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Phonological Scrutiny of the Triggering Motives of Metathesis in QAD

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Abstract: *The current study sought to identify the triggering motive of applying metathesis in everyday speech by Qunfudhah Arabic Dialect (QAD) speakers. A vast number of words used in everyday interactions were gathered and analyzed using a qualitative descriptive approach. Results revealed that metathesis is not a random process as was claimed in some early studies pertaining to this topic. Data obtained from the current study evinced that speakers use metathesis for several reasons rather than it being a random process. One reason is to simplify the production of clusters. In addition, the word syllable boundary and the sonority sequence principle makes the word liable to metathesis as found in this dialect. Moreover, it was evident that the place and manner of articulation play essential roles in using metathesis. Therefore, this paper has raised a number of questions as well as implications in need of further investigation.*

Keywords: metathesis, phonetics, phonology, QAD, SSP, syllable

INTRODUCTION

Patterns in languages are typically dated, analyzed, and presented using features and representations specific and restricted to a particular language and its structural rules (Berent, Balaban, Lennertz, & Vaknin-Nusbaum, 2010; Goldsmith, 1993; Kiparsky, 1973). This includes structural modifications resulting from the phonological rules which tend to render the output as different from the input such as reduction as a sign of markedness (Prince & Smolensky, 2004).
Investigating how phonological rules govern languages is a progressive issue. These rules are considered by laypersons as a matter of coincidence, whereas to linguists they raise a controversial question. One of the phonological rules is metathesis which, according to Fromkin et al. (2014), is a phonological process that substitutes the place of one phoneme for another. This definition of metathesis is represented in the simple equation: XY→YX, signifying that the rule of metathesis is to move one sound to the place of another sound. In English, for instance, the modern word

'bird' has developed from the old English word 'brid' using the metathesis rule (Richrads & Schmidt, 2010). In this word, the vowel /ɪ/ is reversed to the place of the consonant /r/. Such substitution is not common, yet it exists in a vast number of languages.

Arabic is a language in which metathesis occurs to change the order of phonemes. This is referred to in Arabic as 'Qalb Makani' -/qəlb məkænɪ/- and there are numerous words which illustrate the rule. For instance, in the example 'Altawa [ʔaltəwə] (twisted) →Atlawa [ʔatləwwə] (twisting), the voiceless alveolar stop /t/ takes the place of the voiced alveolar lateral approximant /l/. It is evident here that the glide /w/ becomes geminate after applying the rule of metathesis to the word, preceded by a lateral approximant that carries the syllabicity feature in phonology.

This cohort study aims to shed light on uses of the metathesis rule by speakers of Qunfudhah Arabic Dialect (QAD), an Arabic language variety spoken in the southern province of Saudi Arabia. The study of dialects and varieties is essential to pave the way for linguists and researchers to understand how language rules in general and phonological rules in particular are exercised and implemented. Notwithstanding the rapid growth in studies of languages and dialects, no single study has been conducted to examine the rule of metathesis in the QAD.

REVIEW OF THE LITERATURE

Research studies have increasingly been conducted to investigate the role of metathesis across a number of languages. Many of the current studies, however, have focused on standard languages rather than on the varieties and dialects of these standard languages. Moreover, the body of research suggests that there is a scarcity of studies investigating metathesis in the dialects of Semitic languages. Studies have primarily been conducted to explore how metathesis is the result of errors that occur during the utterance of words (Blevins & Garrett 1998; Hume 2001, Hale 2003). Conversely, other studies (e.g., Blevins & Garrett 1998; Grammont 1950; Hale 2003; Hume 2001; Ultan 1978) have shown that metathesis is a rule which is exercised by speakers to reduce or to avoid markedness. This claim was also made previously by an eminent Arabic language scholar, Alfarahidi, who stated that metathesis is a typical process by which speakers of Arabic avoid consecutive guttural sounds in the same word.

