A Sociophonetic Approach to Syllable Onset Clusters in Iraqi Arabic

Asst. Prof. Dr. Majid Rasim Younus

Majid.r@ircoedu.uobaghdad.edu.iq University of Baghdad/ College of Education, Ibn Rushd Asst. Prof. Dr. Rasim Tayeh Jehjooh rasimtayeh@alkadhum-col.edu.iq Imam Al-kadhum College

ABSTRACT

Although no language is better, some impressionistic attributes, like beauty, ugliness, harshness, intelligence, prestige, etc., are assigned to particular languages. Arabic is no exception to this. Based on the researcher's experience abroad and the relevant literature on social attitudes towards languages, Arabic is often described as throaty, harsh, loud, and violent (Stevens, 2006; Mubarak et al.; W., 2017). The main issue of this paper is to examine whether 'loudness' as a negative social attitude towards Arabic has any linguistic basis or it is only a biased impression. For this purpose, a sociophonetic analysis is carried out to examine this social phenomenon in Iraqi Arabic based on the Sonority Sequencing Principle. This principle states that sounds rise in sonority as they get closer to the syllable peak and decrease as they get away from that peak (Al etal.; Y., 2013).

Methodologically, the paper follows a mixed methods research design, analyzing attested data collected from books, articles, and theses. The quantitative part of the paper examines in statistical terms whether or not the attested cases of syllable onset clusters conform to the Sonority Sequencing Principle. In this respect, the results reveal that sonority is a reliable theoretical principle for the predictability of syllable onset clusters in Iraqi Arabic. The qualitative part of the paper presents a thorough descriptive account of all the possible sonority patterns found In Iraqi Arabic, grouped into categories based on Hogg and McCully's (1987) sonority scale.

Keywords:Sociophonetics, Sonority Sequencing Principle, Iraqi Arabic

المنهج الصوتي الاجتماعي لدراسة مجاميع سواكن بداية المقطع في اللهجة العراقية أ.م.د ماجد رسم يونس جامعة بغداد/كلية التربية ابن رشد للعلوم الإنسانية أ.م.د راسم تايه جحجوح كلية الامام الكاظم (عليه السلام)

الملخص

على الرغم من أنه لا يوجد لغة أفضل من أخرى، إلا أن بعض الصفات الانطباعية، مثل الجمال، القبح، القسوة، الذكاء، السمعة، وغيرها، يتم تعليقها على لغات معينة. والعربية ليست استثناءً من ذلك. بناءً على تجارب الباحث في الخارج والمراجع ذات الصلة حول المواقف الاجتماعية تجاه اللغات، توصف العربية في كثير من الأحيان بأنها قاسية، عالية، وعنيفة . الاجتماعية تجاه اللغات، توصف العربية في كثير من الأحيان بأنها قاسية، عالية، وعنيفة . التحقق مما إذا كانت الجهرية كموقف اجتماعي سلبي تجاه العربية لها أي أساس لغوي أم أنها مجرد انطباع متحيز . ولهذا الغرض، تم إجراء تحليل صوتي اجتماعي لفحص هذه الظاهرة الاجتماعية في العربية العراقية استنادًا إلى مبدأ تسلسل الأصوات الجهرية وينص هذا المبدأ على أن الأصوات تتزايد في قوتها كلما اقتربت من قمة المقطع الصوتي، وتنخفض كلما ابتعدت عن تلك القمة.

من الناحية المنهجية، يتبع البحث تصميمًا لأبحاث الطرق المختلطة، ويحلل البيانات الموثقة المجمعة من الكتب والمقالات والأطروحات. ويفحص الجزء الكمي من البحث بشكل إحصائي ما إذا كانت الحالات الموثقة لمجاميع السواكن في بداية المقاطع الصوتية تتماشى مع مبدأ تسلسل الصوتيات. وفي هذا الصدد، تكشف النتائج عن أن قوة او جهورة الصوت هي مبدأ نظري موثوق لتوقع مجاميع السواكن في بداية المقاطع الصوتية في العربية العراقية. ويقدم الجزء النوعي من البحث وصفًا مفصلًا لجميع الأنماط المحتملة للصوتية التي تم العثور عليها في العربية العراقية، مجمعة في فئات استنادًا إلى مقياس الصوتية الذي أقترحه McCully's (1987).



