Structural change in Urban Palestinian Arabic induced by contact with Modern Hebrew

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General

In her overview of over a century of contact between Arabic and Hebrew in Palestine, Henkin-Roitfarb "stress[es] that the contact is asymmetric" (2011:61). This qualification has to do mostly with the imbalance of dual language proficiency across the Jewish-Israeli community, where Hebrew is used as the primary language of communication, and the Palestinian community, whose native language is Palestinian Arabic. While the former includes native speakers of various dialects of Arabic, though typically not Palestinian Arabic (more common are North African and Mesopotamian dialects), as well as a small percentage of non-native speakers who have mastered Arabic as a second language, they do not compare to the overwhelming numbers of Palestinians who have studied within the Israeli educational system and acquired Hebrew to a high level of proficiency.

The goal of the current paper is to focus on a number of structural changes in a contemporary dialect of Palestinian Arabic and contextualize them as contact-induced changes. Because Arabic and Hebrew share—or had shared—certain features throughout history, and because some of the changes described may not be unique to Arabic varieties that are in contact with Hebrew, there will be an almost forensic nature to some of the argumentation herein. Using a combination of quantitative methods, general principles of diachronic linguistics and language contact and—first and foremost—basing the analysis on empirical data recorded in Palestine between 1999 and 2005, I hope to establish that much of the deviation exhibited in the dialect at hand from neighboring dialects that are not in contact with Hebrew is indeed a result of this very contact.

Thomason & Kaufman (1988:67) argue that "long-term contact with widespread bilingualism among borrowing-language speakers is a prerequisite for extensive structural borrowing." Nagy (1996) provides us with a body of work which has taken this notion and incorporated it within the theoretical thinking and methodology of variationist sociolinguistics. Nagy lists (1996:41) three groups of intensity of contact factors: amount of contact, cultural identity and linguistic factors.

Palestinian citizens of Israel attend, for the most part, public schools whose main language of instruction is Arabic. Officially, the variety of Arabic used in the school system is Modern Standard Arabic. Pupils study Hebrew starting in the third grade
of elementary school (Amara 2001:160). However, scholars in educational linguistics raise serious doubt regarding the degree of proficiency these students typically achieve by the end of high school. In Jaffa, where the main bulk of data for the current study were collected, this is further complicated by the fact that many families prefer to send their children to schools in which Hebrew, not Arabic, is the main language of instruction. Other children attend private parochial schools, where other languages (e.g., French) are also added into the mix.

According to the most recent report by the Israeli Central Bureau of Statistics, “Arabs” (i.e., Palestinians) constitute 20.69% of Israel’s population of 8,114,000. Talmon (2000) reports that while most (ca. 65%) of the speakers of Palestinian Arabic within Israel are concentrated in the Galilee and in Haifa, i.e., in the northern part of the country, some 100,000 live in the southern Nagab region, and over 200,000 live in the central region, within the greater metropolitan area whose core is in Tel Aviv-Jaffa. The Palestinians living in the muṭṭallaθ ‘Triangle’ area north and northeast of Tel Aviv-Jaffa are not quite a part of the cluster of suburbs and semi-industrial towns of the metropolis. Those living in the mixed (i.e., Jewish-Arab) towns of Lydd and Ramle are closer to that status.

Those living in Jaffa (Arabic jafa; Hebrew jafo, in more formal registers ja’fo) formerly an autonomous municipal entity and since shortly after the formation of the State of Israel part of the city of Tel Aviv-Jaffa, are in many ways full participants in the urban experience, culturally and financially. There appears to be some controversy surrounding the number of Palestinians currently living in Jaffa. According to the demographic section of the 2012 statistical bulletin for the City of Tel Aviv—Jaffa, out of 404,800 people living in the city as a whole (Tel Aviv and Jaffa combined), at the end of 2011, 388,100 (95.87%) were “Jewish and other non-Arabs” and the remaining 16,700 (4.13%) were “Arabs” (i.e., Palestinians). However, only about 14,000 of these (83.83%) lived in Jaffa.

The numbers reported by the League of the Arabs of Jaffa, a local group that describes its goal as “to preserve the Arab presence in Jaffa and to protect the rights of the Palestinians in Jaffa as an Arab Palestinian Minority [sic],” are higher. The

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1. I have been informed (inter alia by Elana Shohamy of Tel Aviv University School of Education, p.c., Feb. 2007) that this is changing and that due to pressure from parents and other community factors, Hebrew is now entering the Arab schools as early as the second and first grades in many instances.
3. Unless otherwise noted, transcriptions in this paper are based on IPA notation.
League devotes part of its web site\(^6\) to "Historical Background"—about Jaffa and its Palestinian identity, not about the League itself—and opens with the following:

> “The number of Arabs in Jaffa today reaches about 23,000 inhabitants. Before Jaffa fell in Israeli hands in 1948, the Arab inhabitants of Jaffa counted more than 120,000. Most of them were forced to leave their city. Only 3900 Arabs were able to stay in Jaffa. Today Jaffa is one of the six so called Palestinian mixed cities targeted by the Israeli authorities. Jewish new comers live in the homes of the Palestinians who were forced to leave in 1948. All six cities are targeted by the Israeli authorities to turn them into marginal insignificant minorities.”