To some linguists, this means that metathesis is a strategy, or a rule, applied to ease sound and utterance production rather than being a speech error. In the same vein, Faust (2014) clarified that metathesis is implemented in some languages to avoid adjacent vowels across a word's syllable boundary; known phonologically as 'hiatus'. On the other hand, in some languages (e.g., Hebrew) metathesis is applied to avoid the consecutive of consonants in a word's 'morpheme boundary' (Jones, 2016). To some researchers, however, metathesis is often diachronic in its nature, while in some other contexts or applications it is a matter of arbitrariness (Finley, 2017).

Surfing Metathesis Language Data

According to Hume (2016), many languages have no obvious factor(s) to trigger speakers to use metathesis in a particular context. Therefore, metathesis is believed to be an arbitrary outcome rather than a typical rule to follow. To some extent, this claim is invalid for several reasons. Firstly, the rule is sometimes applied by speakers and can be readily noted in their outputs. However, the motivation behind its use is not easily identified by researchers and requires further investigation to determine the pattern in the input 'perception' which led to the output 'production'. Secondly, in many cases researchers apply the same rules and tools in their investigations which, unfortunately, leads to the same results. As a result, the phonological accounts for metathesis in several studies rely heavily on equations or abstract symbols to indicate the direction of this rule in a language (i.e., [XY] → [YX] or vice versa [YX] →[XY]).

As such, new tools for investigation and an acute examination from different perspectives can help to resolve some of the linguistic puzzles regarding metathesis. From the acoustic viewpoint, it has been revealed that the use of metathesis is the result of decomposing the illicit cluster within the host language syllable system (Hock, 1985). This claim appeared in an earlier study by Selkirk (1984) who substantiated that the Sonority Sequence Principle (SSP) has a significant role in determining the ordering of consonants that stem from the nucleus of the syllable toward the coda. This indicates that whenever there is an increase in the quality of sonorant, the word is susceptible to metathesis.

A Brief Account of QAD and its Phonological sSystem

The QAD is spoken in the Alqunfudhah Governate in the Kingdom of Saudi Arabia as well as in numerous villages and rural areas belonging to this Governate. With a population of approximately 300,000 people, the Governate is the fourth largest in the Makkah Province (see Figure 1 for illustration).

Figure 1. Map Showing the Alqunfudhah Governate

Figure 1 shows the location of the Alqunfudhah Governate, 360 km to the south of the Holy City of Makkah. The dialect of Alqunfudhah is a mixture of Standard Arabic and urban and rural dialects, varying according to the geographical territory. Put simply, the dialect spoken by those who live in the city of Alqunfudhah (previously called 'Albandar') and carries registers, words, and phrases that reflect the urban lifestyle, where they live, and the neighborhood where they were raised. This includes lifestyle aspects related to business, trade, marine life, water activities, fishing, and other surroundings, all of which influence people's selection and pronunciation of words and phrases. Dialects in other areas, on the other hand, are influenced by everyday activities such as herding cattle (i.e., camels, goats, sheep, cows), selling and buying cattle, or farming. There is no doubt that these activities are less common nowadays because the lifestyle of the new generation has changed due to the advent of the Internet and modern technologies. This has triggered new generations to depart from their traditional dialect in favor of 'Plain Dialect'. However, some people still hold on tightly to the traditional dialect, believing that it is a part of their identity and register.

