b. Morphology,

c. Syntax,
d. Semantics.

Moreover,

In addition, these levels may overlap, so there is the effect of a certain changing of the short vowels in more than one level, such as morphemic syntactic, syntactic-semantic. Moreover, the fundamental roles of short vowels in shaping basic concepts in the study of Arabic poetry and rhyme shows has remained far from the unified research approach of studying them which might show their extreme importance and their essential roles in the structure of Arabic poetry. The researcher has emphasized the importance of starting from the study of short vowels and their fundamental roles at all levels of linguistic and poetic analyses. The researcher then has come up with a definition based on the speech characteristics of the short vowels, indicating that the shortcomings of the traditional definition had resulted from the fact that it had been based on quantitative bases.

Key words: short sound, long bug, functional sounds, quantitative definition, qualitative definition, levels of linguistic analysis, syntax, meaning, Arabic poetry, Arabic rhyme.

1. Prolegomena

1.1. Phonologically speaking, it is said that Arabic sound system, like other Semitic languages, has six basic vowel sounds (phonemes) with some variants, or allophones, of each.[1] These vowels can be classified into two groups. The first group includes the long vowels (henceforth, ALVs) which are called in Arabic grammar [ħurŭf ul-med] or prolonged letters. They are three in number:ʔ lif, which can be phonologically transcribed by either /a/ or /ā/, [ωaŭ] which can be phonologically transcribed by either /ŭ/ or /ω/, and [jāʔ] which can be either /i:/ or /j/. The first two variants of [sukŭn] and [jāʔ], i.e., the /ω/ and /j/ sounds, are semivowels in nature but they are considered vowels in traditional writing concerning Arabic phonology; moreover, the traditional grammarians usually set down these two semivowels in the list of Arabic letters of alphabet which includes the consonant letters and the three ALVs as well. For the purpose of this study, they will be also set down in both Table (1) of Arabic vowels since they are classified as vowels by Arabic grammarians, and in Table (2) of the Arabic consonants since they phonologically behave as consonants.

1.2. The second group of vowel sounds in Arabic includes three short vowels (henceforth, ASVs). In Arabic, they are designated [ʔl-ħerekat] (الحَرَكات). Here, it is noticed that one of the characteristics of Arabic writing system is that [ʔl-ħerekat] are not represented by letters, therefore the Arabic orthography does not include them; instead, they are represented by a special group of diacritical marks written either above or under the letter, or even left out without any representation to the supposition or guessing of the reader as in certain types of printed modern standard Arabic, or in Arabic handwriting. The process of writing down the ASVs in a written text is known [ʔt⁰teʃkɪːl] (التَشْكيْل). In this case, the ASVs are written on different consonant letters of each word[2].

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1 The concept of 'phoneme' had first been suggested by Jan Baudouin de Courtenay (1845-1929) in his monumental work "Essay on a Theory of Phonetic Alternation" (1895). According to his account of the phoneme, it is a sound or phonological unit which makes difference in meaning. He had also shown that each phoneme has a set of 'allophones', or variants of the same phoneme but they do not make any difference in meaning. As for Arabic language, the members of the two sets of vowels, i.e. both ASVs and ALVs, are all individual phonemes since they make difference in meaning. See: "The proceedings of Baudouin de Courtenay conference" Warsaw 1979. Janusz Rieger, Mieczyslaw Szymczak, and Stanislaw Urbanczyk (eds), and "Jan Baudouin de Courtenay's contribution to general linguistics" by Arleta Adamska-Sałaciak. Faculty of English, Adam Mickiewicz University, Poznań, Poland. Published on the cite: https://www.academia.edu/2944356/Jan_Baudouin_de_Courtenays_contribution_to_general_linguistics.

For an elaborate discussion of the problems associated with the concept of 'phoneme', you can consult the excellent chapter written by Peter Roach, (1991) "English Phonetics and Phonology" 2nd ed. Cambridge University Press. Pp. (110-119).

2 The concept of [ʔt⁰teʃkɪːl] might refer to the presence of the ASVs on the last letter of the word only. Here the functions of the ASVs are syntactic in nature.

1.3. The ASVs are: [fetħę], written above the letter, (ؘ), [demˀmę], written above the letter, (ُ), and [kesrę], written under the letter, (ِ). Some Arab grammarians add what is traditionally called [as-sukŭn] or the zero short vowel (henceforth ZSV),[1] which is represented by a diacritic sign above the letter (ْ), as one of the ASVs. Their account of the ZSV as one of the ASVs is definitely correct as it has certain morphological and syntactic functions. Now since the focus of this study is to investigate the linguistic functions of ASVs, their phonological functions will not be entirely excluded, i.e., only a brief account of their articulatory and auditory aspects will be discussed.

1.4. The idea that the ASVs are only portions of the ALVs is dominant in the traditional treatises of the Arabic grammar.[2] It can be traced back to the ancient grammarians of Arabic such as Sibawaih (died in 796 AD) and Ibn Jinni: (died in 1002 AD). For example, the latter states that:

" Be aware that the ASVs are only portions[3] of the ALVs: the ALVs are [ʔlif] (represented by /a/ or /ā/), [ωaŭ] (represented by /ŭ/ or /ω/) and [jāʔ] (represented by /ɪ:/ or /j/). Just as these letters (the ALVs) are three in number, the ASVs are also three in number. They are [ʔl-fetħę], [ʔl-đemmę], and [ʔl-kesrę]. [ʔl-fetħę] is part of the ʔif, [ʔl-kesrę] is part of the jāʔ, and [ʔl-đemmę] is part of [ωaŭ]. The old grammarians called [ʔl-fetħę] the small [ʔlif], [ʔl-đemmę] the small [ωaŭ], and [ʔl-kesrę] the small jāʔ; and they [the old grammarians] were definitely right."[4]

This statement has been so influential in the Arabic linguistic thought concerning the nature of the ASVs that no substantial treatises have been devoted for investigating the full linguistic functions of them. instead, the study of these functions has been scattered on different levels of language study such as [ʔşˀşərˀf]. As for the problem of [ʔsˀ-sukŭn], and whether it is a segment of Arabic vowels or not, it has recently been studied in detail. In fact, [ʔsˀ-sukŭn] is one of the of ASVs since it has certain grammatical functions to fulfill only by it, as mentioned above. Orthographically speaking,, it is written above consonant letters exactly like ASVs. Yet, it might be claimed that if [ʔsˀ-sukŭn] is not phonologically articulated, then how can we treat it as a member of ASVs? The answer is that it is a zero element or member which is, according to Crystal (1999:372): "An abstract unit with no physical realization in the stream of speech; also called a **null element**." Then he clarifies the concept of null element by stating that "The term is commonly used for the absence of a morpheme [or even a phoneme] in contexts where one would normally occur; […] A **zero morph [or phone]** is sometimes proposed to handle singular/plural alternations in such nouns as sheep, where no change is involved."

This account of the zero morph or phone can be adopted as a good reason for considering [ʔsˀ-sukŭn], or the ZSV, as the fourth short vowel in Arabic since a zero element, in linguistics, is functionally a constituent needed in analysis although it is not realized in speech. In phonology, it refers to an element that is phonologically null. This implies that there is a lack of an element where it is theoretically expected. In Arabic [ʔsˀ-sukŭn] is usually written with the symbol above the letter [ْ].[5] Therefore, the ZSV is not a tangible segment but it has certain linguistic functions exactly like

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1 Max, L. Margolis (1910) *A Manual of the Aramaic Language of the Babylonian Talmud.* Fischer & Wittig. Leipzig. P. 10.

