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| RESEARCH ARTICLE

Splitting Unsplittable Foreign Words in Casual Speech by EFL Arab Learners

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| ABSTRACT

This study sheds light on a novel mispronunciation problem in L2 where Arabic-speaking EFL learners split unsplittable foreign long words in the flow of speech into two sub-parts and the factors involved in this faulty word segmentation. A sample of 15 unsplittable foreign long words segmented by 74 Arab college students was analyzed. Results showed that Arab learners split words to two parts as in Skype > Sky + pe, Kaspersky > Kasper + sky, Swarovski > Swaro+viski, Google > Go + gil, vegetable > vege + table, marshmallow > Marsh + mello, Michigan > Mit + shigan, Wednesday > Wednes + day, manipulated > manu + plated and so on. In segmenting long words, Arab learners often rely on the words' written form, treating unfamiliar long words as consisting of familiar parts and pronouncing them as if they were two words, with a slight pause between both parts, especially in the case of segments that resemble known English words as sky, table, go, day, marsh. They rearrange consonant clusters based on their Arabic (L1) phonotactic constraints, insert a vowel to break the clusters, and stress the penultimate syllable in the second part. Some faulty word segmentation in the sample is based on cross-linguistic lexical associations, where segments evoke meaningful words in their native language (Arabic) as Swaro سوار meaning (bracelet). Learners intuitively reconstruct unfamiliar words using analogies from both English and Arabic. Their pattern of phonological segmentation is driven by both orthographic influence and phonotactic constraints in Arabic. Learners try to make sense of unfamiliar phonological forms using Arabic phonology, English orthography, and semantic associations. To enable Arab learners to pronounce long words without segmenting them, this study recommends awareness-raising of orthographic mismatches, phonetic awareness training, stress and rhythm drills, listening to native speakers and shadowing their pronunciation, pause, juncture and boundaries, metacognitive strategy training, contrastive analysis and cross-linguistic awareness, and interactive activities. A variety of technologies can be used in pronunciation practice as well. Results of the data analysis, sources of faulty word segmentation and recommendation for teaching and practice are described in detail.

| KEYWORDS

Pronunciation errors, unsplittable words, word splitting, word segmentation, foreign words, casual speech, Arab EFL learners, educated Arabs. Arabic speaking learners

| ARTICLE INFORMATION

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1. Introduction

In linguistics, the terms pause, juncture and boundary refer to different aspects of speech segmentation and the ways speakers mark the divisions between words, phrases, or sentences. They show stops and continuity in the flow of speech.

A pause[1] is a brief stop or break in speech often marked by silence. It occurs for various reasons, such as taking a breath, emphasizing a point, or indicating the end of a thought. They help in organizing speech and making it more understandable. Pauses can be unfilled (silent) as in (*I was thinking... maybe we should go)* or filled with vocalizations like "uh," "um," "er" as in

[1] https://edge.sagepub.com/sites/default/files/nonverbal_section_01_module03.pdf

"*Well, uh, I don't know.*" Pause has three functions: Cognitive that allows time for planning speech; discourse-related that signals a transition between ideas; and emotional that expresses hesitation, emphasis, or dramatic effect.

Regarding juncture[2], it is about sound transitions between two words or syllables and the way sounds are connected or separated in speech which helps distinguish meaning. It helps listeners distinguish words and phrases that might otherwise sound similar as *Mill* and *seem ill*, *good buy* and *good-bye* in the following sentences: *Did he see Mill? Did he seem ill? Have a good buy before you say good-bye*. There are different types of junctures: (i) Open juncture which is a slight break or change in sound that differentiates phrases occurring at word boundaries and marked by a slight pause, like in (*a name vs. an aim), (I scream vs. ice cream)*; (ii) Close juncture which is a smooth transition between sounds within a word, like in (*night rate* vs. *nitrate).* (iii) Terminal juncture which occurs at the end of a sentence or clause, often marked by a change in pitch or a pause as in the statement: *She went to school*, and the question: *Did she go to school*? In both cases, the change in pitch at the end of the statement and the question helps signal to the listener that the speaker has finished their idea or is asking a question about it (Demirezen, 2019; Al-Jarf, 2003; Al-Jarf, 1990; Al-Jurf, 1994).

The first problem in dealing with primary and secondary compounds is how to distinguish phrasal compounds from simple phrases. This highlights the importance of non-syntactic features such as prosodic characteristics of stress, pitch or juncture, the use of special forms of the constituent parts, or the possibility of either interrupting the utterance or expanding it by adding further modifiers. In languages that have stress systems, there are often special patterns of modulation signaling compounds as such. The presence of the juncture-phenomena (internal disjuncture) assists in identifying compounds that are normally unsplittable and cannot be fully expanded. 'beware' and 'be very aware' (Al-Jarf, 2015a).

