DELATERALISATION IN ARABIC AND MEHRI

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Abstract

The Arabic lateral *ḍ* was considered extinct. However, it was found lately in use in some Arabic dialects such as Rijāl Almaʕ in southwest Saudi Arabia and in some varieties of the Mehri language. Nevertheless, delateralisation is apparent. To assess the extent of delateralisation, this study investigates the current usage of the lateral **ḍ* among Rijāl Almaʕ speakers in Abha city, southwest Saudi Arabia and Mehri speakers in Dammam, east Saudi Arabia. 74 speakers, 38 speakers of Rijāl Almaʕ in Abha city and 36 Mehri speakers in Dammam city, participated in this study. Their age ranges from 15 to 75 years old. The data comprises almost 56 hours of audio recording captured during informal interviews. The findings show that there is a delateralisation occurring among some younger and educated speakers of Mehri and Rijāl Almaʕ.

DESLATERALIZACIÓN EN ÁRABE Y EN MEHRI

Resumen

La *ḍ* lateral árabe se consideraba extinguida. Sin embargo, últimamente se ha constatado su uso en algunos dialectos árabes como Rijāl Almaʕ en el suroeste de Arabia Saudita y en algunas variedades de la lengua Mehri. Con todo, la deslateralización es aparente. Para evaluar el alcance de la deslateralización, este estudio investiga el uso actual de la lateral **ḍ* entre los hablantes de Rijāl Almaʕ en la ciudad de Abha, situada al suroeste de Arabia Saudita, y entre los hablantes de Mehri en Dammam, al este de Arabia Saudita. Han particpado en este estudio 74 informantes, 38 de Rijāl Almaʕ en la ciudad de Abha y 36 de Mehri en la ciudad de Dammam. Su edad oscilaba entre los 15 y los 75 años. Los datos han registrado casi

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56 horas de grabación obtenidas mediante entrevistas informales. Los resultados muestran una deslateralización en algunos informantes más jóvenes y cultos de Mehri y Rijāl Almaʕ.

Palabras clave

deslateralización, árabe, Mehri, Rijāl Almaʕ

1. Introduction

The eighth-century grammarian Sibawayh provided a description of *ḍād*, **ḍ*, that can only be interpreted as lateral: "between the first part (from the back) of the side of the tongue with the molars next to it"' (Sibawayh 1988: 405). Also, according to Sibawayh, the sound is released from the right side of the mouth (Sibawayh 1988: 405). However, scholars such as Ibn Yaʕīsh (n.d.), Ibn Jinnī (1985) and Al-Mubarrad (1994) have stated that it may be articulated from either the right or the left side.

In the twelfth century, Al-Sakkāki produced a cross-sectional articulatory diagram of the mouth (see Figure 1) in which *ḍād* was shown to involve lateral release (Al-Sakkāki 1987). In terms of phonation or voicing, manner, and secondary articulation, *ḍād* is categorised as a *majhūr* 'voiced' or 'unbreathed' (cf. Garbell 1958; Steiner 1977; Sibawayh 1988), *riχwah* 'fricative', and *muṭbaqah* 'emphatic' consonant.

Figure 1. Vocal tract with Arabic letters placed according to where corresponding sound is produced (source: Al-Sakkāki 1987: 19).

Furthermore, it has been assumed that most modern Arabic dialects no longer distinguish between orthographic *ḍād* and *ẓā'* (see e.g., Al-Wer 2004, but cf. Versteegh 2006). Thus, dialects that exhibit interdentals realise the merged phoneme as an emphatic voiced interdental fricative [ḏ], whereas innovative dialects, particularly urban dialects spoken outside the Arabian Peninsula and that do not exhibit interdentals, realise a merged phoneme as an emphatic voiced alveolar stop [ḏ]. In fact, even in the written form, we have observed that in social media *ḍād* is disappearing and being substituted by *ẓā'* (an observation that merits separate investigation).

Overall, the history of the merging between the phoneme [ḏ], which is the lateral, and [ḏ], which is the emphatic interdental fricative, has proven enigmatic. In an early work addressing this topic, Brown (2007) presents and compares data from Old South Arabian speech communities with lexical data from the Islamic tradition. According to Brown's data on the earliest Arabic texts that use /ḏ/ and /ḏ/ minimal pairs, it was between the fourth and mid-eighth centuries that free variation in the usage of [ḏ] and [ḏ] occurred. His data supports the theory that the pre-Islamic and early Islamic Arabic speech communities exhibited different usage patterns in respect of the [ḏ] and [ḏ] relationship. Essentially, some pronounced the two sounds separately and produced the lettered tradition of the Qur'an, while others did not distinguish between the two phonemes. These early Arabic texts also provide glimpses into how the Islamic lexical tradition explains the historical link between the two phonemes.

Some recently conducted fieldwork studies in southwest Saudi Arabia (Al-Azraqi 2008, 2010, 2012; Asiri 2009; Al-Azraqi et al. 2013; Heselwood et al. 2013) have revealed that the lateral reflexes of *ḍ continue to be exhibited in the dialects spoken today in the Tihāmah (coastal plain) of the Asir region including the province of Rijāl Almaʕ and in the Tihāmah of the Qaḥṭān region, both of which are in southwest Saudi Arabia. This lateral sound is also attested in the Mehri language as concluded by Watson & Al-Azraqi (2011), who found that the Mehri dialects spoken in Oman and Yemen exhibit a similar range of variation in the realisation of the emphatic lateral to that heard in the Arabic dialects of the Tihāmah in Saudi Arabia.