2 The ASVs and ALVs are both vowels since they are all produced when 'there is no obstruction of the flow of the air as it passes from the larynx to the lips'. See: Roach, Peter, "English Phonetics and Phonology" 2nd ed. Cambridge University Press. 1991. Cambridge. P. 10.

3 Stating that the ASVs, being portions of the ALVs, does not plainly explain how much are these portions; here, we can ask whether each short vowel is half of its counterpart, or less, or more. Moreover, this definition is definitely quantitive in nature.

4 The following is the Arabic text written by Ibn Jinni:

"اعلم أن الحركات أبعاض حروف المد واللين: و هي الألف و الياء و الواو. فكما أن هذه الحروف ثلاثة فكذلك الحركات ثلاث. و هي الفتحة و الكسرة و الضمة. فالفتحة بعض الألف، و الكسرة بعض الياء، و الضمة بعض الواو. و قد كان متقدمو النحويين يسمون الفتحة الألف الصغيرة، و الكسرة الياء الصغيرة و الضمة الواو الصغيرة، و قد كانوا في ذلك على طريق مستقيمة."

ابن جنّي، (سر صناعة الإعراب) ج1، ص. 19. طباعة البابي الحلبي . ط1. 1954.:See

5 In Arabic, the term [ʔsˀ-sukŭn] is of two types: [alive sukŭn] which can occur on every consonant, and [dead sukŭn] which occurs on [ħurŭf ul-med] only. Here, it is noticed that in the Quranic orthography the [alive

other short vowel segments. It may represent either the mere absence of any short vowel when the speaker stops at the end of a sentence which is the phenomenon known in Arabic as pausing, or stopping with ZSV.

1.5. The ZSV may function as a morphological marker shown on the second letter of the noun (زَرْعٌ) [zerʕun], (plantation) in comparison with the verb (زَرَعَ), [zereʕe], (he planted). It may be also to manifest a syntactic function i.e. to express negation as in the final consonant of the following expression: [lem⁰ jəktub⁰], (لَمْ يَكْتُبْ) (He didn`t write).[1] As a result, although the ZSV is null in articulation, it has certain linguistic functions; therefore, it will be treated as member of the ASVs and its linguistic functions will be taken into consideration.

1.6. The above mentioned distinction between ALVs and ASVs obviously shows that the vowel sound system in Arabic is based upon quantitive criteria; therefore, it can be better modified to make it qualitative criteria. This can done by adopting the model of phonetic description suggested by Daniel Jones in order to make it fit with the nature of vowels in Arabic. As far as the researcher knows, the linguistic functions of ASVs in Arabic have not been elaborately investigated yet.[2] Indeed, the following factors have led to this situation:

a. The representation of ASVs as diacritic symbols in Arabic writing system has indirectly affected the analysis of the ancient traditional grammarians and made them treat the ASVs as if they were rather subsidiary.[3] This is obvious in the fact that there had been no single study devoted completely for investigating these functions.

b. The previous factor has led to the inadequacy of the definition of ASVs presented by those grammarians. For them, the focus has been on the auditory perception of the ASVs rather than on the way they are articulated. It is quite clear that the qualitative treatment of the ASVs is due to the focus on their perception.

c. The modern efforts in studying the ASVs have been focusing on criticizing the ancient Arab grammarians' account of the ASVs in the realm of Arabic phonology only; some of them have mentioned minute differences which occur in certain phonological situations while using the ASVs in the process of speech.

d. Therefore, the ASVs are still in need for an appropriate linguistic study, i.e., different linguistic functions of ASVs are still scant; therefore, they have to be completed by further investigations. These investigation should adopt a rather comprehensive new procedure.

Accordingly, this study aims at achieving the following objectives: first, some light will be shed on the description of the ASVs presented by some grammarians, both ancient and modern; secondly, the segmentations of ASVs will be phonologically described and redefined in terms of modern articulatory phonology; thirdly, their full linguistic functions in Arabic language; i. e. the lexical,

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sukŭn] is represented by the head of the letter (ح), or /ħ/ in phonetic description. Yet, the ancient Arabic grammarians have not pondered enough concerning a third type of [ʔs⁰-sukŭn] which is usually connected with the phenomenon called pausing (الوقف) [ʔl-ωăğ⁰f] at the end sentences. This type is different from both [alive sukŭn] and [dead sukŭn] because it has different distribution with only one function.

1 For an elaborate discussion of the ZSV, see the chapter entitled "السكون في العربية" in:

القاهرة. 1998. د. كمال بشر، "دراسات في علم اللغة" دار غريب للطباعة والنشر.

إذ يقول د. كمال بشر: "إذا نظرنا إلى السكون من الناحية الصوتية، فهي لا تعد حركة؛ لأننا لا نستطيع أن نحدد مخارجها و صفتها و كيفية صدورها، أما إذا نظرنا إليها في التركيب فهي ذات أثر فاعل فيه." وهذا يعني أن السكون، من حيث الماهية، هو انعدام الوجود المادي للصوت مما يؤدي إلى تعذر إيراد وصف صوتي له؛ أما من حيث الوظيفة، في التركيب الصرفي والتركيب النحوي، فهو يؤدي وظائف معجمية ونحوية مهمة أسوة بالحركات القصيرة الأخرى."

2 In fact, Dr. Tammam Hassān, one of the well-known contemporary scholars in modern Arabic grammar, has not referred to "as-sukŭn " in his detailed account or inventory of Arabic sound system. See:

د. تمام حسان، "مناهج البحث في اللغة" مكتبة الأنجلو مصرية، القاهرة. 1990. ص. 13 وما يليها.

3 One of the modern grammarian and phonologist specialized in Arabic [ʔl-ğəralę] has noticed that:

"إن الحركات قد وردت لدى الخليل، وسيبويه، والفرَّاء، والفارسي إلا أنها بقيت ترد على هامش الحديث عن الصوامت، ولم يتبلور الاهتمام بالحركات إلا على يد ابن جنِّي ... وأحسب أن الإشارات الصوتية [بخصوص الحركات] لدى علماء اللغة بعد ابن جنِّي كانت في معظمها تتكئُ على آرائه"

See; د. زيد خليل القرالة، "الحركات في اللغة العربية: دراسة في التشكيل الصوتي" عالم الكتب، أربد، 2004. المقدمة، ص (أ).

morphological, syntactic, and semantic functions will be investigated in order to outline the linguistic status of them; fourthly, the functions of ASVs in Arabic metrics (أوْزانُ الشِّعرِ العَرَبي) and Arabic rhyme (القافية) will be briefly manifested to give a full account of range the functions of the ASVs. It should be noticed here that, in the linguistic reality, these functions might be so intermingled that they can co-occur in one or more levels of linguistic analysis, such as morphophonemic, morphosyntactic, syntactico & semantic levels, and prosodic level as well.

