

**WORD FREQUENCY AND THE ACQUISITION OF THE  
ARABIC URBAN PRESTIGIOUS FORM [ʔ]**

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**ABSTRACT**

The study explores the role of word frequency in the process of acquisition of the urban prestigious form [ʔ] in place of [q] in the vocabulary of the colloquial Arabic of Christian rural migrants to the city of Hims in Syria. The original corpus of words was derived from the naturally occurring speech of fifty-two participants, paying special attention to older speakers who use the two forms variably. The study shows that frequency plays a major facilitative role in guiding the acquisition process towards the most frequent words first, although adopting the form [ʔ] was initiated by the urban Himsi speakers' stigmatization of the rural form [q] and by social factors. The results have implications for lexical diffusion theory. They also imply that frequency can play a facilitative role in developing higher levels of urban sociolinguistic competence. More importantly, knowledge of word frequency enables predictions on the content of speakers' variable speech.

**Key words:** lexical diffusion, stigma, sociolinguistic competence, variation, colloquial Syrian Arabic, rural

**RESUMEN ABSTRACTO**

*Este estudio explora el papel de la frecuencia de palabras en el proceso de adquisición de la prestigiosa forma urbana [ʔ] en lugar de [q] en el vocabulario del árabe coloquial de los migrantes rurales cristianos en la ciudad de Hims en Siria. El cuerpo original de palabras se derivó del lenguaje expresado naturalmente por los cincuenta y cinco participantes, prestando especial atención a los parlantes más viejos que usan las dos formas variablemente. El estudio demuestra que la frecuencia juega un papel facilitador mayor en adquirir el proceso de adquisición hacia las palabras más frecuentes primero, aún cuando adoptar la forma [ʔ] fue iniciada por la estigmatización de los parlantes Himsi urbanos de la forma rural [q] y por*

*factores sociales. Los resultados tienen implicaciones para la teoría de difusión léxica. También implican que la frecuencia puede jugar un papel facilitador en desarrollar niveles más altos de competencia sociolingüística urbana. Más importante aún, el conocimiento de la frecuencia de palabras permite predicciones en el contenido de la expresión variable del hablante.*

**Palabras clave:** *Difusión léxica, estigma, competencia sociolingüística, variación, Árabe Sirio coloquial, rural*

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## Introduction

This study focuses on the influence of word frequency on the acquisition process of phonological urban prestigious forms, as initiated by social factors and stigmatization of native rural forms, rather than by frequency. The study draws parallels with lexical diffusion theory (Chen, 1972) and has implications regarding the role of frequency in acquiring higher levels of sociolinguistic competence through guiding the acquisition process towards highly frequent words first. A further implication of the study is the potential for predictions on the content of speakers' variable speech. The study described in this paper investigates the acquisition of the urban prestigious form [ʔ], in place of the rural form [q], in the colloquial Arabic vocabulary of Christian rural migrants to the city of Hims in Syria. The least frequent words in colloquial Arabic are usually technical and specialized terms used for specific purposes (Holes, 2004 [1995]; Habib, 2005). Thus, their production with the new prestigious form [ʔ] may be delayed

or impaired. It is, thus, expected that highly frequent words with the [ʔ] sound will be acquired faster by speakers whose speech is variable (Pierrehumbert, 2001; Medoza-Denton, Hay, & Jannedy, 2003). The effect of word frequency on the acquisition process of urban prestigious forms within the framework of sociolinguistic variation is not widely studied, particularly in relation to Arabic language. Daher (1998a;1998b) alludes briefly to the role of frequency in the use of [q] and [ʔ] in the context of comparing Damascene male and female users of these two sounds in relation to their use of the Standard Arabic form [q].<sup>1</sup>