1. Introduction

Sociophonetics is the branch of linguistics that integrates the methods and theories of sociolinguistics and phonetics in investigating language as a social phenomenon. (Baranowski, 2013, p.1). A social attitude towards languages is a worldwide phenomenon, not specific to one language variety. It is a sociolinguistic perception of languages, assigning them prejudices or emotional reflections such as harshness, violence, intelligence, prestige, etc. (Sung, 2016). In this respect, Dennis R. Preston (2004) points out that "understanding folk attitudes towards ways of speaking contributes to our knowledge of how speech can influence... critically important matters" (p. 480).

The main issue of this paper is to examine whether 'loudness' as a negative social attitude towards Arabic has any linguistic basis or it is only a biased impression. For this purpose, a mixed-methods research design is used to investigate this social phenomenon in Iraqi Arabic from the Sonority Sequencing Principle (SSP) perspective. The present paper attempts to bridge the gap between the applicability of sonority as a universal principle and its violation from a social perspective. It has two aims. The first aim is to find out whether or not the confirmed cases of syllable onset clusters comply with the cross-linguistic explanatory power of the SSP. The second aim is to categorize the socially configured sonority patterns these onset clusters reveal in Iraqi Arabic by Hogg and McCully's (1987) sonority scale. To this end, the paper addresses the following research questions:

RQ1: Do onset syllable clusters in Iraqi Arabic comply with the Sonority Sequencing Principle? RQ2: What are the possible sonority patterns found in Iraqi Arabic?

The paper is structured as follows: Section Two provides a theoretical background on the concepts of Sonority and Iraqi Arabic. The methodology, along with data collection and analytical procedures, are

103

presented in Section Three. Section Four presents and discusses the results, which are interpreted in the light of the framework outlined in the previous section.

2. Theoretical Background

2.1. The Sonority Sequencing Principle

In phonetics, sonority is associated with the perceptual quality of loudness. Crystal (2003, p.423) defines sonority as the relative loudness of segments compared to others similar in pitch, stress, and duration. In chest pulse theory, sonority is associated from an articulatory perspective with pulmonic air pressure and, hence, in the identification of syllables (Giegerich, 1992, p.132). Based on this standpoint, the syllable nucleus is intrinsically more sonorous than syllable margins, and this provides an accurate distribution of segments in syllables.

Some approaches to sonority go beyond the phonetic binary opposition between sonorant and non-sonorant sounds and provide different possibilities based on speakers' variations. In this regard, As–Sammer (2016, p. 26) summarizes the hierarchical sonority routes of sounds in related literature as follows: "low vowels> mid vowels > high vowels > lateral approximant > nasals > voiced fricatives > voiceless fricatives >voiced plosives > voiceless plosives (After, Ladefoged, 1993); low vowels > mid vowels > high vowels (and glides)> flaps > laterals > nasals > voiced fricatives > voiceless fricatives > voiceless stops (After Hogg and McCully, 1987)." A similar investigation of a suprasegmental feature is the analysis of juncture by Awad, R. and Yousif, S. (2020).

In this paper, Hogg and McCully's (1987) sonority scale, as shown in Figure (1) below, is adopted since this scale is the most comprehensive and widely used model in sonority-based phonetic research. The use of the model in the present paper is to describe and rank the patterns of all

Yot

possible onset syllable sequences found in Iraq Arabic and provide conclusions as to whether these onset patterns converge or diverge from the universal implication of sonority routes described by the model. Apart from the Sonority Sequencing Principle, divergence from the model occurs in two instances described as Sonority Reversals and Sonority Plateaus. Although the SSP expresses the norm of sound distributions in syllables based on their relative loudness to adjacent segments, it is violated in two manners. "First, two segments in a margin may have the same sonority, known as sonority plateaus. Second, the more peripheral in the onset or coda may have higher sonority than a segment closer to the nucleus; such aberrant sonority profiles are known as reversals" (Carlisle, 2008, cited in As–Sammer, 2016, p.12).