2. The Traditional Description of the ASVs

2.1. Theoretically speaking, the description of the ASVs presented by ancient Arab grammarians have reflected their own account of the ASVs as they are articulated, or what these grammarians call the enunciation or articulatory features (مخارج) of the ASVs. For example, Syibawayh states that "[al-fatħę] (ﹷ) is taken from the [ʔlif] /a/, /ā/; and [ʔl-kasrę] (ﹻ) from [yā?] /ɪː/, /j/; and [ʔl-đem⁰mę], (ﹹ) from [ωaǔ] /ǔ/, /ω/. Moreover, ʔbn Jinnyi believes that "The ASVs, [ʔl-Harakāt] in his wording, are only little portions of the long, or prolonged vowels, [ħurǔf ul-med] in his wording". Of course, this account of the ASVs is based on quantitive features of the ASVs which depends mainly on their auditory features and description, whereas the appropriate account of the ASVs must be based on the qualitative properties derived from the process of their production.

2.2. In producing the ASVs, the changes of the mouth cavity, of the tongue position in it, shape of lips and degree of the openness of them should be taken into consideration when discussing the articulatory features of each pair of the ASVs since the articulatory features are the most important factors in the process of producing ASVs.[1] Phonologically speaking, the description of [fetħę] (ﹷ) vs. [ʔlif] /a/,/ā/; [đem⁰mę] (ﹹ) vs. [ωaǔ] /u/,/ǔ/ and [kesrę] (ﹻ) vs. [yā?] /ɪː/, /j/ shows that the two supposedly identical counterparts of each pair are substantially different from each other in articulation. (See the diagram of the Arabic vowels below)

Some of the recent treatises have presented a more adequate and critical account of ASVs as suggested by ancient grammarians. For example, al-Ghorni[2] refers to one of the reasons of these inadequacies of the grammarians' description when he states that "It is noted that the ancient grammarians' description of the ASVs has been limited to the role of the two lips without taking into consideration the role of the tongue in the process of articulating them although it is the fundamental organ of speech which gives the ASVs their own specific features." Therefore, it is assumed here that their description lacks adequacy and it can be replaced by a more adequate one. As for the functions of the ASVs which have not been also tackled with adequately by the ancient grammarians, Bishr (1986: 205) states that the ASVs may have a syntactic effect; yet, he does not explain this type of effect.

To avoid going into unnecessary minute details of the ALVs and the ASVs, and the allophones of each, the following procedure will be adopted:

a. Unless the allophones of any vowel or consonant sound are morphologically relevant to the aim of this study, they will be neglected. For example, each member of the ALVs and ASVs can be pronounced differently in different phonological environments in different varieties of standard Arabic, but these variations are not morphologically relevant since they do not make changes in the meaning of words. Phonologically speaking, these variations or the allophones may be useful in revealing the geographical distribution of the Arabic dialects and they neglected since this distribution is not discussed here.

b. Though the two sounds /ɪː/ or /j/, are two distinct sounds, i.e. a vowel and a semi vowel respectively, on the articulatory level, and they have different distributions; yet, they had been treated as if they were both vowels and they constitute two allophones of the same vowel sound in ancient Arabic

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1 The substitution of a short vowel by its counterpart in certain phonological environment does not confute the fact that the two members of each pair are intrinsically different.

2 See: علي القُرَني، "أثَرُ الحركاتِ في اللغةِ العربية: دراسة في الصوتِ والبنية" أطروحة دكتوراه، جامعة الإمام محمد بن عبد العزيز، الرياض، 2004، ص 9.

grammar. The same procedure is also noticed with the two sounds /ŭ/, /ω/. This attitude will be reversed in this study, and they will considered two distinct phonemes,

c. The [sukŭn] is considered an ASVs since it has specific functions to fulfill on the morphological, syntactic and semantic levels. It has also a vital role in Arabic prosody and rhyme. Therefore, it be treated as a genuine member of the ASVs. For example, in the words [ωeƫen], (وَطَن) (country), [ωereǧę], (وَرَقَة) (paper, leave) and [ωaħdę], (unity, unit), the first sound is /ω/. Now if it is compared with the second sound /u:/ in the words [ʕu:d], (عود) (lute), [sŭǧ], (سوق) (market), and the third sound in [ʕəmŭd], (عَمود) (pilar), it is clear that they are two different sounds since the former is a semi vowel sound which occurs both initially and medially but not finally, whereas the latter is a vowel sound which occurs both medially and finally but not initially.[1]

d. The phonetic description of both the ALVs and ASVs will be treated and symbolized according to the international phonetic symbols with some necessary modifications. Therefore, table 1 and table 2 will be adopted in the process of rendering Arabic words, phrases, and sentences into phonetic symbols.

2.2. The description of the ASVs and ALVs should be based on qualitative criteria which focus on the factual differences between each pair, or set, of the long and short vowels. As a result, the description of both the ASVs and ALVs in table No. 1. will be adopted in this research.[2]

3. The Linguistic Functions of ASVs:

1.1. Lexical Function:

The richness of Arabic lexicon is due to the vital role of both the ASVs and ALVs in producing new lexical items. It is obvious that the ASVs immensely participate in forming new lexical items with some variation of the position or positions of one or more of the ASVs as in the following examples:

i. In the nouns: (بُرٌّ) [burrun], (بَرٌّ) [berrun], and (بِرٌّ) [bɪrrun], which mean (grain), (land), and (charity) respectively, the three different lexemes are formed by changing the short vowel attached to the first letter /b/.

ii. In the verbs: (قَصَرَ) [ǧeşere], (قَصُرَ) [ǧeşure], and (قَصِرَ) [ǧeşire], which mean (became short), (bleached), and (had pain in his nick) respectively, they differ lexically according to the change of the short vowel attached to the second root, i.e. the (عين) [ʕein] of the verb: the [feƫħę], [ðem⁰mę], and [kesrę] respecyively. Moreover, the first verb (قَصَرَ) is transitive and it falls within the first category of the morphological structures of the bare three roots verb, the second verb (قَصُرَ) is intransitive and it falls within the fifth category, and the third verb (قَصِرَ) is intransitive and it falls within the sixth category.[3]

iii. The three-root word (ح+س+ب) can give different meanings according to the kind and position of the ASVs on each of its three consonant letters. The following are the lexical unit resulting from changing the ASVs:

a. (حَسِبَ) (يَحْسَبُ), [ħəsɪbə] [jəsəbu] a verb which means 'reckoned', 'reckons'.

b. (حَسَبَ) (يَحْسِبُ), [ħəsəbə] [jəħ⁰sɪbu] a verb which means 'calculated', 'calculates'

c. (حَسْبُ) [ħəs⁰bu] a particle or a noun, which means 'enough'

d. (حَسَبٌ) [ħəsəbun] a noun which means 'the genetic affliation'.

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1 If not impossible, it is very difficult uttering words beginning with vowel sounds. This is why words in English language which are supposed to begin with vowel sounds, such as 'in', 'all' and 'eat' are pronounced with the glottal stop /ʔ/ inserted before gliding to first the vowel sound in each word. Compare the phonetic transcription of them with that of 'tin', 'call' and 'seat' respectively: /ʔin/, /tin/; /ʔɔ:l/, /kɔ:l/ and /ʔɪ:t/, /sɪ:t/.

2 See "The Index of Charts and Tables".

3 The infinitives of these three verbs also differ in form according to the change of the short vowels and their placement.