Numerous phonological features are evident in QAD, especially in rural areas where word sounds are uttered differently, rendering them different to the Makkan dialect. These include, for instance, lengthening the vowel sounds in words when reporting second-person speech. For example, /gılta:lı/ 'you told me' contrasts with the Makkah urban pronunciation /gʊltəl.lı/, which shortens the vowel production and adds geminates to the lateral approximant /l/ after the schwa /ə/. In addition to phonological differences, word selections differ when seeking to name, to call, or to describe things. When referring to the four directions (North, South, East and West) in this dialect, the older generation especially expressive them as (***mishayem)*** /mɪʃaım **/,** (North); (***miyammin***) /mɪjamın/ (South); (**misannid**) /mısənıd/ (East); (***midaiyya***) /mıdaɪjəʕ/ (West). In addition, some consonants not featured in Standard Arabic are still heard in many words in this dialect such as the voiced velar stop /g/ (e.g., gaal 'he said', magaal 'an article', Ageel 'a proper name', aagel 'polite'…etc.). This indicates that the phoneme was once part of the Standard Arabic pronunciation but was lost as a letter, with its pronunciation still used to contrast with its voiceless velar stop counterpart; that is, /k/ (see Table 1 below). Moreover, the affricate /ts/ is also heard in this dialect such as (***yetsala***): /jɪtsəla/ 'amusing himself' and (***yetsamah***): /jɪtsæməħ/ 'ask for forgiveness', yet it is a word boundary phenomenon.

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Table 1. QAD Consonant Sounds Chart

Place / Manner	Bilabial	Labio-dental	Dental	Alveolar	Alveo-palatal	Palatal	Velar	Labio-velar	Uvular	Pharyngeal	Glottal
Stop	b			t d			k (g[1])		q		ʔ
Nasal	m			n							
Emphatic stop				tˤ dˤ							
Fricative		f	θ ð	s z	ʃ				χ ʁ	ħ ʕ	h
Emphatic fricative			ðˤ	sˤ							
Affricate				(tˢ)	dʒ						
Glide						j		w			
Lateral				l							
Trill				r							

1. This sound is produced more frequently in this spoken dialect even though it is not part of the inventory.

Table 1 presents all the consonants in the Standard Arabic languages still applied by QAD speakers with the exception of the voiced velar stop (e.g., /g/) and the voiced dental emphatic fricative (e.g., /ðˤ/ ظ). This phoneme appears less frequently in QAD and in many other Arabic dialect productions because people cannot distinguish between it and the voiced alveolar emphatic stop (e.g., /dˤ/ ض). Table 1 also shows the place and manner of articulation of QAD consonants. The International Phonetic Alphabet (IPA) symbols used in the Table 1 are presented in Table 2 with their Arabic counterpart symbols and examples:

Table 2. QAD Sound Description and Example

Arabic Symbol	IPA	Descriptors	Example
ب	/b/	voiced bilabial stop	"برج"/bʊrdʒ/ (tower)
ت	/t/	voiceless alveo-dental stop	"تمر"/tamr/ (palm date)
د	/d/	voiced alveo-dental stop	"درب"/darb/ (route)
ك	/k/	voiceless velar stop	"كتاب" /kıta:b/ (book)
ق	/q/	voiceless uvular	"قرية" / qarijah/ (village)[1]
ء	/ʔ/	voiceless glottal stop	"أمل" /ʔaməl/ (hope)
ط	/tˤ/	voiceless alveo-dental emphatic stop	"طين" /tˤi:n/ (clay)
ض	/dˤ/	is a voiced alveo-dental emphatic stop	"ضو" /dˤəʊ/ (light)

