مجلة جامعة جازان للعلوم الإنسانية
Jazan University Journal of Human Sciences (JUJHS)

# تحليل صرفي–صوتي "للاحتكاك" و "التعطيش" للاحقة المؤنثة [–كِ] في اللهجات السعودية

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# A Phono-morphological Analysis of 'Affrication' and 'Frication' of the Feminine Suffix [-ki] in Saudi Dialects

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| DOI | ACCEPTED القبول | Edit التعديل | RECEIVED الإستلام |
|---|---|---|---|
| https://doi.org/10.37575/h/edu/22002 | 19/12/2023 | 07/11/2023 | 10/10/2023 |

| NO. OF PAGES عدد الصفحات | YEAR سنة العدد | VOLUME رقم المجلد | ISSUE رقم العدد |
|---|---|---|---|
| 19 | 2024 | 12 | 2 |

## الملخص:

الاحتكاك و التعطيش هما طريقتان لوصف نطق الحروف الساكنة. تنتج الصوامت الاحتكاكية عن طريق تقريب موضعين من مواضع النطق من بعضهما ودفع الهواء بينهما عبر ممر ضيق مما يحدث صوتا مسموعاً. تبدأ صوائت التعطيش في نطقها كصوت متوقف وتنتهي كصوت احتكاكي. بالنسبة "للتعطيش" و "الاحتكاك" فهما من العمليات أو الأنماط التي تؤثر على الأنظمة الصوتية في العديد من لغات العالم. على سبيل المثال ، في اللغة العربية الحديثة و الكلاسيكية ، يعتبر الاحتكاك ظاهرة صوتية لغوية تؤثر على كاف المخاطبة المؤنثة و تقلبها الى الصوت الاحتكاكي (–س) أو (–ش). بينما يؤثر التعطيش على كاف المخاطبة المؤنثة و تقلبها الى (–تس)، (–تش) أو (تچ). انتشرت هذه الظواهر أو السمات اللغوية بين لهجات الجزيرة العربية منذ عصر ما قبل الإسلام حتى الآن. بل أن لها مصطلحات عربية خاصة كالكشكشة و الكسكسة و التشتشة و التستسة و التچتچة. أعتمدت هذه الورقة العلمية على نظرية بوجي للتشكيل الصرفي (٢٠٠٩ ، ٢٠١٠ ، ٢٠١٦ ، ٢٠١٩) لتحليل العلاقة بين التشكيل الصوتي و الصرفي لكاف المخاطبة المؤنثة (–كِ) و معناها باعتبارها علامة لغوية لها علاقة منهجية بين الشكل والمعنى. وضح هذا البحث أن استخدام الأنماط الصوتية المختلفة لكاف المخاطب المؤنثة مثل (–س)، (–ش)، (–تس)، (–تش) أو (تچ) لها علاقة بالمعنى الاجتماعي و الثقافي، حيث أنها مرتبطة بالخلفية الاجتماعية والثقافية للمتحدثين ولا سيما لهجاتهم أو المنطقة التي ينتمون اليها في المملكة العربية السعودية. و أخيراً، يساعد هذا العمل على فهم وتفسير التباينات اللهجية وتأثيراتها على التشكيل الصوتي و الصرفي لكاف المخاطبة المؤنثة في اللهجات السعودية.

**الكلمات المفتاحية:** الهياكل المختلفة، الاحتكاك، التعطيش، الكشكشة، الكسكسة.

## Abstract:

Fricatives and affricates are two manners of articulation describing the process of producing consonants. A fricative is produced when two articulators are placed in close proximity, by creating a narrow channel with the mouth through which air is forced. An affricate is the consonant that is initiated as a stop and ends as a fricative. 'Affrication' and 'Frication' are phonological processes used to produce sounds in multiple languages. In modern and classical Arabic, 'frication' realizes the second feminine singular object/possessive pronouns' (2FSPs) suffix [-ki] as the fricatives [-s] or [-š], while 'affrication' realizes it as an affricate, such as [-č], [-tš] or [-ts]. These processes are associated with Arabian peninsula dialects and have existed since the pre-Islamic era. They are present in Arabic terms; i.e. Kaškašah 'كشكشة', Taštašah 'تشتشة' , kačkača 'كچكچة', Kaskasah 'كسكسة' and Tastasah 'تستسة'. This study is unique in that it aims to examine the interface between the many levels of the form-meaning representation of 2FSPs in distinct Saudi Dialects (SDs) by employing Booji's (2009, 2010, 2016, 2019a) Construction Morphology. 2FSP is considered a linguistic signifier with a systematic form-meaning relationship and so this research also explores the relationship between the form of the allostructions (i.e. morpho-phonological variants) of 2FSP (i.e. [-s], [-ts], [-š], [-tš] and [-č]), and the conceptual meaning (i.e. semantics and pragmatics) in SDs. The study found that the phono-morphological construction demonstrates that 2FSP allostructions indicate the socio-cultural background of speakers (i.e. their dialects and the Saudi region where they belong). These allostructions are instantiations of constructional schemas which function as both a model for existing forms and a guide for forming new forms. These schemas reduce the degree of arbitrariness in the form-meaning relationship of the 2FSP allostructions. This study contributes to advancing the understanding and interpretation of [-ki] dialectal variations while highlighting key implications for phono-morphological construction in SDs.

