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On the phonological processes in two varieties of Arabic

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Abstract

The current study aims to determine some phonological processes in two varieties of Arabic—Standard and Lebanese Arabic—with focus on Lebanese as a cornerstone of analysis within the theoretical framework of generative phonology, henceforth GP (Chomsky & Halle, 1968). In pursuit of this goal, a number of 160 Lebanese Arabic words were extracted from the audio-visual sources such as sound tracks and video clips which were available on virtual spaces. From among the whole data including 160 words, merely 28 words were selected for tabulation in this article. As the major concern of the research was Lebanese Arabic, first, the Lebanese data were transcribed and then comparisons between the two varieties were made to see which phonological changes take place while moving from Standard Arabic to Lebanese Arabic. Ultimately, the results of the study showed that the words in the Lebanese variety of Arabic were phonemically the same as those in the standard variety of the language; however, they were phonetically different. To put it another way, both the Standard and the Lebanese Arabic language varieties have phonologically identical words which are phonetically distinct. In this paper, such consonants as /q/, /ʤ/, /θ/ and /ð/ were looked into from the GP perspective.

Keywords: Lebanese Arabic; Standard Arabic; phonological processes; generative phonology; language varieties.

1. Introduction

Specifying some phonological processes in two varieties of Arabic, that is to say, Standard Arabic and Lebanese Arabic, hereafter SA and LA respectively, are the main concern of the present paper in general and a specific number of consonants are compared in identical words in particular. First, a brief introduction of Arabic will be given and then the most outstanding works whose concentration is to examine Arabic with respect to GP will be referred to.

One of the branches of Semitic languages is Arabic, which is spoken in 25 countries within the areas of the Middle East as well as North Africa. The standard variety of Arabic is used in books, by school teachers, in education, in the Holy Koran, by poets, by writers as well as in formal settings, whereas its colloquial variety is frequently used by its native speakers in daily conversations and informal communications (Watson, 2002).

The term *Lebanon* is derived from the Semitic word *læbæn*, which refers to the white peaks of Lebanon Mountains. The capital of Lebanon is Beirut, which is located on the Mediterranean coasts. The official language of Lebanon is Arabic; however, French is considered as the second official language of the country. Lebanon was a French colony until 1941, yet it became officially independent in 1943 (Hajij, 2017).

From a phonemic perspective, Arabic vowels have been focused on much more than the consonants, although the two categories play a significant role in phonemic analyses. For example, the length of both consonants and vowels is phonemic and contrastive in a way that long vowels are twice as long as short vowels and geminated consonants are also longer than one single consonant (Chahal, 2003); in both cases, the longer phonemes make the word meaning different.

In the present article, the focus is on the way the consonants in the two varieties are articulated, and as the SA variety is regarded basic, as the name suggests, the data were gathered from the LA variety, in which the linguistic expressions are differently pronounced. Nevertheless, as no access to native speakers of the Arabic language in general and to those of its two varieties in particular was possible, the findings of the study were culled from such audio-visual resources as sound tracks as well as TV programs in which native speakers of Lebanese, especially singers, sang or talked. The number of the whole data is restricted to 160 sentences composed of the words phonetically different from their SA counterparts. Thus, the method is a descriptive-analytic one via which the data were collected, compared and analyzed. It is also worth noting that the data have been transcribed based on IPA in this paper.

2. Literature review

In this section, a number of studies relevant to multiple varieties of Arabic have been pointed out. However, as far as the comparison of the LA and SA varieties of Arabic is concerned,

it seems that no work has been done yet; nevertheless, there are a few studies focusing on LA as well as other varieties of Arabic which have been carried out within the framework of GP, the most remarkable of which come in what follows.

In a research carried out in 2013, Alduais has investigated Koranic phonology within the theory of GP. In addition, he has formulated the rules of GP for the rules of non-syllabic Nuun as well. Finally, he has drawn the conclusion that the theory of GP fails to explain the phonological Koranic rules only in one case, which is relevant to the representation level of concealment rules.

Abdo has argued stress in Arabic within the GP framework; however, Brame (1971) has reviewed the work. Unfortunately, not much information is available about the original article by Abdo.