Some research on frequency has shown that phonological changes affect highly frequent words at a faster rate than least frequent words (Bybee & Scheibman, 1999; Bybee, 2000; 2001; 2002; Hooper, 1976; Phillips, 1984). Frequency has been viewed as a factor that leads to variation and change, including reduction (Bybee, 2000; 2001; 2002; 2006; Coetzee, 2008; Coetzee & Pater, 2008; Guy, 1991; Patrick, 1992; Phillips, 2006; Pierrehumbert, 2001; Santa Ana, 1992), lexical diffusion change (Bybee, 2002; Phillips, 1999; 2001; 2006), and acquisition and learning (BybeeBybee, 1995; Tomasello, 2003). Frequency has also been viewed as a factor that affects the cognitive representation of forms and constructions, as well as linguistic competence (Bybee, 2000; 2001; 2002; 2006; Phillips, 1999; 2000; 2001; Tomasello, 2003). Linguistic experience and usage manifested in repetition of phonological strings, words, or constructions influence linguistic competence, and the representation of those repeated experiences in memory from which these words or forms are retrieved in production (Bybee, 2001; 2006). Thus, repetition, usage, and experience of language lead to the creation of representations or grammatical rules for those repeated/frequent forms. In this study, this idea is manifested in adoption, assimilation into one's phonetic system, and production of the most frequent words containing the [ʔ] sound first. This adoption and assimilation takes place in the

speech of rural migrant speakers who, aware of the stigma associated with [q] in Hims, try to avoid it. They are further influenced by other social pressures to adopt the urban prestigious form [ʔ] in order to sound prestigious and city-like (Habib, 2005; 2008). Thus, in this study frequency is not viewed as the primary factor for variation, change, and acquisition, as was previously suggested. Rather, it plays a supplementary, facilitative role in acquiring the urban prestigious form [ʔ] in the most frequent words first. In other words, social factors lead to the variable use of [q] and [ʔ] in the speech of rural migrants, whereas word frequency leads to the acquisition of the most frequent words containing the [ʔ] sound first by speakers with variable use of the two forms.

In a sociolinguistic study, the role of social factors, age, gender, residential area, and social class in the variable use of [q] and [ʔ] in the speech of Christian rural migrants to the city of Hims in Syria (Habib, 2008) are investigated. The results showed that their use of the Himsi prestigious form [ʔ] (Appendix) was inconsistent and that the social factors, age, gender, and residential area played a major role in this variation (Habib, 2008). In the regression tests, age, gender, and residential area emerged as statistically significant, whereas social class was statistically insignificant factor regarding the use of both [q] and [ʔ]. Residential area showed inconsistent results in two different statistical tests regarding the variable use of [q]. The regression test showed significance, whilst the contrast test between the two surveyed residential areas – Akrama and Al-Hameeddieh – showed insignificance (Habib, 2008,). Thus it can be concluded from the results of the contrast test that the observed variation is due to chance, rather than residential area. There was also statistically significant interaction among age, gender, and

residential area with respect to the use of [q], but not with respect to the use of [ʔ]. The results showed a significant difference between the younger and the older generations regarding their acquisition of the new urban form [ʔ]. The younger generation showed complete linguistic shift and acquisition of [ʔ], whereas the older generation displayed different patterns. Some showed complete acquisition, others showed maintenance of their native rural form, [q], and many showed variable use of both forms (Appendix). The inconsistency observed among speakers, particularly amongst the older generation, raised the following research questions:

1. How does the learning process of the urban prestigious form [ʔ] proceed?
2. Do speakers learn some words faster than other words?
3. Does the frequency of certain words influence such acquisition?

### *Data*

To answer the posed research questions, the data from the sociolinguistic study were used (Habib, 2008). The data consist of original corpus of words containing the two sounds [q] and [ʔ], collected from the naturally occurring speech of fifty-two speakers as part of this study (see Habib, 2008 for complete description of data collection and methodology). The corpus consists of a total of 11548 words, of which 5874 (51%) words are produced with [q] and 5674 (49%) with [ʔ] (Appendix).

### *Analysis*

For the purpose of this study, the transcribed words containing the relevant sounds for each speaker were entered in a separate table, grouping similar words together. This resulted in a corpus that contained groups of similar words from all fifty-two speakers. To aid the frequency analysis, the most frequent words produced with [ʔ] – words that occur 20 times or more (Table 1) – were selected. Similarly, the most frequent words produced with [q] – also occurring 20 times or more – were extracted for comparison purposes (Table 1). Having similar highly frequent words in the two lists in Table 1 – the [ʔ] list and the [q] list – is an indication that those words are frequent in both dialects. The high frequency of words produced with [q] does not necessarily imply that it will negatively affect the acquisition process of highly frequent words with [ʔ]. Rather, it informs us that those words are highly frequent in speech in Syrian society in general and that rural people, who may produce similar words with the [q] sound with similar high frequency, are exposed to the same highly frequent words with [ʔ] much more than to other less frequent words in major urban centers, such as Hims.