**Keywords:** Allostructions, Affrication, Frication, Kaškašah, Kaskasah.

## 1. Introduction:

Phonological processes play a significant role in modern generative and natural phonology. They provide a thorough explanation of how phonetic, morphological, and lexical components work in concert to generate the conditions required to produce a specific phonological structure (Alrasheedi, 2015; Bora and Hazarika, 2022). They can be reviewed to identify how the sounds of a particular language transform over time. They also clarify how the sounds of a language are used to produce it. A variety of phonological processes have been the subject of linguistic studies, including assimilation, dissimilation, palatalization, nasalization, velarization, pharyngealization, as well as, affrication and frication.

Affrication denotes a phonological process in which a plosive requires a fricative release (Trask, 2004). In Classical Arabic, this influences the velar stop [k], which is altered so as to be pronounced as the fricative [-tš] or [-ts]. In addition, frication can refer to the phonological process in the Arabic language by which the velar plosive [k] is substituted by a fricative [s] or [š]. These are four variants of the second feminine singular oblique (object, possessive) pronoun suffix (Owens, 2103).

Early Arab grammarians, including Sibawaih, Ibn-Jinni and Ibn Yaʿish, recognised and discussed these ancient phonological phenomena, designating them Kaškašah and Kaskasah (Basha, 2019; Al-Azraqi, 2007a; Owens, 2103). Thus, instead of referring to places of articulation, Arab linguists use the terms Kaškašah and Kaskasah derived from the morphemes [-kiš] and [-kis] to define these linguistic phenomena.

### 1.1 Kaškašah

Kaškašah is common in ancient South Arabic and South Semitic languages, such as Amharic and modern South Arabian (Basha, 2019; Retsö, 2000). Historically it was used by a number of ancient tribes within the Arabian Peninsula (i.e. Tamim, Mandur, Rabia'a and Bakr ibn Wail), and is still present in Bahraini, Omani, Hadrami, and Dhofaria dialects, as well as some dialects of southern Iraq and southern Saudi Arabia, Yemeni and the Al-Murra tribe (Basha, 2019; Retsö, 2000). It affects the sound [k] in the second feminine singular object and possessive pronouns (2 FSP) [-ki], altering it to [š] or [tš] (Al-Azraqi, 2007a; Al-Rafe'ie, 2013; Dodsworth, 2017; Basha, 2019).

The first type of the Kaškašah refers to the insertion of [š] after [k] in [-ki], such as: [marratu bikši] "I passed by you" instead of [marratu biki] (Al-Rafe'ie, 2013; Al-Azraqi, 2007a; Basha, 2019). The second type refers to the substitution of [k] with [š], such as: [marratu bikš] "I passed by you" instead of [marratu biki] (Al-Rafe'ie, 2013; Al-Azraqi, 2007a; Dodsworth, 2017; Basha, 2019). Al-Rafe'ie (2013) further argued that use of [š] instead of [k] indicates an Arabic phonological process known as Shanshnah, which is associated with Yemen. The main difference between

Šanšanah and Kaškašah is that the use of [š] instead of [k] is not limited to 2FSP (Basha, 2019; Al-Rafe'ie, 2013), but can also be used with the second masculine singular pronoun, i.e. [labbaɪʃ ałłhumma labbaɪš] "Here I am, O God, here I am" instead of [labbaɪk ałłhumma labbaɪk]. The third type, the Kaškašah, refers to the substitution of [ki] with [tš], such as: [marratu bitš] "I passed by you" instead of [marratu biki] (Al-Azraqi, 2007a; Dodsworth, 2017). Al-Azraqi (2007a) further claimed that the current situation in the Arabian Peninsula differs slightly from that previously reported by Arab linguists, with the form indicating 2FSP being [-tš] instead of [-kiš]. She characterized this feature as a type of palatalization. Al-Obaid (2015) described this particular phonological phenomenon as Taštašah, viewing it as distinct from Kaškašah. Taštašah is the replacement of any [k] sound with [tš] in any part of the word, and is not restricted to 2FSP. This feature occurs in the east and northeast of Saudi Arabia, and in some dialects spoken in Kuwait, Bahrain, Qatar, the United Arab Emirates, Iraq, and southern parts of Jordan and Syria.