It is worth noting that this web page has a “© 2007” notation at its bottom, implying that the information in it may not have been updated in seven years. This actually brings the population figures more in line with the official ones from the municipal authorities (which, in turn, are drawn from the Central Bureau of Statistics). The municipal report (written in Hebrew), indicates that the non-Jewish population of Tel Aviv—Jaffa had peaked in 2003 at 28,200, having doubled from what it had been in 1991. But the current (i.e., 2011) statistic represents a fall, following a decrease in annual natural growth, currently at -0.3%.

### The Envelope of Variation

The study summarized in this paper comprises two main sociolinguistic variables. As is customary in variationist sociolinguistics, these variables will be referred to using regular parentheses ( ) . In addition to the main variables, I will discuss a number of additional variables, for which only preliminary data is currently available. However, the preliminary data for the additional variables, alongside the abundant data and careful analysis for the two main variables, paint what I believe to be a solid picture of a contemporary language contact situation between two Semitic languages.

The two main variables are (\(\text{Y}\)) and (\(\text{EMPH}\)). The former refers to the voiced pharyngeal fricative in Arabic, which in Palestinian Arabic is often depharyngealed in a variety of phonetic realizations. The latter is in fact a cluster of variables: (\(d^n\)), (\(s^\text{\&}\)) and (\(t^\text{\&}\)) – the three so-called emphatic consonantal phonemes of urban Palestinian Arabic.\(^7\)

While Arabic and Hebrew are both Semitic languages of the Central Semitic branch,\(^8\) the phonemic inventory of Hebrew is impoverished in comparison with Arabic. Old

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\(^7\) Note that urban Palestinian Arabic, the variety under investigation, has merged the two voiced pharyngealed alveolars: \(d^n\>d^\text{\&}\). For a detailed account of this merger, and the question of whether it is indeed a merger per se, see Al-Wer 2004.

\(^8\) Arabic used to be classified as a South Semitic language, alongside the Ethiopian and South Arabian languages, but a newer classification had been proposed by Hetzron in 1972, and Rubin’s (2008) family tree is something of a refinement of that tree. Rubin means for it to represent the
Hebrew had already lost several Proto-Semitic (PS) consonantal phonemes. Modern Hebrew has since lost several more. Classical Arabic (CA), with its 28 consonantal phonemes, has all but one of the PS consonants. The 29th, a voiceless lateral fricative /ʕ/ (conventionally marked as /ʃ/ by most Semitists), is found in Old Hebrew but has merged in Modern Hebrew with the voiceless alveolar fricative /s/. CA has a set of emphatic (CA mufaxxam) consonants, which are pharyngealized or velarized (or, according to Shahin 1995, 1996, uvularized)\(^9\) counterparts of non-emphatic consonants: /d/, /s/, /t/, /ð/\(^10\). Old Hebrew merged the first and fourth of these with the second, and Modern Hebrew merged the third with /t/, and the merged Old Hebrew /s/ is pronounced as an affricate /c/ [ts] (see Steiner 1982: 11-44 for a discussion of the origins of the diachrony of the affricated reflexes of Hebrew /s/ in the various locales in which it was spoken). In Palestinian Arabic, as in virtually every contemporary vernacular of Arabic, Classical Arabic */d/ and */ð/ are merged (or appear to be merged; see Al-Wer 2004) either as a stop or a fricative, depending on whether the dialect in general has retained the pronunciation of interdental fricatives. Dialects that merged */θ/ and */ð/ with /t/ and /d/, respectively, typically only have a voiced emphatic alveolar stop as a reflex of both */d/ and */ð/. Dialects that have retained the non-emphatic interdental have a voiced emphatic interdental fricative as the merged (or nearly-merged) fricative. In some dialects, a new variant, a voiced emphatic alveolar fricative */ʕ/ has emerged, usually by means of lexical diffusion and borrowing from CA or MSA into the vernacular. In the Jaffa dialect, a typical urban Mediterranean variety, all historical interdental fricatives have alveolar plosive reflexes.

Another difference between contemporary Hebrew and Arabic is that Arabic has distinctions of quantity: consonant gemination and vowel length. Biblical Hebrew

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\(^{9}\) I wish not to enter the debate on the precise phonetic nature of “emphasis” in Arabic. In Shahin 1996 it is strongly argued that pharyngealization and uvularization are two discrete processes. McCarthy 1994 is also of the view that: “The so-called pharyngealized consonants of Arabic should really be called uvularized.” On the other hand, both traditional groupings of Arabic consonants and modern acoustic accounts find that the emphatics share features with the pharyngeal and uvular consonants alike and that the emphatics do have constriction in the pharynx. I will therefore use the term pharyngealized for the emphatics and transcribe them with a superscript ˤ accordingly.