1.1 The Rijāl Almaʕ dialect

Rijāl Almaʕ is a small province in southwest Saudi Arabia. The Rijāl Almaʕ dialect is one of the many dialects of southwest Saudi Arabia to have retained ancient linguistic features (Asiri 2009). Speakers of this dialect began to migrate over the mountains from Rijāl Almaʕ to Abha city (approx. 45 km to the east) during the twentieth century. Since then, many more have left in search of a better life. However, not only people from Rijāl Almaʕ, but others too have moved to Abha, so there have been several generations of language contact. During that time, a range of different dialects and sub-dialects have been used and become mixed both in the city and in the region of Abha. A koineisation process has therefore been taking place, including the levelling and simplification of the Abha dialect itself, and thus some of the features of the Abha dialect have changed (Al-Azraqi 2014, 2016). It is beyond the scope of the current paper to outline all the details of the sub-dialects used in Abha and the surrounding villages, therefore the reader is referred to Al-Azraqi (1998).

1.2 The Mehri language

Mehri is one of six endangered modern South Arabian languages. The other five are Soqoṭri, spoken exclusively on the Yemeni island of Soqotra; Shahri, also known as Jibbāli, spoken within Dhofar in Oman; Ḥarsūsi, spoken in Jiddat al-Ḥarāsīs in Oman; Hobyōt, spoken in a small area straddling the border of Yemen and Oman; and the highly endangered Baṭḥari, which is used in Oman (Watson 2012: 1). These languages vary in their level of endangerment. Mehri is considered by UNESCO to be 'definitely endangered'. We should mention here that contrary to the criteria for this UNESCO classification, children do learn and use this language. However, they use it mainly among their families. Mehri and the five other endangered modern South Arabian languages belong to the Semitic family of languages. Mehri is an entirely oral, unwritten Semitic language that is spoken in different dialects across Oman, the United Arab Emirates, Eastern Yemen. Wide research has also been carried out on Mehri in languages other than Arabic (Johnstone 1970a, 1970b, 1973, 1975a, 1975b, 1987; Al-

Aidaroos 1996, 1999; Sima 2005, 2009; Stroomer 1999, 2004; Watson 2012, 2014; Watson & Al-Azraqi 2011; Watson & Bellem 2010, 2011; Watson & Rowlett 2013; Bittner 1909, 1911, 1913, 1914; Liebhaber 2007; Bellem & Watson 2014; Jahn 1902, 1905; Stein 2011; Thomas 1937). Watson (2012) recently studied the Mehri dialects of Mehreyyet and Mahriyōt. In 2008, Watson & Bellem worked on the phonetics and phonology of Mehri emphatics (Watson & Bellem 2010). Several studies have gathered and analysed Mehri lexemes; see Rubin (2007, 2008, 2009, 2010); Al-Qumairi (2003); Alfadly (2007).

In Saudi Arabia, Mehri is used in Al-Rub'Al-Khali (the Empty Quarter) in the south of country, particularly in Kharkheer. Some Mehri-speaking communities have also moved to other parts of the country as Al-Wasee', Najran, Sharoorah, Al-Ahsa, and Dammam (Al-Azraqi 2017). The latter is the area of interest in the current study.

The Mehri in Dammam live in a relatively small and closed immigrant community. The first Mehri people settled in Dammam approximately 40 years ago. Mehri people in Dammam mainly work in small businesses and usually have large families. Their children go to school, although some do not continue beyond grade 12 (age 18) into higher education. Most Mehri speakers, especially men and the younger generations, speak Arabic. Older Mehri speakers can communicate with Arabic speakers to some extent. The Mehri language has retained distinctive linguistic features, and there are some sounds that have no counterparts in Arabic (Al-Azraqi 2017). Lateralisation is exhibited in the Mehri language spoken in Saudi Arabia. Sounds that appear in the Mehri dialects in Oman and Yemen are also exhibited in the variety of Mehri spoken in Dammam (Watson & Al-Azraqi 2011).

The aim of the current study is to investigate delateralisation among two distinct groups of speakers in Saudi Arabia, the Mehri speakers in Dammam and the Rijāl Almaʕ speakers in Abha city. The remainder of the paper is organised as follows: The next section presents a brief overview of previous studies on lateralisation in the dialects of southwest Saudi Arabia including Rijāl Almaʕ and also its existence in the Mehri language. Then the data collection method and participants profile for the current study are described. This is followed by a presentation and discussion of the results of the data analysis. Finally, some brief concluding remarks are made.

2. Previous study

2.1 Lateralisation in the dialects of southwest Saudi Arabia

Al-Azraqi has found that the usage of the lateral *ḍād* occurs in parts of southwest Saudi Arabia (Al-Azraqi 2008, 2010, 2012). More recent research conducted over a wider area of southwest Saudi Arabia has revealed that lateral and lateralised emphatics are used in the dialects of that region (Al-Azraqi et al. 2013; Heselwood et al. 2013). Furthermore, the degree of variation between the types of lateral(ised) emphatics has been found to be greater than hitherto assumed. Moreover, a phonological distinction exists between the cognates of **ḍ* and **ḏ̣* in many dialects in the region.