ف	/f/	voiceless labiodental fricative	"فرش" /fərʃ/ (mattress)
ث	/θ/	voiceless interdental fricative	"ثعلب"/θəʕləb/ (fox)
ذ	/ð/	voiced interdental fricative	"ذَنَب" /ðənəb/ (tail)
س	/s/	voiceless alveo-dental fricative	"سر" /sɪɹ/ (secret)
ش	/ʃ/	voiceless alveo-palatal fricative	"شهر" /ʃəhr/ (month)
ز	/z/	voiced alveo-dental fricative	"زُرار" /zʊrar/ (button)
خ	/χ/	voiceless uvular fricative	"خَمير" /χəmi:r/ (fermented bread)
غ	/ʁ/	voiced uvular fricative	"غرفة" /ʁʊrfəh/ (room).
ح	/ħ/	voiceless pharyngeal fricative	"حليب" /ħəli:b/ (milk)
ع	/ʕ/	voiced pharyngeal fricative	"علم" /ʕɪlm/ (science)
هـ	/h/	voiceless glottal fricative	"هوى" /həwə/ (air)
ظ	/ðˤ/	voiced interdental emphatic fricative	"ظفر" 'ðˤʊfəɹ' (nail)
صـ	/sˤ/	voiceless alveo-dental emphatic fricative	"صبر"، /sˤəbr/ (patience)
جـ	/dʒ/	voiced alveo-palatal affricate	"جبل" /dʒəbəl/ (mountain)
يـ	/j/	voiced palatal glide	"يشتغل" /jəʃtəʁɪl/ (to work)
و	/w/	voiced labio-velar glide	"وادي" /wa:di/ (valley)
لـ	/l/	voiced alveo-dental lateral	"لسان" /lɪsa:n/ (tongue)
ر	/r/	voiced alveo-dental trill	"رمل" /rəml/ (sand)

1 This sound is rarely used in QAD except in formal situations or while reciting the Holy Quran. As such, the word "قرية" is uttered in the QAD as /garijah/.

Vowels in the QAD also feature in Standard Arabic with some exceptions pertaining to the lengthening of some vowels (see Figure 2 for more details).

Figure 2 has been modified and expanded by the researcher of the current study to show the length difference of the vowels.

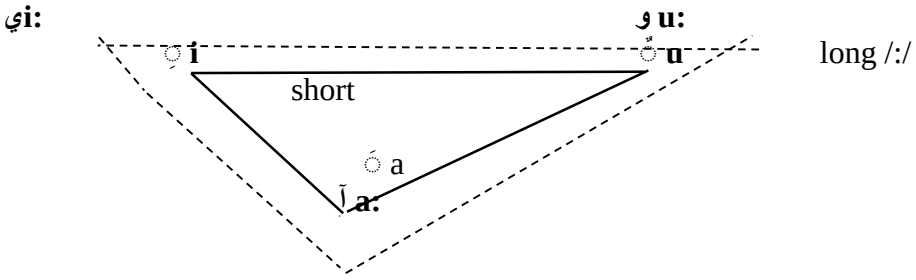

Figure 2. QAD Vowel Sounds Lengths

The triangular shape in Figure 2 shows the six main Standard Arabic vowels which also feature in the QAD sound system. The straight-line triangle represents the three Arabic short vowels: /i/ِ, /u/ُ, and /a/َ. These vowels are sometimes represented by diacritics as shown in the triangle. They are referred to, according to Ibn Jinni, as parts-of-whole sounds. The other three vowels represented by the dotted lines are long sounds /i:/ي, /u:/و, and /a:/آ. According to some Arabic linguists there is a schwa /ə/ in Arabic representing a weak vowel found in words such as "بومه" 'buməh' {owl} (Sabir & Alsaeed, 2014). The use of schwa in Arabic is indicated when the following consonant is unreleased or when it precedes two consonant clusters. In addition, there are two diphthongs in Arabic: /ai/ and /au/, with examples provided below describing these vowels in detail:

1. /i/ is a high front unrounded short vowel (e.g. "فجل" /fidʒl/ {radish})
2. /i:/ is a high front unrounded long vowel (e.g. "جديد" /dʒadi:d/ {new})
3. /a/ is a low front unrounded short vowel (e.g. "خد" /χad/ {cheek})
4. /a:/ is a low front unrounded long vowel (e.g. "مالح" /ma:lɪħ/ {salty})
5. /u:/ is a high back rounded long vowel (e.g. "سور" /su:r/ {fence})
6. /u/ is a high back rounded short vowel (e.g. "كرسي" 'kuɪsi' {chair})
7. /ə/ is a mid-front unrounded short vowel (e.g. "بومه" /buməh/ {owl})

There are only three ***diphthongs*** in QAD:

8. /eɪ/ which consists of two vowels: one is a mid-front unrounded long vowel and the other one is a high-front unrounded short vowel. This diphthong is found in words such as "بيرق" /beirəg/ {flag}.
9. /au/ which consists of two short vowels: one is a low-front unrounded short vowel and the other is a high-back rounded short vowel. This diphthong is found in words such

as "فوّر" /fauər/ {boiled}. However, it is evident here that the gemination has a role in such diphthongization.

