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Metathesis in Syrian Arabic: Types and Conditioning Factors

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Abstract

This study explores metathesis in Syrian Arabic (SyA). The data reveal two types of metatheses. Type-I is phonologically conditioned, involving at least one of the four root consonants, *ʒ*, *ʃ*, *ʕ* and *ħ* with the fricatives (z, s), liquids (l, r) or gutturals (q/ʔ) in specific positions within the root regardless of word derivation. Type-II is morpho-phonologically conditioned, involving Standard Arabic reflexive Pattern VIII, *(ʔi)ftaʕal*, that resulted historically from generalized metathesis of reflexive-*t* with C1 of the original Proto-Aramaic reflexive Pattern *(ʔi)tfaʕal*. It occurs in SyA as a reversed metathesis

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of Pattern VIII with doubling of C2, *tfaʕʕal*. This reverse metathesis occurs when the root consonant adjacent to reflexive-*t* is the fricative (s), pharyngeals (ʕ, ħ) or liquids (l, r). While metathesis results from strictly ranking the Optimality Theoretic LINEARITY constraint lower than LEFT-ANCHOR(t), geminating C2 is explained in terms of prosodic weight of the syllable to maintain stress assignment of the input and verb grammaticality and/or semantic correspondence with the input. Thus, the constraints IDENT(Stress), WEIGHT-BY-POSITION must dominate INTEGRITY and *CODA to allow gemination that contributes moriac weight to the penultimate syllable to receive priority stress over final bimoriac heavy syllables.

Keywords: reversed metathesis, Syrian Arabic, phonologically conditioned, morpho-phonologically conditioned, prosodic weight, moriac, stress assignment, gemination

1. Introduction

Metathesis is referred to in Arabic as *ʾiqlāb* or *al-qalb al-makāniy* ‘lit. place inversion’. Hume (2004: 203) defines metathesis as ‘the process whereby in certain languages the expected linear ordering of sounds is reversed under certain conditions.’ Historically, metathesis was often considered the result of slips of the tongue or speech errors (e.g., Blevins & Garrett 1998, Hume 2001, Hale 2003) and was not attributed to phonological or phonetic factors. However, this view changed with some linguists arguing that metathesis is an optimization process (e.g., Grammont 1950, Ultan 1978: 395) applied to avoid marked structures in favor of less marked ones. However, Blevins & Garrett (1998) argued against this optimization theory because metathesis could result in more marked structures.

Metathesis is a common and systemic phenomenon in numerous languages in the world (e.g., Ultan 1978). In Semitic languages, such

as Hebrew, Aramaic and Mandaic, a prominent type of metathesis has been observed: metathesis between *t* + sibilant in the reflexive/ inchoative/reciprocal verb patterns (Malone 1971, 1996; Aïm 2005; Jones 2016). The *t* is considered part of the reflexive prefix, and the sibilant is the first radical of the stem/root. However, Arabic shows variation in what can be metathesized (Banjar 2003 [for Makkan and Cairene Arabic], Jasim & Sharhan 2013 [for IA][1]). The cited studies about Arabic are not clear as to what types of metatheses exist in Arabic or the type of processes or factors involved. Hence, this study aims to explore metathesis in SyA, seeking to answer the following questions:

1. What type(s) of metathesis exist(s) in SyA?
2. What are the conditioning factors (phonological/morphological) or processes that may lead to metathesis in SyA?

The paper is organized as follows. Section 2 gives an overview of metathesis in Semitic languages and Arabic. Section 3 describes the data collection and coding procedures. Section 4 presents the data with analysis and findings. Section 5 concludes the paper.

[1] The following abbreviations are used in this paper: CV (a syllable that consists of a Consonant and Vowel), CVC (a syllable that consists of a Consonant, Vowel, and Consonant), CVG (a syllable that consists of a Consonant, Vowel, and Geminate Consonant), CVV (a syllable that consists of a Consonant, Vowel, and Vowel (or Long Vowel instead of Vowel and Vowel), EA (Egyptian Arabic), IA (Iraqi Arabic), OT (Optimality Theory), SA (Standard Arabic), SyA (Syrian Arabic), TH (Tiberian Hebrew).

2. Overview of the Literature

2.1. Metathesis in Semitic Languages

According to Malone (1996: 231) 'metathesis and fusion appear widely in Semitic as corrective stabilizers.' For example, in Tigre, an Ethio-Semitic language, metathesis is used as 'a strategy of hiatus avoidance' (Faust 2014: 225). In Modern Hebrew, metathesis between *t* and a sibilant occurs only in the reflexive/reciprocal/ inchoative *binyan* 'pattern' *hitpaʾel* (e.g., *histadeʁ* 'arrange oneself, get along with'; *hizdaken* 'grow old'), when the stem begins with a sibilant fricative /s, z, ʃ, ʧ/ (Jones 2016: 25–26).[2] {*hit-*} is considered a prefix attached to a verb stem. In this binyan, also *t* and the sibilant are adjacent with no other segment separating them. According to Jones (2016: 29) 'metathesis only occurs in Modern Hebrew across a morpheme boundary'. That is why it occurs in binyan *hitpaʾel* as opposed to binyan *hifʾel* (e.g., *hitsis* 'ferment'). In the latter, the *t* is part of the stem, not the affix. His analysis takes into consideration the proposal and arguments of Coetzee (1999) who proposes that the sequence *t* + sibilant is marked in TH. It is prohibited across morpheme boundaries because the *t* and the following sibilant can be phonologically restructured into a similar, existing affricate in the language, leading to confusion. In this sense, the OT constraint LINEAR applies only between morphemes, not intra-morpheme, as the same sequence is not prohibited within a single morpheme. In other words, there are two separate LINEAR constraints: one intra-

[2] International Phonetics Alphabet (IPA) is used to transcribe foreign and Arabic words, except in cases where an already transcribed example is copied as is from its source. Jones (2016) himself used the IPA in transcribing examples from Hebrew and other Semitic languages.

morpheme and the other inter-morpheme. The constraint that militates against the sequence *t+SIB is ranked below intra-morpheme LINEAR (referred to as HOMLIN, homomorphemic linearity [Jones 2016: 68]) to prevent metathesis of this sequence within a single morpheme. However, it is ranked higher than inter-morpheme LINEAR to prevent this sequence between two morphemes. Coetzee's proposal supports Ultan's (1978: 395) view that metathesis can be due to the 'introduction of noncanonical sequences' through 'accidents of morphological juxtaposition'. Coetzee's (1999: 128) analysis and formulated constraints do not apply only to *hitpaʾal* binyan. Rather, they can be thought of 'as general characteristics of TH phonotactics'. They also can be applied universally based on whether a language has similar sequences that can conflate into affricates. Based on Coetzee's (1999) proposal and analysis, one can stipulate that similar morpho-phonological constraints apply in the same order in other Semitic languages, such as Aramaic, Mandaic, etc.