The data in Al-Azraqi et al. (2013) and Heselwood et al. (2013) was collected by fieldwork and in the laboratory. For both studies, the first step involved fieldwork to collect data on the usage of a predefined list of 29 words containing orthographic *ḍād* and 16 words containing orthographic *ḏā'* in word-initial, word-medial intervocalic, word-medial pre-consonantal, and word-final positions, as well as data on their narrative usage in a short list of topics relating to local culture. Word list data was collected by recording three tokens of each word in the following sentence frame: *anā gult* [WORD] *ams* ('I said [WORD] yesterday'). The fieldworkers collected data from 115 speakers aged 10 to 90 years from 16 villages in the provinces of Rijāl Almaʕ and Al-Rubūʕah. The second step consisted of data collection in the phonetics laboratory at the University of Leeds in the UK, where two native speakers, one from Rijāl Almaʕ and one from Al-Rubūʕah, provided electropalatographic (EPG) data for further analysis by producing three tokens for each word individually from the abovementioned word list. The EPG data was captured via a custom-made acrylic plate fitted to the speaker's palate.

An analysis of the EPG data collected by both studies showed distinctions between **ḍ* and **ḏ̣* for both native speakers, although there was a lack of universal correspondence between the orthographic symbol and a particular sound. The speaker from Rijāl Almaʕ tended to realise the cognate of **ḍ* as an emphatic lateral sonorant and that of **ḏ̣* as an emphatic interdental fricative or lateralised interdental fricative. The

speaker from Al-Rubū ʕah exhibited three distinct types of lateral and lateralised emphatic sounds. These sounds comprised a lateral sonorant in which the air was released from both sides of the tongue simultaneously (which corresponded typically to *ḏ̣*) and two distinct lateralised fricatives in which the air was released on one side of the tongue only – one involving some front tongue contact with the alveolar ridge and the other involving lighter contact only. Moreover, the lateralised fricative with lighter contact was found more commonly to be a reflex of *ḍ*, but it also occurred in certain lexemes as a reflex of *ḏ̣*. In both dialects, *ḍ* and *ḏ̣* were sounded in religious words and phrases as an emphatic lateral sonorant. For example, *ḏ̣* in *ṣalāt aḏ̣-ḏ̣uhr* ('noon prayer') and *ḍ* in *wuḍūʔ* ('ablutions') were spoken in both cases in the two dialects as [ɬ:] (Al-Azraqi et al. 2013; Heselwood et al. 2013).

Overall, the EPG data indicated the usage of three distinct lateral(ised) emphatics in addition to the emphatic lateral sonorant and two lateralised fricatives. Also, the EPG analysis of the lateralised fricatives identified a contrast between lighter and heavier contact on the left side of the palate (Al-Azraqi et al. 2013; Heselwood et al. 2013).

Furthermore, Al-Azraqi et al. (2013) identified the geographical distribution of lateral(ised) emphatics in the Saudi Arabian region of Tihāmah and the geographical distribution of dialects that exhibit phonemic distinctions between *ḍ* and *ḏ̣*. Based on the results of an instrumental phonetic analysis, the same study also ascertained the extent to which the lateral(ised) emphatics in these dialects correlate with cognates of *ḍ*. The study also determined the extent to which these lateral(ised) emphatics correlate with the phonetic correlates of the lateral(ised) emphatic in the dialects of Mehri used in Oman and Yemen.

2.2 Lateralisation in Mehri

As regards the laterals in the Mehri dialects spoken in Oman and Yemen, Watson & Al-Azraqi (2011) concluded that these dialects exhibit a similar range of variation in the realisation of the emphatic lateral to that heard in the Arabic dialects of the Tihāmah in Saudia Arabia including those spoken in Rijāl Almaʕ and Al-Rubū ʕah. The authors examined the Mehri dialects spoken in Jōdab in Hawf, in the eastern province of

Yemen; in Gabgabat near Salālah in Dhofar, Oman; and in Ndēt in Oman on the border with Yemen. The informants were aged from 20 to 45 years and had received a level of education ranging from basic to university level. Audio data was gathered by Watson from Yemen in 2008 and from Dhofar between January and April 2010. The data included semi-structured interviews and elicited sentences and word lists. Data was recorded onto an Olympus LS-10 recorder or directly onto a Sony laptop using Adobe Audition 1.5 software and saved as raw data in WAV format. Phonetic analysis was performed using the PRAAT program for acoustic analysis (www.fon.hum.uva.nl/praat/).

The authors found that the Mahriyōt dialect, the variety of Mehri spoken in far eastern Yemen, exhibits a voiced lateralised pharyngealised fricative, but with considerably less friction than the voiced lateralised pharyngealised fricative attested in Rijāl Almaʕ and in the speech of the younger generation living in al-Rubūʕah. Also, female speakers of the Mahriyōt dialect tend to produce an affricate that is often realised as voiceless. In the Mehri dialect spoken in Gabgabat, the lateral emphatic is realised as a voiceless lateral fricative, with glottalisation and slight affrication. In the Mehri dialect spoken in Ndēt, the lateral emphatic is realised mainly as a pharyngealised lateral sonorant (Watson & Al-Azraqi 2011).

Lateralisation also exists among Mehri speakers in Dammam. During fieldwork undertaken in the city of Dammam to collect data for the forthcoming dictionary of the Mehri language, it became apparent that lateralisation exists in this dialect (Al-Azraqi 2017). Moreover, it seems that the emphatic lateral *ḍ* is being used in a similar way to that reported in Watson & Al-Azraqi (2011). However, there is a variation between older and younger speakers, and delateralisation is also apparent.