Owen (2013) introduced the term kačkača, which is derived from kaškašah. In addition, Owen (2013) appraised Sibawaih's accuracy when describing the differences between [tš] and [č], where [tš] is the voiceless palato-alveolar affricate. However, Sibawaih's designation comprises the composite phonetic features [ʤi:m], which is the letter for the sound [ʤ], and [ši:n] is the letter for the sound [š] (Owen, 2013). Holes (1991) described this form as an alveolar affricate. It is found in the eastern and northern regions of the Arabian Peninsula, in some modern dialects in Kuwait, northern Qatar, and along the Emirate coast. Moreover, it is a feature of the Bedouin dialects of the north-western Syrian desert, along with the east and north-east of Amman, as well as among the north-east and western desert edge of the Bedouin village population of Lower Iraq (most notably in Baghdad) (Holes, 1991). It is also found in a number of eastern dialects in Saudi Arabia, including some Hasawi and northern dialects, i.e. the Yam tribe dialect from Wadi Najran (Holes, 1991).

Kaškašah and Taštašah have counterparts in classical and modern Arabic, known as Kaskasah and Tastasah. Since the term Tastasah was first mentioned in 2015 by Al-Obaid, the next paragraph refers to the more common and most widespread term, Kaskasah.

### 1.2 Kaskasah

Kaskasah, which is still in use, is an ancient phonological phenomenon discussed by linguists particularly in reference to the Arabian Peninsula; for example, Watson (1992) states that "kaskasa receives fewer mentions than kaškaša". This phenomenon is attributed to Bakr ibn Wael, Hawazen, and Tamim (Basha, 2019; Al-Azraqi,

2007a) and is currently found in Najd, stretching from central Saudi Arabia towards the northern region (Al-Azraqi, 2007b). It appears in three formulations, affecting the sound [k] in 2FSP [-ki] and changes it to [s]. The first form of kaskasah involves combining [s] and [k] in 2FSP morpheme, i.e. [marratu biksi] “I passed by you” instead of [marratu biki]. This usage is frequent among certain Arabian Peninsula tribes, such as Hawazen, Rabiia’a, Mudr, and Tamim (Al-Rubaat and Qarqaz, 2019; Basha, 2019). The second form of kaskasah occurs when the sound [k] is exchanged for the sound [s], i.e. [marratu bis] “I passed by you” instead of [marratu biki]. This usage is commonplace among some Arabian Peninsulas’ tribes, including Bakr ibn Wael, Rabiia’a, and Mudr (Al-Rubaat and Qarqaz, 2019; Basha, 2019). Finally, the substitution of [-ki] with [ts], as in [marratu bits] “I passed by you” instead of [marratu biki], is the third form of kaskasah. This form is most popular in Najdi, Qasimi, and Hail dialects (Al-azraqi, 2007b).

Al-Obaid (2015) described this particular phonological process as Tastasah, which he stated to differ from Kaskasah. Tastasah denotes the replacement of any [k] sound with [s] in any portion of the word, and as such is not limited to 2FSP.

The terms Kaškašah, Taštašah, kačkača, Kaskasah and Tastasah are used to describe linguistic phenomena present in a variety of Arabic dialects since ancient times. Their existence and use historically is unrelated to modern dialects. However, they embody interesting linguistic dimensions that introduce a variety of linguistic features. Thus, the current research examines their morpho-phonological construction and the relationship between their forms and socio-cultural meaning.

The following section presents general information concerning where kaskasah or kaškašah are spoken in Saudi Arabia, in relation to the five major regions.

### a. Regional Contexts


**Figure 1: Saudi Arabic dialect map (source: Alghamdi 2020)**

Figure 1 represents the main dialects in Saudi Arabia, in relation to the main five regions: (1) Najd (central); (2) Hijazi (western); (3) Gulf (eastern); (4) Southern; and (5) Northern. Although each dialect is associated with a distinct geographical location, with its own unique culture and linguistic environment, they all contain either kaskasah or kaškašah.

Moreover, [-ts] is commonly used as a 2FSP suffix in central Saudi Arabia, including Najd and Al-Qasim (Al-Azragi, 2007). It is also used in Bisha at the southwest of the country, and in Jaba Shammar in the far north (Holes, 1991), as well as the Al-Jawf oasis, which is located close to Skaka, in the north of Saudi Arabia. It can also be found in Hayl, in north-western Saudi Arabia (Al-Rashidi, 2015) and in Hijaz, among the Banuý ʕamr of the Harb in Wadi al-Furüʕ and the Sihliyya of ʕAwf (branch of the Harb) in Wadi an-Nagiʕ southeast of al-Madena (Al-Hazmy, 1975). Meanwhile, [s] occurs in the middle regions of Saudi Arabia, including Najd and Al-Qasim, and some parts of the north near the Al-Jawf oasis (Al-Azragi, 2007b).

The use of [š] is common in the south and southwest of Saudi Arabia, including Najd, particularly where the western border meets Asir's margin (Al-Azraqi, 2007b). Moreover, the use of [tš] or [č] is common among speakers originating from the eastern region of Saudi Arabia, including Dammam, Dhahran and Al-Khobar, Al-Qatbf, Al-Ahsa, and Jubail (Al-Azraqi, 2007b).

The purpose of this paper is not to address the historical development of kaškašah and kaskasah in the Arabian Peninsula, nor does it explore the phonological processes of affrication and frication of the velar [k]. Rather, it focuses on the phono-morphological construction of the kaškašah and kaskasah, analysing the interface between the various levels of representation that inform both the form and meaning of 2FSP.