10. /ɔɪ/ which consists of two short vowels: one is a mid-back rounded short vowel and the other is a high-front unrounded short vowel. It is found in a word such as "مويه" /mɔɪjəh/ {water}.

Data Collection

Numerous metathesized words were elicited from QAD speakers, students, and this researcher (as a native speaker of the dialect). The participants were asked to fill in the blanks in a word file to indicate the word and its metathesized counterpart. The completed list was then revised and checked by asking several participants (a random sample) to state whether they use the metathesized counterpart in their everyday interactions.

Objective

Prior to commencing data analysis in the current study, it was noted that metathesis in QAD is not a speech error. Rather, it is a spoken phenomenon that is frequently applied in everyday spoken language. However, metathesis varies according to the age and educational background of the speaker. In this regard, the main objective of the study was to identify the underlying phonological motives that trigger QAD speakers to metathesize words. It is hypothesized that the use of metathesis in QAD is not a random process or an outcome of coincidence, but a response by speakers of this dialect when they encounter some consonants with particular features. Moreover, the environment in which some sounds occur triggers the speaker to shift their places using metathesis. As such, the current research seeks to answer the following question:

- To what extent do sound feature and environment trigger QAD speakers to apply metathesis?

Data Sorting and Analysis

The current study is exploratory and interpretative in nature. The following Tables present the data used in this study, with the data analyzed using the descriptive method. Each Table presents the words to receive metathesis according to the targeted phoneme or group of phonemes. The words in Table 3 are sorted based on the origin of the word, where loanwords are combined. The words in other Tables are sorted according to the phoneme's VPM (voicing, place of articulation, and manner of articulation).

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Table 3. Metathesis Applied to English Loanword Used in QAD Dialect

Original Word	Metathesis in QAD	Rule	English Glossary
kɪtʃəb	kɪʃtəb	tʃ→ʃt	Ketchup
sɪndwɪtʃ	sɪndwɪʃt	tʃ→ʃt	Sandwich
kələtʃ	kələʃt	tʃ→ʃt	Clutch
swɪtʃ	swɪʃt	tʃ→ʃt	Switch
ʔɪstərɪtʃ	ʔɪstərɪʃt	tʃ→ʃt	Stretch
tʌtʃ	tʌʃt	tʃ→ʃt	Touch

Figure 3. Sound Position Shift in Table 3

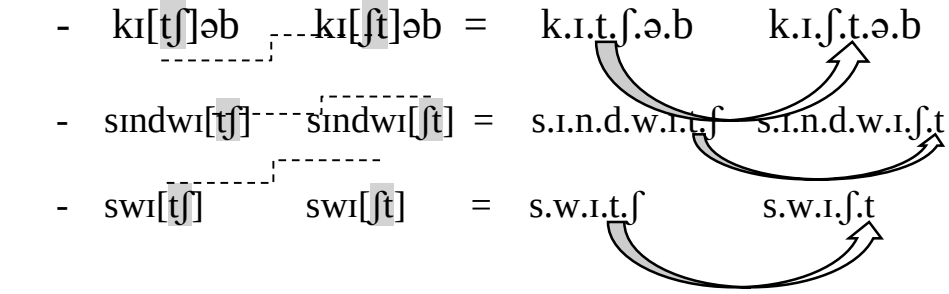

Table 4. Metathesis Applied to Stops, Liquids, and Fricatives

Original Word	Metathesis in QAD	Rule	English Glossary
ʔagrəb	ʔargəb	gr → rg	Scorpion
jaqbɪdˤ	jaqdˤɪb	bdˤ →dˤb	Hold
sˤaʕɪqəh	sˤagɪʕəh	ʕq →gʕ	Lightening
falsəfəh	faləfsəh	ls → sl	Philosophy
χəsəf	χəfəs	sf → fs	Destroy
ʃəftˤ	ʃətˤf	ftˤ → tˤf	Suction