Like Hebrew, in Aramaic, 'metathesis doesn't apply outside the reflexive stems' (Aïm 2005: 6). Aïm (2005: 6) similarly argues that 'metathesis *is* a *morphological* process: the succession of any sibilant and any dental stop is not a sufficient condition. To trigger the metathesis, the sibilant must be the first consonant of a root and the dental stop must be the passive/reflexive affix.' He shows 'i) that Aramaic and Hebrew exhibit a selection between the coronal obstruents (fricatives and stops at once) and the other consonants during the derivation of the reflexive/passive verbal forms, ii) that this selection can explain the metathesis that occurs in this verbal form' (Aïm 2005: 3–4). He posits, using the Classical Arabic templatic analysis proposed by Guerssel & Lowenstamm (1990), that the initial CV-site of the template requires an obstruent radical. If the first radical of the root is not an obstruent in the reflexive verb, then the

floating reflexive *t* attaches to the initial CV-site, as the non-obstruent radical, which is not allowed in the initial CV-site, will take a position in the medial CV-site.

Like Hebrew and classical Aramaic languages, Classical Mandaic exhibits metathesis between the reflexive *t* and an immediately following pre-Hebrew sibilant (Malone 1971: 396), *s, z, ṣ*, *š* and *ś*,[3] e.g., **ʔitsamika* > *éstəmex* 'he was reassured' (Malone 1971). The *t* also assimilates to the sibilant in voice and pharyngealization, i.e., emphasis. Proto-Aramaic exhibited a similar type of metathesis and assimilation, e.g., **ʔitsˁaliba* > **ʔisˁtˁaliba* 'he was hanged'. The Proto-Aramaic form that is not metathesized is still present in EA, for example, *ʔitsˁalab* 'he was crucified'. However, Hebrew verbs whose second radical is 'an apical stop' fail to metathesize (Malone 1996: 227). Malone (1996: 227) explains this by proposing an Antiwedging constraint 'in terms of which features shared by adjacent segments are bonded in such a way as to resist disruption', partially explicating this bonding by the Obligatory Contour Principle (Leben 1973, McCarthy 1981) that forbids identical elements from occurring adjacent to each other. Likewise, in Biblical Aramaic and Syriac, the reflexive *t* does not metathesize and remains a prefix before non-sibilant *m*. A similar phenomenon is also observed in SyA. In other words, in SyA, we observe a reverse type of metathesis, e.g., *(ʔi)stamaʕ* > *tsammaʕ* 'he listened', where the reflexive *t* appears as a prefix, i.e., not metathesized with the sibilant.

In most of the studies above, metathesis in Semitic languages is attributed to morphological conditioning. However, within the optimization approach to metathesis (e.g., Grammont 1950, Ultan 1978: 395), Hock (1985: 529–530) excluded morphologically conditioned

[3] Malone (1971) uses this convention in writing these three sibilants *ṣ*, *š* and *ś*, which correspond with IPA *sˁ*, *ʃ* and *ɬ* (voiceless alveolar lateral fricative), respectively.

metathesis such as the Hebrew sibilant metathesis, because he did not consider them 'regular'. Nonetheless, Hock (1985: 532–533) argued that metathesis 'can become regular only when it serves a specific structural purpose', such as 'converting phonologically or perceptually 'marked' structures into more acceptable ones.' This regularity can be observed in the reflexive Pattern VIII of SA, *(ʔi)ftaʕal*. This Pattern, according to Khassawneh et al. (2018: 23), originated like in other Semitic languages from *(ʔi)tfaʕal* due to the presence of *t* next to a sibilant, which is considered 'heavy' in Arabic as well as in other languages. This inversion between the *t* and sibilants was generalized to other consonants in the language unlike in other Semitic languages where the *t* does not metathesize with consonants other than sibilants, and even with sibilants, it may not metathesize, e.g., in Biblical Hebrew **hit-ʃagea* > *hiʃtagea* 'go crazy' whereas *hit-labeʃ* > *hitlabeʃ* 'dress oneself' (Jones 2016: 26), in Aramaic **ʔit-səʕar* > *ʔistəʕar* 'he has been visited' (Aïm 2005: 1) whereas *ʔitʔaxið* > *ʔitʔaxið* 'he was seized' (Malone 1971: 399). This regular inversion in Arabic is not surprising given the tendency 'in languages in general' for a plosive next to a fricative to result in inversion (Fleisch & Shāhīn 1966: 146). Such generalization highlights another side to metathesis and that is phonological conditioning in addition to morphological conditioning. For example, Hume (2004), like Hock (1985), argues that stops, such as (t), are perceived better prevocalically than preconsonantally, which could be the reason why it metathesizes with sibilants and other sonorants such as (l, r, n) that have 'stronger internal' perceptual cues such as friction in the case of sibilants and 'stretched out cues' in the case of sonorants than stops that require contextual perceptual cues such as consonant release or burst. Belvins & Garrett (2004: 128) go beyond 'elongated phonetic cues' in sibilant metathesis, which, they consider to be caused by a process called 'auditory-stream decoupling'

in which 'the sibilant noise somehow distracts the listener, leading to high confusion rates with respect to the linear order of segments.' As explained in Jones (2016: 15), 'the sibilant noise is dissociated from the rest of the sibilant and reinterpreted by listeners in a different position.' Jones (2016) supported this hypothesis by testing the perception of English speakers of /t/ + sibilant sequences, who like Hebrew speakers who metathesize these sequences, misperceived them as sibilant + /t/ instead. Segments that undergo CV metathesis and have long duration phonetic features include, according to Blevins & Garrett (1998: 513), liquids (laterals, rhotics), laryngeals (h, ʔ), pharyngeals (in Arabic ʕ, ħ) and glides/vowels (j/i, w/u). This supports Ultan's (1978: 374) proposal that 'the more resonant a sound, the more susceptible it is to metathesis.'