## 2. Phono-Morphological Construction

Construction morphology is a subset of construction grammar, which maintains particular types of construction (i.e. linguistic entities), which contribute to generalisations about word morphology (cf. Van Der Spuy, 2020; Booij and Audringb 2017; Croft, 2001). Moreover, constructions are, in general, defined as a systematic form-meaning correspondence (cf. Van Der Spuy, 2020; Booij and Audringb, 2017; Croft, 2001).

In terms of the standard assumptions made concerning the construction of words, there are several schemas that explicate sets of paradigmatically related words as formalized by a systematic form-meaning correspondence (Booij, 2009, 2010, 2019a). The addition of the English suffix -er to the end of a verb to show an individual's occupation or job, or to indicate that they undertake a specified action, i.e. bake > baker, eat > eater, run > runner *and* write > writer (Booij, 2009). This group of words produce an abstract schema that conveys a generalization about the structure and meaning of 'one who' nouns ending in -er, as a foundation for creating new 'one who' nouns in English ending in -er. This schema is as follows:

1) [[x]V –ər]N 'who Vs'

The x in the schema stands for the phonological form of the base verb, and the V in the 'who Vs' stands for the meaning of the corresponding verb.

Alternative examples of an occupation morpheme arising from Damascus Arabic reveal different abstract schema: xabbaaz 'baker'; xaddaam 'servant'; bawwaab 'doorkeeper'; and sammaak 'fish seller' (Davis and Tsujimura, 2018, p.3, as cited from Booij, 2019a). The nouns indicating occupations share the following schema.

2) (C1aC2C2aaC3)i ↔ Ni ↔ [Occupation]SEMi [1].

This schema reveals that phonology is crucial to the appropriate characterization of the morphological construction (Booij, 2019a). While the morphological structure refers to lexical organisation and affixes, the phonological structure refers to sound segments and prosodic categories of the word (Booij and Audring, 2017). In addition, the constructional schema (2)

[1] C stands for consonant, N stands for noun, SEM stands for semantics or meaning, and the lower case i stands for the correspondence relations.

demonstrates the importance of the systematic relationship between the three levels of grammar in construction words: phonological form (PHON), morpho-syntactic properties (SYN) and meaning (SEM) (Booij, 2019a).

Thus, correspondence between the three levels of grammar for this set of occupation nouns in Damascus Arabic is as follows.

3) PHON: (C1aC2C2aaC3)i

SYN: Ni

SEM: [OCCUPATION]i

According to schemas (2) and (3), the phonological shape constitutes the primary motivating factor for the shared meaning component. Booij (2019a) refines the definition of 'morphological construction', which has come to consider each word as a linguistic sign, and a systematic pairing of form-meaning relation, with each word conveying a complex piece of information and levels of grammar. The following section briefly discussed the constructional approach for word formation, concentrating on the tripartite parallel architecture of the grammar illustrating the relation between 'construction' and 'hierarchical lexicon' of complex words.

**2.1 Construction Morphology and Stratification:**

Croft (2001), Jackendoff (2002) and Booij and Audringb (2017) considered that in both construction morphology and parallel architecture constructions, every word is a linguistic sign combining both form and meaning. Similarly, three parallel representations for forms and meanings constitute fundamental components of the parallel architecture of the constructional schemata, as follows:

Phonological structure ↔ Morpho-Syntactic structure ↔ Conceptual structure

Each structure is subject to the regulations (or limitations) applying to specific types of representation. Firstly, the phonological structure is regulated by prosodic restrictions, i.e. those for creating syllables and higher-level prosodic aspects. Secondly, the morpho-syntactic structure is regulated by syntactic and morphological restrictions. Thirdly, the conceptual structure consists of the semantic (SEM), pragmatic (PRAG), and discourse (DISC) properties of language constructs (Jackendoff, 2002; Booij and Audringb, 2017). The double arrows in the above schema represent interfaced relations between these various structures within a particular language construct. According to Booij and Audringb (2017), Croft (2001) presented a similar perspective, as follows:

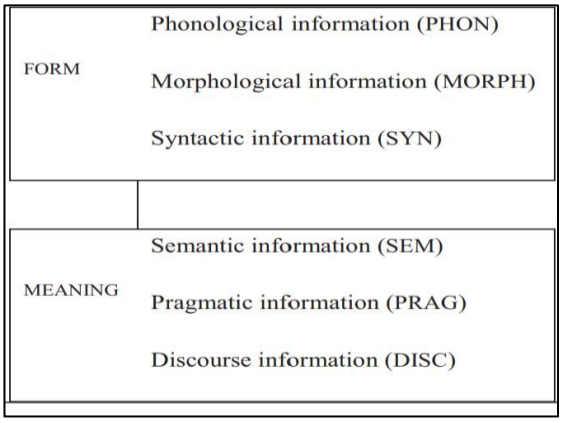


**Figure 2: Constructions as pairings of FORM and MEANING (Booij and Audringb, 2017)**

The above figure illustrates that constructional schemas for words have three levels, revealing that each word specifies the connections between three different types of structure. Moreover, the interface between the various levels of representation in a constructional schema may be subject to universal rules or restrictions that are applicable to several schemas (Booij and Audringb, 2017).