Boundary[3], on the other hand, is a structural division in language between units of speech, such as word boundaries (*blackbird vs. black bird*); phrase/clause boundaries (*After dinner, we left*), where the comma indicates a boundary); and sentence boundaries marked by punctuation in writing and intonation/pauses in speech. Boundaries can be signalled by pauses (silence between phrases), pitch changes (rising or falling intonation), or other phonetic cues as lengthening of final syllables before a boundary. Word boundaries[4] mark the beginning and end of words and help listeners in segmenting speech into meaningful units. In written language, these are typically indicated by spaces. In spoken language, they can be identified by pauses, changes in pitch, or other phonetic cues. For example: Written boundary as in "*The cat sat on the mat*", and spoken boundary is the slight pause between "*The*" and "cat" helps listeners recognize these as separate words (Modarresi Ghavami, 2014). There are several types of boundaries: (a) Morpheme boundaries which are the smallest units of meaning within a word as in *unhappiness*: The word can be broken down into three morphemes: un- (prefix), *happy* (root), and -*ness* (suffix); (b) syllable boundaries which are separate the individual syllables within a word as in *computer* which has three syllables - *"com-pu-ter"*; (c) phonological boundaries occurring between phonemes, syllables, or words as in *night rate* vs. *nitrate* to help distinguish *night rate* it from the single word "*nitrate*." (d) intonational boundaries marked by changes in pitch and often used to indicate the end of a phrase or sentence as in a statement: *"She went to the store"* with a falling pitch at the end, and in questions as "*Did she go to the store*?" with a rising pitch at the end. These boundaries help in segmenting speech into meaningful units, making it easier for listeners to understand and process language (Nordquist, 2020; Modarresi Ghavami, 2014).

Mastering pauses, junctures, and boundaries by foreign language students will help them sound more natural, understand spoken language better, avoid misunderstandings, and improve fluency and prosody. The elements of pause, juncture, and boundary are often overlooked in traditional language teaching but are essential for authentic communication.

In addition, pause, juncture, and bounday in communication and language learning have not received a lot of attention from researchers in the literature. Few studies exist. For example, Barik (1968) examined the distinction between juncture pauses and hesitation pauses in spontaneous speech. He confirmed that juncture pauses occur at grammatical boundaries and are typically longer, while hesitation pauses reflect cognitive processing within clauses. Barik proposed distributional and durational criteria to distinguish between them. His work contributed to refining pause typologies in psycholinguistics. It also underscored the need for clearer operational definitions in pause research.

The phonological structures of *open* and *close junctures* in English, particularly for EFL teacher training, were examined by Demirezen (2019) who argued that junctures function like traffic signals in speech, guiding segmentation and meaning. Misperception of junctures can lead to communication breakdowns, especially among non-native speakers. The researcher

[2] Juncture - Wikipedia

[3] Definition and Examples of Word Boundaries (thoughtco.com)

[4] Juncture: Pause or Boundary? – DOAJ

emphasized the pedagogical importance of teaching suprasegmental features and recommended the integration of juncture awareness into pronunciation instruction.

Additionally, a study by Kim, Stephens & Pitt (2012) explored how listeners perceive and produce word boundaries in casual speech, especially when words blend together. Contextual cues - semantic and syntactic - were found crucial in resolving ambiguous boundaries. Experimental results showed that both native and non-native listeners rely heavily on prosody and lexical expectation. The study contributes to models of spoken word segmentation. It also underscores challenges for ASR systems processing natural speech.

Understanding how prosody and semantics interact in real-time processing was examined by Kim, Stephens & Pitt (2012) who analyzed how listeners perceive ambiguous word boundaries in casual speech, such as (*a long"* vs. *along*) where acoustic cues can be unclear, in which case listeners will depend on contextual information to resolve the ambiguity. Results of experiments on talkers' production and perception showed that one-word and two-word versions were produced almost identically regardless of whether the preceding sentential context is biased or neutral. They added that acoustic cues are often insufficient, and listeners usually rely heavily on contextual information. They concluded that speech segmentation is guided by top-down expectations.

The role of prosody in parsing speech streams and how juncture, pauses and intonation falls influence the perceptual segmentation of speech were investigated by Henderson (1980). Using unfamiliar languages to control for syntactic knowledge, Henderson found that for English listeners, intonation cues were more salient than pauses. Henderson concluded that listeners rely on pitch contours more than silence to detect boundaries. His findings informed models of speech perception in cross-linguistic contexts.

Juncture cues as indicators of disfluency in spontaneous speech was the focus of a study by Lickley (1996) who argued that disfluencies disrupt normal juncture phenomena like assimilation and elision and that in fluent speech, these processes obscure word boundaries, but disfluency blocks them, making boundaries perceptible. Perceptual experiments conducted by Lickley confirmed that listeners use these disruptions to detect disfluency. Based on his findings, Lickley introduced a new phonological feature for early detection of speech repairs. In normal, fluent uninterrupted speech, words are not usually separated by silent pause forming discrete units, but have their boundaries linked by processes as liaison, assimilation, elision and so on.

In Japanese, prosodic cues, especially F_0 contours and stop closure duration, were more influential than segmental variations in signalling juncture. This means that Japanese listeners rely on pitch movement and timing to detect phrase boundaries. The study contributed to understanding how juncture is encoded and perceived in mora-timed languages. It also highlighted dialectal variation in prosodic patterns (Shimizu & Dantsuji, 1980).

Regarding the problems of perceiving and producing whole words in listening and interpreting, some educated Arabs made different types of pronunciation errors at the consonant, vowel phoneme, syllable, and sound sequence levels. For example, analysis of a sample of errors in pronouncing English Proper Nouns collected from the spontaneous speech of a sample of Arab informants showed that Arabic speakers mispronounce English vowels in *Google, Moodle, Uber, Nixon, London;* break words into two sub-words *(Kasper+sky, Sky+pe)*; pronounce words the way they appear in writing as in (*Wednesday Nike, Nazi, Hyundai, Huawei*); and transfer Arabic stress rules to English words as in *May'flower, 'McDonald* (Al-Jarf, 2022b; Al-Jarf, 2022c).