3. Aim and methods of data collection

The current study aims to examine the change occurring in the use of the lateral sound *ḍ*, that is, the merger between /ḍ/ and /ḏ̣/, among two distinct groups of speakers in Saudi Arabia:

Rijāl Almaʕ speakers living in Abha city in southwest Saudi Arabia and Mehri

speakers living in Dammam city in east Saudi Arabia. These two groups each speak a different language but the lateral sound /ḍ/ is attested in both varieties. In this study, we hypothesised that the verbal communications of speakers possessing different socio-demographic characteristics would provide evidence of a shift in the extent of the usage of the lateral sound /ḍ/. Even though Rijāl Almaʕ speakers use an Arabic variety and Mehri speakers use a non-Arabic variety, it was anticipated that a change in usage would be apparent in both groups. It was also assumed that any change would be influenced by communication with speakers of other varieties of Arabic in which lateral sounds are not attested in.

Furthermore, it was surmised that age and level of education would be suitable social variables to analyse in our attempt to find evidence to support our main hypothesis. Firstly, as regards age, this variable has been found to be an important indicator when studying varieties of dialect in Saudi Arabia because it reflects the impact of communication among different generations (Al-Azraqi 2014). Also, age was included in this study as a key variable on the basis of the claim that investigating linguistic differences between speakers of different ages facilitates the study of linguistic change. Secondly, as shown by Al-Azraqi (2014), level of education has a stable relation with age; usually, semi-educated and uneducated people are over 55 years of age, whereas younger people are mostly educated, which made her not to consider level of education when examining negators in Abha Arabic (2016). However, for the benefit of this study, level of education was considered. Perhaps it is stable with the speakers of Rijāl Almaʕ in Abha, but we needed to investigate whether it is in Mehri speakers who potentially are exposed to Arabic when they are at school. They must be exposed to Arabic at school. Thus, the potential influence of two social variables – age and level of education – was investigated in this study.

With respect to the sample analysed in this study, it consisted of 74 randomly selected speakers: 38 speakers of Rijāl Almaʕ (20 men, 18 women) in Abha city and 36 Mehri speakers (20 men, 16 women) in Dammam city. The participants ranged in age from 15 to 75 years. They, in both groups, have different levels of education ranging from no formal education to a university level of education. Some of the Mehri speakers could speak Arabic but could not read or write it. The participants in both groups were

either original, first- or second-generation immigrants. By original, we mean the speakers themselves had migrated to their respective cities at various ages, while first generation refers to the children of original migrants and second generation refers to children of first-generation migrants (See Tables 1, 2, 3 and 4).

For the analysis, the participants were divided into three age groups: 15-35 years; 36-55 years; and 56-75 years. A range of 20 years was considered suitable based on the assumption that this range captures the common features of the different age groups. The participants were also grouped into three levels of education: educated (those who can read and write fluently), semi-educated (those who can read and write but stopped learning at grade 9), and uneducated (those who cannot read or write).

Fifty-six hours of audio recordings were captured using an Olympus LS-20M recorder (approximately 28 hours with Rijāl Almaʕ speakers and the remainder with Mehri speakers). The audio files were saved in WAV format. The recordings took place during the informal interviews in Abha and in Dammam. The interview usually started by talking about different topics such as migration, farming, cooking, Eid and family gatherings, etc. However, a previously planned word list was used to manage the interview. A list consisting of 27 words containing the lateral *ḍ in word-initial, word-medial intervocalic, word-medial pre-consonantal, and word-final positions was used with the Rijāl Almaʕ participants while a list of 15 Mehri words containing the lateral *ḍ in the same distribution was used with the Mehri speakers. It should be noted that the Rijāl Almaʕ speakers spoke their own local Arabic dialect, whereas the Mehri speakers spoke the Mehri language.[1] Microsoft Excel 2010 and GraphPad Prism 5 were used to analyse the data. Before moving on to discuss the demographic characteristics of the participants, some difficulties encountered in selecting the sample are highlighted.

For consistency, the Rijāl Almaʕ group and the Mehri group were divided into three similar-sized age groups. However, the Rijāl Almaʕ age group included original, second generation, and first-generation immigrants, whereas the Mehri age group included only original and first-generation immigrants. Nevertheless, the generation of the speaker is a very important factor in the study of sociolinguistics. The years of

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[1] The author is familiar with Mehri to some extent, but an assistant was needed sometimes to smooth communication, especially when interviewing older participants.

communication matter. So, for the purposes of this study the three age groups were retained for both the Rijāl Almaʕ group and the Mehri group and, in addition, the number of years since arrival was also considered, as shown in Tables 3 and 4.

It was also important to divide the two groups of speakers into a similar number of participants for each of the three levels of education, but this too was not easy. This is because, on the one hand, uneducated speakers are rare among the Rijāl Almaʕ community in Abha city while, on the other hand, the opposite is true among the Mehri community in Dammam where the uneducated and semi-educated are the majority. The educational status of the Mehri community could be caused by the year of emigration and perhaps the difficulty of learning Arabic as a second language.

With this proviso in mind, Tables 1 and 2 provide age and level of education profile of the speakers of Rijāl Almaʕ, respectively, while Tables 3 and 4 provide the same for the Mehri speakers.