Table 1

Most frequent words produced with [q] and [ʔ]

	Word produced with [ʔ]	No. of tokens	Matching word produced with [q]	Glossary	No. of tokens
1	hallaʔ/halleʔ	735	hallaq/halleq	Now	457
2	waʔt	295	waqt	Time	82
3	ʔaal	264	qaal	Said	424
4	ʔilt	234	qilt	I/you said	397
5	baʔaa	124	baqaa	So/such/yet	98
6	ʔallee	115	qallee	He told me	172

7	ʔabl	96	qabl	Before	87
8	ʔaam	77	qaam	Discourse marker (Lit. ‘got up/did’)	41
9	rifʔaat/rifʔeet	76	rifqaat	Friends	53
10	ʔuulee	68	quulee	You can say/say	61
11	ħaʔʔ	58	ħaqq	Right/price	49
12	tlaaʔee	52	tlaaqee	You can find	22
13	rʔiiʔ	50	rʔiiq	Friend	24
14	ʔillik	50	qillik	I tell you	110
15	ʔuuloo	49	quuloo	You (pl)/they say	47
16	ʔaddeef	42	qaddeef	How much	19
17	ʔariiʔ	42	ʔariiq	Road/way	48
18	taʔriiban/taʔriiban	43	taqriiban/taqriiben	Almost/approximately	59
19	ʔalluu	41	qalluu	He told him	148
20	farʔ	38	farq	Difference	13
21	ʔal	36	qal	Discourse marker (Lit. ‘it has been said’)	139
22	ʔaʕad	36	qaʕad	He sat/lived	7
23	ʔiʕʕa	35	qiʕʕa	Story	21
24	ʔimt/ʔumit	34	qimt	Discourse marker (Lit. ‘I got up/did’)	3
25	ʔadd	33	qadd	As much	34
26	ʔallaa	32	qallaa	He told her	42
27	ʔalb	32	qalb	Heart	39
28	ʔuul	31	quul	Say/I say	20
29	ʔaaʕdi	31	qaaʕdi/deeʕdi	Sitting/living (F)	10
30	fooʔ	31	fooq	Up/above/upstairs	55
31	ʔilnaa	30	qilnaa	We said	88
32	ʔiddaam/ʔiddeem	31	qiddaam/qiddeem	Before/in front of	60
33	ʔaliil	27	qaliil	Little	43
34	ʔadiim	12	qadiim	Old/archaic	36
35	warʔa/waraʔa	26	warqa/waraqqa	Paper/leaf/Syrian pound	32
36	ʔaʔtiini	29	qaʔtiini	Town name	7
37	suuʔ	28	Suuq	Market/drive	19

38	maṅṭiʔa/ maṅṭaʔa/maṅṭʔa	28	maṅṭaqa/maṅṭqa	Area	7
39	ʔariib	24	qariib	Close/relative	28
40	tʔillee	24	tqillee	She/you tell(s) me	25
41	ntaʔalnaa	24	ntaqalnaa	We moved	8
42	ṭariiʔa	23	ṭariiqa	Method/way	10
43	wraaʔ	23	wraaq	Papers	10
44	laaʔee	22	laaqee	I find	6
45	yʔʕod	21	yqʕod	He sits/lives	12
46	maʕʔuul	20	maʕquul	Possible	20
47	niʔʕod	20	niqʕod	We sit/live	10
48	ʔaaʕdiin	20	qaaʕdiin/qeeʕdiin	Living/sitting	9
49	ʔallon	5	qallon	He told them	25
50	ʔaʔall	7	ʔaqall	Less	22
51	ṭabaʔa	12	ṭabaqa	Social class	20
52	ʕaʔl	15	ʕaql	Mind	20
53	ʔahwi	8	qahwi	Coffee	20
54	yʔillee	18	yqillee	He tells me	27
55	biiʔillee	13	biiqillee	He tells me	28
56	ʕalaaʔa	13	ʕalaaqa	Relation	29
57	ʔeeʕid/ʔaaʕid	15	qeeʕid/qaaʕid	He is sitting down	33
58	ṭaabiʔ	13	ṭaabiq	Floor/story	24

The process of acquisition of the new form [ʔ] is evident when we examine the words produced with [ʔ] by varying older speakers (those that use both forms interchangeably).