\(^{10}\) In this section only, I am transcribing the emphatics with an underdot, as is customary among Semitists. This is mostly because it is unclear what the exact nature of PS emphatics was. It is common to think that they were historically ejective. Cf. Bergsträßer (1983:4): “The oldest pronunciation of the emphatics was probably with following release of the glottal stop, as is still the case in modern Ethiopic; this is widely replaced by a weakened pronunciation with velarization – broader contact between tongue and palate, particularly the soft palate.” Elsewhere, as stated above, I use a more IPA-compliant transcription.
(as far as the Tiberian “pointing” system for indication of vocalization can tell us) was beginning to lose some of the length distinctions for certain vowels, in some cases substituting different vowel qualities for a PS long vowel. Also in Biblical Hebrew, certain “guttural” consonants (pharyngeals, laryngeals and the liquid /r/) were not geminated, often with compensatory lengthening of a preceding vowel. Modern Hebrew is much more categorical: gemination and long vowels do not exist.

Finally, most speakers of Modern Hebrew do not have the PS (and Old Hebrew) pharyngeal fricatives that most varieties of Arabic have retained. In Modern Hebrew, /h/ has merged with /x/, and /ʕ/ has merged with the glottal stop /ʔ/ (both of which, as well as /h/, are often realized as a phonetic zero).

Lenition in Palestinian Arabic

The processes of sound change that I am grouping together as “lenition” include the following:

(7) Shortening of long vowels \( V_1 \rightarrow V_1^{11} \)

(8) Degemination of consonants \( C_1 C_1 \rightarrow C_1 \)

(9) Depharyngealization of the voiced pharyngeal fricative \( \ʕ \rightarrow \ʔ \sim \emptyset \)

(10) Depharyngealization of secondary pharyngeal articulation of emphatic alveolar stops and fricative

\[
\begin{align*}
\{d^\dagger\} & \rightarrow \{d\} \\
\{s^\dagger\} & \rightarrow \{s\} \\
\{t^\dagger\} & \rightarrow \{t\}
\end{align*}
\]

I am using “lenition” as a categorization of both types of features (those involving loss of pharyngeal articulation and those involving loss of length distinction), mainly because the end result of each of these processes is a less complex system, insofar as it includes fewer features from which the speaker needs to choose, and the features that are taking over are in a sense of simpler articulatory nature. This is in line with Campbell’s (1998:41) definition: “Lenition is a reasonably loose notion applied to a variety of kinds of changes in which the resulting sound after the change is conceived of as somehow weaker in articulation than the original sounds”.

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11 In the formal representation of these processes I am using the synchronic arrow (\( \rightarrow \)) rather than the diachronic angled bracket (>), as for now I am only treating these processes as variable rules, which do not necessarily affect the underlying phonological value of the features involved.
The Fieldwork

The Sample

The data for this study were extracted from sociolinguistic interviews conducted in Palestine by the author with native speakers of Palestinian Arabic, mostly in 2004 and 2005 (two interviews from a pilot study in 1999 were also used for parts of the analysis). For the purpose of controlling for and analyzing the role of contact between Arabic and Hebrew, a two-pronged approach was employed. First, the sample included not only speakers for whom it was known that contact was a part of their linguistic repertoire, but also a sub-sample of speakers (referred to hereafter as the “control group”) for whom it was assumed a priori that contact with Hebrew was nonexistent or negligent at best. The former group of speakers consisted of natives of Jaffa, a Palestinian city that was ethnically cleansed in 1948 and became a mixed Arab-Jewish town, and later a borough of the larger, predominantly Jewish, City of Tel Aviv-Jaffa. The latter was interviewed in Jerusalem and Ramallah and comprised residents of these two West Bank cities and their environs.

Secondly, the speakers within the Jaffa sample are stratified (albeit not evenly) to represent various levels of language contact within the town itself. For instance, speakers of different age groups are assumed to have had varying degrees of exposure to Hebrew during their formative years and throughout their primary and secondary education. Additional social factors, including language of primary and secondary education (schooling in Jaffa is offered in Arabic, Hebrew, and French, depending on the type of school), proficiency in Hebrew as assessed by the researcher, and others (see Horesh 2014 for details) were coded for and included in a careful quantitative analysis of the data.

<table>
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<tr>
<th>Age</th>
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<th>West Bank</th>
</tr>
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<tr>
<td></td>
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<td>M</td>
<td>F</td>
</tr>
<tr>
<td>14-35</td>
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<td>7</td>
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</tr>
<tr>
<td>36-60</td>
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</tr>
<tr>
<td>61+</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Grand total</td>
<td>24</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Number of speakers sampled by age and socioeconomic status

The interviews

In addition to some of the standard urban topics of discussion that sociolinguists use to elicit vernacular forms (danger of death, premonitions, childhood games,
etc.), I saw the need to construct a number of modules that would address questions of language contact and language attitude. Examples of questions of this sort can be found in the interview excerpts in a study of Anglophones in Quebec, by Nagy, Moisset & Sankoff (1996).