As to the phonology of Arabic in general and the investigation of Lebanese Arabic in particular, there are a few works which have focused on the acoustic study of the variety typically known as Levantine Arabic. To name a few, the following pieces of research would be considerable: Kenstowicz, 1986; Gouskova and Hall, 2009; Khattab and Al-Tamimi, 2008 as well as Obegi, 1971; Alharbi, 1991; Almbark and Hellmuth, 2015; Alotaibi and Meftah, 2013; Al-Tamimi, 2004; El-Imam, 1990; El-Imam, 2004; Khattab, 2007; Kiparsky, 2002; Munro, 1993; Nasr, 1960, as well as Obrecht, 1968.

As far as the authors' knowledge, no work has been allocated to the comparison between the two varieties of Arabic, that is to say, LA and SA, up to now especially with regard to the theory of GP. Furthermore, the studies done with focus on Arabic are either restricted to solely one variety of the language or to the investigation of the suprasegmental features such as word stress, tone and intonation. Indeed, the current paper seems to be the first research comparatively carried out between the two varieties of Arabic, one of which is regarded standard and fundamental and against which the other is evaluated.

3. Theoretical framework

GP, which refers to the phonemic part of generative grammar, was introduced by Chomsky and Halle in 1968. In generative grammar, the surface form of the syntactic part enters into the phonemic representation so that it can give the phonetic representation after the operation of phonological rules. Thus, GP is considered as a type of derivational phonology in which the phonetic form is derived from the phonemic form. The phonemic and phonetic representations are molded by the distinctive features. The rules are also formed in an appropriate way that gives rise to an obvious as well as exact description of the phonological patterns.

Several years later, GP underwent some changes which led to other approaches such as autosegmental metrical phonology, lexical phonology, as well as optimality theory.

It is worth stating that, in Chomsky and Halle (1968), distinctive features are used to describe consonants and vowels. It should be mentioned that the distinctive features are functionally separated. In other words, some point out the place of articulation, whereas some others exhibit the manner of articulation. It is worth noting that the two aforementioned separated categories are regarded as the major classes of the features, as there are also some other features that make distinctions with regard to the source of producing energy such as voicing and such suprasegmental features as stress and tone. However, what is of a significant value is that the presence of a feature is indicated by a plus sign while its absence is indicated by a minus sign.

In what follows, first the phonological rules are defined and then the phonological operations taking place between the consonants of the two Arabic varieties in question will be presented.

4. Discussion

In this section, first the phonological rules stated in GP are defined and then the data are tabulated. Thereafter, the phonological processes under which the consonants of LA change will be described. As mentioned earlier, the consonants under investigation are *q, θ, ʤ, ð*, which are phonemically the same but phonetically distinct in the two varieties.

4.1. Phonological rules

Phonological rules which are also described as phonological processes are of multiple types as follows. It should be noted that, as the definitions relevant to each process were more pertinent and better described by such secondary sources as Crystal (2003), Matthews (1996) as well as Modarresi-Ghavami (2015) than the first-hand source (Chomsky & Halle, 1968), consequently, the preference was to use the former sources here.

4.1.1. Assimilation

It is a process in which one sound segment influences another sound in such a way that the two sounds become more alike or even identical. This process is of several types as follows: partial vs. total; contiguous vs. non-contiguous, as well as regressive vs. progressive (Crystal, 2003).

4.1.2. Deletion

It is a process taken place at some level of representation in a way that some sound might be deleted optionally from the phonological representation in order to derive a phonetic representation (Matthews, 1996).

4.1.3. Insertion

It is a diachronic or synchronic process in which one sound is inserted into a segment of phonemes (Modarresi-Ghavami, 2015).

4.1.4. Lenition

It is a process which diachronically or synchronically occurs in weakening the overall strength of a sound (Crystal, 2003).

4.1.5. Fortition

It is a process which diachronically or synchronically occurs in strengthening the overall force of a sound (Crystal, 2003).

4.1.6. Dissimilation

It is a process in which one sound segment influences another sound in such a way that the two sounds become less alike or different (Crystal, 2003).

4.1.7. Metathesis

It refers to a process where some alteration in the normal sequence of sounds, syllables or words take place (Crystal, 2003).