A similar perspective was identified by Halliday and Matthiessen (2014), who claimed that any linguistic sign is part of a stratified dynamic abstract system and is itself stratified. They identified stratification as a semiotic hierarchy, containing elements allowing for further analysis with mutually defined relationships. Halliday's division of the sign into two strata shows the relationship between the stratum of content (i.e. the meaning or conceptual structure) and the stratum of expression (i.e. the form or phonological and morpho-syntactic structures) (Halliday and Matthiessen, 2014). The stratum of content expands into two strata: firstly, lexicogrammar (the wording) and secondly, semantics (the meaning). On the other hand, phonetics (speech sounds) and phonology (speech sound structure) form two additional strata added to the stratum of expression of the spoken signs. Halliday and Matthiessen (2014) viewed these strata as interconnected in the human mind regarding realisation, leading them to present a model of realisation among the strata from the speaker's perspective, as follows:

**Table 1: From Eco-social Environment to Soundwaves (Halliday and Matthiessen 2014, P. 26)**

| | | |
|---|---|---|
| [from environment to] meaning: | interfacing, via receptors | semantics |
| [from meaning to] wording: | internal organisation | lexicogrammar |
| [from wording to] composing: | internal organisation | phonology |
| [from composing to] sounding: | interfacing, via motors | phonetics |

Halliday assumed that the speaker commences meaning-making for a word on the content stratum, which is further separated into semantics and lexicogrammar (Halliday and

Matthiessen, 2014). He further asserted that the speaker initially realizes their internal experience into meaning in specific situational and sociocultural contexts, i.e. the semantic stratum.

The second stage occurs when speakers realize the conceptual structure of meaning through wording, i.e. the lexicogrammatic stratum. Morpho-syntax structure does not form separate strata, but is rather an aspect of grammar or lexicogrammar (Halliday and Matthiessen, 2014). Halliday (2003) argued that lexicogrammar revolves around expressive and communicative functions, being a fundamental aspect of language's meaning-making structure. Consequently, the representation of a word that has meaning in particular situational and sociocultural contexts can be found in fixed forms at the most delicate end of the lexicogrammatical system (Halliday and Matthiessen, 2014).

The parallel architecture constructs described by Croft (2001), Jackendoff (2002) and Booij and Audringb (2017), along with Halliday and Matthiessen's (2014) stratification of linguistic signs, allow for the natural and dynamic realisational relations between the strata of the form and meanings.

Booij and Audringb (2017) claimed that, in the default scenario, it is not only the word's lexical specification that defines the interface between the various levels of representation between form and meaning. Instead, they argued the same is valid for word constructional schemas, which offer broad generalizations concerning the constructions of words. Therefore, in a constructional schema, the interface between the various layers of representation may be subject to general rules or restrictions applicable to several schemas.

**2.2 Construction Morphology and Allomorphic Stratification:**

Booij and Audringb (2017) stated that the simultaneous accessibility of phonological, syntactic/morphological, and semantic levels is a critical component of Parallel Architecture in constructing words. In addition, they considered that, in order to express generalisations on the morphological level, it is vital that information on the level of the phonological structure is available. Allomorphs are phonetic variations of morphemes, but rather than creating new words, they change how they sound. Thus, the phonological properties of affixes play a role in constraints on their construction (Booij and Audringb, 2017). Moreover, the phonological output conditions govern the selection of allomorphs and competing affixes (Booij and Audringb, 2017).

Hence, allomorphy should be accounted for mainly in the lexical construction (Booij, 2012). For instance, tje, je, pje, kje, and etje are five allomorphs of the Dutch diminutive suffix (cf. Booij, 2019b; Booij, 2012; Booij, 1999). They are attached to nouns, adjectives, some verbs, and

several prepositions. The stem's phonological shape determines which allomorph will be used. In addition, it is proposed that a set of ordered phonological rules may be used to create these five allomorphs from one underlying form, [tjə] (cf. Booij, 2019b; Booij, 2012; Booij, 1999). This topic was extensively discussed by Dutch linguists, as shown in the references provided in Booij (1999) and Booij (2019b). All these shapes of morphemes convey the same meaning with regard to the diminutive.