In another study, Saudi student interpreters had numerous problems in pronouncing foreign Proper Nouns in English-Arabic and Arabic-English media discourse interpreting. These included phoneme discrimination failures (*Davos* > *Dagos*, Dados; replacing unfamiliar names with rhyming nonsense words (*Missouri* > *lizouri, rozouri*); omitting syllables or segments (*Abuja* > *Buja, Bloomberg* > *Bloomber*); substituting vowels/consonants by others (*Dracula* > *Dracola, Snapchat* > *Snabshat*); overgeneralizing Arabic pronunciation (*Eiffel* > */iːfəl/, Erdogan* > *Ardoghan*); inserting vowels in clusters (Beligrade, Uzbakistan); and syllable reversals (Serbrenica > Srebrenica, ALESCO > LASCO). These errors reflect memory limitations, lack of exposure, and phonological transfer during real-time interpreting (Al-Jarf, 2022c).

In listening and spelling, Saudi freshman students struggled with whole-word spelling such as inability to hear/discriminate all phonemes, confusing vowel phonemes and final syllables; inability to hear full word structure; missing the final syllables or suffixes; confusing similar-sounding words; mishearing entire words; replacing unfamiliar words with phonetically similar ones; omitting syllables due to auditory simplification; and simplifying polysyllabic words by omitting syllables and suffixes or reducing complex forms (Al-Jarf 2019; Al-Jarf, 2010; Al-Jarf, 2009; Al-Jarf, 2008a; Al-Jarf, 2008b; Al-Jarf, 2008c; Al-Jarf, 2007; Al-Jarf, 2005a; Al-Jarf, 2005b; Al-Jarf, 1999).

Studies that investigate the segmentation of long foreign words when pronounced by Arabic speakers in daily speech are almost lacking. Therefore, the purpose of this study is to shed light on a novel mispronunciation problem in L2 where Arabic speakers

learning EFL split long, unsplittable foreign words into two words in the flow of speech whether they are speaking in English, code-mixing English and Arabic or speaking in Arabic. It also aims to find out why Arabic speakers split unsplittable single long words into two and whether there is semantic interference, a phonological reanalysis, syllable structure transfer, orthographic transparency, morphological parsing, stress and prosody misinterpretation, or cross-linguistic factors involved.

This study is significant for both language learners, instructors and linguists as the concepts of pause, juncture, and boundary are important in communication, phonetics, phonology, and discourse analysis. They play a crucial role in foreign language learning, particularly in developing listening comprehension, pronunciation, fluency, and natural speech patterns. They help them understand how speech is organized and how listeners parse meaning from continuous speech signals. Pause is important for clarity and meaning and faulty pauses may change meaning as in (*Let's eat, Grandma! vs. Let's eat Grandma*!) Proper pauses help learners sound more natural and avoid robot-like speech. Recognizing where to pauses within a word helps learners parse speech into meaningful units. Similarly, juncture helps distinguish between phrases like *(a name* vs. *an aim)*, *(I scream* vs. *ice cream)* and that different junctures change meaning. Misapplied junctures can lead to misunderstandings (*grade A* vs. *gray day*). It teaches learners how words blend or separate in fast speech (*Did you* > *Didja*). An example of French liaison (*vous avez* vs. *vous_avez*) relies on juncture rules. Knowledge of pause, juncture and boundary have benefits for language learners including better listening skills. Recognizing pauses/junctures helps decode fast speech. Proper boundaries prevent choppy or run-together speech. Using pauses correctly makes speech sound more native-like and prevent misunderstandings (*a part* vs. *apart*).

2. Methodology

2.1 Participants

Participants in the current study consisted of 74 EFL Arabic speakers. All the participants were studying English in college, or have taken English language courses, whether as there major or as a university requirement. They were at different college levels.

2.2 *Data Collection and analysis*

A sample of 15 long English words which were split into two parts was collected from the spontaneous speech of Arabic speakers who are studying or have studied English as a foreign language. The author collected the segmentation errors from observations of the subjects in natural conversational situations, whether they were speaking in Arabic, code-mixing Arabic with English words) or they were fully speaking in English. In collecting the incorrectly segmented words, the author used the diary methodology. Only words that the subjects split into two sub-words in their speech were recorded. Other types of pronunciation problems were ignored. No pronunciation tests, interviews, or questionnaire surveys were used. The subjects were not prompted or given any stimuli to produce the split words.

The sample of split words includes the following: *Skype, Kaspersky, Swarovski, Google, vegetable, broccoli, Marshmallow, Michigan, Philadelphia, manipulated, SAPTCO, Wednesday, Friday, Neurobion, Blackberry*.

The correct pronunciation of each word in the sample was verified by Google Translate. Their correct pronunciation was transcribed by Copilot and Gemini AI using the International Phonetic Alphabet (IPA). The split forms were marked and transcribed by the author. Results of the analysis of the split words are reported qualitatively. The percentage of subjects who mispronounced each word was not calculated as what matters in this study is the word-splitting phenomenon, not the frequency of users.

The sources of splitting errors were classified into semantic interference, phonological reanalysis, syllable structure transfer, orthographic transparency, morphological parsing, stress and prosody misinterpretation, and cross-linguistic factors. These are reported qualitatively while discussing each word and how it is segmented and why.