2.2. Metathesis in Arabic

Metathesis in Arabic has been approached from different perspectives, ranging from no metathesis to floating root consonants that may lead to random metathesis. Haddad (2008) suggests that in three SA broken plurals, /CaCaaC/, /CaCuC/ and /CaCiC/, the inversion of the initial consonant and vowel is not the result of metathesis. Rather, it is the result of 'pseudometathesis' that is hypothesized by Blevins & Garrett (1998: 540) where a 'vowel epenthesis is followed historically by vowel deletion or vice versa', resulting in a form that mimics metathesis. In SA, Haddad (2008) argues that syncope of V1 occurs before epenthesis of *ʔV*, e.g., /CaCaaC/ /kabaad/ 'livers' → [CCaaC] → [ʔaCCaaC] [ʔakbaad]. A vowel is first epenthesized before C1 to avoid complex onsets; then the prothetic *ʔ* is epenthesized to avoid an onsetless syllable.

Prunet et al. (2000) applied a morpheme-based approach to roots in Arabic when they examined the speech pattern of an Arabic-French

bilingual aphasic patient who had a brain stroke and produced only root consonant metathesis errors in Arabic only. The errors were random involving any root consonants in a manner similar to healthy Arabic speakers. These metathesis errors indicate 'dissociation between root consonants and non-root segments (vowels, affixes and epenthetic consonants)' (Idrissi 2018: 288). Hence, Prunet et al. (2000: 643) proposed that metathesis is the result of floating root consonants 'on the root tier' in autosegmental representations of Arabic. That is, they lack 'skeletal anchoring', making them 'liable to undergo metathesis' (Prunet 2006: 58), although roots form 'lexical units in the mental lexicon of speakers of Arabic' (Prunet et al. 2000: 642–643). This hypothesis seems to suggest that metathesis may occur randomly among floating root consonants. However, when metathesis occurs among certain root consonants and in certain positions within a root, as is the case in my data, one should explore other approaches.

Ratcliffe (2004: 70) indicates that processes such as metathesis are more frequent in Arabic due 'to the existence of a rule of sonority-based parsing in the morphology of Arabic'. For example, Angoujard (1990: 15) assigns the consonants /h/, /ħ/ and /ʕ/ higher sonority value than other fricatives; it could be due to this higher sonority, Arabic speakers 'reject hypocoristics from names' with these sounds 'as second consonant' (Ratcliffe 2004: 69), not discounting Davis & Zawaydeh (1999) account that these sounds resist gemination in C2 in the hypocoristic template C1aC2C2uuC3 where C1, C2 and C3 correspond with C1, C2 and C3, respectively, of the full name.

In her examination of synchronic metathesis in Makkan and Cairene Arabic as a 'phonological process', Banjar (2003: 28) also found that metathesis occurs more frequently when there are the sonorant consonants /m/, /n/, /l/ and /r/. However, the examples presented in her study show highly varied set of metathesized

consonants including the following: m&l, n&l, l&n, l&ʕ, l&r, l&ħ, x&l, z&dʒ, s&r, t&r, r&n, ħ&f, s&f, f&q/ʔ, r&f, f&w, z&r, r&y, k&ʔ, h&r, ð&b, w&m, b&h, ħ&m, s&m, t&ʃ, ʕ&q/g, m&r and n&t/l&t/k&t/ħ&t/r&t/b&t. Thus, other consonants besides the sonorants /m/, /n/, /l/ and /r/ are involved in metathesis. These are the sonorants /w/, /y/, fricatives /s/, /f/, /z/, /x/, /ħ/, /ʕ/, /ʃ/, /ð/, /h/, affricate /dʒ/ and stops /t/, /k/, /b/, /q/, /g/, /ʔ/. Excluding the last collated six metathesized sounds n&t/l&t/k&t/ħ&t/r&t/b&t, metathesis occurs 'between root radicals within the root itself' (Banjar 2003: 28). Thus, sounds other than sonorants are involved, and there seems to be more going on than having adjacent or non-adjacent consonants metathesizing, particularly adjacency could refer to consecutive radicals in a root even if separated by a vowel. Her example *ta:biʕ* > *bita:ʕ* 'belongs to' is considered non-adjacent metathesis. However, this seems to be a different type of metathesis: a whole syllable (consonant and vowel) metathesizing with another syllable. Thus, one should explore whether it is a whole syllable or just radicals and the position in the root where the radicals' metathesis occurs, e.g., does it occur between C1&C2 or C2&C3 in triradical roots or between C3&C4 in quadriradical or more roots? Is it a whole syllable or just radicals that are metathesizing? Do certain word formation patterns trigger metathesis based on their consonant composition? These are questions that should be answered. Furthermore, the last collated six metathesized sounds n&t/l&t/k&t/ħ&t/r&t/b&t all involve the reflexive verb *(ʔi)ftaʕal*. This is what Banjar (2003) refers to as 'root-infix' metathesis in which what she calls the 'infix' *-t-* becomes a 'prefix' leading to change in the verb pattern from *(ʔi)ftaʕal* to *(ʔi)tfaʕal*. In this sense, she is using similar terminology to Malone (1971, 1996), Aïm (2005) and Jones (2016) who consider the reflexive *t* in Hebrew, Aramaic and Mandaic a prefix, whereas in Arabic *-t-* is

considered part of verb Pattern VIII *(ʔi)ftaʕal*. In addition, this could be the maintenance of the original Proto-Aramaic pattern *(ʔi)tfaʕal* like in Aramaic and Hebrew instead of metathesis. In other words, metathesis does not occur in this pattern even when *-t-* is followed by a first radical sonorant or fricative of the root.

Similarly, Jasim & Sharhan (2013) found that in IA, the consonants /l/, /r/ and /t/ metathesize more than other consonants, indicating that sonorant sounds are more susceptible to metathesis. Nonetheless, they do not recognize, based on the examples given in their paper, that /t/ mostly metathesizes in the reflexive form of the verb and when there is a continuant sound next to it like /r/, /l/ and /ħ/. Similarly, the stop /b/ metathesizes in a couple of examples with the fricatives /h/ and /ʃ/. While Jasim & Sharhan (2013: 20) recognize that 'obstruents (including *stop, fricatives* and *affricates*) lend themselves to be metathesized,' they do not present a rigorous analysis of the data, pointing out the different types of metatheses and the specific conditions that may lead to metathesis. Their examples mainly focused on indicating adjacent and non-adjacent metatheses, although their classification of non-adjacent is not based on adjacency of root radicals (discounting vowels) or the position of the radical in the word, i.e., does the metathesis occur between C1&C2, C2&C3, C1&C3 (in triliteral roots) or C3&C4 (in quadriliteral roots)? Without exploring these specifics, Jasim & Sharhan (2013: 21) concluded that metathesis 'does not serve any grammatical function in IA. As a result, it is an abrupt and sporadic process rather than being gradual and regular.'