Figure (1) Hogg and McCully's (1987) Sonority Index

2.2. Iraqi Arabic

In their sociolinguistic situations, Arabic-speaking countries are characterized by two distinct language varieties: Modern Standard Arabic (MSA) and Vernacular (Maamouri, 2005, p.1). The former is limited to official communication settings, primarily written. Meanwhile, the latter is the everyday spoken language used mainly in informal settings, named vernacular or colloquial (ibid). In this respect, Iraqi

Arabic (IA) refers to the spoken colloquial Arabic used in Iraq. According to Wallace (2004, p.3), IA's sound system does not differ much from MSA in the consonantal system. However, much complexity is found in the number of vowels. The table below presents an inventory of the IA segmental phonemes. There are thirty–eight consonants in IA, and these consonantal segments can be described according to the three parameters of voicing, place of articulation, and manner of articulation. There are more consonant sounds in IA than in English. Some sounds are quite unlike anything in English, while others are, in some respect, like certain English sounds. Table (1) below presents IA consonants.

| | LABIAL | INTERDENTAL | DENTAL | PALATAL | VELAR | UVULAR | PHARYNGEAL | GLOTTAL |
|-----------------------------------|------------|-------------|-------------|----------|--------|---------|------------|---------|
| STOPS Voiceless Voiced | p p b b | | t t d | | k g | q | | ę |
| SPIRANTS Voiceless Voiced | f f. v | θ δ δ | s ș. z z | s s | x ġ | | E E | h |
| AFFRICATES Voiceless Voiced | | - index | and the | č j | | n Einer | | |
| NASALS | m m | Inter | n | a series | | | | |
| LATERALS | | | l Į | | | | | |
| FLAP | | | r | | | | | |
| SEMIVOWELS | w | - | | у | | | | |

Table (1) The Consonant System of Iraqi Arabic

(After Wallace, 2004, p. 87)

As for the vowel sounds, the IA vowel system is composed of five long vowels, four short vowels, and several vowel/semivowel combinations called diphthongs. All vowels in IA have a much more comprehensive range of variation than in English. Within this range, the precise phonetic quality of a given vowel depends upon its position in the word and the nature of the adjacent consonant sounds. Short vowels are

107

shorter in actual time of duration than longer vowels and may also differ from them in quality. On the other hand, diphthongs in IA are sequences of a short or long vowel and a semivowel (w or y) in the same syllable (For more details, see Shaymaa, S. & Rezqallah, M. 2021). There are four common diphthongs (ibid, p.26). The vowel system of IA is presented and described in tables (2) and (3) below:

| Type of Vowel | | Front | Central | Back | |
|---------------|-------|-------|---------|------|--|
| High | Long | ii | | นน | |
| | Short | i | | u | |
| Mid | Long | ee | | 00 | |
| | Short | | | 0 | |
| Low | Long | | aa | | |
| | Short | | a | | |

Table (2) pure vowel system in Iraqi Arabic

(After Wallace, 2004, p.87)

| Vowel Height | With glide to y | With glide to w |
|--------------|-----------------|-----------------|
| High vowels | | iw |
| Mid vowels | ooy | eew |
| Low vowels | aay | aaw |
| | ay | aw |

Table (3) diphthong vowel system in Iraqi Arabic

(After Wallace, 2004, p.87)

In Iraqi Arabic, the structure of the syllable includes an obligatory vowel and an optional consonant at the margins as follows: CV, CVV, CVC, CVVC, CVCC and CVVCC (Holes, 2004), where C and V represent a consonant and a vowel respectively.

3. Methodology

This is a mixed-methods research to investigate syllable onset clusters in Iraqi Arabic from the perspective of the SSP. According to Creswell et al. (2003, p.212), mixed-methods research combines quantitative and qualitative methodologies to investigate a particular research problem. The justification for using this research design is to provide an in-depth



account of the topic under investigation. This paper aims to support the quantitative results with a thorough description of the nature of its statistics. Hence, a qualitative description of all the possible social configurations of sonority patterns exemplifying the statistical results arrived at. This research is based on data from books, articles, theses, and dictionaries. This type of data collection can be used in sonority research. In this regard, Al Tamimi, and Al Shboul (2013) cited many researchers who employed such data in their research, such as Kambusziy and Serish (2006), who based their analysis of vowel epenthesis in the Persian CVCC syllable on dictionaries in their investigation of the phonotactics of German initial clusters.