In the Jaffa case, similar modules were adapted to fit the local setting. Part of my strategy was to conduct the interview with a short Hebrew component, leading to a longer portion in Arabic. It had been my experience that as a non-Arab who happens to speak Arabic, I am often identified as an “other” (more specifically, a Jewish Israeli, regardless of my own personal views of my identity). Oftentimes, when I initiate a dialogue in Arabic with Palestinians, my interlocutors reply in Hebrew and impose a switching of the language of the interaction. Since I wanted to gather some information not only about the speakers’ own assessment of their Hebrew and their level of contact with Hebrew speakers, but also about their actual level of proficiency in Hebrew and the degree to which their Hebrew resembled that of native speakers, it seemed like a good idea to commence each interview with the Hebrew component, including, *inter alia*, an explicit language-centered module of questions and a short reading passage, and then introducing Arabic through an abrupt shift on my part in the form of “okay, now in Arabic!” (uttered in Arabic).

**Analysis and discussion: variable 1 – (ʕ)**

**Description of the variable**

A complex variable

Upon embarking on the fine-grained work of coding the corpus for this variable, it became clear that it is a more complex variable than I had originally envisaged it to be. I had suspected that there would be more to this variable than simply a pharyngeal realization – the traditional [ʕ] – and a mere deletion of the segment. What I had thought would be an intermediate variant, based on casual auditory observation of the data I had been collecting, was a sort of a glottal stop [ʔ].

Two types of vocalization

However, when I began coding, I discovered the existence of at least two types of vocalic variants of (ʕ) in the Palestinian dialect. One of them I am calling ‘compensatory lengthening,’ as it involves simply the lengthening of the preceding otherwise short vowel, e.g., *baːdeːn* → *baːdən* ‘later.’ The second type of vocalic variant is ‘syllabic vocalization.’ It consists not only of the addition of a vocalic mora, but also of resyllabification of the word. It often occurs at the final word boundary, though it is not limited to this position. A prime, recurring example of this phenomenon is found in the word *us.buːʕ* → *us.baːʕ* ‘week.’ What I find intriguing
about this particular variant in the context of the Arabic-Hebrew language contact situation – and this specific lexical item happens to illustrate this quite neatly – is that there is a similar phenomenon in Hebrew, traditionally known as *patah gənuva* such as in the Hebrew equivalent of *us.бу:ʕ* ~ *us.бу:а—ʃа.vу.а(ʕ)*—the [ʕ] only pronounced nowadays by Hebrew speakers whose dialects are influenced by Arabic (usually because of ancestry within the Middle East or in North Africa).

Creaky voice

It is worth noting here that an additional type of variant was quite common in the data analyzed for this study. I had originally considered coding this variant, often referred to in the literature as ‘creaky voice,’ as separate from the traditional pharyngeal [ʕ], and in a subsequent study may in fact return to these tokens and study them in their own right. However, I have chosen, for the sake of both convenience and a certain degree of logic, which I shall defend henceforth, to code the creaky voiced tokens as ‘regular’ pharyngeals. The convenience argument has to do with the lack of certainty in distinguishing creaky tokens from pharyngeal ones in a good deal of the cases. On the one hand, many profoundly creaky tokens do show up on spectrographic images in quite recognizable fashions. On the other hand, I decidedly only used the freeware Praat and its spectrographic feature as an aid in determining the quality (and in the case of compensatory lengthening – quantity) of variants, secondary to my own auditory impressions of the phonations. For this reason, in those cases in which there was a discrepancy between Praat showing some degree of creakiness, but the auditory impression being that of an actual pharyngeal, I preferred to code the tokens as the latter.

A hierarchy of lenition

In terms of logic, my rational was as follows. The idea behind coding for multiple types of variants was that there was a hierarchy of lenition, possibly related to contact between Arabic and Hebrew, and that this hierarchy was gradient. This gradient nature of the variants would subsequently allow for a multivariate analysis (e.g., using Rbrul)\(^\text{12}\), treating the variables on a continuous scale. It was fairly clear where on this scale the four variants I eventually coded for would fall. Adding ‘creaky voice’ into the mix would have potentially jeopardized the analysis, as it would have been virtually impossible to assess where this variant belongs on the continuous scale.