There is a close connection between phonological and morphological analyses. This connection has been designated as the morphophonemic realm, or the interface, between these two levels of study.[1]

1.2. Morphological Function:

The ASVs play a vital role in different processes of Arabic morphology [al-ṣerf]. This is very obvious in forming the morphological structures of different types. For example, in conjugating the present form of the bare three-root verbs[2] (ف+ع+ل), [f+ʕ+l], it is possible to get what is called in Arabic (أبوابُ الفعلِ الثلاثي المجرد) or the six categories of the bare three-root verb.[3] These six categories, or morphological structures, can be formed by changing the short vowel of the first root, or (فاء) [fāʔ] of the verb, into stillness or [sukŭn], and attaching a different short vowel to the second root, or the (عين) [ʕain] of the present form of the verb taking into consideration the type of the short vowel attached to the first letter, or the (عين) [ʕain] of the verb.[4] These six morphological structures or categories are:

i. The category of the verb (نَصَرَ), (يَنْصُرُ), (helped/supported) [neṣere], [jen⁰ṣuru], in which the [fatħę] of the second root is changed into [đem⁰mę]. Some other examples of this category are: (رَسَمَ), (يَرْسُمُ) [reseme]/[jer⁰sumu] (drew/paint), and (حَرَثَ), (يَحْرُثُ) [ħereθe]/ [jeħ⁰uθu] (ploughed/ rototilled).

ii. The category of the verb (ضَرَبَ) (يَضْرِبُ), [đerebe] [jeđ⁰ribu] (beat/strike), in which the [fatħę] of the second root is changed into [kesrę] in the present form of the verb. Here are some other examples of this category: (فَقَدَ) (يَفْقِدُ), [feğede] [jef⁰ğidu] and (كَشَفَ) (يَكْشِفُ) [keʃefe] [jek⁰ʃifu].

iii. The category of the verb (فَتَحَ), (يَفْتَحُ), [feteħe] [jef⁰teħu] (opened/opens) in which the [fatħę] of the second root is retained. Some other examples of this category are: (رَكَعَ), (يَرْكَعُ) [rekeʕe]/[jer⁰keʕu] (knelt/kneels), and (مَدَحَ), (يَمْدَحُ) [medeħe]/ [jem⁰deħu] (praised/praises).

iv. The category of the verb (فَرِحَ) (يَفْرَحُ) [feriħe] [jef⁰reħu], (felt happiness) (feels Happiness), in which the second root is followed by [kesrę] which is changed into [fatħę] in the present form of the verb. Another two verbs of this category are: (حَفِظَ) (يَحْفَظُ) [ħefiđe] [jeħ⁰feđu] (preserved/memorized, preserves/ memorizes) and (فَشِلَ) (يَفْشَلُ) [feʃile] [jef⁰ʃelu] (failed) (fails).

v. The category of the verb (شَرُفَ) (يَشْرُفُ) [ʃerufe] [jeʃ⁰rufu], (had honours) (has honour). In this type, the [đem⁰mę] on the second root of the verb is retained in its present form. Here are two other verbs of this category: (قَصُرَ) (يَقْصُرُ) [ğeṣure] [jeğ⁰ṣuru] and (صَغُرَ) (يَصْغُرُ) [ṣeğure] [jeṣ⁰ğuru], (became small) (becomes small).

vi. The category of the verb (حَسِبَ) (يَحْسِبُ)[5] [ħesibe] [jeħ⁰sibu] (calculated) (calculates) in which the [kesrę] on the second root is retained. Here are another two verbs of this type: (وَرِثَ) (يَرِثُ) [ωəriθe] [jeriθu], (وَثِقَ) (يَثِقُ) [ωəθiğe] [jeθiğu].

In fact, the role of ASVs is not confined to these six morphological structures of the bare three-root verbs, it also plays an intrinsic role in all morphological structures, or (الأبنية الصرفية), of Arabic language as well.

1.3. Syntactic Function:

AS for syntactic role of the ASVs, one of the basic features of Arabic language is that it is one of the declinable languages; therefore, the function of declension in Arabic is basically achieved by the ASVs which are the so essential components or signs of the declining process in nouns and verbs that they are called parsing vowels. This is very clear in the declinable cases (حالات الإعراب) (nominative

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1 Here is one of the elaborate researches concerning the morphophonemic realm: Lieberm, Rochelle (2009) *Introducing Morphology*. Cambridge University Press. Cambridge, New york. Chapter 9: Sounds and Shapes: The Interface between Morphology and Phonology. Pp. (157-172)

2 The same procedure in (14) can be applied on the augmented verbs, or nouns, which have additional letters.

3 Of course, the quadrilateral (four-fold) verbs, and pentagonal (five-fold) verbs are also affected by the ASVs on the letters composing them.

4 It should be noted here that in the process of transliteration of the Arabic words, all the ASVs will be represented by the signs found in Table (1) and these signs will be written after the letters and not over or under them.

5 If the short vowel of second root in the verb (حَسِبَ) is changed into [fetħę],then it will be a member of the fourth category and its meaning will be (thought or imagined).

case, accusative case, genitive case, and jussive case); and indeclinable cases (حالات البناء) of certain words which keep the short vowel on the last letter no matter their syntactic functions are such as (أمْسِ) [ʔmˈsi] and (مِنْ قَبْلُ ومِنْ بَعْدُ) [minˈ ǧəbˈlu sukŭn ə minˈ bəˈó][1]. Usually, the nominative case (حالة الرفع), which refers to a certain parsing position in the sentence such as the subject (المُبتدأ), the predicate (الخَبَر) and the agent (الفاعل), is usually expressed by [ðemˈmę] on the last letter.[2] The accusative case (حالة النصب/الفتح)[3] in the object (المفعول به), and some adverbs which are usually expressed by [fetħę] on the last letter. The genitive case in nouns (حالة الجر)[4] which are preceded by prepositions and the nouns preceded by the [sukŭn aŭ] of oath, is expressed by [kesrę] under the last letter of the noun, and the jussive case in verbs (حالة الجزم)[5] is expressed by [sukŭn] on the last letter of the verb. The following sentences will clearly demonstrate this syntactic function:

1. a. The boy wrote his lesson in the school.

    b. (كَتَبَ الوَلَدُ دَرْسَهُ في المدرسة)

      Here, the noun (الوُلَدُ) is in the nominative case and it ends with [ðemˈmę] because it is the subject of the verb (كَتَبَ), whereas the noun (دَرْسَ) is in the accusative case and it ends in [fetħę] since it is the object of the verb. The noun (المدرسةِ) is in the genitive case and it ends in [kesrę] because it is preceded by the preposition in (في).[6]

2. a. Ahmed visited his uncle yesterday.

    b. (زارَ أحْمَدُ عمَّهُ أمْسِ)

      The noun (أمْسِ) is used as an adverb of time; therefore it must be in the accusative case. Yet it is treated as one of the indeclinable nouns which keeps the [kesrę] under its last letter regardless of its function in the sentence.[7] Some other indeclinable words or expressions are the compound number (العدد المركب) which is always accompanied with the [fetħę] on the last letters of its two parts; for example, numbers fourteen (أرْبَعَةَ عَشْرَةَ) and sixteen (ستةَ عشرةَ) can occur in nominative case, accusative case and genitive case but the [fetħę] is kept on their two parts.