Regarding data analysis, all data were transcribed by the researcher and then assessed against Hogg and McCully's (1987) Sonority Scale to be placed on their appropriate ranks. After that, a description of all the possible categories and subcategories of sonority patterns in terms of sonority conformity, reversals, and sonority plateaus is provided.

4. Results and Discussion

As checked against Hogg and McCully's (1987) sonority scale, the results reveal that the data fall into three main groups: Conformity, sonority reversals, and sonority plateaus. Quantitatively, the frequency of occurrences of these sonority patterns was as follows: 142 for Conformity, forming 71% of the total data; 38 for sonority reversals, with 19% and 20 for sonority plateaus, with 10%, as demonstrated in Fig. 2 below.







The quantitative results reveal that the sonority conformity pattern is the most frequent in the data, forming 71%. The second higher occurrence is recorded for reversals sonority pattern, forming 19%. The lowest statistics are recorded for the sonority plateaus pattern, forming 10%. These numbers answer the first research question. It clearly shows that syllable onset clusters of IA comply with the universal applicability of the SSP. This entails that 'loudness' as a negative social attitude assigned to Arabic has no linguistic justification. Most of the sonority patterns revealed by the results show a general low to high sonority trend that characterizes most languages and accents. In this regard, the social impressions of accents rely not on linguistic evidence but on other social parameters.

The paper's qualitative aspect reveals various major and sub-major sonority patterns. This provides a vivid picture of the complexity and versatility of these patterns in Iraqi Arabic. However, the patterns do not surface equally, whereby Conformity is featured as the most recurrent pattern, whereas reversal is regarded as a more serious departure from the sonority sequencing Principle. The following tables provide a thorough qualitative description of the sonority patterns in Iraqi Arabic, as the data under analysis reveal.

1. Sonority Conformity Pattern

This unmarked sonority pattern is found to fall into six major patterns: 1) voiceless fricative + consonant, 2) voiced fricative + consonant, 3) voiced stop +consonant, 4) voiceless stop + consonant, 5) affricates +consonant, and 6) nasal + consonant, and flap + consonant as shown in table 4 below.

| Sonority Pattern | | | Examples | | | |
|------------------------|-----------|---|--|--|--|--|
| voiceless | fricative | + | snoon (teeth) ; syoof (swords); śboor (pl.little fish) | | | |
| consonant | | | | | | |
| voiced | fricative | + | śmakh (big head); ðyabə (wolves); khwan (brothers); | | | |
| consonant | | | | | | |
| voiced stop +consonant | | | blade (original); dmooâ (tears); bšarə (good news) ; | | | |
| | | | qrood (monkeys) | | | |
| voiceless | stop | + | tlool(hills); tfal (spitting); kraâ (feet) | | | |
| consonant | | | | | | |
| affricates +consonant | | | Čmağ (headcover); čmalə (in addition) | | | |
| nasal + consonant | | | mrayə (mirror); mlooħə (salinity); mrad (wish) | | | |

Table (4) Sonority Conformity Patterns

2. Sonority Reversals Patterns

As shown in Table 5 below, a few cases reference sonority reversals. This sonority pattern is found to include the following categories:1) voiceless fricative+ consonant; 2) voiced stop+ consonant; 3) voiced fricative + consonant; 4) *glide+ consonant* 5) nasal+ consonant

| Sonority Patterns | Examples | | | |
|----------------------------------|---|--|--|--|
| voiceless fricative+ voiced stop | sbēnağ (spinach), sbanə (spanner), sbuâtēâēš | | | |
| | (seventeen); <i>hd₂â₂š</i> (eleven) | | | |
| voiced fricative + voiced stop | bŧoon (stomachs); ŧbarə (axes); gboor (tombs) | | | |
| | | | | |
| Glide + voiceless fricative | lsan (tongue lħaf (blanket nšał ⊣ə(God willing) | | | |
| voiceless fricative +affricates | <i>ħčay</i> ə (talk) | | | |
| | | | | |
| voiced stop+ voiceless stop | <i>btisam</i> ∂ (smile) | | | |