3. Results

Data analysis showed that EFL Arab students in the current study made the following splitting errors in the following words:

1) *Skype*

Skype is derived from the phrase "*Sky peer-to-peer*," which was initially shortened to "*Skyper*." But since some domain names associated with "*Skyper*" were already taken, the final "r" was dropped, resulting in the name "*Skype*". Subjects in the current study do not pronounce *Skype* as a single word /skaɪp/, but they split it into two familiar sub-parts by inserting a slight pause between them and inserting a long vowel at the end sky+pe /skaɪ +pi:/ in the spoken language. This points to spelling influence, and how the learners' brains are processing and restructuring the sounds based on their native phonological system. Here, the learners are phonologically chunking the word *Skype* by familiar cues. The learners are relying on familiar syllables or lexical units. So when they see *Skype*, they perceive *sky* as a recognizable unit and start a new "segment" (pe) which is a small word that resembles "*be*" and is easy to pronounce. Learners often decode unfamiliar words by reading them as letter sequences, especially if they are encountering the word in written form before hearing it pronounced. Since *Skype* looks like *Sky* + *pe*, many assume it should be

parsed and spoken in two parts. They lack familiarity with silent e and English morphophonemics. Even though they might know the word "type" but the initial consonant cluste /sk/ created confusion which resulted in splitting the word to be able to pronounce it easily. Since *Sky* is a known word and *pe* seems isolated, they assign an artificial juncture or boundary by changing the silent e to /pi:/ which is similar to "be". *Sky* is a high-frequency noun in EFL contexts. Learners may default to familiar morphemes, interpreting the unknown *Skype* as a compound or portmanteau, which encourages splitting.

2) *Kaspersky*

Kaspersky is a brand name that seems to be unfamiliar and is difficult to pronounce as a single word due to its syllabic structure and unfamiliarity with the Slavic suffix -sky. So the students split it into two words with two familiar parts (kasper+sky). Here, mental images of the word (its spelling or morphemes) interfere with pronunciation. Visually, *Kaspersky* looks like two distinct and familiar words (*Kasper* + *sky*) encouraging the learners to assign a boundary after *Kasper*. They interpreted the second segment (sky) as a standalone noun. Since Arabic avoids final consonant clusters as /-rsk/, the learners insert a perceived boundary to ease pronunciation. This resulted in the production of an extra syllable or split rhythmic unit: /kæs.pər/ + /skaɪ/. In *Kaspersky*, English places stress on the first or penultimate syllable, but when the learners split the word into two, they wrongly applied main stress on *sky* due to word familiarity and application of Arabic stress rules.

3) Swarovski

Swarovski is most likely Czech or Polish but linguistically, the name consists of the Slavic root "*Swar*-" or "*Svara*" and the suffix "-ski". Proper nouns like *Swarovski* are rarely encountered orally in classroom instruction. Since this word looks foreign and unfamiliar, some learners infer pronunciation from spelling and split the word into *swaro+viski***,** placing the main stress incorrectly on *viski* and treating *swaro* as a standalone word. Splitting *Swarovski* into 2 words is attributed to orthographic parsing, L1 phonotactic adaptation, and lexical unfamiliarity. This brand name includes a compressed consonant cluster /ˈswɔːrɒfski/, which is difficult for Arab learners to pronounce due to unfamiliarity with the pronunciation of the foreign word and the final consonant cluster -vski. Therefore, they phototactically simplify the segment by inserting a vowel to break the consonant cluster and the result is -viski. In other words, when Arab learners split *Swarovski* to Swaro + viski, they visually parse the unfamiliar word into parts that resemble two simpler words. The primary stress shifts from the second syllable in the English pronunciation to the final word in the students' pronunciation.

An interesting cross-linguistic observation is that the students probably felt a connection between *Swaro* (from *Swarovski*) and the Arabic word سيوار /siˈwaːr/ meaning *bracelet*. This semantic interference overlaps with a phonological reanalysis. Since *Swarovski* refers to crystal jewellery and bracelets, in particular, are common products, the students' brain associates it with familiar a semantic field. So the learner may naturally segment it as *Swaro* (bracelet) + *visky* (an unfamiliar part), reinforcing a split that feels linguistically and culturally plausible. This type of cross-linguistic influence, where meaning and sound interact, is incredibly rich for analysis. Learners may process *viski* which sounds like Vicky as a familiar proper name in English.

The splitting of *Swarovski* into two shorter and words is not just due to decoding issues, but it also involves Lexical association, analogy across languages, semantic interference based on context (jewellery > سوار) and name-like template matching in the mind of the learner

4) *Vegetable*

Some EFL Arab students tend to split *vegetable* into *vege* + *table*. This can be attributed to orthographic influence, prosodic unfamiliarity, and L1 phonotactics. Pronouncing *vegetable* as *vege* + *table* /ˈvɛdʒəˌteɪbəl/ instead of the native-like /ˈvɛdʒtəbl̩/ is based on how the word is spelled. Since Arabic has consistent phoneme–grapheme relationships, learners tend to pronounce every visible component producing a mispronounced version /ˈvɛdʒə +ˌteɪbəl/. They are also not familiar with schwa reduction and syllable compression applied in the native pronunciation /ˈvɛdʒtəbl̩/ as they are not attuned to English rhythm and reduction and retain full vowel sounds, producing the unnatural pronunciation due to segmentation. *Vege+table* reflects mental lexicon organization as "*table*" is a highly familiar, concrete English word and learners may subconsciously extract it from the longer word *vegetable*, which looks like a compound. This triggers the mental segmentation: *vege* + *table*.