\(^{12}\)Rbrul is the current standard software among many variationist sociolinguists for conducting multivariate statistics, replacing the hitherto ubiquitous Varbrul/Goldvarb program (see Johnson 2009).
It is worth noting here that ‘creaky voice’ (or ‘creaky phonation’ as a more technical, phonetic term) has been widely observed in a variety of dialects (see, e.g., Heselwood 2007:6, 13, 17). One variety in which it is common to see this feature is Maltese, which is of course tempting for drawing analogies with Palestinian Arabic because of the contact situations both varieties have been subject to. What is interesting about creaky voice as a reflex for /ʕ/ in Maltese, however, is that the literature seems to mostly attest to this feature being prevalent in the dialects of Gozo, the smaller inhabited island of Malta, which is considered to have a more conservative dialect, one that preserves pharyngeal consonants (see, e.g., Hume et al. 2009:15, fn 1). Agius (1992:130) informs us that “[a] ‘creaky voice’ to describe the alternation in the pronunciation of the voiced pharyngeal fricative [...] occurs practically in all Gozitan dialects.” He further asserts that (similarly to the Palestinian case) “at times it is lost except for a compensatory lengthening of adjacent vowels.” Compensatory lengthening for historical /ʕ/ is also the focus of Hume et al.’s 2009 study involving two speakers from the island of Malta itself (not Gozo). Their findings, however (e.g., p. 42) indicate that unlike the Palestinian data, in Maltese, vowels adjacent to a historical voiced pharyngeal are typically not lengthened to the same extent as phonemically long vowels.

In summation, the five variants eventually coded for with respect to the (ʕ) variable are as follows, in ascending order of lenition:

1. Pharyngeal
2. Glottal
3. Compensatory lengthening
4. Syllabic vocalization
5. Deletion
Figure 1 is a graphic representation of a cross-tabulations of the data, in which for each speaker, two values are reported. The left-hand side bar for each speaker represents a value for the application of a variable rule that assumes deletion of the pharyngeal only, ignoring all intermediate variants. The bar on the right for each speaker aggregates all of the lenited variants: deletion (i.e., ∅), compensatory lengthening, and syllabic vocalization, and treats them collectively as the application value, in opposition to the fully pharyngeal [ʕ] variant.

The purpose of this cross-tabulation and its graphic representation is mostly for getting a general feel of the data, prior to submitting it to more rigorous “number crunching.” What we see here is a rather convincing confirmation of the general hypothesis at hand that correlates lenition of pharyngeal articulation with contact a

![Figure 1: Cross-tabulation of (ʕ) by speaker, community and 2 types of lenition](image)

speaker has with Hebrew. This is true across the sample. In other words, while the distinction between the bilingual Jaffa speakers and the non-bilingual West Bank speakers is helpful to maintain a perspective regarding speakers’ general proficiency with the superstrate language and its potential to induce change on a daily basis, high variability is apparent within the bilingual group as well.

Several Jaffa speakers have relatively low values for deletion (the blue bars in Figure 1), but when considering all forms of lenition (the red bars), their values surge.
Consider such speakers as ‘tˤaːriq,’¹³ who was an 18 year-old high school student at the time of the interview (born 1987). His value for ∅ realization of ⟨ʕ⟩ is 0.109, but his value for lenition in general is 0.562. ‘umm xaliːl’ is an even more striking case. Not only is she much older (born 1928), but her life trajectory is much more complex. She had left Jaffa in 1946 to marry a man in the village of abu kiʃk, where the dialect spoken is of a Bedouin type (I have met her husband, and he still speaks a Bedouin dialect), and after being expelled from their village (which was eventually destroyed) in 1948 to Gaza and to northern Sinai in Egypt, they returned to Palestine, but to a different village altogether, zalʒuːle, where I ended up interviewing her in 2004.

Similarly to ‘tˤaːriq,’ ‘umm xaliːl’s’ speech exhibits a very low rate of full deletion of the voiced pharyngeal fricative (0.111). Her value for lenition at-large is seven-fold at 0.752. I have no clear-cut explanation for this pattern, only a few educated guesses. We can begin with the gender hypothesis, which is known from general sociolinguistics. As a woman, albeit the oldest woman in the sample, it is not unreasonable for us to expect somewhat more advanced tokens from her than from her male counterparts. Also recall that at the time of the interview, ‘umm xaliːl’ had been displaced from the original environment of her native dialect for six decades. She had acquired neither the rural, fallaːhi, dialect of her “new” domicile nor any of the dialects of the places in which she lived during her transition there (including her husband’s Bedouin dialect). She reports still visiting Jaffa from time to time (a mere 35-km drive from her current village). While her Hebrew proficiency is the lowest of all the Jaffa speakers in the sample, and her level of contact with Hebrew speakers the lowest as well, she is still exposed to Hebrew through mass media, shopping trips to Jewish cities and other sources.

All of the above amount to a rather nebulous set of factors, which admittedly could have led to either a more conservative linguistic behavior or, as indeed we see in this case, a more advanced one. I tend to think that her rather special position in her family and community have led her to assert her urban origins in some ways that she is aware of (e.g., the non pronunciation of interdentals and the glottal realization of historical ⟨q⟩, cf. Shahin 2008:527) and in others – such as the lenition in the case of the ⟨ʕ⟩ variable – that are below her level of consciousness.

Multivariate analysis

Elsewhere (Horesh 2014) I explain in greater detail the rationale behind the quantitative methodology I have used to attain the results I report in this section. I also report the statistics much more exhaustively there than I do here. What I wish to provide below in terms of the quantitative component of the linguistic analysis of

¹³ All speakers are referred to by pseudonyms, hence the single quotes.
the variation is the conclusion arising from the statistical modeling, with only a representative set of numerical corroboration.