Observing the speech of younger participants, who show complete shift towards the use of [ʔ], and older speakers who show categorical use of [q] or [ʔ], does not yield much information regarding the acquisition process of the urban form [ʔ]. Thus, both younger and older speakers



who demonstrate either maintenance of their native rural form [q], or complete acquisition of [ʔ], are excluded from the study. However, the use of the [ʔ] sound by fourteen older speakers whose speech is characterized with variation, equally divided into seven males and seven females, is investigated as a part of this study. There are older speakers who show minor variability, such as Speakers 1, 3, 8, 11, and 22,<sup>2</sup> whilst other older speakers show greater variability – Speakers 5, 6, 9, 16, 19, 20, 23, 25, and 28. Table 2 presents the number of occurrences in speech of some of the highly frequent words extracted in Table 1 in comparison to the number of occurrences of less frequent words. The percentages of the occurrence of these highly frequent words in relation to other words uttered with [ʔ] is also given to establish whether frequency has influenced the acquisition of certain words with the [ʔ] sound before other words with the same sound.

Table 2

Numbers and percentages of highly frequent words in the speech of varying speakers

Speaker	Word with [ʔ]	No. of tokens	Total No. of tokens with [ʔ]	% of the word's occurrence to the total of words with [ʔ]
1	hallaʔ	8	10	80%
3	hallaʔ	2	3	67%
8	hallaʔ	3	10	30%
	waʔt	7		70%
11	hallaʔ	9	19	57%
22	ʔimt	1	1	100%
5	ʔaʕad	8	22	36%
	ʔabl	2		9%
	rifʔaat	1		4.5%
	waʔt	1		4.5%
	hallaʔ	1		4.5%

	ገaam	1		4.5%
	ገaal	1		4.5%
	ገillik	1		4.5%
	ገumit	1		4.5%
6	halla?	9	41	22%
	ገaba?	5		12%
	foo?	3		7%
	ba?aa	2		5%
	maገገi?	2		5%
	ገal	1		2%
	ገarii?	1		2%
	ገarii?	1		2%
	far?	1		2%
9	ገaam	11	50	22%
	halla?	9		18%
	wa?t	5		10%
	ገuul	4		8%
	ba?aa	4		8%
	ገuulee	3		6%
	ገalluu	3		6%
	ገaddeef	2		4%
	ገaal	2		4%
	ገimt	1		2%
	suu?	1		2%
	ገabl	1		2%
	ገallon	1		2%
16	halla?	12	86	14%
	wa?t	6		7%
	ገaal	5		6%
	ba?aa	4		5%
	ገilt	3		3%
	ገadd	3		3%
	ገal	2		2%
	ገarii?	2		2%

	ʔaliil	2		2%
	ʔallaa	2		2%
	ṭabaʔa	2		2%
	ʔillik	2		2%
	ʔillaa	2		2%
	ʔalluu	2		2%
	rifʔaat	1		1%
	ʔahwi	1		1%
	ṭlaaʔee	1		1%
	ʔuulee	1		1%
	ʔillon	1		1%
	ʔadiim	1		1%
	Ṣaʔl	1		1%
19	hallaʔ	12	75	16%
	ʔilt	9		12%
	ʔaal	9		12%
	ʔalluu	7		9%
	rʔiiʔ	3		4%
	rifʔaat	2		3%
	ʔadd	2		3%
	ʔaaṢdiin	1		1%
	ʔaam	1		1%
	ʔilnaa	1		1%
	ʔahwi	1		1%
	ʔaṢad	1		1%
	ʔallee	1		1%
	fooʔ	1		1%
20	ʔilt	17	61	28%
	hallaʔ	12		20%
	ʔallee	10		16%
	ʔaal	4		7%
	waʔt	2		3%
	ʔal	2		3%