3. In 4.2 Morphological Function, there is a brief account of the morphological structures of the three-root verbs which are in active voice formula. In addition, the rendering of active voice into passive voice entails certain important changes in the syntactic structure of the sentence. Here, the active form of the verb (مَدَحَ), (يَمْدَحُ) [medeħe]/ [jemˈdeħu] (praised/ praises) is changed into passive form by certain changes in the ASVs on the first and second sound sounds and it becomes (مُدِحَ) [mudiħe], and (يُمْدَحُ) [jumˈdeħu] respectively. The same procedure of changing certain ASVs in the past form and present form is applied on the passive form of other verbs. As a result, there is a basic syntactic effect of changing the ASVs on the sentence since its whole structure is changed. For example, the following two sentences have different structures both in the morphological structure of the verb and in other constituents of the sentence, especially the subject and object. The latter is in the accusative case in sentence number one of the Arabic version, then it becomes the pro agent (نائِبُ الفاعِل), which is in the nominative case in sentence 2 of the Arabic version:

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1 The original short vowel on the last letter of the word [bəζdó] is [ðemˈmę] which has been changed into [sukŭn] of the pause.

2 The nominative case might refer to [ðemˈmę] on the last letter of a noun or a verb. it includes: the subject (المبتدأ), the predicate (الخبر), the agent or doer (الفاعل), the deputy of the doer, or the pro agent (نائب الفاعل), the noun of copular be (كان) & its sisters, and the predicate of assertive (إنَّ) & its sisters.

3 The accusative case might refer to [fetħę] on the last letter of a noun or a verb. It includes: the object (المفعول به), some adverbs of time, the predicate of (كان) & its sisters, and the noun of the assertive (إنَّ) & its sisters.

4 The genitive case occurs only in nouns and the jussive case occurs only in verbs preceded by a jussive particle (أداةُ جزم) or it is part of conditional statement.

5 If the last letter of a noun or a verb is one of the ALVs, then the process of using ASVs is drastically different.

6 For more information about the position of ASVs after consonant letters; See the brief account at the end of this paper.

7 The non-delineable nouns and verbs include those which end with the vowel sound /ā/ such as (مدى) horizon, (عصا) stick, (مشى) walked, (سعى) sought/strive. Here, different types of ASVs are not articulated, instead, they have to be estimated.

أ.   كَتَبَ الرَجُلُ قَصِيْدَةً جَدِيدةً.

a. The man wrote a new poem.

ب.   كُتِبَتْ قصيدةٌ جميلة.

b. A new poem was written {by the man}.

3.4.1 Syntactico-semantic Function:

This function is of two dimensions, i.e. it is dichotomous since its first change is morphological represented by changing one or more short vowels with others, but its consequences are both syntactic and semantic. As a result, it can be designated as morpho-syntactico-semanitc function. It reveals the far reaching linguistic phenomenon of the functions of ASVs. To demonstrate these basic roles of ASVs, the following examples will be discussed in some detail.

3.4.2 In the Holy Quran, Verse No. 28 of Sûrah No. 35 (Fâṭir) We read: "And likewise of men and Ad-dawâbb [moving (living) creatures, beasts], and cattle, are of various colours. It is only those who have knowledge among His slaves that fear Allâh. Verily, Allâh is All-Mighty, Oft-Forgiving."[1]

And the Qur'anic text of this verse is:

"وَمِنَ النَّاسِ وَالدَّوَابِّ وَالْأَنْعَامِ مُخْتَلِفٌ أَلْوَانُهُ كَذَلِكَ ۗ إِنَّمَا يَخْشَى اللَّهَ مِنْ عِبَادِهِ الْعُلَمَاءُ ۗ إِنَّ اللَّهَ عَزِيزٌ غَفُورٌ"

And we will concentrate on the part of the verse written in italics:

"إِنَّمَا يَخْشَى اللَّهَ مِنْ عِبَادِهِ الْعُلَمَاءُ" in which the correct reading necessitates that the [fetħe] must be used on the name of the Almighty God (Allâh) since it is the object of the verb (يَخْشَى) [jeχ⁰ʃâ] and it is uttered [Allâhe] and the subject is (العلماءُ) [Al-ʕulemâʔu] or *those who have knowledge.* If one of these two short vowels is used instead of the other, the whole meaning of the clause will be "God fears of *those who have knowledge,*" which is on the contrary of the exact meaning of this verse since God is the creator of all creatures among which are *those who have knowledge*.

3.4.3. The dialogue between Abul-aswed Adduʔeli[2] and his daughter is another example of the syntactico-semantic effects of changing one of ASVs by another. In this narrative text, the [fetħe] is replaced by [ðem⁰me] on the last letter of the word (أَجْمَلَ) [ʔdʒ⁰mele] and it becomes (أَجْمَلُ) [ʔdʒ⁰melu]. This change has resulted in certain substantial syntactic and semantic changes as we will see. The tale says that one night, Abul-aswed Adduʔeli's daughter wanted to express her surprise of the beauty of the sky at that time; therefore, she said:

- ما أَجْمَلُ السَماءِ(؟/!)

The translation of which is: "-What is the most beautiful thing in the sky?". Her father, believing that she was asking him a question, answered:

- نُجُومُها.

The translation of his reply is: "- Its stars." Then, the daughter commented:

- إنما أردتُ التعجبَ مِنْ جمالِ السماء.

Its translation is: "- In fact, I want to show that I am surprised by the beauty of the sky!" The father said:

- كان ينبغي أن تقولي: "ما أَجْمَلَ السَماءَ!"

Its translation is: "You must say: How beautiful the sky is!"

The difference in the syntactic structure and semantic interpretation of two sentences is so vast as explained below:

a.   "-What is the most beautiful thing in the sky?"

b.   " How beautiful the sky is!"

The difference in meaning and structure reassures the far reaching effects of the ASVs on different linguistic levels in Arabic.

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1 Here, the translation of Quranic verses are adopted from: "Translation of the meanings of THE NOBLE QUR'AN IN THE ENGLISH LANGUAGE" By: Muhammed Taqî-ud-dîn Al-Hilâlî and Muhammed Muhsin Khân. KING FAHAD COMPLEX FOR THE PRINTING OF THE HOLY QUR'AN. Madinah, K.S.A. 1984.

2 Abul-aswed Adduʔeli, ðālim ibn ʿζemr ibn Sufiān ibn Jandal, (died in 69 H, 688 A.D.) was one of the earliest founders of the Arabic grammar.

3.4.3. Another example of the effects of the use of one of the ASVs instead of the other in certain linguistic environments will inevitably result in a syntactic and semantic change as well. For example, the Arabic verse by Hassan Bin Thabit[1]: "لا أَسرُقُ الشـعراءَ ما نطقوا بَلْ لا يوافِــقُ شعرَهم شعري" which can be translated into the following:

"I do not plagiarize what other poets utter///moreover, my poetry does not fit their poetry".

This vast difference has resulted from changing of [fetħę] on the third letter of the word (شعرَهم) of the second part of the verse, and the result is that the word (شعرَهم) is the object and the word (شعري)[2] is necessarily the subject of the verb (لا يوافِــق). Hence, the meaning is "my poetry does not agree with the poetry of other poets", whereas if [đem⁰mę] is used instead of the [fetħę] on the third letter, the whole meaning will be drastically changed and its translation will be "I do not plagiarize what other poets utter///moreover, their poetry does not fit mine".

It is clear that the word (شعرُهم) will be the subject of the verb (لا يوافِــقُ) whereas the word (شعري) will be its object and the meaning is that the poetry of other poets does not agree with his poetry.