4.2. Data

In this subsection, some of the words extracted from the whole data in the two varieties are exhibited through the following table:

TABLE 1

The phonetic forms of words in SA & LA

NO.	SA PRONUNCIATION	LA PRONUNCIATION	ARABIC WRITTEN FORM	ENGLISH MEANING
1	**ʤ**æmil	**ʒ**æmil	جميل	pretty
2	**ʤ**ædid	**ʒ**ædid	جديد	new
3	**ʤ**ænb	**ʒ**ænb	جنب	beside
4	?æ**ʤ**mæl	?æ**ʒ**mæl	أجمل	the most beautiful
5	hæ**ʤ**erni	hæ**ʒ**erni	هجرني	dumped me

6	bæræmæ**ʤ**	bæræmæ**ʒ**	برامج	programs
7	ʔer**ʤ**a	ʔer**ʒ**a	إرجع	come back [imperative form]
8	**ʤ**æwzi	**ʒ**æwzi	جوزي	my husband
9	**q**ulu	**ʔ**ulu	قولوا	say
10	ʕa**q**əl	ʕa**ʔ**əl	عاقل	wise
11	mæʕ**q**ul	mæʕ**ʔ**ul	معقول	reasonable
12	wæ**q**t	wæ**ʔ**t	وقت	time
13	ræfi**q**	ræfi**ʔ**	رفيق	friend
14	færi**q**	færi**ʔ**	فريق	team
15	**q**ælbi	**ʔ**ælbi	قلبي	my heart
16	**q**issæ	**ʔ**issæ	قصة	story
17	**q**æmær	**ʔ** æmær	قمر	moon
18	mæxlu**q**	mæxlu**ʔ**	مخلوق	creature
19	ʔeb**q**a	ʔeb**ʔ**a	إبقى	stay [imperative form]
20	ħæ**q**	ħæ**ʔ**	حق	right
21	fæw**q**	fæw**ʔ**	فوق	over
22	**θ**ubi	**t**ubi	ثوبي	my clothing
23	**θ**æ**q**i:l	**t**æ**ʔ**i:l	ثقيل	heavy
24	mi**θ**il	mi**t**il	مثل	like
25	ʔæk**θ**ær	ʔæk**t**ær	أكثر	the most
26	xo**ð**	xo**d**	خذ	take
27	**ð**o**q**	**d**o**ʔ**	ذق	taste (Imperative form)
28	lo**q**æk	lo**ʔ**æk	لقاك	your visit

As table 1 illustrates, consonantal changes have taken place in the production of the four sounds θ, ʤ, q, and ð in such a way that in the underlying level of representation these sounds are produced the same in the two varieties, that is, in the same way they are produced in SA, whereas they undergo changes in LA at the phonetic level of repre-

sentation. To put it another way, the abovementioned sounds are respectively produced as t, ʒ, ʔ, d in LA.

Following the aforementioned variations, four phonological rules are considerable, which would be referred to in the next subsection.

4.2.1. Phonological rules

Regarding the data and the way each word is produced in LA, as table 1 depicts, the following phonological rules are considerable:

Rule 1: Change of [θ] to [t]

/θ/ ⟶ [t] / everywhere

[θ] ⟶ [t]

$$\begin{bmatrix} +\text{cons} \\ +\text{cont} \\ +\text{ant} \\ +\text{cor} \\ -\text{voice} \end{bmatrix} \longrightarrow \begin{bmatrix} +\text{cons} \\ -\text{cont} \\ +\text{ant} \\ -\text{voice} \end{bmatrix} \; / \text{ everywhere}$$

Rule 2: Change of [ʤ] to [ʒ]

/ʤ/ ⟶ [ʒ] /everywhere

[ʤ] ⟶ [ʒ]

$$\begin{bmatrix} +\text{cons} \\ -\text{cont} \\ -\text{ant} \\ -\text{str} \\ +\text{voice} \end{bmatrix} \longrightarrow \begin{bmatrix} +\text{cons} \\ +\text{cont} \\ -\text{ant} \\ +\text{str} \\ +\text{voice} \end{bmatrix} \; / \text{ everywhere}$$