	ʔilnaa	2		3%
	ʔimt	1		2%
	ʕaʔl	1		2%
	waraʔa	1		2%
	ʔabl	1		2%
	ʔadd	1		2%
23	hallaʔ	14	21	67%
	baʔaa	1		5%
	tʔillee	1		5%
	ʔilt	1		5%
	ʔilnaa	1		5%
	ʔaal	1		5%
25	hallaʔ	16	55	29%
	ʔaal	13		24%
	ʔal	7		13%
	niʔʕod	2		4%
	baʔaa	2		4%
	waʔt	2		4%
	ʔaam	1		2%
	ʔallee	1		2%
	ʔallaa	1		2%
	ʔabl	1		2%
	maʕʔuul	1		2%
28	halleʔ	10	29	35%
	ʔilt	3		10%
	baʔaa	1		3%
	ʕaʔl	1		3%
	ʕalaaʔa	1		3%
	ʔilt	1		3%
	ʔaal	1		3%

## Findings

Table 2 strongly suggests that the more frequent the word, the more likely for it to occur in the speech of varying speakers. This implies that frequently occurring words are acquired faster than infrequent words. In most of the varying speakers, the word *hallaʔ* ‘now’ shows the highest percentages because it is the most frequent word in Table 1 (735 tokens with [ʔ] and 457 tokens with [q]). Even in speakers whose variation is minor, this word seems to penetrate into their speech because of its high frequency, as is the case with Speakers 1, 3, 8, and 11 (Table 2). The second most frequent word in Table 1 is *waʔ* ‘time’ (295 occurrences with [ʔ]). Table 2 shows that this word occurs in high percentages in most speakers. For example, it is the only occurring word besides *hallaʔ* ‘now’ in the speech of Speaker-8 and has a higher percentage than *hallaʔ* ‘now’ (Table 2). It also has the highest percentage after *hallaʔ* ‘now’ in the speech of Speaker-16 (Table 2). The next four most frequent words are *ʔaal* ‘said’, *ʔilt* ‘I/you said’, *baʔaa* ‘so/such/yet’, and *ʔallee* ‘he told me’ (264, 234, 124, and 115 occurrences with [ʔ] respectively) (Table 1). For instance, *ʔaal* ‘said’ has the second highest percentage in Speaker-25, the third highest percentage in Speakers 16 and 19, and the fourth highest percentage in Speaker-20 (Table 2). It also occurs in the speech of most other speakers. Similarly, *ʔilt* ‘I/you said’ has the second highest percentage in Speakers 19 and 28, whilst it also occurs in the speech of most other participants. In comparison, *baʔaa* ‘so/such/yet’ has the second highest percentage in Speaker-23, the third highest percentage in Speaker-28, the fourth highest percentage in Speakers

6 and 16, and the fifth highest percentage in Speakers 9 and 25. This word also appears in the speech of most other speakers. Similarly, *ʔallee* ‘he told me’ has the third highest percentage in Speaker-20 and is used by most other speakers.

It is worth noting here that a word like *ʔallee* ‘he told me’ is semantically related to other frequently occurring words like *ʔallaa* ‘he told her’, *ʔalluu* ‘he told him’, *ʔuul* ‘say/I say’, etc., with the semantic meaning of ‘say/tell.’ Nevertheless, in this study they are treated independently. However, as they are derived from the same root in Arabic, it is possible to group them together, yielding even higher frequency. The non-concatenative morphology of Arabic language depends mainly on interweaving roots and patterns; roots consist usually of three consonants and carry an abstract meaning from which semantically related words are derived (Holes, 2004 [1995], p. 99; Habib, 2008). Patterns are vowels and consonants that are added to roots to derive those semantically related words. Although the frequency of various forms of the verb for ‘say/tell’ and other words has been calculated separately, the possibility that speakers may operate on the basis of the frequency of the root, not the word has not been eliminated.

Feldman et al. (1995) argued that morphemes and rules are stored in the brain, comparing English – a concatenative language, with Hebrew – a non-concatenative language like Arabic. Their study showed morphological relatedness effects in a repetition priming study among words that share the same root, even at long lags. This indicates that roots are stored separately in the lexicon and are accessed quickly by speakers who have previously encountered them. Once accessed, speakers apply stored rules to build or decipher semantically related words.

Nonetheless, Beret et al. (2006) argued that in Hebrew, stems, not roots, are stored in the brain, although their findings do not completely eliminate the possibility of roots being stored.