3.4.4. The Use of [kesrę] to Avoid the Meeting of Two Consonants:

On the supra-segmental level, the [kesrę] has a special role in Arabic articulation since it is used instead of the [sukŭn] on the last consonant of jussive words such as the Quranic verse " **... إِذْ قَالَتِ امْرَأَةُ عِمْرَانَ...**" in which the /t/ sound in the verb [ğālət⁰] is followed by the [sukŭn] and the [m⁰rə?tu] begins with /m/ sound followed by the [sukŭn]; therefore, the [kesrę] is used instead of the [sukŭn] after the verb and it becomes [ğāləti]. Another example can be found in the Quranic verse "**...أَقِمِ الصَّلَاة**" in which the verb [?ğim⁰] is ended with the [sukŭn] and it is replaced by [kesrę] to avoid the meeting of two successive consonants.

4. The Functions of the ASVs in Arabic Prosody and Rhyme:

4.1. In Arabic Prosody:

There are some other functions of ASVs in both Arabic prosody and Arabic rhyme. In Arabic prosody, the role of ASVs is very important since this prosody depends thoroughly on the sequences of consonants and ASVs to form the feet of each metre.[3] In fact, the whole system of Arabic metre is based on four components as follows:

a. The cords (الأسْباب); they are two in number:

i. The light cord (السَبَبُ الخَفيْف) is a syllable which includes a consonant which is followed by one of the ASVs except the sukŭn, and quiescent, i.e. which is followed by sukŭn, as in the following words: [min⁰] (from), [len⁰] (will not) and [lem⁰] (not). The light is represented by the following sigh: [cv+c]; where (cv) stands for a consonant followed by a vowel and (c) for a consonant only.

ii. The heavy cord (السَبَبُ الثَقيْل) is also of two syllables containing two mobile/moving sounds as in: [lįme] (why) and [lekə] (for you). It is represented by [cv+cv].

b. The Bars (الأوْتاد): they are also two:

i. The undivided bar (الوَتَدُ المَجْموع) is of two syllables composed of two mobile/moving letters followed by a quiescent one such as in: [leğed⁰] (has been), [metā] (when), and [?nā] (I, me).[4] It is represented by [cv+cv+c].

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1 Hassan Bin Thabit, (died in 670 A.D.), is a maven poet who had been called 'the poet of the prophet Mohammed (Peace be upon Him)'.

2 The short vowel attached to a noun followed by a possessive (ياء) [ja?] to express its syntactic role cannot be uttered for phonological reasons; therefore, the only written sign of the syntactic roles of both the two words (شعرَهم) and (شعري) is the short vowel on the word (شعرَهم) [fetħę], then, it is the object and the word (شعري) will inevitably be the subject; now if the short vowel used is the [đem⁰mę] instead of the [fetħę], then the subject is inevitably the word (شعرُهم). See: ديوان حسان بن ثابت: نشر دار صادر، بيروت، 1974 ص. 97.

3 The consonant letter followed by [sukŭn] is called quiescent, whereas the one which is followed by one of ASVs is called mobile/moving letter.

4 The traditional Arabic grammarians suppose that there is a short vowels following the consonant letter and preceding the ALVs which comes after that consonant. This supposition is rather theoretical since the

ii. The divided bar (الوَتَدُ المَفْروق) is also of two syllables; it includes one mobile/moving letter followed by one quiescent and then another mobile/moving letter such as [ʔən⁰tə] (you), and [ğeb⁰lə] (before). It is represented by [cv+c+cv].

The above manifestation of the basic components of the feet of Arabic metrics has shown that the ASVs play vital roles in Arabic prosody. The feet of each metre are composed by putting together either similar feet in the mixed metres, as in the (swift) metre (السَريع)[1] which is measured as:

(مُسْتَفْعِلُنْ مُسْتَفْعِلُنْ فاعِلُ) in the first part and must be repeated in the second part. It can be represented by the Arabic verse:

(مَنْ يَذُقِ الحربَ يَجِدْ طَعْمَهَا //////// مُرَّاً وَتَتْرُكُهُ بِأوْجَاعٍ)

Or, the pure metres as in the (trembling) metre (الرجز), and its feet are twice as: (مُسْتَفْعِلُنْ مُسْتَفْعِلُنْ) (مُسْتَفْعِلُنْ) in the first part and should be repeated in the second part. It can be represented by the Arabic verse:

(والقَوْلُ لَا تَمْلِكُهُ إِذَا نَمَى ////// كَالسَهْمِ لَا يَمْلِكُهُ رَامٍ رَمَى)

There is a huge number of permitted changes in the structures of the feet in all Arabic metres. These are called poetic permissions such as the 'deviations' (الزَحافات) and 'defect' (ألعِلَل). Yet, any type of these poetic permission cannot be done without noting carefully the ASVs in one way or another.

4.2. The Role of the ASVs in Formula of Arabic Rhyme:

The ASVs has a basic role in forming Arabic rhyme, or [ʔl-ğafiȷ̣ę]. There are several definitions of the concept 'rhyme' in Arabic poetry. But the famous definition of [ʔl-ğafiȷ̣ę] presented by [ʔl-χelɪːl bin ʔħmed ʔl-frāfɪːdɪ]: is the most important one since he had been the founder of the Arabic metrics and prosody. In his definition of [ʔl-ğafiȷ̣ę], he states that it is "the sum of the sounds from the end of the verse to the first quiescent [consonant] letter following it with the mobile/moving consonant before another mobile/moving one." Here, we can see that this definition of rhyme in Arabic poetry depends completely on the sequences of consonants and short vowels. As result, the ASVs are essential elements in forming different rhyme schemes in Arabic poetry.[2]

There are also other two issues related to the functions of the ASVs. The first one is the supposition that Arabic language does not accept the succession of two consonants. This supposition entails the presence of ASVs to help overcome this problem. Yet, this supposition is not always true since there is a kind of succession of two consonants followed by a short vowel. This is noticed in many examples such as: /ğeble/ (قَبْلَ) (before) in which there is no short vowel between the consonant sounds /b/ and /l/, /rumħ/ (رُمْح) (spear) where there is no short vowel between the consonant sounds /m/ and /ħ/, and /şeb⁰r/, (صَبْرٌ) or (patience) where there is no short vowel between the consonant sounds /b/ and /r/, i.e the ccv or the vcc are possible but not cccv or vccc or more.[3]

The second issue is the supposition that all Arabic words always begin with mobile/moving consonants. In fact the Arabic words begin with a consonant followed by a short vowel sound. As for words which begin with [ω] and [j] sounds, as in [ωəğ⁰tun] (وَقْتٌ) (time), and [jəŭmun] (يَوْمٌ). Definitely speaking, these two sounds are semi vowels which phonologically behave as consonants rather as vowels; therefore, they can be uttered at the beginning of words exactly like any other consonant.[4]

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presence of such short vowel has no realization in articulation. This assertion suggests reconsidering the system of Arabic prosody. The task of acknowledging that there is no vowel sound before the prolonged vowel sounds is very difficult; yet, its implications on the whole system of Arabic metrics is so huge that only a committee of several efficient scholars can cooperate to accomplish it in a long span of time.