Cappelle (2006) used the term 'allostructions' to describe construction words that use different allomorphs capable of altering the sound of the affixes without changing their meaning. This refers to a 'paraphrase relation' between near identical constructions (Audring 2019; Kapatsinski, 2018). Cappelle (2006) stated:

> In a Construction Grammar architecture, the existence of allostructions is fully expected … (generally known as allomorphs) [which] include form-meaning pairings on the morphological level ... The notion 'allostruction' might even be further generalized to the domain of phonology. Inasmuch as specific sounds can be conceptualized as instances of one and the same more abstract phonological schema (a phoneme), we can regard these sounds not only as allophones … but also as allostructions of one another: tiny formal variants of a single acoustic 'concept' ... In short, just as the notion of construction itself stretches from morphological (and perhaps even phonological) units all the way up to sentence types, so we can assimilate formal variation at all levels of grammatical description to the notion of 'allostructions'. (Cappelle, 2006, pp. 21-22)

A well-known example is the English noun plural suffix -s, which has three allostructions [s], [z] and [əz]. Van der Spuy (2020) discussed the schemas of the phonological alternation of the English plural as follows[2]:

4) '/z/ suffixation'

<X/ωi ↔ [N, sg]i ↔ [SG[SEM]]i > z <Xz/ ωj ↔ [N, pl]j ↔ [PL[SEM]]j>

5) '/s/ suffixation'

<XC[ stri:-, vd:-]/ ωi ↔ [N, sg]i↔ [SG[SEM]]i> ≈ <XC[ stri:-, vd:-]s/ ωj ↔ [N, pl]j ↔ [PL[SEM]]j>

[2] Abbreviations and symbols: C – 'consonant'; The variables i and j stand for the lexical indexes on the phonological, syntactic, and semantic properties of words; N – noun; SEM – a variable over lexical meanings; PL/pl – plural; SG/sg – singular; stri – 'strident'; vd – voiced; angle brackets < > mark the boundaries of a schema; ±–'either marked or not marked for a given feature'; ↔ – 'corresponds with'; ≈ – 'is in a paradigmatic relationship with'; Capital letters X, Y, Z are variables over sequences of phones or phonemes (Van der Spuy 2020, p. 2; Booij 2010, p. 4).

6) '/əz/ suffixation'

</XC[stri:+]/ ωi ↔ [N, sg]i ↔ [SG[SEM]]i> ≈
</XC[stri:+]əz/ ωj ↔ [N, pl]j↔ [PL[SEM]]j>

The first parts of the schema, which appear on the left (i.e. </X/ωi ↔ [N, sg]i ↔ [SG[SEM]]i >; </XC[ stri:-, vd:-]/ωi ↔ [N, sg]i↔ [SG[SEM]]i> ; or </XC[stri:+]/ ωi ↔ [N, sg]i ↔ [SG[SEM]]i> ) state that an English singular noun consists of a sequence of phonemes constituting a phonological word (ω)'. The second parts of the schema, which appear on the right, are known as 'second-order schemas' (Booij and Audringb 2017), because they are schemas of schemas. The second-order schema provides meaningful data for the systematic construction of the English plural. To clarify further, Schema 4 of the English plural suffixation /z/ will be read as "Given a singular noun with the phonological form /X/, its plural will have the form /Xz/" (Van der Spuy, 2020). The nouns ending with non-strident voiceless consonants [p t k f q] will have the plural suffix /-s/. Schema 5 will thus be read as "Given a singular noun of the form /XC/, where C is a voiceless non-strident consonant, the corresponding plural will have the form /XCs/" (Van der Spuy, 2020). Elsewhere, nouns ending with strident consonants [s z ʃ ʒ tʃ dʒ] will have the plural suffix /-əz/. Thus, Schema 6 will be read as "Given a singular noun of the form /XC/, where C is a strident consonant, the corresponding plural will have the form /XCəz/" /" (Van der Spuy, 2020).

The phonological distinctions between these plural subschemas are reflected in the use of different allostructions [-s], [-z] and [-əz]. However, it is expected that the symbol SEM will remain meaningful over the entirety of the second-order schema, as it denotes that which is consistent in the meaning, in this case 'the plural'.

The following section offers an overview of 2FSP morpheme in Saudi Arabic dialects with a variety of phonological variants (allostructions). All these variable allostructions convey 2FSPs, indicating the differing socio-cultural backgrounds of each speaker.

**a. Phono-Morphological Construction and 2FSP**

7) < [[[X] Ni, Vi, Part.i, Prop.i -*k* 2SP -*i* {Gen., Acc.}] *ω*i] Nj, Vj, Partj, Propj ↔ [2FSP, SA SEMi]j >

It should be noted that Schema 7 (above) is not very informative, as it offers a very general schema for standard Arabic 2FSP attached to a present or past V, N, Part. or Prop. The suffix [-ki] is represented as a bound morpheme. As discussed previously in Section 2, the standard Arabic 2FSP [-ki] realizes a two-in-one morpho-syntactic case mark, whereas [-k] alone presents the second singular object/possessive pronoun, and the vowel [-i] presents the *Kasrah*. Curly brackets are used to denote alternative constituents. So, *Kasrah* denotes the Genitive (Gen.) or Accusative (Acc.) case. The variable x denotes the phonological shape (i.e. the

form) attached to the suffix [-ki]. In the current case, this could be V, N, Part. or Prop. The lower case 'i' attached to V, N, Part. or Prop. is the lexical index standing for the (input).