On the other hand, Davis and Zawaydeh (2001) and Arad (2003) propose that both stems and roots are stored in the brain. Whether roots or stems are stored in the brain is beyond the scope of this study, as grouping words based on root frequency or merely word frequency does not affect the results. Although words are not grouped based on the frequency of the root, semantically related words are highly frequent even when they are analyzed independently from each other and show that high frequency lead to faster acquisition of them.

### Discussion and Conclusion

The comparison between Table 1 and Table 2 revealed that frequency plays a major role in the acquisition process of [ʔ]. Mostly, highly frequent words are the ones that occur in the speech of varying speakers, evident in the high percentages of these words in their speech. Table 2 showed that the more frequent the word, the higher its usage in the speech of varying speakers. This leads to the conclusion that the more frequent the word that contains the [ʔ] sound, the faster the acquisition of that word and the more likely for it to be acquired. Highly frequent words with [ʔ] are even acquired by those whose speech can be characterized by almost 100% use of [q].

This study implies that the knowledge of word frequency enables predications on whether this word is used by varying speakers or not. In other words, the frequency of words yields expectations on the content of varying speakers' speech. Similar research is required to investigate this predication in other languages and dialects where speakers show variation in the use of phonological forms.

Moreover, in this study, frequency is not taken to be the main reason for acquisition of the new prestigious form, as it demonstrated that social factors influenced the speakers to acquire

the urban form [ʔ]. It is thus postulated that the role of frequency is to lead the acquisition process towards the most common words first, whilst speakers aware of the stigma associated with [q] in Hims try to adopt [ʔ] in order to conform to the society. The process of this acquisition is not random; rather, it follows a certain pattern, whereby the most frequent words with [ʔ] are acquired first.

The findings of this study suggest that cross-generational change may start with a few highly frequent [ʔ] words and then may spread to other words. In this sense, the mechanism of change from [q] to [ʔ] in the older generation of rural migrants to Hims could be the result of lexical diffusion (Habib, 2005, Section 4.2), as highly frequent words with [ʔ] are acquired first. According to lexical diffusion theory (Chen, 1972), “sound changes occur word by word” (Deumert & Mesthrie, 2000, p. 118). Phonetic and phonological changes can also occur gradually (Phillips, 1999; Bybee, 2000). The theory thus implies that sound change does not occur in all words at the same time and that change may occur in some words before others; i.e., high frequency words undergo the change first. Chen (1972, cited in Deumert & Mesthrie, 2000, p. 119) proposed the S-curve pattern, suggesting that:

1. Initially the new pronunciation is to be found in a few common words. These are often words or groups of words important to a subgroup or subculture within the community.
2. The change then spreads to other words at a relatively rapid rate.
3. At the final stage, the rate of the change slows down with the few last words to undergo the change.

The findings of this study support Chen’s (1972) first suggestion: change begins with “a few common words.” However, it is beyond the scope of this study to confirm the second and



third proposals of lexical diffusion theory, as it requires longitudinal studies to see whether there is a spread to other words and how rapid the spread is. Nonetheless, we can conclude that the high frequency of certain words used in everyday life can speed the acquisition of those words with their new phonological forms and their assimilation in one's speech. Since high frequency expedites the acquisition of the urban prestigious form [ʔ] in highly frequent words, it can be viewed as playing a facilitative role in the acquisition process of the new form. Furthermore, it is crucial in developing and advancing higher levels of urban sociolinguistic competence because the change from rural [q] to urban [ʔ] is socially conditioned. According to usage-based theory, highly frequent words become entrenched in their own phonemic representations, automated, and easier to access (Bybee, 2001). Since words produced with [ʔ] are associated with prestige, learning those words and having quick mental access to them due to high frequency is indicative of achieving some level of urban sociolinguistic competence.

## Notes

1. The Standard Arabic sound /q/ is realized as [q] in Standard Arabic, the formal, written language; [q] in the native dialect of the rural speakers in this study; [ʔ] in the native Himsi dialect; and varies between [q] and [ʔ] in the colloquial Arabic of many rural migrants to the city of Hims.
2. I only include here the number of speakers who showed variation in Habib (2008). The Appendix includes all fifty-two speakers and their use of [q] and [ʔ]. The Appendix shows clearly the variability in the speech of older speakers 1, 3, 5, 6, 8, 9, 11, 16, 19, 20, 22, 23, 25, and 28. Speakers 1 to 11 are males. Speakers 16 to 28 are females.