Figure 4. Sound Position Shift in Table 4

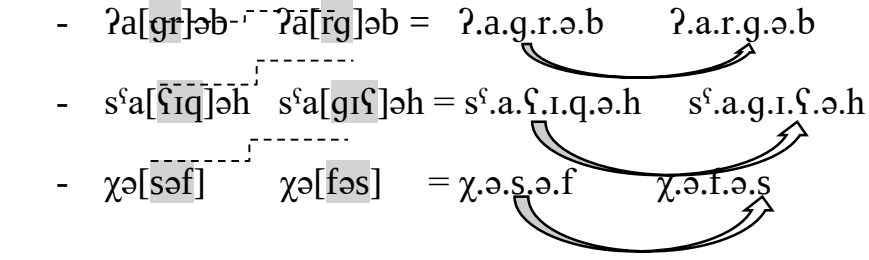

Table 5. Metathesis Applied to Nasals and Affricates

Original Word	Metathesis in QAD	Rule	English Glossary
jətənəs.sˤət	jətəsˤən.nət	nsˤ → sˤn	Eavesdropping
zaʊdʒ	dʒaʊz	z dʒ → dʒ z	Husband
zəndʒəbi:l	dʒənzəbi:l	z dʒ → dʒ z	Ginger
lazɪdʒ	ladʒɪz	z dʒ → dʒ z	Sticky
dʒɪd.dʒɪd	dɪdʒ.dɪdʒ	dʒ d → d dʒ	Cricket
zəʊædʒ	dʒəʊæz	z dʒ → dʒ z	Marriage
mɪrzæb	mɪzræb	rz →zr	Water gutter
jɪnərfiz	jɪnəfrɪz	rf → fr	Make angry
kəhrəbaʔ	kərhəbah	hr → rh	Electricity
sʊlħʊfah	sʊħlʊfah	lħ →ħl	Turtle
ʔaltəħaf	tɪləħ.ħəf	lt →tl	Cover oneself
jaħtrɪq	jətħr.rag	ħt →tħ	Burning
ʔartəmə	ʔatrəma	rt →tr	Thrown away
jərtəχj	jətrəχj	rt →tr	Slacking
ʔɪstələm	tɪsəl.lam	st →ts	Received
ʕəmi:q	mɪʕi:g	ʕm →mʕ	Deep
jastæ:k	jɪtsəʊw.wak	st → ts	To brush teeth with a stick