3. Data Collection and Coding

The data collection was triggered by noticing the metathesis

phenomenon in SyA in specific words. Over a period of more than ten years, the author manually recorded frequently and generally metathesized words with their original expected form through observation of people's informal naturally occurring colloquial speech and/or in TV soap operas. It is worth noting that the collected words are not considered speech errors or slips of the tongue. Rather, they are highly frequent words used by most Syrian people possibly unnoticed or unknown as being metathesized. Thus, people do not correct themselves or others when they produce or hear these words because they are very common and widespread to the point many people are oblivious to them and may believe they are the correct form. Some of the collected metathesized words also occur metathesized in other Arabic varieties. For example, Example (2) in Table 1 can occur in Makkan and Cairene Arabic (Banjar 2003: 21) among many other examples in Table 1 and Table 2.

After a good number of generally metathesized words have been collected, each example was coded with regards to the types of metathesized sounds and the location within the word (initially, finally or medially). The latter codification led to more specific coding, i.e., locating the sounds within the root, i.e., which radicals of the root, C1, C2, C3 and/or C4 are involved in the metathesis. Rarely, roots with C5 or C6 are observed in the data. The reason roots were taken into consideration is that during the coding process, only consonants were observed to metathesize; vowels rarely change place or quality. It is worth noting that most common roots in Arabic are triradical (i.e., contain three radical consonants). With each radical added, the roots become less common. Thus, most of the data come from triradical-root words with a few examples from quadriradical roots.

4. Analysis and Findings

While previous studies on Semitic languages often considered a morphological explanation for metathesis, in this study of SyA, two types of metatheses emerged in the data:

Type-I: Phonologically conditioned metathesis that applies to any word if the phonological conditions are met.
Type-II: Morpho-phonologically conditioned metathesis that only applies to SA reflexive verb *Pattern VIII*, *(ʔi)ftaʕal*.

4.1. Type-I: Phonologically Conditioned Metathesis

Table 1 presents examples of Type-I metathesis that apply to any word if the phonological conditions are met. It is worth noting that all the provided examples are just one of many parts of speech, patterns or conjugations in which metathesis occurs. For instance, Example (1), *nzaʕaʒ* > *nʒaʕaz* 'he got upset',[4] is a third-person singular masculine verb, but there are many other parts of speech that are derived from the same root *zʕʒ* that also undergo the same type of metathesis, e.g., *mazʕuːʒ* > *maʒʕuːz* 'he is bothered/upset (Passive Participle)', *zaʕaʒaː* > *ʒaʕazaː* 'he bothered her', among many other derivative words.

[4] The SA affricate *ʤ* is pronounced in SyA as a the fricative *ʒ*.

Table 1. Type-I: Phonologically Conditioned Metathesis

	Original Word	Metathesized Word	Glossary	Root	Radicals Affected	Radicals' Location
1	nzaʕaʒ	nʒaʕaz	'he got upset'	zʕʒ	z, ʒ	C1, C3
2	zawaːʒ	ʒawaːz	'marriage'	zʕʒ	z, ʒ	C1, C3
3	zanʒabiːl	ʒanzabiːl	'ginger'	znʒbl	z, ʒ	C1, C3
4	zaʒʒ	ʒazz	'put in prison'	zʒʒ	z, ʒ	C1, C3[5]
5	namuːzaʒ	namuːʒaz	'pattern, form, model'	nmzʒ	z, ʒ	C3, C4
6	zaʒal	ʒazal	'traditional genre of improvised sung poetry'	zʒl	z, ʒ	C1, C2
7	btəstarʒeː	btəstaʒreː	'you dare'	rʒl[6]	r, ʒ	C1, C2
8	falsafi	falfasi	'assuming wisdom'	flsf	s, f	C3, C4
9	xasaf	xafas	'dimmed'	xsf	s, f	C2, C3
10	narfaz	nafraz	'he got agitated'	nrfz	r, f	C2, C3
11	sˁaħiːfi	sˁafiːħi	'newspaper'	sˁħf	ħ, f	C2, C3
12	musˁħaf	musˁfaħ	'Qur'an'	sˁħf	ħ, f	C2, C3

[5] *ʒ* could be C2 or C3 due to gemination but I will consider it here C3 in parallel to all other previous examples with z and ʒ metathesis.

[6] The root is based on the same verb in SA *starʒal* 'he manned up, he dared'. Some may assume that the root is rather *ʒrʔ*, in which the *ʔ* lenites into a vowel and C1 and C2, *ʒ* and *r*, metathesize. Assuming such root will imply that the metathesized form is the correct form and that the correct form is the metathesized one. Furthermore, the verb *staʒraʔ* following the semantics of Pattern X in Arabic will mean 'to seek boldness or daring from another person', which is a different meaning from the metathesized verb *staʒre*: 'dare'. Hence, it is assumed in this study that the root is *rʒl* based on the meaning and the SA corresponding verb.

13	saffaq/ʔ	saqq/ʔʔaf	'he clapped'	sfq/ʔ	f, ʔ/q	C2, C3
14	bʕaq/ʔlu	bq/ʔaʕlu	'in his sound mind'	ʕq/ʔl	ʕ, ʔ/q	C1, C2
15	ʔiʕq/ʔosˁ	ʔiq/ʔʕosˁ	'I pinch'	ʕq/ʔsˁ	ʕ, ʔ/q	C1, C2
16	malʕaq/ʔa	maʕlaq/ʔa	'spoon'	lʕq/ʔ	l, ʕ	C1, C2
17	tfaħħasˁsˁ	tħaffasˁsˁ	'examined'	fħsˁ	f, ħ	C1, C2
18	zileħfi	ziħelfi	'turtle'	zlħf[7]	l, ħ	C2, C3
19	ħusa:li	suħa:li	'scum'	ħsl[8]	ħ, s	C1, C2

In all the examples in Table 1, metathesis involves at least one of four consonants, *ʒ*, *f*, *ʕ* and *ħ*. In most cases, the other consonant is an alveolar fricative (z, s) or liquid (l, r). Example (13)–Example (16) show metatheses with the SA uvular voiceless stop *q* or its dialectal variant the glottal stop *ʔ*. It seems most metathesis in SyA occur between adjacent root consonants. *ʒ* is the only consonant that exhibits non-adjacent metathesis with the root radical *z*, i.e., between C3 and C1 respectively (see Example [1]–Example [4]). The metathesis between *ʒ* and *z* can also occur when they are adjacent root consonants (see Example [5]–Example [6]). When *ʒ* occupies C2, it can also exhibit adjacent metathesis with C1 if C1 is a rhotic (based on the limited data available) (see Example [7]). Hence, *ʒ* can metathesize with a preceding *z* regardless of whether it is occupying C2, C3 or C4 (in quadriradical root words). However, it can metathesize with a preceding rhotic when it occupies C2. No evidence is available of *ʒ* metathesizing when it occupies C1.