In Table 2 below, “Log-odds” are numbers between $-\infty$ and $\infty$, such that any positive numbered log-odd indicates favoring application of the variable rule, and negative numbered log-odds indicate disfavoring. A log-odd of 0 indicates neutrality (Johnson 2009:361).

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</tr>
<tr>
<td></td>
<td>2</td>
<td>-0.737</td>
<td>2128</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Realization of pharyngeals in Hebrew speech (p&lt;0.01)</th>
<th>Factor</th>
<th>Log-odds</th>
<th>Tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partial</td>
<td>0.540</td>
<td>732</td>
<td></td>
</tr>
<tr>
<td>Pharyngeal</td>
<td>0.540</td>
<td>476</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>-0.027</td>
<td>1294</td>
</tr>
<tr>
<td></td>
<td>No Hebrew data</td>
<td>-0.513</td>
<td>667</td>
</tr>
</tbody>
</table>

Table 2: Rbrul results for Jaffa & West Bank (binary: all lenition variants)

Most of the results shown in Table 2 confirm the hypothesis correlating language contact and the change in progress in Palestinian Arabic with reference to the weakening of pharyngeals. The favoring of the younger two age groups, which include speakers born after 1948, and most importantly educated – at least in the
Jaffa speech community – under the auspices of the Israeli Ministry of Education\textsuperscript{14} is in line with this rationale, as is, of course, the factor group relating to language of schooling. The self-reported level of contact with Hebrew speakers factor group is also consistent with this pattern.

Favoring of women versus men in the multivariate analysis is consistent with preliminary observations we have noted in the cross-tabulations above.

It is interesting – and at first glance counterintuitive – that bilingual speakers who realize (all or some) of the historical Hebrew pharyngeal consonants as pharyngeals, tend to lenite them in their native Arabic. What this test actually tells us may be interpreted somewhat differently, especially in light of some of the other statistical results, which establish that everyone has lenition in their speech. The question now is what variants of lenition do they use more frequently.

\textbf{Analysis and discussion: variable 2 – (EMPH)}

\textbf{Description of the variable}

The variable dealt with in this section comprises three phonemes of Palestinian Arabic, which traditionally have a primary articulation in the alveolar ridge and a secondary articulation, which has been described by phoneticians and phonologists as “velarized” or “pharyngealized.” See Davis (2009) for a succinct overview of this phenomenon. Note also that other scholars prefer to characterize these consonants as “uvularized” – see Shahin (2002, especially pp. 24-28), who reviews literature on this very matter, as well as studies such as Al-Tamimi & Heselwood (2011), who continue to review the literature, as well as conduct instrumental experiments and find that uvularization and pharyngealization occur interchangeably in, e.g., Jordanian Arabic. Unfortunately, in most cases the imaging technologies they have used have not been very useful in allowing them to visualize the uvulae of their speakers. However, acoustic analysis has allowed them to account for uvularization in an environment of an adjacent vowel /u:/, which was ascertained through observation of the third formant (F3).

\textbf{Main research questions}

\textsuperscript{14} While some Jaffa speakers in the sample were educated in private Christian schools, they have all reported that Hebrew was part of their school curriculum and general upbringing.
The current study is less concerned with the particular articulation of the emphatic variants of the historical emphatics of Palestinian Arabic. What does interest us is very similar to what we tried to observe with respect to variable 1. The questions we pose are therefore as follows:

1. Are the historical “emphatics” of Arabic undergoing a change in progress similar to the voiced pharyngeal?
2. If so, to what extent can this change be attributed to contact with a Hebrew superstrate?

For these two questions, it seems phonologically useful, even if not always phonetically accurate, to call the emphatic consonants “pharyngealized,” as it permits us to treat them as analogous to the full-fledged pharyngeal consonants, the variation in which we have addressed in the previous section. Shahin (2002) follows Bessell & Czaykowska-Higgins (1991) and speaks of a natural class of consonant called “postvelars.” These are defined as “sounds articulated wholly or partly in the postvelar region of the vocal tract” (Shahin 2002:18), and as such include the “gutturals” (Shahin’s terminology) – /ʕ q χ/ (and perhaps /ʔ h/) – wholly articulated postvelarly, and the emphatics, which have “primary non-postvelar, secondary postvelar articulation” (Shahin 2002:19).