Figure 5. Sound Position Shift in Table 5

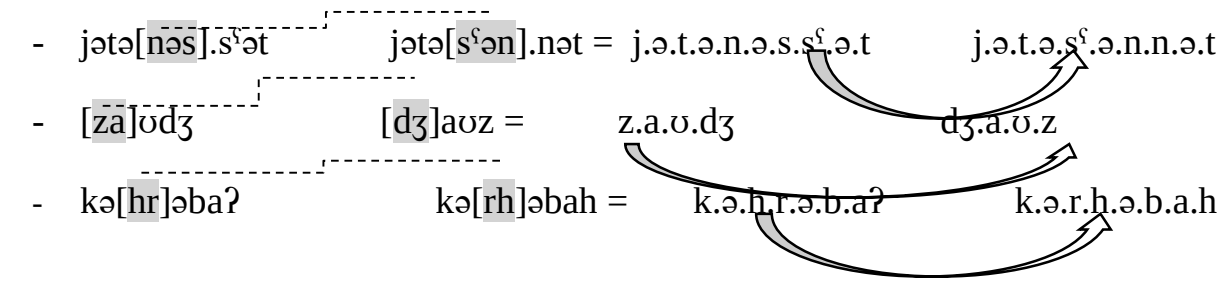

Table 6. Pharyngeals and Other Sounds

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Original Word	Metathesis in QAD	Rule	English Glossary
ləʕn	nəʕl	ʕn → nʕ	Curse
zʊdʒadʒ	dʒəzaz or gəzaz	zdʒ →dʒz	Glass
həfa	fəha	hf → fh	Forgot
nadˤʊdʒ	nɪdʒɪdˤ	dˤdʒ → dʒdˤ	Well-cooked
təzaħlaq	tɪzəlħag	ħl→ lħ	Slipped

Figure 6. Sound Position Shift in Table 6

- [t]əʕn [n]əʕl = l.ə.ʕ.n n.ə.ʕ.l
- na[dˤ]ʊdʒ nɪ[dʒ]ɪdˤ = n.a.dˤ.ʊ.d.ʒ n.ɪ.dʒ.ɪ.dˤ

DISCUSSION

Table 3 presents the words to have received metathesis. As shown above, they are foreign words (English loanwords) used in everyday conversation by QAD speakers. The metathesis targets the affricates and reverses their order. It is clear that the voiceless alveolar stop /t/ is moved forward, while the voiceless postalveolar fricative /ʃ/ moves back to produce /ʃt/ rather than /tʃ/. This clarifies that QAD speakers tend to change the order of the foreign-word sounds. They metathesize them in order to ease the production of this cluster (e.g., /tʃ/) as it is difficult for them to pronounce because it is not part of their inventory system. This phonological rule is referred to as cluster simplification. For illustration, numerous words in the QAD demonstrate the /ʃt/ combination such as /mɪʃtəhi/ "مشتهي" {he likes}, /mʊʃtag/ "مشتاق" {long for}, and /mʊʃtərək/ "مُشترك" {mutual}, along with many other words where the /ʃ/ precedes the /t/ (not vice versa). Even in the word "مستشفى" /mʊstəʃfə/ {hospital} where the /t/ precedes the /ʃ/ there is a schwa between the two. QAD speakers tend to metathesize the word and substitute the /s/ with /ʃ/ to become "مشتشفى" /mʊʃtəʃfə/. This emphasizes that metathesis here is not a coincidence, but a systemic process used by speakers to ease the production of clusters which are not part of their language system. In other words, QAD speakers use their native system to mirror the production of new sounds. In addition, syllable boundary plays an essential role in determining how to apply metathesis.

It is apparent in Table 4 that metathesis targets stop sounds such as /g/, /b/, and /d/ as well as target fricative sounds such as /s/ and /f/, and the lateral approximant, /l/. What is interesting in this data is that the metathesis here is a result of reversing the place of articulation. This is evident in the utterance of approximant and stop /rg/ and /gʕ/, which become /gr/ and /gʕ/. The observed

difference here is that the metathesis does not target the manner of articulation, but the place of articulation. Data in Table 4 suggest that when the approximants or the fricatives precede the stop, QAD speakers tend to reverse their places. There are potentially two possible explanations for this reversing: to break the adjacency of two voiced sounds; or the essential role that the syllable boundary plays in determining the onset of the word's second syllable.