Moreover,(ωi) states that the input of the V, N, Part. or Prop. and the attached 2FSP consist of a sequence of phonemes constituting a phonological word. Firstly, the variable 'j' stands for the construction (output); secondly, ↔ stands for systematic correspondence between form and meaning operator for the 'negation' meaning; thirdly, 2FSP stands for the second feminine singular object/possessive pronoun; and fourthly, SA stands for standard Arabic. In addition, SEMi stands for meaning of V, N, Part. or Prop. With the base coindexed by 'i'. The overall meaning is subsequently coindexed by 'j'.

Schema 7 becomes more meaningful with the inclusion of second order schemas, which are necessary for a proper account of the phono-morphological processes impacting on 2FSP in Saudi Dialects (SDs).

8) < [[[X] Ni, Vi, Part.i, Prop.i -*k* 2SP -*i* {Gen., Acc.}] *ω*i] Nj, Vj, Partj, Propj ↔ [2FSP, SA SEMi]j > ≈ < [[[X] Ni, Vi, Part.i, Prop.i {-s, -ts, -š, -tš, -č}2FSP] *ω*i] Nj, Vj, Partj, Propj ↔ [2FSP, SDs SEMi PRGi]j >

The second order schema explicates the changes influencing 2FSP in SDs. The symbol ≈ indicates the paradigmatic relation between two constructional schemas. The changes that occur between the first and second schema are entirely phonological. In addition, the genitive and accusative morpho-syntactic case [-i], which appear in the standard Arabic in the first schema, do not appear in the second order schema. Furthermore, 2SP [-k], which appears in the standard Arabic in the first schema, is changed to one of the phonological variants appearing between the curly brackets [-s], [-ts], [-š], [-tš] or [-č]. The use of these alternatives is unrelated to phonological rules, but rather depends on the region of the dialect in Saudi Arabia (cf. Al-azraqi, 2007b). Realization of these variables depends on a number of socio-cultural contexts, i.e. the socio-cultural background of the speakers, including factors such as dialect, education, and gender. This highlights the need for additional work to be done in this point of social-cultural context, and the aim of the current study is to act as a starting point for future research examining the socio-cultural norms or factors influencing 2FSP usage.

As discussed previously in point 3.1, each linguistic sign indicates connections between three different levels: firstly, the phonological structure; secondly, the morpho-syntactic structure; and thirdly, the conceptual structure. The phonology and morpho-syntax structures are related to the form, and the conceptual structure to the meaning. According to Jackendoff (2002) and Booij and Audring (2017), the SEM, PRG, and DISC aspects of language constructions make up the conceptual structure. In the second order schema, besides the SEMi, which denotes the logical meaning of 2FSP suffix (i.e. its semantics), PRGi is added to show

that 2FSP suffix can carry social-cultural meaning behind it (i.e. its pragmatics).

The most obvious socio-cultural implications of the different phonological variants of 2FSP suffix in Saudi Arabia concern the various SDs and regions. This indicates that listeners can guess the dialect or region of the speaker if he/she uses one of the phonological variables of 2FSP. For example, if the speaker employs [-š] as 2FSP suffix, this reveals that he/she is from (or is speaking the dialect of) the south or southwestern region of Saudi Arabia. In addition, when a speaker uses [-č] for 2FSP, this indicates that he/she speaks the Eastern Saudi dialect. For additional similar examples, please see Section 1.3.

## 3. Phono-Morphological Changes of 2FSP in Arabic

2FSP is realized as [-ki] in Classical Standard and Modern Standard Arabic (Basha, 2019; Owen, 2013; Al-Azraqi, 2007a; Watson, 1992). It does not occur independently, but attached to past and present verbs, nouns, prepositions, and particles, being the counterpart of the English *you* or *your*, singular, feminine, and attached to the following: (I) nouns appearing in the genitive case 'possessive'; (II) particles occurring in the genitive case; (III) propositions occurring in the genitive case; and (IV) verbs occurring in the accusative case, as the object of a verb (cf. Basha, 2019). For example:

| | | | | |
|---|---|---|---|---|
| 1. | [zara] | [-k] | + [-i] | = [zaraki] |
| | Visit. past | 2FSP | + accusative.case (kasrah) | = visit.you. 2FSP |
| 2. | [yazuru] | [-k] | + [-i] | = [yazuruki] |
| | Visit.present | 2FSP | + accusative.case (kasrah) | = visit.you. 2FSP |
| 3. | [kaʔanna] | [-k] | + [-i] | = [kaʔannaki] |
| | Particle | 2FSP | + accusative.case (kasra) | = As if.you. 2FSP |
| 4. | [la] | [-k] | + [-i] | = [laki] |
| | For. proposition | 2FSP | + genitive.case (kasrah) | = For.you.2FSP |
| 5. | [ʃaʕr] | [-k] | + [-i] | = [ʃaʕrki] |
| | hair.noun | 2FSP | + genitive.case (kasrah) | =hair.your.2FSP |

The above examples reveal the position of the phono-morphological structure of 2FSP in standard Arabic. Furthermore, examples 1, 2, 3 and 4 show that it occurs as an object pronoun with past-present verbs, articles, and propositions,

while Example 5 demonstrates that it occurs as a possessive pronoun with the nouns.