5) Marshmallow

The students pronounce *marshmallow* /ˈmɑːrʃ.mə.loʊ/ as (*marsh* + mello) /mɑːʃ/ +/ˈmɛlloʊ/. Orthographically, *marsh* is a real English word, and *mello* resembles *mellow*. Phonologically, the learners are simplifying the unfamiliar long word to 2 familiar short words. The students are drawing from orthographic cues, L1 phonological patterns, and lexical familiarity. The word *marshmallow* visually looks like two standalone English words: *marsh* + *mellow*. Both are independently meaningful, which prompts learners to split the word accordingly and pronounce each syllable with full stress and distinct articulation: /mɑːrʃ/ + /ˈmɛlloʊ/ instead of the native-like /ˈmɑːrʃ.mə.loʊ/. The learners shift the stress from the first syllable in the English pronunciation to the penultimate (middle) syllable of the second segment in the students' pronunciation /mɑːrʃ.ˈmɛlloː/. Arabic-speaking learners restructure

prosodic boundaries to reflect familiar stress patterns. The gemination of the /ll/ in the second part is also a phonological transfer from Colloquial Arabic morphosyntax where the Arabic pronunciation of tri-syllabic and four-syllable words ending in a clitic pronoun as /katabtillu:/ and /ʔiʃtaretillu:/.

6) *Philadelphia*

The *Philadelphi Corridor* محور فيلادلفيا became very common in the news during the Israeli-Gaza War. Some Arab learners pronounce *Philadelphia* by splitting it into *Philad-livia*, by performing orthographic and phonological reanalysis, driven in part by lexical similarity bias and L1 transfer. Arabic-speaking learners visually encounter *Philadelphia* and attempt to make sense of it by breaking it into *Philad-* and *-livia*, by analogy with Olivia, a familiar English name. They are lexically reconstructing the unfamiliar or hard-to-pronounce the segment *-delph-* with a more familiar pattern, *-livia* . English /fɪ.lə.ˈdɛl.fi.ə/ seems to be difficult for some Arab students to pronounce, especially when occurring in word medial position. To simplify it, the learners may substitute or restructure complex consonant-vowel transitions into easier L1-compatible syllables, replacing /dɛl/ with /lɪv/ or /lɪvjə/. They also shift the stress pattern to align with familiar trisyllabic Arabic words. Names like *Olivia, Livia, Sylvia* all end in *-ivia*. When learners encounter *Philadelphia*, they subconsciously draw from that template, turning the end of the word into something that resembles a name.

7) Broccoli

Due to the lack of exposure to the native pronunciation of *broccoli* by native speakers, some learners rely on grapheme phoneme correspondence. Thus, they pronounce *broccoli /brakli/ or /brokli/* with a geminate*d /broˈkolli/* due to reliance on orthography. Arab learners tend to sound out every letter in a written word, and although double cc means gemination in their subconscious, geminating it in *broccoli* is difficult. This led them to geminate the /ll/ instead even if it is spelled as a single letter "l". Here the learners are overgeneralizing this feature when seeing words where gemination might be plausible. In *broccoli*, the /kə/ syllable is replaced with the more stable /ko/, and the /l/ is elongated to anchor the final syllable.-This also reflects vowel substitution, i.e., replacing the reduced schwa /ə/ with a full vowel like /o/ or /u/. This pronunciation shows how learners blend perceptual repair, L1 syllable rules, and orthographic reinterpretation to force an unfamiliar form into a familiar mould.

8) *Manipulated*

Some learners pronounce the English verb *manipulated* as *manu+plated* /ˈmæ.njuː/ + /ˈpleɪ.tɪd/. This pronunciation error is based on orthographic reanalysis and lexical analogy. They visually identify manu + plated as recognizable English chunks where *manu* resembles "*manual*," "*manufacture*," or even names like *Manuel*; *plated* is similar to *plate* and *gold-plated*. Instead of the smooth native pronunciation /məˈnɪ.pjʊ.leɪ.tɪd/, they reconstructed it as /ˈmæ.njuː ˈpleɪ.tɪd/, with primary stress on each part. The Learners probably draw on similar-sounding verbs they already know like *duplicated*, translated, so *manipulated* sounds like *manu + plated*, fitting into a productive mental pattern. This word is a clear instance of mis-parsed lexical morphology which can also be considered orthographic reconstruction via verbal analogy.

9) *Google*

Google is more frequently encountered in writing than in speech. Since learners depend heavily on spelling-to-sound guesses, without clear auditory models, they default to what makes lexical or morphological sense. Saudi learners, in particular, tend to pronounce *Google* /ˈguːgəl/ as go+gil /goʊˈgɪl/. Since they are not familiar with the correct syllabification of *Google* /ˈguːgəl/, the segmentation go+gil /goʊˈgɪl/ is a result of orthographic interference, analogy to familiar lexemes, and phonotactic repair as the /gəl/ ending in *Google* does not exist in Arabic, so the learners changed the vowel to /gil/ to fit the Arabic sound system. The double "o" in Google are close to *go*, and the unfamiliar *-gle* ending gets restructured into a pronounceable unit /gil/. *Go + Gil* mirrors the pattern of many two-part names or verbs: *Go-get*, *Go-Kart*, etc. In English, the sequence /gəl/ is reduced and lightly pronounced in fluent speech. Learners unused to syllabic /l/ or final schwa may overcorrect it, fully voice the last part as a standalone syllable /gɪl/.