Let us scrutinize the data again /ʔa**gr**əb/ → /ʔa**rg**əb/ {scorpion}, / sˤa**ʕɪq**əh/ → / sˤa**gɪʕ**əh/ {lightening} for further clarification. Metathesis would not be part of the word if the word ended in a voiceless velar stop /q/, which was part of the original Standard Arabic word. In this case, the QAD speakers changed the voice property of the sound, /q/, to become voiced /g/ to produce /ʔa**g**rəb/ rather than /ʔa**q**rəb/. It is evident here that the QAD speakers metathesized (reversed) the place of the velar stop /g/ to precede the alveolar trill /r/. This is because in this environment there is no epenthesis vowel to break the two syllables; in this case, the coda of the word's first syllable /ʔa**g.r**əb/ is impermissible in the QAD. There is no single word that ends with voiced velar stop/g/ /ʔag/ where the coda is unreleased. On the other hand, there are numerous words where the voiced alveolar trill becomes the coda of a syllable /ʔar/, such as /ʕark/ {stir}. While the velar stop /g/ precedes the pharyngeal fricative /ʕ/ in the second word, there is an epenthetic short vowel /ɪ/ breaking the cluster which eases production of the word's two syllables. For the fricative, the place of articulation has not been reversed because weak vowels here have a role in metathesis.

Table 5 tells a different story. The metathesis there took different forms according to different motives. The first motive is easily noticed; namely, gemination and syllable weight triggered QAD speakers to use metathesis. The first word /jə.tə.nəs.sˤət/ has four syllables and shows the role of the syllable weight as well as the gemination /jə.tə.sˤən.nət/ in metathesis. The targeted sound here is the emphatic /sˤ/ which was reversed to precede to the nasal phoneme /n/. One of the issues to emerge here is that even though the reversion changes the place of the phoneme, the reversed phoneme's feature has not been affected. It is evident that the gemination feature of the emphatic /sˤ/ phoneme has spilled over the nasal phoneme /n/ to become geminate. The possible rationale for this is that the syllable weight of the word has not been affected.

Other examples such as /zəʊdʒ/→ /dʒəʊz/, /zəndʒəbi:l/ → /dʒənzəbi:l/ show that QAD speakers are inclined to metathesize the fricative /z/ to become affricate /dʒ/, implying that they only target the manner of articulation. This is also evident in one of the interesting examples in Table 5 (e.g., /dʒɪd.dʒɪd/→ /dɪdʒ.dɪdʒ/) in which the metathesis targets the manner to turn the affricate /dʒ/ to become a stop /d/. This indicates that in order to ease the production of adjacent sounds, QAD speakers tend to change their manner of articulation. In some cases, we find that although metathesis is not about changing the order of sounds, it affects the feature of the donor language's (e.g., English) sounds. To illustrate this point, QAD speakers use the word "عنقز" to refer to 'chickenpox'; however, the word was derived from 'acne' rather than 'chickenpox'. In this case, the Arabic word "عنقز" is metathesized from 'acne' /ˈækni/ in which the cluster /kn/ becomes →

/ng/. Metathesis takes place here using the feature substitution of the cluster: voiceless /k/ becomes voiced /g/.

CONCLUSION AND RECOMMENDATION

This paper has argued that the features of sounds and the environment in which they are uttered have a significant role in triggering QAD speakers to apply metathesis. Regarding the main research question, this study found that the manner of articulation is the main factor to trigger metathesis rather than the place of articulation. It is evident that English loanwords with alien phonemes used extensively in QAD are the target of metathesis, such as the affricate where the fricative precedes the stop (e.g., /tʃ/). It was also found that when the word carries the fricative before the stop, QAD speakers tend to metathesize it to become /ʃt/ in order to ease their production. In addition, the results of this investigation show that the place of articulation has a role in metathesis, refuting Hume's (2016) claim that many languages have no obvious factor(s) to trigger speakers to use metathesis in a particular context. It emerged through this research that people use metathesis to avoid mispronunciation potential due to the adjacency of sounds that share the same features. Cluster simplification also emerged as another rule applied by QAD speakers to avoid pronunciation difficulties. Therefore, further researcher should be conducted to determine whether the gender, age, and educational background of a speaker plays a role in metathesis. Furthermore, it is worth investigating whether the new generation tends to apply metathesis in their speech more than the old one.

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