Number of participants	Age group		
	(15-35)	**(36-55)**	**(56-75)**
	12 (All second generation)	14 (All first generation)	12 (All emigrated at different ages, but all spent up to 25 years in Abha)

Table 1. Demographic profile of Rijāl Almaʕ-speaking participants (age group).

Number of participants	Level of education		
	Educated	**Semi-educated**	**Uneducated**
	18 (Six are in high school, seven are in university, and five have finished university)	10 (Four stopped at grade 7, two stopped at grade 6, and four at grade 4)	10 (None of the 10 attended school)

Table 2. Demographic profile of Rijāl Almaʕ-speaking participants (level of education).

	Age group		
Number of participants	**(16-35)**	**(36-55)**	**(56-72)**
	14 (All first generation)	12 (All emigrated at different ages but spent between 15 to 20 years in Dammam)	10 (All emigrated at different ages but spent up to 21 years in Dammam)

Table 3. Demographic profile of Mehri-speaking participants (age group).

	Level of education		
Number of participants	**Educated**	**Semi-educated**	**Uneducated**
	10 (four are in high school, three are in university, and two have finished university)	10 (four stopped at grade 7, two stopped at grade 6, and four attended night school up to grade 5)	16 (None of the 16 attended school)

Table 4. Demographic profile of Mehri-speaking participants (level of education).

4. Results and Discussion

The analysis of the data revealed that there is some delateralisation in the Rijāl Almaʕ dialect spoken in Abha city and in the Mehri language spoken in Dammam city. [ḍ] in words as *ḍīfān* "guests" and *maḍā* "went" changed to the emphatic interdental fricative [ḏ̣] among Rijāl Almaʕ speakers. The same is happing among Mehri speakers in words like *tanōḏ̣aħ* "bleeding" and *ḏ̣akmīm* "cheek". The change is particularly obvious among the younger and the educated speakers. The extent of delateralisation among the two groups is discussed below.

4.1 Rijāl Almaʕ Dialect Group

From Figure 2, it can be seen that there is some delateralisation and that it is related to age. Specifically, there is a much higher level of usage of [ḏ̣], as opposed to the lateral *ḍ*, among younger speakers. Speakers aged 15-35 years old, who are mainly second generation, show a level of delateralisation (94.9%) that is higher than that

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exhibited by the other two age groups (87% for 36-55-year-olds and 79% for 56-75-year-olds). The dominant sound is [ḏ], which is used by most of the speakers of Saudi dialects of all age groups.

The means for the 15-35, 36-55, and 56-75 age groups were calculated as 24, 23.6, and 21, respectively. The one-way analysis of variance (ANOVA) results showed that the variation across age groups is significant ($p < 0.0001$).
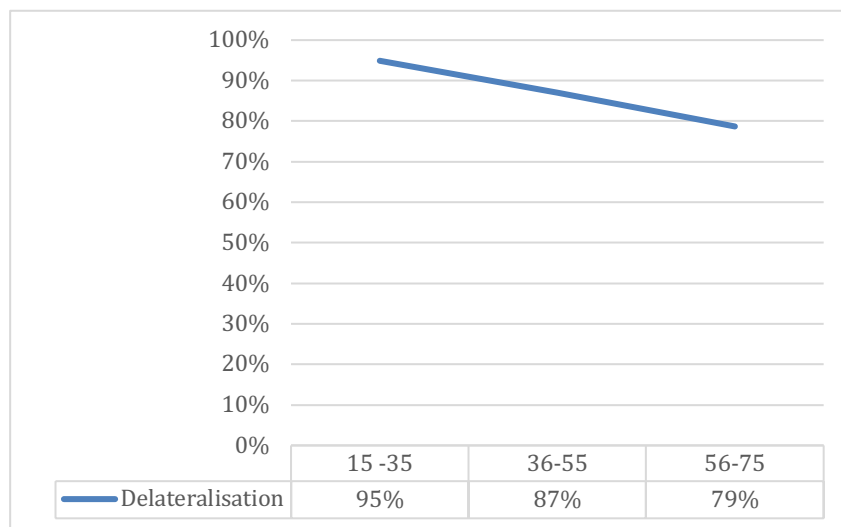
	15 -35	36-55	56-75
Delateralisation	95%	87%	79%

Figure 2. Delateralisation among Rijāl Almaʕ speakers by age.

In addition, it can be observed from Figure 3 that there is a higher level of delateralisation among educated speakers. These speakers are mainly second generation (see Table 1). Among these speakers there is higher usage of [ḏ] (96%) compared to the other two age groups (89% for semi-educated speakers and 71% for uneducated speakers).