The standard 2FSP [-ki] realizes a two-in-one morpho-syntactic case mark: (I) the voiceless velar plosive [-k], conveying the second singular object/possessive pronouns, and (II) the short vowel [-i] presenting the *Kasrah,* i.e. a fixed morpho-syntactic mark that is always related to the genitive case. However, in Arabic, *Kasrah* (or the phoneme [-i]) is always attached to 2FSP [-k] whether in relation to nouns, particles, and propositions appearing in the genitive case, or verbs in the accusative case.

2FSP Standard Arabic [-ki] is realized as [-ki] or as [-ik] in many non-standard modern Arabic spoken dialects (Watson, 1992) and can thus lose

the *Kasrah* case [-i]. For instance, throughout Saudi Arabia, this feature has been variable during the past twenty years and may continue to change (Al-Azraqi, 2007b). Therefore, there are two contextually determined allomorphs in a single koineized reflex of 2FSP morpheme: firstly, the vowel-final suffix [-ki] and secondly, a consonant-final suffix [-ik] (Al-Azraqi, 2007b). This new koine form is referred to as [k] (Al-Azraqi, 2007b). In many non-standard Arabic dialects

(Classical and Modern), 2FSP is realized as [-s], [-ts], [-š], [-tš] and [-č] (see sections 1.1 and 1.2

above). Saudi Arabia has been home to the majority of the Arab tribes that have existed from antiquity to the present, which creates challenges when seeking to precisely locate the initial shift between 2FSP suffixes [-ki] and [-k] to their variants [-s], [-ts], [-š], [-tš] and [-č].

Arab grammarians and scholars consider kaškašah and kaskasah to be undesirable linguistic phenomena deviating from pure Standard Arabic, despite being pure Classical Arabic, having existed since ancient times (cf. Al-Rafe'ie, 2013). Through its phono-morphological analyses of affrication and frication of the feminine suffix [-ki] in Saudi dialects, the present study contributes to existing knowledge regarding the phonology of Arabic dialects by showcasing key phonological features under consideration across Saudi dialects. The approach adopted in this study will prove useful for expanding our understanding of other sound patterns in Saudi dialects. The findings from this study will also contribute to the current literature on Saudi Arabia, as well as modern Arabic dialects.

## 4. Discussion and Conclusion

This article discussed the phono-morphological construction of 2FSP in Saudi Dialects. It revealed that the standard classical and modern Arabic 2FSP suffix [-ki] has a number of allostructions (i.e. phono-morphological variants), i.e. [s], [ts], [š], [tš] and [č], with these types of sound changes being termed frication and affrication. Thus, frication refers to the change of the suffix [-ki] to be the fricative [-s] and [-š], while affrication refers to the change of [-ki] to the affricates [ts], [tš] and [č]. Furthermore, it has shown that, in Arabic linguistics, the shift from [-

ki] to [s] and [ts] is known as kaskasah, while the change from [-ki] to [š], [tš] and [č] is known as kaškašah. Moreover, modern Arab linguists use the term Tastasah to denote the shift from [ki] to [ts], and the term Taštašah to denote the change from [ki] to [tš]. In addition, they also use the term kačkačah to describe the changing of [ki] to [č].

This study is distinctive in that it studies the phono-morphological construction of 2FSP [-ki], examining the interface between the various levels of the form-meaning representation of kaškašah and kaskasah in different Saudi Dialects, using Booji's (2009, 2010, 2016, 2019a) Construction Morphology. The analysis has revealed that 2FSP is a linguistic sign consisting of a pairing of form and meaning. The form of 2FSP is comprised of two dimensions: firstly, its phonological form and secondly, its morpho-syntactic properties. However, its meaning derives from the conceptual structure, which in turn comprises the SEM, PRG, and DISC aspects of language (cf. Jackendoff, 2002 and Booij and Audring, 2017). In Saudi dialects, the the form of the 2FSP [-ki] has different allostructions (i.e. morpho-phonological variants), including: [-s], [-ts], [-š], [-tš] and [-č]. The phono-morphological Schema 8 in Section 3.3 shows that using a number of different 2FSP allostructions instead of [-ki], relates to the socio-cultural background of the speakers, in particular their dialects, or the region of Saudi Arabia to which the speaker belongs. In this case, the outputs of this study corresponded with the main objective of Construction Morphology, which is to reduce arbitrariness. Based on Booji's (2009, 2010, 2016, 2019a), the main idea behind Construction Morphology is that schemas provide a highly structured lexicon in natural languages. Hence, these schemas motivate some generalizations and lessen the degree of arbitrary relationships between the form and meaning of the linguistic signs.

This paper contributes to enhancing the understanding and interpretations of the phono-morphological construction in dialectal variations of 2FSP allostructions of the suffix [-ki] in Saudi dialects. Moreover, this study has also considered the use of phono-morphological construction to model different suffixations, which could be viewed as linguistic signs combining both form and meaning.

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