Rule 3: Change of [q] to [ʔ]

/q/ ⟶ [ʔ]/everywhere

[q] ⟶ [ʔ]

$$\begin{bmatrix} +\text{cons} \\ -\text{cont} \\ +\text{dors} \\ -\text{voice} \end{bmatrix} \longrightarrow \begin{bmatrix} +\text{cons} \\ -\text{cont} \\ +\text{glot} \\ -\text{voice} \end{bmatrix} \; / \text{ everywhere}$$

Rule 4: Change of [ð] to [d]

[ð] ⟶ [d]

/ð/ ⟶ [d] / everywhere

$$\begin{bmatrix} +\text{cons} \\ +\text{cont} \\ +\text{ant} \\ +\text{cor} \\ +\text{voice} \end{bmatrix} \longrightarrow \begin{bmatrix} +\text{cons} \\ -\text{cont} \\ +\text{ant} \\ -\text{cor} \\ +\text{voice} \end{bmatrix} \; / \text{ everywhere}$$

As can be seen, from among the rules mentioned above, in three of them, the outcome of the change is a sound with [- cont] feature: [t], [ʔ], [d].

According to the definition of the phonological rules stated earlier on the one hand and the change of a sound with [+ cont] feature to another sound with [- cont] feature, on the other hand, in rules 1 and 4, fortition has taken place. By contrast, in rule 2, where the change of /ʤ/ as a sound with [- cont] feature into [ʒ] as a sound with [+ cont] feature occurs, it can be claimed that lenition has happened. As a result, in rules 1 and 4, there is a tendency towards fortition, whereas in rule 2, the process goes the wrong way round: lenition.

As to rule 3, where /q/ at the phonemic level is produced as [ʔ] at the phonetic level of representation, it cannot be claimed that fortition has happened, although the outcome of the evolution is a [- cont] sound, because /q/ is also regarded as a [- cont] sound. Thus, unlike the evolution of the three other sounds, the manner of articulation has remained unchanged. Indeed, in transformation from /q/ to [ʔ], it is the place of articulation which has undergone some change. In addition, given the voicing status, the two sounds are voiceless. Therefore, the only difference between them refers to the position out of which they are produced, that is, one is dorsal while the other is glottal. Such a process is more similar to what occurs in dissimilation.

And last but not least, the aforementioned phonological transformations all take place in any position of the words they are used in, as our data reveal. That is why the environment for them all is identically restricted to one phonological condition: everywhere.

As the last point, it ought to be mentioned that there was a considerable number of songs at the phonetic level of representation of which /ʤ/ was produced as [g] in spite of the fact that the singer was Lebanese. Nevertheless, further examinations indicated that, whenever the singer produced the sound in the way mentioned above, the song had been written by an Egyptian songwriter or it had been going to be prepared for the television series of Egypt. And in some other cases, the singer was vocally repeating a song that originally belongs to and was already performed by an Egyptian singer. Indeed, our investigations showed

that in the Egyptian variety of the Arabic language, the sound /ʤ/ is produced as [g] at the phonetic level of representation at all possible positions of the words, that is, initial, middle and final.

5. Conclusion

Throughout the present paper, two varieties of Arabic—Standard and Lebanese Arabic—, respectively indicated as SA and LA, were phonologically compared to each other. Adopting the theory of generative phonology (GP) introduced by Chomsky and Halle (1968), we analyzed our data and finally concluded that the underlying level or the level of phonemic representation which belongs to SA undergoes some phonological rules in LA that give rise to a different phonetic level of representation. It is worth noting that such phonological changes are of lenition/fortition types which take place at the initial, middle as well as final positions of words. Furthermore, it seems that one of the changes, that is to say, the change of [ʤ] into [ʒ], has been the offspring of the impact of French on Lebanese Arabic, as, on the one hand, in the former language, i.e. French, the sound [ʒ] is frequently used and, on the other hand, some time ago Lebanon has been under the colonialism of France. However, in spite of the phonetic distinctions between the two Arabic varieties in question, there are some likenesses, the most outstanding of which refers to the identical orthography of the words that the two varieties have in common. Additionally, as far as the authors are aware, these two varieties enjoy the same word order and grammatical rules.

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