1 For the analyses of Arabic metres, see:

د. غازي يموت، "بحور الشعر العربي: عروض الخليل" دار الفكر، بيروت، 1992. (البحر الرجز) ص (120-131) (البحر السريع) (ص 144-154)

2 The Arabic version of this definition is:

"القافية هي مجموع الأصوات من آخر البيت إلى أول ساكن يليه مع المتحرك الذي قبل الساكن"

3 Another assumption states that Arabic words do not begin with a consonant in which the grammarians intend to say that the fact that all Arabic words do not begin with (ccv) which contradicts the fact that all the Arabic words begin with combination of (cv) in which the first sound is a consonants.

4 For further reading, see the following Arabic sources:

There is another problem concerning the articulatory position of the ASVs and consonants. There had been some debate among the ancient grammarians of Arabic concerning the position of the short vowel and whether it occurs before the consonant, or it is articulated simultaneously with it, or it is articulated after it. Ɂbn Jinni states that "As for Sibawaih's trend, the short vowel definitely occurs after the [consonant] letter. Some other grammarians say that these two sound [the consonant and the vowel] occurs simultaneously with each other, some other grammarians say that it occurs before it" then he states that what makes Sibawaih's trend more valid that we can notice the presence of the short vowel between the two alike letters preventing the two from being mingled or assimilated into one." This means that the reality of Arabic phonological system asserts that the ASVs can only occur after the consonant letters which implies that the phonemic description should reflect this fact as it is apparent in this paper.

5. Conclusions:

This paper has introduced a condensed comprehensive account of the full range of linguistic functions of the ASVs in Arabic language. These functions have been far reaching effects on different aspects of the language and they comprises all the aspects and levels of language phenomena in Arabic. This has shown that the traditional definition of the ASVs is in adequate since it does not reflect these functional aspects of them. Accordingly, these aspects have been focused on to demonstrate that the ASVs have been always playing vital roles in all linguistic manifestations of Arabic language because there are no single word or expression without being affected by them. Moreover, the following conclusions are stated:

1. The members of ASVs are not parts of their counterparts of ALVs. Instead, they are so different in the manner of the mouth during the articulation process that they can be considered genuine phonemes of the vowel sounds in Arabic.

2. Although the [sukŭn] is not articulated at all, it must be added to the set of the ASVs as an essential member of them since it has some specific important linguistic functions which cannot be fulfilled by other members of the ASVs.

3. The supposition of the presence of one of the ASVs before the prolonged letters is vague since its existence cannot be proved in the reality of articulation; therefore, this supposition should be reconsidered to discover whether the supposedly articulated ASVs do really exist before the prolonged letters or not. This point implies that the whole theory of the Arabic metrics or prosody must be reconsidered and drastic changes must be done into its system.* In fact, the traditional attitude concerning the succession of the consonants and vowels in articulation, which asserts that the vowel sound occurs after the consonant, is very precise. Therefore, the word [katịb] (كاتِب) (writer) has no schwa sound /ə/ between /k/ and /a/.

4. Both the two well-known statements: the first is that Arabic words do not begin with a quiescent letter; and second is that Within the words, Arabic words do not accept the succession or meeting of two quiescent letters are rather inadequate since all Arabic words begin with quiescent letter, and there are many examples of the succession or meeting of two quiescent letters.

5. The adequacy of the evaluation of the far reaching effects of ASVs on different aspects of Arabic language and prosody can be achieved by concentrating on the ASVs as the threshold of the study to show the fact that Arabic language and poetry will cease existing without the fundamental functions of the ASVs.

أ. الشيخ محمد الخضري (1287 هجرية)، "حاشية الخضري على شرح ابن عقيل على ألفية ابن مالك"، دار الفكر، بيروت 1978، ج1، ص 59.

ب. محي الدين رمضان، "في صوتيات العربية" مكتبة الرسالة الحديثة، عمان، دون تاريخ، ، ص 203.

ت. سيبويه، أبو بشر عمرو بن عثمان بن قنبر، "الكتاب"، تحقيق عبد السلام محمد هارون، عالم الكتب، بيروت (1377 هجرية) 1 ج4، 177.

ث. أبو القاسم عبد الرحمن بن عبد الله السهيلي، "نتائج الفكر في النحو" تحقيق محمد إبراهيم البنا، دار الرياض للنشر و التوزيع، ط2، دون تاريخ، ص 84.

ج. علي بن محمد بن عيسى، نور الدين الأشموني الشافعي، "شرح الأشموني على ألفية ابن مالك"، دار إحياء الكتب العلمية، عيسى البابي الحلبي، دون تاريخ. ج4، ص 124.

ح. محمد إبراهيم البنا (1981) "الإعراب سمة العربية الفصحى" دار الإصلاح، بيروت، ص 26.

Index of Charts and Tables
Table No. 1.
The Phonological Features of Articulating the Sets of the ASVs and ALVS*

The short vowel	The long vowel
1. [fetħẹ], either /e/ or /ə/: med, front or central, unrounded	2. [ʔlif], either /a/ or /ā/: low, central or back, unrounded
3. [đem⁰mẹ], /u/: high, back, unrounded	2. [ωaŭ], either /ŭ/, or /ω/: high, central/ back, roundrd
4. [kesrẹ], /i/: high, rather central, unrounded	3. [jāʔ], /ɪ:/, or /j/: high, front, unrounded

     * It is essential to state that the difference between each short vowels and its long vowel counterpart is not a matter of shortening the ASVs or prolonging the ALVS. Actually, it is due to the differences in the production of each. For example, both [kesrẹ] and [jāʔ] are high, unrounded, but the difference between them is due to the fact that the first one is 'rather central' whereas the second one is 'front'.

     Also, it must be noticed that the so called two long vowels /ω/ and /j/ are semi vowels in nature and they phonologically behave as consonants, but are included in this table just because they are considered as vowels by ancient grammarians which might impose that they should be discussed and analyzed according to their account.

Table No. 2.

Phonetic Symbols of Arabic Vowels

Arabic long vowels	phonetic symbols
ألف [ʔlif]	*/a/ or /ā/
واو [sukŭn aŭ]	**/ŭ/ or /sukŭn /
ياء [jāʔ]	***/j/ or /ɪ:/
Arabic short vowels****	phonetic symbols
فتحة [fetħẹ]	/e/or /ə/
ضمة [đem⁰mẹ]	/u/
كسرة [kesrẹ]	/i/
سكون [sukŭn]	/∴/ ⁰
سكون الوقف على آخر الكلمة*****	/ó/
فتحة مشربة بالهاء تلفظ بدلاً من التاء القصيرة في آخر الكلمة	/ẹ/

* In Arabic, the two phonetic symbols /a/ and /ā/ represent the same long vowel (ألف) in different phonological environments. They are considered two allophones of the same phoneme by Arab grammarians. The allophone /a/ usually occurs initially in the definite Arabic article in words beginning with lunar letters like (القلب), [al-ğelb], in English (the heart), and (المفهوم), [al-mefħŭm] in English (the concept); whereas the allophone /ā/ occurs elsewhere; it is represented in words like (قائد), [ğa:ʔid], in English (leader).

** In Arabic, the two phonetic symbols /u:/ and /w/ may represent the same letter (و). Although the second one is a semi vowel, both of them are considered allophones of the same phoneme. It is also noticed that /w/ occurs only initially in words (وقت), [wağt] (time) and (وصف), [waşf] (description), whereas the sound /u:/ occurs either medially, as in (نوْع) [nəŭʕ] (type) and (لَون) [ləŭn], (colour), (مَوْج) [məŭdʒ] (waves); or finally as in (لَوْ) [ləŭ], (if), and (نَو), [nəŭ], (weather), (جَو) [dʒəŭ].