The means for the 15-35, 36-55, and 56-75 age groups were found to be 26, 24, and 19, respectively. Similar to age, the ANOVA showed that the variation by level of education is significant ($p < 0.0001$).
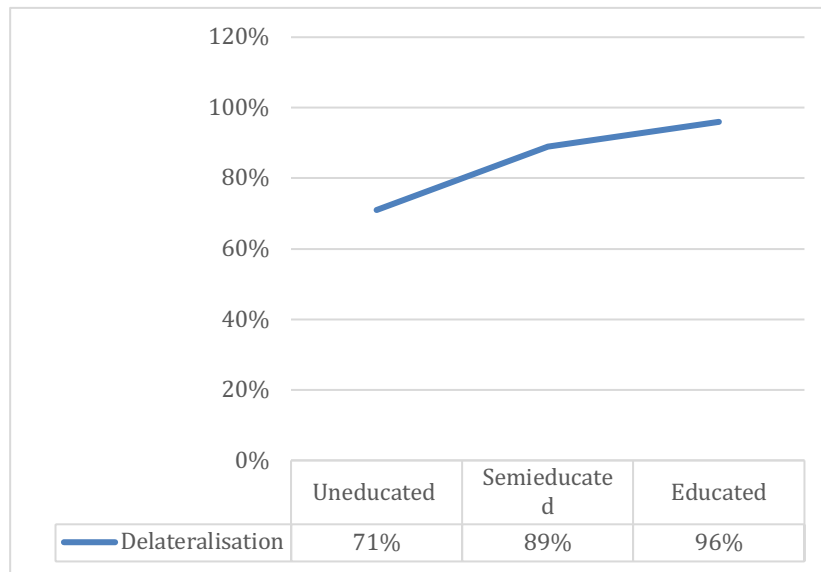
	Uneducated	Semieducated	Educated
Delateralisation	71%	89%	96%

Figure 3. Delateralisation among Rijāl Almaʕ speakers by level of education.

4.2 Mehri Language Group

The data showed that there is also some delateralisation in the case of the Mehri language speakers in Dammam city. Here too, the younger generation shows a greater tendency towards delateralisation, where [ḏ] is replacing lateral *ḍ among 48% of 15-35-year-olds, compared to 22% of 36-55-year-olds and 9% of those above 56 years of age, as shown in Figure 4. Even though the extent of delateralisation is lower overall compared to the Rijāl Almaʕ dialect group, probably because the participants in the Mehri language group are relatively recent arrivals, there is a clear indication of delateralisation.

The means obtained for the 15-35, 36-55, and 56-75 age groups were 7.2, 2.5, and 1.4, respectively. The one-way ANOVA results showed that the variation by age is significant (p < 0.0001).
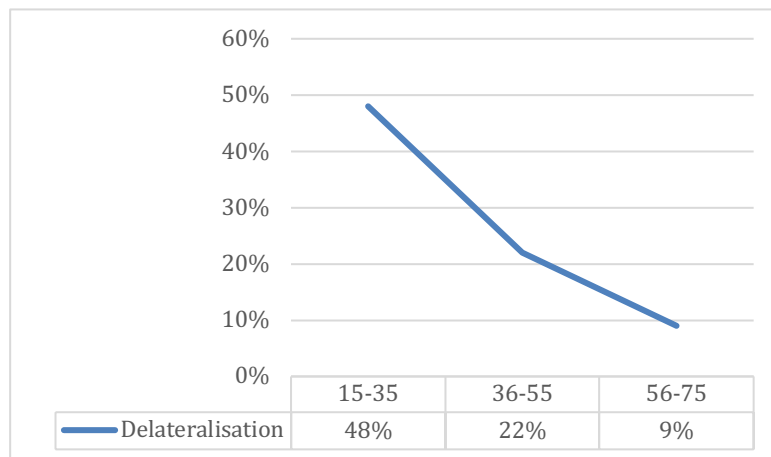
Figure 4. Delateralisation among Mehri speakers by age.

As for the level of education, the data showed that, as is the case with Rijāl Almaʕ speakers in Abha city, this variable has a relation with delateralisation in the Mehri language among speakers living in Dammam city. Among the participants in this study, 49% of educated Mehri speakers show a tendency towards delateralisation, compared to 32% of the semi-educated and 8% of uneducated participants, as shown in Figure 5.

The means for the 15-35, 36-55, and 56-75 age groups were calculated as 4.7, 4.8, and 1.25, respectively. Again, the ANOVA showed that the variation is significant ($p < 0.0001$).
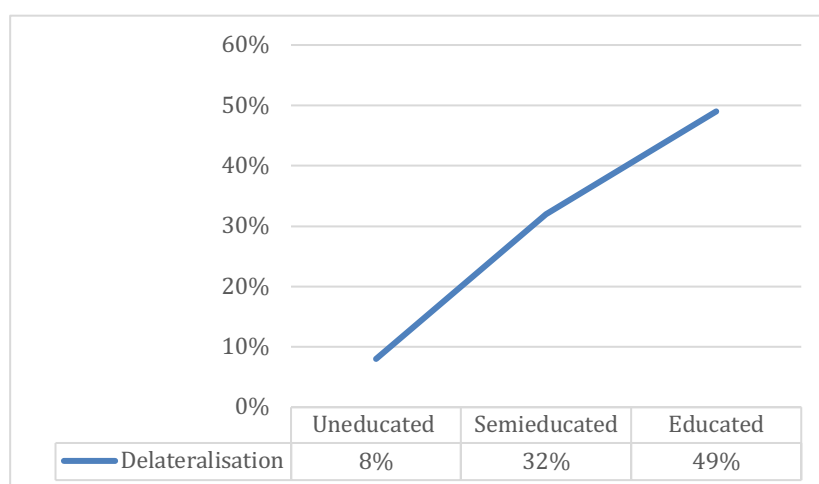
Figure 5. Delateralisation among Mehri Speakers by level of education.