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## Appendix

### Distribution of [q] and [ʔ] in the speech of each speaker

Speaker	Gender	Age	Social class	Area	No. of [q]	% of [q]	No. of [ʔ]	% of [ʔ]
1	M	77	LM	Akrama	222/232	96	10/232	4
2	M	67	LM	Akrama	264/264	100	0/264	0
3	M	64	LM	Al-Hameeddieh	467/470	99	3/470	1
4	M	60	LM	Al-Hameeddieh	204/204	100	0/204	0
5	M	70	LM	Al-Hameeddieh	80/102	78	22/102	22
6	M	67	LM	Al-Hameeddieh	70/111	63	41/111	37
7	M	64	LM	Al-Hameeddieh	122/122	100	0/122	0
8	M	53	LM	Akrama	183/193	95	10/193	5
9	M	70	UM	Al-Hameeddieh	79/129	61	50/129	39
10	M	69	UM	Al-Hameeddieh	273/273	100	0/273	0
11	M	62	UM	Al-Hameeddieh	286/305	94	19/305	6
12	M	62	UM	Al-Hameeddieh	308/308	100	0/308	0
13	M	64	UM	Al-Hameeddieh	205/205	100	0/208	0
14	F	75	LM	Akrama	170/170	100	0/170	0
15	F	61	LM	Akrama	278/278	100	0/278	0
16	F	61	LM	Al-Hameeddieh	44/130	34	86/130	66
17	F	61	LM	Al-Hameeddieh	0/154	0	154/154	100
18	F	59	LM	Al-Hameeddieh	421/421	100	0/421	0
19	F	56	LM	Al-Hameeddieh	56/131	43	75/131	57
20	F	52	LM	Akrama	61/129	47	68/129	53
21	F	53	LM	Al-Hameeddieh	7/94	8	87/94	92
22	F	67	LM	Al-Hameeddieh	115/116	99	1/116	1
23	F	58	LM	Al-Hameeddieh	44/65	68	21/65	32
24	F	58	UM	Al-Hameeddieh	375/375	100	0/375	0
25	F	57	UM	Al-Hameeddieh	163/218	75	55/218	25
26	F	61	UM	Al-Hameeddieh	0/137	0	137/137	100
27	F	58	UM	Al-Hameeddieh	361/361	100	0/361	0
28	F	57	UM	Al-Hameeddieh	103/133	77	30/133	23
29	M	31	LM	Akrama	239/271	88	32/271	12
30	M	25	LM	Akrama	290/303	96	13/303	4
31	M	35	LM	Akrama	254/255	100	1/255	0
32	M	30	LM	Al-Hameeddieh	32/317	10	285/317	90
33	M	23	LM	Akrama	2/120	2	118/120	98
34	M	19	LM	Akrama	9/220	4	211/220	96
35	M	24	UM	Al-Hameeddieh	2/294	1	292/294	99
36	M	23	UM	Al-Hameeddieh	32/315	10	284/315	90
37	M	24	UM	Al-Hameeddieh	2/181	1	179/181	99
38	M	36	UM	Al-Hameeddieh	3/59	5	56/59	95
39	M	27	UM	Al-Hameeddieh	6/215	3	209/215	97
40	F	35	LM	Al-Hameeddieh	5/475	1	470/475	99
41	F	28	LM	Al-Hameeddieh	11/143	8	132/143	92
42	F	24	LM	Al-Hameeddieh	0/308	0	308/308	100
43	F	18	LM	Akrama	0/65	0	65/65	100
44	F	29	LM	Akrama	5/421	1	416/421	99
45	F	28	UM	Al-Hameeddieh	1/124	1	123/124	99
46	F	33	UM	Al-Hameeddieh	3/479	0	476/479	100
47	F	32	UM	Al-Hameeddieh	0/114	0	114/114	100
48	F	28	UM	Al-Hameeddieh	7/385	2	378/385	98

49	F	23	UM	Al-Hameeddieh	6/118	5	112/118	95
50	F	25	UM	Al-Hameeddieh	2/178	1	176/178	99
51	F	21	UM	Al-Hameeddieh	2/127	2	125/127	98
52	F	26	UM	Al-Hameeddieh	0/230	0	230/230	100
Total					5874/ 11548	51	5674/ 11548	49

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