The other three consonants *f*, *ʕ* and *ħ* exhibit only adjacent metathesis with root radicals. When *f* occupies a final or prefinal

[7] The radical *z* of this root corresponds with SA *s*.
[8] The radical *s* of this root corresponds with SA *θ*.

consonantal position, i.e., C3 (final in triradical and prefinal in quadriradical root words) or C4 (in quadriradical root words), it can exhibit adjacent metathesis with C2 or C3 respectively (see Example [8]–Example [12]). When *f* occupies C2 in triradical root words, it can metathesize with *q/ʔ* (based on the limited data available) (see Example [13]). In this case, metathesis happens between C1 and C2. Although *q* and *ʔ* are stops, they are both considered guttural sounds in Arabic like the pharyngeals *ʕ* and *ħ*, glottal *h* and uvular *x* and *ʁ*. *ʔ* is glottal; *q* is uvular and produced with a retracted tongue root feature [+RTR] (Davis 1993, 1995; Shahin 1998; Zawaydeh 1998; Al-Raba'a & Davis 2020) that leads to 'constriction of the top of the pharynx' (Holes 2004: 57). Being guttural consonants possibly makes them exhibit metathesis with other sounds like the pharyngeals *ʕ* and *ħ*. Gutturals have been observed to be involved in phonological metathesis in other Arabic varieties. For example, in Bedouin Hijazi Arabic the gutturals *ħ*, *x* and *ʕ* metathesize with a preceding low [a] when they occupy C2, e.g., **yaħkum* is metathesized to *yħakum* 'he rules' (Al-Mozainy 1981, Hume 2011: 205).

The pharyngeal fricatives *ʕ* and *ħ* exhibit only adjacent metathesis when they occupy C1 or C2 in triradical roots and C3 in quadriliteral roots. If they are in C1, they metathesize with C2 (see Example [14], Example [15] and Example [19]). If they are in C2 or C3 (in quadriliteral roots), they metathesize with the preceding sound, C1 or C2 respectively (see Example [16]–Example [18]). The consonant they metathesize with is either the fricatives (f, s), liquid (l) or gutturals (*q/ʔ*).

Example (6), Example (7), Example (14), Example (15), Example (17) and Example (19) may suggest that when C3 is *l* or *sˁ*, metathesis happens between C1 and C2. However, the presence of examples such as Example (16) suggests that the previous analysis of the pharyngeal fricatives *ʕ* and *ħ* is more accurate. In Example (16), *q/ʔ* as C3 does

not metathesize with ʕ although it could metathesize with *f* in the same position (see Example [13]) and the same sound ʕ when it is in C2 (see Example [14] and Example [15]).

It is worth noting that in all these examples, metathesis is not regular (Wireback 2004: 679); it happens sporadically. Despite this observation, such metathesis does not just occur randomly between any set of consonants and in any position of the word. Rather, there are certain phonological conditions that must be met for these sporadic cases of metathesis to occur.

4.2. Type-II: Morpho-Phonologically Conditioned Metathesis

Table 2 presents examples of Type-II metathesis mainly from SyA, SA and EA (for comparison purposes). As mentioned above, the SA reflexive verb Pattern VIII, *(ʔi)ftaʕal*, according to Khassawneh et al. (2018: 23), originated like in other Semitic languages from the Proto-Aramaic pattern *(ʔi)tfaʕal* where the reflexive *t* preceded a consonant. When the following consonant was a sibilant, *t* metathesized with the sibilant because the Semitic sequence *t* + Sibilant is considered 'heavy' in Arabic, and hence *t* inverted with sibilants. This inversion was generalized to all other consonants in Arabic. However, this full inversion is violated in SyA like in EA (Banjar 2003) and IA (Jasim & Sharhan 2013). One can observe in these dialects the reverse of the fully metathesized SA Pattern VIII *(ʔi)ftaʕal*, i.e., *(ʔi)tfaʕal* (in EA and IA) or *tfaʕʕal* (in SyA and IA). Jasim & Sharhan (2013: 13) suggest that IA examples *ʔitlawwa* and *ʔitlaħħaf* with doubling of C2 are metathesis. These two examples correspond with SyA Example (27) and Example (28), respectively. Similarly, Jasim & Sharhan's (2013: 15) IA examples *ʔatraxa* and *ʔitħama* are considered metathesis,[9] corresponding with

[9] Jasim & Sharhan (2013) use *ʔa-* or *ʔi-* at the beginning of these verbs as well as the

SyA and EA Example (21) and Example (31), respectively. The presence of verbs in the form *(ʔi)tfaʕal* in these dialects can be considered either maintenance of the original Semitic reflexive pattern or reverse metathesis of the reflexive SA Pattern VIII *(ʔi)ftaʕal*.

SyA mainly exhibits the semantically corresponding form *tfaʕʕal*, involving, like IA, doubling of C2 of the original/reversely metathesized Pattern *(ʔi)tfaʕal* (Table 2) without the prothetic *(ʔi)*. Considering the SyA *tfaʕʕal* as corresponding to the SA reflexive Pattern V *tafaʕʕal* is not borne out for several reasons. First, SA Pattern V has never been involved in metathesis and has an additional vowel between *t* and C1. SyA *tfaʕʕal* not only corresponds with IA reflexive forms with and without the doubling of C2, but also corresponds with the EA reflexive *ʔitfaʕal* (see Example [20], Example [21], Example [31] and Example [32]) that has the metathesized form of SA Pattern VIII like IA. While EA requires the epenthesis of the prothetic *ʔi-* in this reflexive verb pattern because vowel initial syllables and consonant clusters syllable initially are prohibited in this dialect (Aquil 2013), SyA does not have this requirement because syllable initial clusters are permitted (Kiparsky 2003, Broselow 2018). Thus, only doubling of C2 is observed in the SyA reflexive verb. More importantly, SyA verbs of the form *tfaʕʕal* such as *traxxa:* 'he relaxed' and *trakka:* 'he rested on' among others in Table 2 do not have a corresponding SA Pattern V; the only corresponding SA verb is Pattern VIII *rtaxa:* and *rtaka:*, respectively.

beginning of corresponding SA Pattern VIII verbs. They do not indicate that these initial insertions are optional, at least in SA. It is also worth noting that all the examples presented in Jasim & Sharhan (2013) are written as a mix of Latin and Arabic letters (for Arabic consonants that do not exist in English), and sometimes appeared distorted due to this mixing. In this paper, I present their examples using IPA for clarity and avoidance of confusion.