From the above discussion, it is evident that there is a change from [ḍ] to [ḏ] in both the Rijāl Almaʕ and Mehri-speaking groups, which means that delateralisation is occurring. However, from a comparison of the means for both groups, it is generally much more noticeable among Rijāl Almaʕ speakers than among Mehri speakers. Table 5 shows the means by age and level of education for both the Rijāl Almaʕ and Mehri speakers.

	Age			Level of education		
	(15-35)	(36-55)	(56-75)	Educated	Semi-educated	Uneducated
Rijāl Almaʕ	24	23.6	21	26	24.1	19.2
Mehri	7.2	2.5	1.4	7.4	4.8	1.25

Table 5. The mean of delateralisation among Rijāl Almaʕ and Mehri speakers by age and level of education.

The difference between the Rijāl Almaʕ and Mehri groups is large. The older speakers of Rijāl Almaʕ show 79% delateralisation, whereas the older Mehri speakers show only 8% delateralisation. This could be explained by the phenomenon of language contact. Speakers of Rijāl Almaʕ just use a different Arabic dialect, so they can easily communicate with speakers of similar dialects, and thus acquire the dominant interdental reflex of *d* [ḏ]. On the other hand, Mehri is a totally different language, so communication is not as easy between Mehri and non-Mehri speakers. Nevertheless, there is still evidence of delateralisation among some Mehri speakers.

Generally, delateralisation is more apparent among young speakers in both groups. This may be due to the fact that they have a higher level of education and that the medium of instruction is standard Arabic. Also, they have the opportunity to interact with speakers of different varieties of Arabic in an educational setting. However, this does not fully explain the finding because the younger speakers of Rijāl Almaʕ show 95% delateralisation, which is almost double that of younger Mehri speakers who show 48% delateralisation. This difference could in part be explained by the distinct immigration histories of the two groups; several of the young speakers of Rijāl Almaʕ are second generation unlike the young speakers of Mehri who are all first generation.

Nevertheless, for both groups in this study, it is clear that language contact affects lateralisation, as shown in Figures 6 and 7.
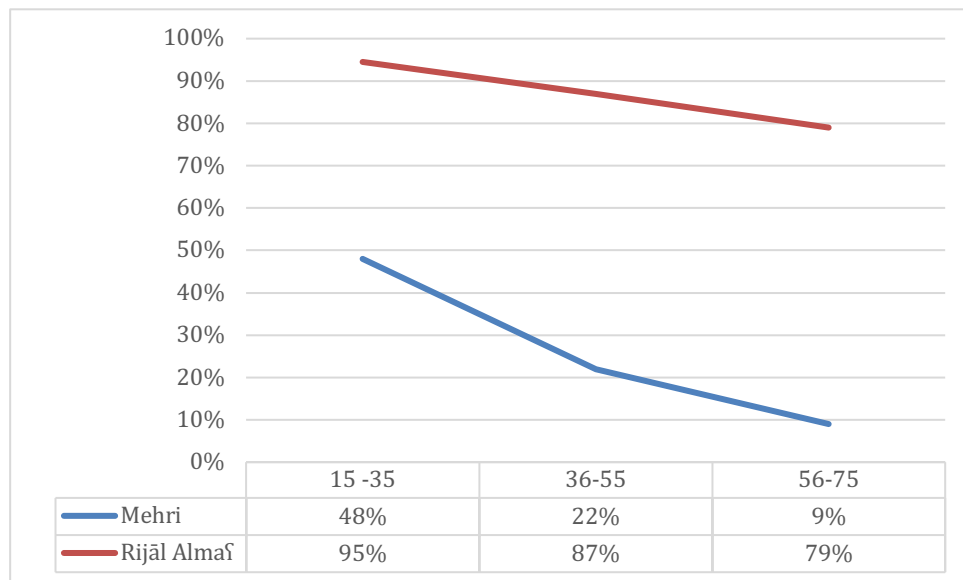

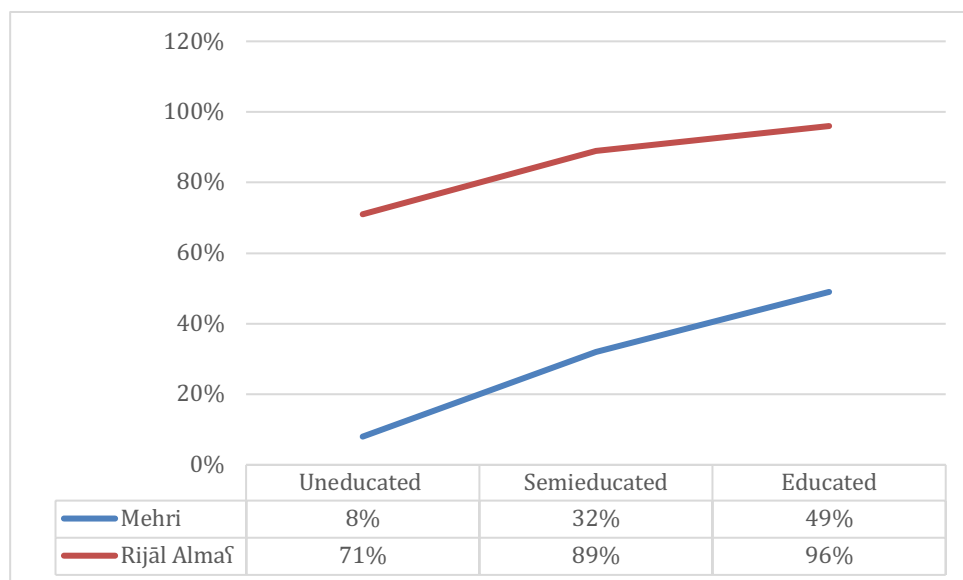Figure 6. Delateralisation among Mehri and Rijāl Almaʕ speakers by age.