As mentioned above, Palestinian Arabic has three traditional emphatic consonants. Some Palestinian dialects have two emphatic stops and a fricative, others have two emphatic fricatives and a stop. Jaffa, being an urban dialect, is of the former type. The emphatic phonemic inventory is therefore as follows:

1. /dˤ/
2. /sˤ/
3. /tˤ/

The observed pronunciation of these traditional phonemes in some cases, however, is what makes them, as a group, to be considered a variable. The alternate (or in Labovian terms, ‘advanced’) realizations of (1)-(3), respectively, are as seen below in (1‘)-(3‘):

1’. [d]
2’. [s]
3’. [t]

If we forget for a moment that this is still merely a variable, and that for each of the three phonemes both variants exist in the data, we may wish to ask an additional question, namely:

3. Are the emphatics merging with their non-emphatic counterparts?

While it may seem premature to ask such a question prior to even establishing that what we have in front of us is a change in progress, let alone a “done deal,” the
diachrony of emphatics – and indeed other postvelar phonemes – both within Arabic and across Semitic languages (specifically the Semitic languages of the Levant: Arabic, Hebrew and Aramaic), virtually begs of us to ask this question at some point or another. And unlike the other instances of phonological processes in these languages, most of which had been signed, sealed and delivered between decades ago (in the case of Modern Hebrew) and over a millennium ago (in the case of Tiberian Hebrew), here we have the opportunity to document and analyze such a change while it is in its variable state. And yes, its very status as an eventual merger is questionable, not only because the change is not yet complete – and for all we know may never reach completion – but also for reasons that will be explained below grounded in theoretical sociohistorical linguistics.

A sociohistorical linguistic approach

The nature of the analysis in this section therefore will differ from that of the previous section in that it will not be as precise from a quantitative point of view. Rather, it will draw from data collected for this study and contextualize it using methodologies and theoretical notions of both historical linguistics and sociolinguistics. There are a number of variants to the approach known as “sociohistorical (or socio-historical) linguistics” – sometimes referred to as “historical sociolinguistics.” One of the most recent treatises undertaking a linguistic study employing such an approach, Trudgill (2010), devotes very little time to even defining what sociohistorical linguistics is. In the prologue to the book, Trudgill (2010:xii) alludes to a certain “historical-sociolinguistic puzzle” and “historical-sociolinguistic tales of detection.” Labov (1982:21) reflects on an older classic he had co-authored with Weinreich and Herzog (Weinreich, Labov & Herzog 1968), arguing that their proposal was to form an alliance “between dialectology, sociolinguistics and historical linguistics [which] is oriented towards a type of theory that would redress the balance between historical and synchronic explanation.”

For Nevalainen (1996:5) it was not until 1982, when Romaine published a monograph whose main title is Socio-historical linguistics, that a “discipline” by this name was developed, with James Milroy following suit a decade later. It is difficult to dispute this assertion, as neither the term “sociohistorical linguistics” nor the variant preferred by Milroy, “historical sociolinguistics” appear to be used by Labov and his collaborators. But in all fairness, Labov has always envisaged his work as an overarching intellectual examination of the human language faculty, very similar to the approach taken by generativist linguists. As early as 1972, he wrote: “I have resisted the term sociolinguistics for many years, since it implies that there can be a successful theory of practice which is not social” (Labov 1972:xiii).
What, if anything, is merging?

In Jaffa, there appears to be a lenition of the emphatic consonants so prominent as to raise the question in (3) above as to whether they have merged with their non-emphatic counterparts. The degree to which this phenomenon has permeated the speech community can be seen anecdotally through such things as spelling errors. In Modern Hebrew, which has undergone a loss of the emphatics, but retained the orthographic representation for those historical emphatics that Biblical Hebrew has retained (more on that later), it is not uncommon for many speakers, be they immigrants, or even native speakers – especially children (see Ravid 2001 for experimental data), but some adults as well – to spell words that traditionally or prescriptively are spelled with a grapheme denoting a historical emphatic consonant (e.g., Ṭ for /tˤ/) with the grapheme denoting the non-emphatic counterpart of that historical emphatic consonant (in this example, Ṯ for /t/), as they have undergone a complete merger in Modern Hebrew (see Bolozky 1997:287).

Figure 2 illustrates a similar error made by an adult bilingual (Arabic L1, Hebrew L2) in his twenties, who spends his time between Jerusalem where he studies and Jaffa, where he is a political activist. It was posted on the online social network Facebook in the spring of 2013. It reads: {mifʕaːrif kif kunt aqdi waqt·i w·ana fi tariq·i bi l·baːsˤ bi·duːn l·ajfoːn!!} ‘dunno how I woulda spent my time while I’m on the bus
without the iPhone!!’ The word *aqdi* ‘I spend’ (subjunctive) is spelled in this example with the grapheme Ꝑ, which represents the non-emphatic voiced alveolar stop /d/, whereas in normative Arabic it is pronounced with the emphatic counterpart /dˤ/, represented orthographically as ض.

The questions of mergers in Arabic – and in Central Semitic – is not a new one. As promised above, we shall return to the fate of emphatics in earlier varieties of Hebrew later in this section. Our main goal in this section, however, is to ascertain what sort of process or processes are under way in Palestinian Arabic with respect to these variables. Al-Wer (2004) has analyzed a closely related question in a number of Arabic dialects: whether the two voiced emphatic phonemes attested in Classical Arabic – interdental fricative /ðˤ/ and alveolar stop /dˤ/ – had merged.