Table 5 Sonority Reversals Patterns

3. Sonority plateaus patterns

As shown in Table 6 below, sonority plateaus can be grouped into two patterns: voiceless fricative + voiceless fricative and voiced fricative +voiced fricative, as exemplified below

| Sonority pattern | Examples |
|--------------------------|--|
| | |
| voiceless fricative + | <i>stanij (sponge snal</i> (diarrnea) hsen |
| voiceless fricative | (personal name $\hbar\Theta al_{\Theta}$ (food leftovers |
| | fsēfis (turkey <i>),</i> šhoor <i>(months) kšaš(hay</i> |
| voiced fricative +voiced | <i>sboor</i> (pl.little fish) <i>skhoon</i> (fever), |
| fricative | <i>śkham</i> (soot âzaz(pl.dear) <i>) śğar</i> (pl. |
| | little; sma <i>zğeiroon</i> (little ; small) <i>,</i> ll |
| | gboor (tombs) <i>âðam</i> (bones) |

Table 6 Sonority Plateaus Patterns

5. Conclusions

The present paper advances the argument that the sonority principle can be applied to investigate social attitudes toward languages and provide fruitful interdisciplinary areas for investigation. The paper provides a fresh perspective on the relationship between sociolinguistics and phonetics. In this respect, the analysis demonstrates that the universal applicability of the sonority principle can predict syllable onset clusters in Iraqi Arabic. This is reflected in the frequency and percentages of the sonority patterns revealed by the results: 71% for Conformity, 19 for reversals, and 10% for plateaus. The results show that 'loudness' as a negative social attitude towards Arabic has no linguistic basis. This attitude is based on other social factors and not linguistic ones. Qualitatively, Iraqi Arabic exhibits major and sub-major sonority patterns, demonstrating their distribution In Iraqi Arabic.

References

Al Tamimi, Y. A., & Al Shboul, Y. (2013). Is the phonotactics of the Arabic complex coda sonority-based? *Journal of King Saud University–Languages and Translation*, *25*(1), 21–33.

Awad, R. and Yousif, S. (2020). The Impact of phonetic Cues in Connected Speech. *Alustath Journal for Human and Social Sciences*, *59*(4), 33–42.

Creswell, J.W. et al. (2003). Advanced mixed methods research designs. In: Tashakkori, A. And Teddlie C.(eds.), *Handbook of mixed methods in social and behavioral research.* Thousand Oaks, CA: Sage, pp. 209–240.

Ghalib, G. (1984). "An Experimental Study of Consonant Gemination in Iraqi Colloquial Arabic."Unpublished Ph.D. Thesis. Leeds: University of Leeds.

Giegerich, H.J. (1992). English Phonology. Cambridge: CUP. Harrington, J. and Cox, F. (2009). The Syllable and Phonotactic Constraints. Macquarie: Macquarie University Press.

Hogg, R. & McCully, C. (1987). Metrical Phonology: A Course Book. Cambridge. CUP. http://alllinguistic.com. Retrieved on 11/10/2015

Holes, C. (1995). *Modern Arabic: Structures, functions and varieties*. London: Longman.

Ladefoged, P. (1993). A Course in Phonetics. (3rd.ed.). New York: Harcourt Brace College Publishers.

Mubarak, H., Darwish, K., & Magdy, W. (2017, August). Abusive language detection on Arabic social media. In *Proceedings of the first workshop on abusive language online* (pp. 52–56).

Maamouri, M. (2005) Variants of Arabic. Online articles can be retrieved from www.variantsofarabicpdf.com.



Shaymaa, S. M., & Rezqallah, M. S. (2021). An Error Analysis: Iraqi EFL College Learners Problems in British Diphthongs and Triphthongs Pronunciation. *Al–Ustath Journal for Human and Social Sciences*.

Sung, C. C. M. (2016). Does accent matter? Investigating the relationship between accent and identity in English as a lingua franca communication. *System*, *60*, 55–65.

Schüppert, A., Hilton, N. H., & Gooskens, C. (2015). Swedish is beautiful, Danish is ugly? Investigating the link between language attitudes and spoken word recognition. *Linguistics*, *53*(2), 375–403.

Stevens, P. B. (2006). Is Spanish really so easy? Is Arabic really so hard?: Perceived difficulty in learning Arabic as a second language. *Handbook for Arabic language teaching professionals in the 21st century*, 35–63.