Figure 7. Delateralisation among Mehri and Rijāl Almaʕ speakers by level of education.

A shift towards delateralisation is happening in both groups. However, the change among Rijāl Almaʕ speakers seems to have progressed more quickly than in the Mehri group. It would seem that education plays a major role in this difference, which is significant (see Figure 10).
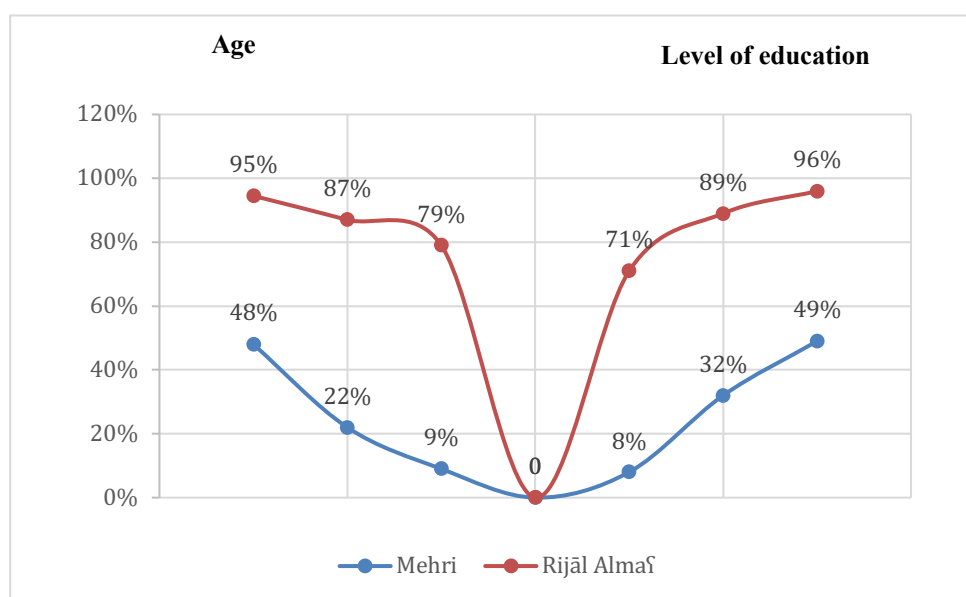
Figure 8. Delateralisation among Mehri and Rijāl Almaʕ speakers by both age and level of education.

From Figure 8, it can be seen that both of the independent variables (age and level of education) have a similar impact on lateralisation in both groups. However, the Mehri group is showing evidence of a slower change than the Rijāl Almaʕ group. This could be because all of the Rijāl Almaʕ speakers in the 15-35 years age group are second generation and all of them are educated, whereas the same age group of the Mehri speakers are all first generation and only some of them are educated (see Table 4).

5. Conclusion

This study aimed to show the pattern of delateralisation among speakers of the Rijāl Almaʕ dialect living in Abha city in southwest Saudi Arabia and that among speakers of the Mehri language living in Dammam city in east Saudi Arabia.

Although lateral and lateralised emphatics are present in Mehri as well as in some dialects of southwest Saudi Arabia such as Rijāl Almaʕ, as shown in earlier studies (Al-Azraqi 2008, 2010, 2012; Asiri 2009; Watson & Al-Azraqi 2011; Al-Azraqi et al. 2013; Heselwood et al. 2013), some delateralisation is evident. Younger and educated

speakers in particular tend to delateralise the sound of [ḍ]. Moreover, [ḏ̣], the emphatic voiced interdental fricative, is increasingly being used as opposed to the lateral [ḍ].

In the case of the Rijāl Almaʕ dialect, a few uneducated speakers under the age of 56 years still produce the lateral and lateralised emphatics that characterised the speech of their parents and grandparents. Most speakers in all age groups use the emphatic voiced interdental fricative reflex instead, [ḏ̣]. Indeed, many of the conservative morpho-syntactic features have been replaced by their less dialect-specific counterparts (see Al-Azraqi 2014, 2016). In the case of the Mehri language, although the lateral sound [ḍ] is still widely heard in the variety used by the Mehri communities in Dammam city, delateralisation is apparent. The change among the older generation does not exceed 8%, but among the younger speakers it is 49%. This proves that a similar change to that seen among Rijāl Almaʕ speakers in Abha city is occurring among Mehri speakers in Dammam city as well. As for the influence of education, it has obviously affected lateralisation because educated Mehri who have attended or are attending schools, where the medium of instruction Arabic, are using the lateral *ḍ* less than the semi-educated and uneducated Mehri speakers. The ANOVA results show that the variations in both the age and level of education are significant.

We believe that communication coupled with education and urbanisation have a major impact on the sound of ḍ and will put the linguistic features in the Rijāl Almaʕ dialect and the Mehri language under threat. The change is already underway and lateralisation is vanishing, following in the wake of its disappearance from modern Arabic varieties. Hence, we hope that the work presented here will encourage investigators to conduct further research on these dialects and to describe and map these dialect-specific features before they are lost forever.

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