10) *Michigan*

Some learners split *Michigan* to *Mit + shigan* /ˈmɪ.ʃɪ.gən/ or /ˈmɪ.ʃə.gən/. Here again, learners are employing proper noun reconstruction through spelling and lexical analogy to familiar lexical templates, phonotactic preferences, and visual cues. Michigan is transcribed in Arabic as متشيغان, since Arabic does not have a /tʃ/ sound, learners break the ch in *Michigan* to /t+ʃ/. Being unfamiliar with the native pronunciation of *Michigan* as /ˈmɪʃɪgən/, they segmented it intro Mit + shigan, perhaps because *sh* feels smoother in Arabic phonotactics than the expected /ʃɪ/. Being unfamiliar with the schwa-like vowel in the unstressed second syllable of *Michigan*, the learners regularize it into three evenly stressed syllables as follows: Mit + shi + gan or Mit + shi + gæn, preserving syllabic clarity but violating native stress contours.

11) *SAPTCO*

The students tend to split the acronym SAPTCO (Saudi Public Transport Company) as Sabit + ko. They phonologically reshape it through native lexical and morphological patterns. The students syllabify it in a way that fits Arabic phonology. Learners reinterpret unfamiliar segments as CV (consonant-vowel) syllable, which are dominant in Arabic syllable structure. They segmented *SAPTCO* into /ˈsaːbit.koː/, which resembles the Colloquial Arabic verb سابتكو (she left you). Consonant clusters like /ptk/ in the middle of *SAPTCO* are not familiar to Arabic, so speakers insert vowels or split the cluster: *SAPTCO* > Sabit /saːbit/ + ko /koː/. The resulting phrase سابتكو aligns exactly with a colloquial Arabic verb سابتكو meaning "she left you," which adds a semantic illusion of familiarity. This further reinforces the mispronunciation and embeds the acronym in informal speech, even if it is for humorous effect. The segmented acronym shows how semantically meaningful Arabic homophones can guide pronunciation of English acronyms and creating bilingual phonological blends shaped by a sociolinguistic context.

12) *Wednesday & Friday*

These are examples of orthographic parsing and L1 syllable-perception transfer. The learners split *Wednesday* and *Friday* into *Wednes* + *day* and *Fri* + *day* as a result of literal orthographic reading. They pronounce every letter and visible morpheme, leading to *Wednesday* > /ˈwɛd.nɛs.deɪ/, instead of native /ˈwɛnz.deɪ/ and *Friday* /ˈfraɪ.deɪ/. Each is pronounced as two clear syllables with full vowels, which is often over-articulated. Here the learners are overapplying morphological rules. *Wednesday* appears to be compound: *Wednes* + *day*. Learners unfamiliar with its historical contraction simplify it by reinserting the "missing" phonemes. Similarly, *Friday* is split as *Fri* + *day*, leading to full stress or clear division between syllables. Arabic does not typically delete segments in fast speech. Instead, each syllable is articulate, and consonants are fully enunciated. It seems that the learners do not frequently *hear* native pronunciations of days of the week in fluent, natural speech. Relying on the written form reinforces spelling-bound articulation, especially for irregular words like *Wednesday*. *Wednesday* and Friday, show segment-preserving overcorrection, where learners reinsert deleted or silent graphemes into speech as a way of making the word logical and complete, both visually and phonetically.

13) *Neurobion*

Some Arab learners pronounce *Neurobion* /ˈnjʊə.roʊ.baɪ.ɒn/ as Neuro + byone. This segmentation is based on how the term is transliterated in Arabic نيوروبيون. *Neurobion* has two parts: Neuro + bion. When learners encounter -bion, they often interpret it as /b+yoːn/. Since Arabic has no equivalent to the English triphthongs like /aɪo/, it is reduced to a diphthong /b-yon/ where there is a slight pause between the b & ion. Arabic-speaking learners isolate the /b/ in *Neurobion* and pronounce it as a syllable onset without a following vowel, then they attach it to /joːn/ and effectively eliminate the triphthongal glide /aɪ.ɒn/ and reduce it to a simplified diphthong or even a flat monophthong. When students pronounce the /b/ unvowelized, they're following Arabic syllable structure rules, which restrict consonant clusters and favor CV (consonant-vowel) or CVC sequences.

Since *Neurobion* is mostly seen in writing, on medicine boxes together with its Arabic transliteration, the learners may never hear the standard English pronunciation /ˈnʊ.roʊ.baɪ.ɑːn/. Without auditory input, spelling takes over. This way, the learners stress bio following the Arabic stress rules of trisyllabic words.

14) *Blackberry*

When learners pronounce *Blackberry*, some split it to black + bairy /blækˈbɛəri/ or /blækˈbeːri/. This shows how orthographic mis-segmentation, lexical familiarity, and phoneme substitution work hand in hand. The learners are segmenting this word based on it spelling. When they see two visually distinct meaningful words in *black* and *berry*, they pronounce them separately and clearly. Instead of the native-like /ˈblækbəri/, with a reduced second syllable, learners apply stress to the second segments, thus they change the vowel in "berry" to a long vowel. The schwa /ə/ in native pronunciation is replaced with /eː/ or /ɛə/, leading to "bairy" /beːri/ or /bɛəri/ which is a hypercorrect or overarticulated form. This aligns with patterns where Arabic speakers avoid reduced vowels and produce fully realized syllables. The learners are applying familiar lexical templates and prosodic rules from Arabic onto an English compound noun, reshaping its pronunciation in the process. In addition, pronouncing the word as 2 separate morphemes stems from its Arabic as it is transliterated as 2 separate words بيري بلاك, not one agglutinated word.