*** In Arabic, the two phonetic symbols /j/ and /ɪ:/ may represent the allophones of the same phoneme by Arab grammarians. The allophone /j/ occurs only initially in words like (يوم), /jəu:m/, (day),

(يَد) [jəd], (hand), and (يباس), [jəbas] (dryness); whereas the allophone /ɪ:/ occurs medially or finally in words like (عِيْدٌ) [ʕɪ:d], (feast), (صَبِيٌّ) [ṣebɪ:un], (young boy).

**** The [sukǔn eğf] at the end of the words ending in final connected (تاء) [tāʔ] is somehow different because it consists of an /e/ followed by a faint echo of the sound /ɦ/.

***** Lexically speaking, al-ḥarakę (movement) is the opposite of as-sokoon (stillness), whereas terminologically speaking, it means a covert, stealthy vowel sound consorting the letter (the consonant sound) and it comes after it.

Table No. 3.

Phonetic Symbols of Arabic Consonant Sounds

Arabic Consonant Sound	Phonetic Symbol	Arabic Vowel Sound	Phonetic symbol
ب	/b/	ت	/t/
ث	/θ/	ج	/dʒ/
ح	/ħ/	خ	/χ/
د	/d/	ذ	/ð/
ر	/r/	ز	/z/
س	/s/	ش	/ʃ/
ص	/ṣ/	ض	/đ/
ط	/ŧ/	ظ	/đ/
ع	/ʕ/	غ	/ĝ/
ف	/f/	ق	/ğ/
ك	/k/	اللام (المخففة) (مفخمة)	light/ l/ heavy /ł/*
م	/m/	ن	/n/
الغنة	ŋ		
هـ	/ɦ/	الهمزة	/ʔ/
و	/sukǔn /	ي	/j/

* The heavy /ł/ is found only in the name of the almighty God in Arabic, or [ʔłāɦi], but it might be uttered with light /l/ in certain phonological environment, as in the Quranic verse " بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ " which can be transliterated in the following [bịm ịlāɦị ʔrᵒrəħmān ịlrəħɪ:m].

Table No. 4.
The Approximate Places in the Mouth Cavity in which Cardinal and Secondary Arabic Vowels Occur*
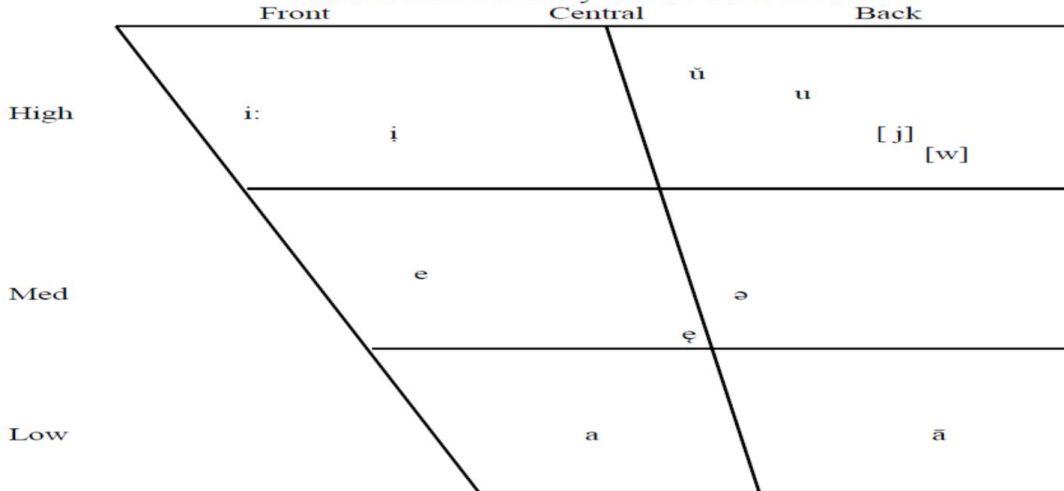
* The AZV [ʔsᵒ-sukǔn] is not represented in this chart since it is not articulated.

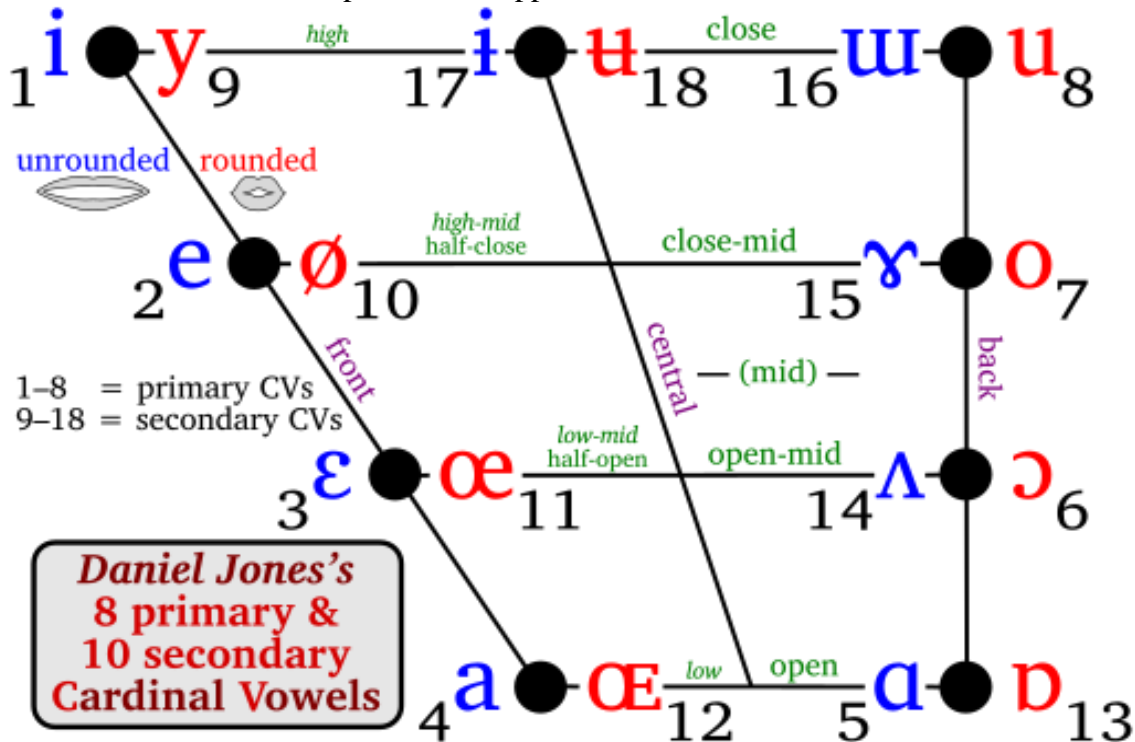5. The Standard <u>IPA</u> Vowel Trapezium, an Application of Jones's Work*

Chart No. 3. (The Chart of Cardinal Vowels in Arabic) on the previous page is derived from the IPA International Chart which includes applications of the Daniel Jones's cardinal and secondary vowels. Some modifications have been made to make it fit with the Arabic sound system.

In fact, the task of acknowledging that there is no vowel sound before the prolonged vowel sounds and its implications on the whole system of Arabic metrics is so huge that only a committee of several scholars can accomplish it in a long span of time.

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