Table 2. Type-II: Morpho-Phonologically-Conditioned Metathesis: *Pattern VIII*, *(ʔi)ftaʕal*

	SA Pattern VIII Verb	Reversely Metathesized	Glossary	Root	Consonants Affected
20	rtasam	SyA → trassam EA → ʔitrasam	'he received the sign of the cross or a theological status in Christianity; he sat still'	rsm	r, reflexive *t*
21	rtaxa:	SyA → traxxa: EA → ʔitraxa:	'he relaxed'	rxy	r, reflexive *t*
22	rtaka:	SyA → trakka:	'he rested on'	rky	r, reflexive *t*
23	rtaʒa:	SyA → traʒʒa:	'he begged'	rʒw	r, reflexive *t*
24	rtaqa:	SyA → traqqa:	'he rose in status'	rqy	r, reflexive *t*
25	rtafaʕ	SyA → traffaʕ	'he rose in rank'	rfʕ	r, reflexive *t*
26	ltamas	SyA → tlammas	'he sought'	lms	l, reflexive *t*
27	ltawa:	SyA → tlawwa:	'he is twisting from pain'	lwy	l, reflexive *t*
28	ltaħaf	SyA → tlaħħaf	'he covered himself'	lħf	l, reflexive *t*
29	ħtasab	SyA → tħassab	'he considered'	ħsb	ħ, reflexive *t*
30	ħtamal	SyA → tħammal	'he tolerated'	ħml	ħ, reflexive *t*
31	ħtama:	SyA → tħamma: EA → ʔitħama:	'he took refuge'	ħmy	ħ, reflexive *t*
32	ħtarq	SyA → tħarraʔ EA → ʔitħaraʔ (Banjar 2003: 26)	'it got burnt'	ħrʔ(q in SA)	ħ, reflexive *t*

33	stamaʕ	SyA → tsammaʕ	‘he listened’	smʕ	s, reflexive *t*
34	stanad	SyA → tsannad	‘he leaned on’	snd	s, reflexive *t*
35	stawa:	SyA → tsawwa:	‘it became cooked’	swy	s, reflexive *t*
36	stalam	SyA → tsallam	‘he received’	slm	s, reflexive *t*
37	ʕtamad	SyA → tʕammad	‘he received baptism’	ʕmd	ʕ, reflexive *t*

Interestingly, the forms *(ʔi)tfaʕal* and *tfaʕʕal*, if considered reversed metathesis, occur when the consonant adjacent to *t*, C1, is the fricative (s), pharyngeals (ʕ, ħ) or liquids (l, r). That is the reverse of the *t* + Sibilant metathesis that occurs in most Semitic languages, Hebrew, Aramaic and Mandaic. If we hypothesize that metathesis itself did not occur in these dialects (SyA, EA, IA), and that the original form *(ʔi)tfaʕal* was retained, a question arises. Why specifically verbs that have sibilants and liquids did not metathesize unless it is a reverse metathesis.

It is worth noting that this reverse metathesis of SA Pattern VIII does not apply to all verbs in SyA even to those whose C1 is the fricative (s), pharyngeals (ʕ, ħ) or liquids (l, r), e.g., *stabaq* ‘he did before/in advance’, *ʕtaraf* ‘he admitted (in court or church)’, *ħtaqar* ‘he demeaned’, *ħtakar* ‘he monopolized’, *ltaʒaʔ* ‘thought refuge’, *rtama:* ‘threw himself’, *rtakab* ‘he committed (a murder)’. That is, these examples behave like verbs that have stops, nasals and other fricatives as C1, e.g., *ktasab* ‘he gained’, *qtadar* ‘he was able’, *qtasʿar* ‘it was limited to’, *ttafaq* ‘he agreed with’,[10] *ntasʿar* ‘he won a fight/war’, *ntaħar* ‘he committed suicide’, *ʃtarak* ‘he participated in’,

[10] The root for this verb is *wfq*; /w/ assimilates to reflexive *t*, so even if there is metathesis, it cannot be noticed.

and *ʒtahad* ‘he worked hard’. This study hypothesizes that these examples do not undergo reverse metathesis because they are borrowed from SA as they either maintain a SA sound such as the voiceless uvular stop [q] as in *stabaq* and *ħtaqar* or they are technical terms used in more formal contexts, e.g., in court, church, business or asylum as in *ʕtaraf*, *ħtakar*, *ltaʒaʔ* and *rtakab*. For these reasons, they maintain the generalized metathesized form of SA Pattern VIII in SyA. They are used either in their borrowed form or may have an alternative colloquial speech form. For example, the SA *rtama:* ‘threw himself’ and *ħtaqar* ‘he scorned’ have the alternative SyA colloquial forms *kabb ħaalu* ‘lit. threw himself’ and *nizel min ʕainu* ‘lit. fell from his eyes’, respectively. As for the consistently metathesized forms in SyA, if the original/reversely metathesized version of Pattern VIII *(ʔi)tfaʕal* is used without doubling C2, the meaning will be either ungrammatical or different from the intended meaning of the examples of *tfaʕʕal* in Table 2. For example, if we only reversely metathesize Example (36) to **tsalam*, it will not be accepted as a verb or will be considered ungrammatical. Thus, metathesis must be accompanied with doubling of C2 to be accepted in SyA, i.e., *tsallam*. Likewise, if we only reversely metathesize Example (34) to *tsanad*, the meaning will change to ‘he was supported’. In order to give the same meaning of SA Pattern VIII, we must double C2 in addition to metathesis, i.e., *tsannad*. All of these examples among others indicate that this morpho-phonologically conditioned reverse metathesis in SyA although not regular, like Hebrew sibilant metathesis (Hock 1985: 529–530), and occurs sporadically like Type-I, it is not random. Synchronically, this type of metathesis does not appear to be productive because it does not apply to borrowed SA Pattern VIII verbs that meet the triggering morpho-phonological conditions. However, this does not preclude the possibility that these borrowed verbs may undergo in the future the same reverse metathesis.