4. Discussion

Findings of the current study showed that Arabic-speaking EFL learners often segment unfamiliar long English words into two small segments based on orthographic cues, L1 phonotactics, and lexical analogy, leading to mispronunciations such as *Skype* > *sky* + *pe*, *Swarovski* > *Swaro* + *viski, Kaspersky* > *Kasper* + *sky*, and so on. These segmentation errors reflect systematic strategies shaped by learners' perceptual, phonological, and cognitive hypotheses. These findings align with and extend findings of prior studies in the literature such as Barik (1968) and Henderson (1980) who emphasized the role of juncture, pauses and intonation falls in signaling syntactic and prosodic boundaries. Learners in the current study often fail to perceive these perceptual and prosodic cues in juncture identification, especially in rapid or reduced speech. Instead, they split unfamiliar long words based on spelling. In Shimizu & Dantsuji's (1980) study, Japanese listeners rely heavily on F_0 contours and stop closure duration to perceive

internal junctures. by contrast, students in this study depend more on morpho-orthographic familiarity. Lickley (1996) indicated that juncture phenomena are blocked during disfluency, and that listeners detect disfluency through the absence of expected linking processes. Saudi learners' insertion of artificial pauses (*Philadelphia* > *Philad* + *livia*) may mimic this blocking effect due to misapplied segmentation strategies that disrupt native-like fluency. Nordquist (2020) added that word boundaries in speech are not visible spaces. They are inferred through stress patterns and syllable onsets. Saudi learners' heavy reliance on orthographic segmentation (*Wednesday* > *Wednes* + *day*) shows a misalignment between written and spoken boundary cues.

Moreover, prior research on EFL learners' spelling and listening challenges, particularly those on phoneme-grapheme inconsistencies, auditory misperception, and overdependence on orthography, provides a strong explanation of the long word segmentation errors observed in this study. Mispronunciations such as *Skype* > *sky* + *pe*, *vegetables* > *vege* + *table*, and *Philadelphia* > *Philad* + *livia* reflect phonological-spelling mismatches documented by Arab learners in those prior studies. Such results show that students often struggle to match heard sounds with correct spellings. They rely heavily on visual decoding strategies and reconstruct unfamiliar words using analogies from familiar ones which directly reflect the word segmentation observed in pronunciation in the vcurrent study. For example, *manipulated* as *manu* + *plated* reflects the same cognitive process as spelling *accumulated* phonetically or substituting *plaited* for *plated*. The observed reluctance to reduce vowels, over-articulation of all visible syllables, and reliance on spelling to infer stress also align with earlier findings on learners' auditory and visual difficulties in spelling less familiar English words. The author's prior studies on spelling performance offer insights into why students over-segment spoken words in the current study. The students seem to be applying the same logic in pronunciation and spelling (Al-Jarf, 2019, Al-Jarf, 2010; Al-Jarf, 2009; Al-Jarf, 2008a; Al-Jarf, 2008b; Al-Jarf, 2008c; Al-Jarf; 2007a).

Furthermore, the current study aligns closely with the findings of Al-Jarf (2022b) & Al-Jarf (2022c) studies on proper noun pronunciation inaccuracies. These studies identified vowel pronunciations errors in (*Google*, *Uber*), consonant substitutions (*bebsi* for *Pepsi*), gemination (*Minnesota*), epenthesis in consonant clusters (*SNAS, Zelinsky*), and word splitting as in *Kasper* + *sky* and *Sky* + *pe*. When native Arabic speakers and student interpreters encountered unfamiliar proper nouns, they produced nonsense words (*Dabos* for *Davos*, *mansouri* for *Missouri*). They inserted vowels to break clusters (*Beligrade*, *Uzbakistan*), and substituted or deleted syllables (*Buja* for *Abuja*, *Bloomber* for *Bloomberg*). These strategies are similar to the word-splitting behaviors in the current study, where learners simplify, reanalyze or reassemble unfamiliar words into more manageable ones in–*Swarovski* > *Swaro* + *viski*, *Philadelphia* > *Philad* + *livia*, and *manipulated* > *manu* + *plated*. These studies show that learners reconstruct unfamiliar words using orthography, phonotactic repair, lexical analogy, and often guided by Arabic morphophonemic templates.

In the current study, learners split unfamiliar long English words into two parts that resemble recognizable morphemes or native-language structures, as in *(Skype*, *Kaspersky*, *Swarovski*, and *Google)* etc. These long word-splitting practices align with Al-Jarf (2023a) and Al-Jarf's (2023c) findings in which Arabic speakers modify borrowed words through clipping, segmenting or reducing them in speech based on ease of articulation. Blending and shortening lexical items is influenced by phonological intuition, orthographic salience, socio-cultural context, which are very similar to splitting *vegetable* into *vege+table* by learners in this study.

In conclusion, findings of the current study are not only consistent with but also extend the author's earlier work. They demonstrate that segmentation errors are part of a broader systematic strategy learners use to cope with unfamiliar phonological input, whether in casual speech, formal interpreting, or spontaneous reading. This triangulation across contexts strengthens the theoretical claim that orthographic overreliance, L1 transfer, and lexical analogy are persistent and cross-modal features of Arabic-speaking learners' pronunciation behavior.