The doubling of C2 in the reversely metathesized verb can be explained in terms of different stress assignment rules in SA and SyA. In SA, if the final syllable is not superheavy, the stress falls on the penultimate if it is heavy (CVV or CVC) (Ryding 2005: 37). Otherwise, the stress falls on the antepenultimate syllable if the penultimate is a light CV (Ryding 2005: 37). SA Pattern VIII is disyllabic and does not contain a superheavy syllable. Thus, a verb such as *rtáxa:* will receive stress on the penultimate syllable. In SyA, stress is based on syllable weight, like in many other Arabic varieties. It falls on the rightmost bimoriac heavy syllable, such as CVV, CVVC and CVCC (Broselow 2018: 37). Thus, mere reverse metathesis of SA Pattern VIII verb will result in **traxá:* where the stress will fall on the second syllable because it is bimoriac CVV compared to the first syllable that is monomoraic. To preserve the stress of SA on the penultimate syllable, the penultimate should be not only a heavy syllable (Watson 2011: 21) but also have a priority of stress to the second bimoriac syllable. This can be achieved if we adopt Davis & Ragheb (2014) approach of geminate consonants as moraic and add weight to a syllable, unlike other consonants that close syllables, making CVC light and CVVC and CVCC heavy or bimoriac (Broselow 2018: 37). In their analysis of San'ani Arabic, Davis & Ragheb (2014: 12) found that syllables closed with a geminate CVG have 'a priority of stress [even] over a superheavy final syllable'.[11] Similarly, Al-Deaibes (2021: 169) applies prosodic weight to account for stress on word-medial, as well as word-final, geminates in Rural Jordanian Arabic, whereby the first consonant of the geminate 'contributes a mora to the coda of the first syllable'. Adopting a

[11] While Davis & Ragheb (2014: 12) use the word 'superheavy' to describe the second syllable of an example (*mak.tú:b* 'letter') that ends with CVVC, Broselow (2018: 37) considers such syllables bimoriac because stress in SyA can fall on word-final CVV (*da.ra.súu* 'they studied') as it can fall on word-final CVVC.

similar approach for SyA can explain the doubling of C2 of **traxá:* as a strategy to create a syllable that ends with a geminate consonant that adds weight to the first syllable, giving it a priority of stress as in San'ani Arabic, hence attracting stress and yielding *tráxxa:*. It is expected to have the same type of stress shift to the first syllable in this reverse metathesis in SyA even when the second syllable is CVC as it is considered lighter or monomoraic compared to CVV (Broselow 2018: 37).

An OT analysis is applied to account for metathesis in SyA and the accompanying gemination of C2. In OT, metathesis results from violating the constraint LINEARITY which leads to different orders of sounds in the input and output (McCarthy & Prince 1994, 1995). However, to account for the doubling of C2 and stress assignment, other relevant constraints are required for the analysis. These constraints are[12]

ONS	Every syllable has an Onset.
*CODA	Syllables do not have codas.
*COMPLEX	No more than one C or V may associate to any syllable position node.
MAX	Deletion of segments is prohibited.
DEP	Insertion of segments is prohibited.
INTEGRITY	No element of the input has multiple correspondents in the output.

[12] The constraints ONS, *CODA and *COMPLEX are adopted from Prince & Smolensky (2002). MAX, DEP, INTEGRITY, LEFT-ANCHOR(t), LINEARITY and IDENT(Stress) are adopted from McCarthy & Prince (1995). LEFT-ANCHOR(t) and IDENT(Stress) are adjusted to fit the current analysis. For other recent work on OT, see Davis & Baertsch (2012), Dutta (2012), and Ghorbanpour et al. (2019).

LEFT-ANCHOR(t)	Requires that the reflexive *t* be aligned with the left edge of the word.
LINEARITY	The linear order of the segments in the output is the same as their linear order in the input/ underlying form.
IDENT(Stress)	Stress assignment in the input is preserved in the output.[13]
WEIGHT-BY-POSITION	Coda consonants surface as moraic. (Hayes 1989)

The motivation for selecting and applying these constraints are as follows. The markedness constraints ONS, *CODA and *COMPLEX are required by the Arabic syllable structure that requires each syllable to have an onset, prefers light syllables such as CV, and avoids complex onsets and codas.[14] As for the faithfulness constraints, MAX and DEP, they are required to prevent deletion and insertion of segments that may affect the preferred syllable structure in Arabic. For example, deletion of a consonant or a vowel may lead respectively to onsetless syllable or complex onset or coda. LEFT-ANCHOR(t) is required to make sure that reflexive *t* aligns with the left edge of the word, as in the original Proto-Aramaic pattern *(ʔi)tfaʕal*. LINEARITY is required to avoid metathesis. INTEGRITY is required to account for the doubling of C2 in the SyA form *tfaʕʕal*. WEIGHT-BY-POSITION and IDENT(Stress) are required for stress assignment and preservation of the input stress, respectively. The different interactions and rankings of these constraints will illustrate how the SyA *tfaʕʕal* metathesizes and why C2 is geminated. This study takes the SA Pattern VIII form

[13] Compare to Farwaneh's (2020: 75) PP-IdentAccent constraint.

[14] Because ONS is never violated in Arabic, it was left out of the ranking. Similarly, because *COMPLEX, MAX, and DEP can be equally violated by SA and SyA forms, they are left out of the rankings.

ftaʕal to be the underlying/input form because of its continued use by SyA speakers, using the example /rtáxa:/.

Tableau 1 represents the ranking of the relevant constraints for SA Pattern VIII verb. In SA, LINEARITY must rank strictly higher than LEFT-ANCHOR(t) and WEIGHT-BY-POSITION for the candidate *rtáxa:* to win. All other candidates violate LINEARITY. INTEGRITY, *CODA and IDENT(Stress) are ranked higher because they are not violated by *rtáxa:*. Their ranking is irrelevant because even if they are ranked lower than LINEARITY, *rtáxa:* will still win. The ranking among the undominated constraints is irrelevant because none of them is violated by *rtáxa:* and so is the ranking between the dominated constraints because they are both violated by the winner.