It is noteworthy to say that splitting long foreign words by Arab EFL learners in the current study can be considered a kind of phonological reduction in pronunciation that follows the principles of *economy* and *competition*, similar to syntactic minimalism (anselow & Cavar, 2001). Arabic speakers tend to minimize articulatory effort unless clarity demands otherwise. Saudi learners resist this economy, producing hyperarticulated forms (e.g., *vegetables* > *vege* + *table*) due to unfamiliarity with phonological reduction rules.

5. Recommendations

To help students overcome their unfamiliar long-word pronunciation problems in casual speech, prior studies in the literature recommended multiple strategies that include the following: (i) providing explicit instruction in juncture and connected speech and incorporating suprasegmental features, especially juncture phonemes into pronunciation curricula (Demirezen (2019). (ii) training students to listen for pitch movement and temporal cues that mark internal junctures. This can be done through intonation contour mapping, and contrastive listening tasks that isolate minimal pairs or ambiguous phrases (e.g., *grey ties* vs. *great eyes*) (Henderson (1980) and Barik (1968). (iii) guiding the students to produce reduced forms like /ˈwɛnz.deɪ/ instead of *Wednes* + *day* through drills, repetition, and rhythm-based practice. This will help them internalize native-like prosody and avoid over-articulation (Fanselow & Cavar (2001). (iv) listening to words spoken by native speakers. Dialogues, podcasts, and storytelling can be used to

help students infer pauses within words from context, rather than relying on spelling (Kim, Stephens & Pitt (2012). (v) Teaching metacognitive strategies to students such as rehearsal, self-monitoring, and error analysis to reflect on their own word segmentation behaviors and correct them over time (Lickley (1996). (vi) Learners must be made aware that English spelling is not a reliable guide to accurate pronunciation. Activities that help learners notice discrepancies in spelling and pronunciation and reduce reliance on orthography should be used (Nordquist (2020) and Modarresi Ghavami (2014). (vii) Incorporating contrastive phonology between English and Arabic to highlight how Arabic differs from English in terms of syllable structure, stress, and consonant clusters. This helps learners understand why they insert boundaries where none exist; and reading and talking about about multicultural children's short stories (Al-Jarf, 2015a; Al-Jarf, 2015c; Al-Jarf, 2003; Al-Jurf, 2002; Al-Jurf, 1995).

In addition, minimal pair drills for practicing junctures as *(why choose* vs. *white shoes)* can be used. The students can read aloud in thought groups to internalize boundaries. The instructor shows learners how native speakers pronounce words as single units rather than segmented parts. To teach and practice pause, juncture and boundaries, instructors can use shadowing exercises where the students listen to and imitate native speakers' pauses and rhythm. Other strategies include raising students' awareness of English pronunciation rules, phonics, phoneme-grapheme correspondences; comparing and contrasting English and Arabic vowels, consonants, and stress rules; practicing pronunciation of multisyllabic words with natural stress and linking (*vegetable* as /ˈve-dʒə-bəl/ instead of vege+table); and role-playing with brand names or real-world conversations to practice natural pronunciation.

Since the word segmentation errors are linked to specific syllable structure, consonant clusters, certain suffixes and certain long words, a lexical approach to vocabulary instruction can be effective. In teaching new and unfamiliar words, Al-Jarf (2023d), Al-Jarf (2022a), Al-Jarf (2019); Al-Jarf (2008a), and Al-Jarf (2006) recommended connecting the printed form of the words with its pronunciation vis connecting phonemes with their graphemes; homophones and homographs, (*bass & bass, read & read);* pronunciation of foreign terms (*Swarovski, Kaspersky, primary)* and secondary compounds especially agglutinates ones (*Wednesday*, Friday), pause, juncture and boundary in phrases and sentences and others.

In addition, numerous technologies can be used to improve Arab students' pronunciation of long foreign words such as ample exposure to authentic spoken English and authentic pronunciation of native English speakers through the utilization of text-to-speech software for enhancing pronunciation accuracy; listening to mobile audiobooks, and YouTube videos for self-regulated pronunciation practice, watching pronunciation practice videos which focus on a single error; watching movies or listening to native podcasts to refine their pronunciation and avoid the segmentation of long foreign words; TED Talks for authentic listening and pronunciation; and MP4 listening and pronunciation lessons are also beneficial. The students can practice listening to English native speakers, shadowing their pronunciation, and answering oral quizzes in a digital multimedia language lab. EFL instructors can use mind-mapping software to show phoneme-grapheme correspondences in words, homophones, homographs, minimal pairs, roots, prefixes and suffixes; online oral presentations; online debates; problem-solving questions; student-created podcasts; integrated listening-speaking tasks and use of Vocaroo, Kahoot-based speaking tasks (Al-Jarf, 2023a; Al-Jarf, 2023b; Al-Jarf, 2021a; Al-Jarf, 2021b; Al-Jarf, 2021c; Al-Jarf, 2022d; Al-Jarf, 2022e; Al-Jarf, 2021; Al-Jarf, 2021d; Al-Jarf, 2020; Al-Jarf, 2017); Al-Jarf, 2015b; Al-Jarf, 2012; Al-Jarf, 2011; Al-Jarf, 2010; Al-Jarf, 2007b).

Finally, cross-linguistic comparative studies in the future may examine whether dialectal background within Arabic affects segmentation of foreign words. Pilot instructional interventions that explicitly teach intonation patterns, stress cues, and vowel reduction to reduce word segmentation errors in English words can be conducted. Use of pre- and post-assessments to see if focused juncture training improves learners' pronunciation of words like *Philadelphia*, *marshmallow*, or *manipulated* can be applied as well.

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