Tableau 1. SA Ranking

/rtáxa:/	LINEARITY	INTEGRITY	*CODA	IDENT(Stress)	WEIGHT-BY-POSITION	LEFT-ANCHOR(t)
tráxxa:	*!	*!	*!			
tráxa:	*!				*	
traxá:	*!			*!		
☺→ rtáxa:					*	*

Tableau 2 represents the ranking of the same constraints for the SyA reversely metathesized verb. In SyA, IDENT(Stress), WEIGHT-BY-POSITION, and LEFT-ANCHOR(t) must rank strictly higher than LINEARITY, INTEGRITY and *CODA for the candidate *tráxxa:* to win. The domination of LEFT-ANCHOR(t) over LINEARITY results in reverse metathesis of SA Pattern VIII. Similarly, the domination of IDENT(Stress) and WEIGHT-BY-POSITION guarantees the doubling of

C2 which is required in SyA to preserve SA stress assignment and for the verb to be accepted as grammatical or semantically corresponding to the input form. There is almost, reverse ranking of constraints between SyA and SA especially that it is possible to rank IDENT(Stress) lower than LINEARITY, INTEGRITY and *CODA in SA without affecting the winner.

Tableau 2. SyA Ranking

/rtáxa:/	IDENT(Stress)	WEIGHT-BY-POSITION	LEFT-ANCHOR(t)	LINEARITY	INTEGRITY	*CODA
☺→ tráxxa:				*	*	*
tráxa:		*!		*		
traxá:	*!			*		
rtáxa:		*!	*!			

The Tableaux show that metathesis in SyA occurs as a result of strictly ranking LINEARITY lower than the undominated LEFT-ANCHOR(t). To achieve this metathesis without affecting stress assignment in the input and the grammaticality and/or semantics of the reversely metathesized verb, SyA requires IDENT(Stress) and WEIGHT-BY-POSITION to be equally undominated. Conversely, ranking LINEARITY higher among undominated constraints prevents reverse metathesis in SA.

5. Conclusion

This study offered a more focused and narrowed approach to

metathesis in SyA compared to other studies on metathesis in other Arabic varieties, such as Banjar (2003) and Jasim & Sharhan (2013). Although these two studies presented numerous examples from EA, Makkan (Banjar 2003) and IA (Jasim & Sharhan 2013), the generalizations made in these studies regarding consonants involved in metathesis did not account for all the consonants involved and did not present a rigorous and reliable phonological or morphological analysis of the presented examples.

In contrast, this study first discovered two types of metatheses in SyA: Type-I phonologically conditioned metathesis and Type-II morpho-phonologically conditioned metathesis. By closely examining the data, it was able to zero in on conditioning factors in each type of metathesis. In Type-I metathesis, at least one of the four root consonants *ʒ*, *f*, *ʕ* and *ħ* is involved in metathesis with an alveolar fricative (z, s), liquid (l, r) or guttural (q/ʔ) in specific positions within the root regardless of word derivation or part of speech. Type-II metathesis involves reverse metathesis of SA reflexive Pattern VIII *(ʔi)ftaʕal* into *tfaʕʕal* with doubling of C2. This reverse metathesis only occurs when the root consonant adjacent to reflexive *t* is the fricative (s), pharyngeals (ʕ, ħ) or liquids (l, r). An OT analysis revealed that *tfaʕʕal* is metathesized due to strictly ranking the LINEARITY constraint lower than LEFT-ANCHOR(t). Geminating C2 is explained in terms of prosodic weight of the syllable to maintain stress assignment of the input and verb grammaticality and/or semantic correspondence with the input. Thus, the constraints IDENT(Stress), WEIGHT-BY-POSITION must dominate INTEGRITY and *CODA to allow gemination that contributes moriac weight to the penultimate syllable to receive a priority of stress over final heavy syllables.

Although both types of metatheses are irregular, sporadic and do not occur in all words or verbs that have the triggering or favoring

phonological or morpho-phonological conditions, they still show systematicity. That is, they do not occur randomly between any kind of consonants and in any word position or verb Pattern. Rather, specific conditions must be met, whether phonological in Type-I or morpho-phonological in Type-II, for metathesis to occur.

Furthermore, in both types of metathesis in SyA, mostly sonorant consonants are involved, which supports previous proposals by Blevins & Garrett (1998: 513) and Ultan (1978) that metathesis occurs mostly in the environment of sonorant sounds such as liquids (laterals, rhotics), laryngeals (h, ʔ), pharyngeals (in Arabic ʕ, ħ) and glides/ vowels (j/i, w/u). This also supports the incomplete observations of Banjar (2003) regarding Makkan and EA and Jasim & Sharhan (2013) regarding IA. In addition to that, this study was able to identify the specific sonorant and non-sonorant sounds involved in each type of metathesis. In Type-I, in addition to the sonorant liquids (l, r) and fricatives (z, s), gutturals such as *q* and its colloquial variant *ʔ* could be involved. This involvement is indicative that the association of a consonant with a guttural feature similar to that associated with other pharyngeals and laryngeals licenses the consonant to undergo metathesis. While liquids are generally more sonorant than fricatives, the degree of sonority does not play a role in this type of metathesis (cf. Ultan 1978: 374). Additionally, the four consonants *ʒ*, *f*, *ʕ* and *ħ*, of which one must be involved in the metathesis, are also sonorant.

In Type-II, the study specifies a slightly narrower list of sonorant consonants involved in reverse metathesis with the reflexive *t*: the fricative (s), pharyngeals (ʕ, ħ) and liquids (l, r). We know that *ʕ* and *ħ* are assigned higher sonority values than other fricatives by Angoujard (1990: 15) and so are liquids by Ultan (1978). However, this study shows, based on both types of metathesis, that alveolar fricatives, particularly *s* and *z*, in SyA can frequently undergo

metathesis. It also shows that both consonants involved in Type-I metathesis are usually sonorants with one exception, metathesis with the gutturals *q* and *ʔ*. Hence, what makes SyA different from other Semitic languages in which metathesis mainly occurs in the reflexive verb pattern between the reflexive stop *t* and a sibilant fricative the following properties: i) the presence of phonologically conditioned Type-I metathesis; ii) the different sonorant consonants involved in Type-II metathesis from the sibilants involved in Hebrew (Jones 2016), Aramaic (Aïm 2005), and Mandaic (Malone 1971) reflexive pattern metathesis; and iii) the greater specificity in metathesis positions and fricatives involved.

Finally, this study contributes to the typology of metathesis in Semitic languages. The analysis and findings of this study should be replicated in other Arabic varieties to extend this typology further and to have more reliable points of reference as to what happens in different Arabic and Semitic varieties and what such findings can inform us about similarities, differences and future changes in these languages or varieties.

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