Both in that study and subsequently in the encyclopedia entry on phonological mergers (Al-Wer 2008) she concludes that while the plain interdental fricatives /θ/ and /ð/ had merged with their alveolar plosive counterparts /t/ and /d/, respectively, in a good number of urban dialects in North Africa and the Levant, this assertion cannot be made for the emphatic pair, despite the lack of contemporary dialects which distinguish between the two phonetically.

One of the most widely accepted principles applied to phonological mergers is that they are typically irreversible. Al-Wer (2008:605) explains this principle in the following manner: “What this means in practice is that it is conceptually impossible for native speakers to unmerge a merged word class.” The example given thereafter is that of the words [ṭaːni] ‘second’ and [tamir] ‘date (the fruit).’ Al-Wer asserts, quite convincingly, there that is “no rule” (i.e., no linguistically internal mechanism) by which a speaker, let alone a speech community at-large, would be able to group words like [ṭaːni] into one etymological group and words like [tamir] into a different such group, thus reversing the merger back to the historical *ṭaːni* and *tamir*.

This, I argue, is not the be all and end all of the argumentation, however. In one of Labov’s first discussions of phonological mergers (Labov 1982) his conclusion that these mergers are irreversible is both non-categorical and accompanied by a number of interesting questions, which may shed particular light on the case of Arabic. In addition to this, most of Labov’s phonological principles regarding mergers, splits and chain shifts (see Labov 1994) are based on such phenomena involving vowels. One of the reasons Labov himself encourages the study of variation in non-Indo-European languages, such as Arabic, is that they are likely to provide data that would test the principles which he has posited through variables of a different nature (Labov, p.c.). Clearly, the pharyngeal and pharyngealized consonants discussed in this thesis are fairly dissimilar from the vowels of English, Spanish, Yiddish and other IE languages upon which most of these principles are based.
Recall the case of Modern Hebrew with its divergent spelling and convergent phonology. Labov explicitly asks: “can mergers be reversed under the influence of spelling?” (Labov 1982:29). Arguably, Palestinian Arabic differs from Modern Hebrew in that it is not quite the same variety of Arabic that people use in literacy, whereas in the Hebrew case, speakers tend to read and write a variety much closer to the vernacular.

A number of arguments can be made in favor of Arabic speakers being able, cognitively, to distinguish, between plain interdentals and their plosive counterparts. Having posited Labov’s question regarding the potential influence of spelling on the reversibility of mergers, a question, which he partially answers by citing Garde (1961) who in turn provides examples from Russian to this effect, we should ask ourselves whether there is any spelling convention that differentiates between interdental fricatives and alveolar stops that is relevant to a dialect such as Urban Palestinian Arabic. After all, the Arabic orthography is primarily a vehicle for reading and writing Standard Arabic (or, as Niloofar Haeri refers to it in her research, “Classical Arabic”).

There is no doubt that in a speech community such as the Palestinian Jaffa community, the prevalent native language is Urban Palestinian Arabic. As such, it is a dialect that lacks interdentals, be they emphatic or plain. Yet, as Haeri (2000:64) quite astutely assesses:

“If we define ‘mother tongue’ as a language that is learned at home without instruction, there is no community of native speakers of Classical Arabic. At the same time, it is the language of Islam, of the state, and of pan-Arab nationalism, and it is explicitly foregrounded as a central marker of ‘Arab’ identity.”

For a community like Jaffa, this statement may need some modification, as “the state” has de jure two official languages – Hebrew and Arabic – and de facto one primary language, Hebrew, and one secondary language, Arabic (as unfortunate and unjust as this may be). It is important to bring this sort of insight into the discussion, while appreciating that we wish not to turn back the wheels of time and regress in our perceptions of language. It is easy to read these lines and accuse their writer of slipping back into the days of reactionary thinking, denying the existence of the vernacular altogether. This is by no means the intention here. Rather, this is an acknowledgment of a subtlety about certain speech communities, which is that even when they use markedly unwritten forms of language, the written forms are not necessarily absent from their awareness.

Add to this the following artifact about Palestinian speech communities: only a small subset of these are urban. Many other speakers throughout Palestine speak rural or Bedouin dialects, in which interdental fricatives are retained as separate phonemes, distinct from the alveolar stops (see Table I in Shahin 2008:527). This gives speakers in cities like Jaffa, Jerusalem, Nazareth and Haifa access to interlocutors throughout the country, whose phonemic inventory is richer than their own. And unlike some of the well-studied variables of North American English,
for instance, the differences in phonemic inventories among speakers of Palestinian Arabic are well above the level of consciousness. Here are several reasons for this:

1. The country is small, and the number of Arabic speakers within it is limited.
2. The variables in question are consonantal, and therefore quite easily noticeable.
3. Within the Mediterranean Basin, being urban carries a certain degree of prestige, mostly due do the glory associated with such large cities in the region as Cairo, Beirut and Damascus. Rural life, specifically rural speech, sounding falla:hi, ‘rural’, is often ridiculed.
4. The expanded phonemic inventory, which includes interdentals, resembles (but is not identical to) that of Classical Arabic, which, as noted above, is a variety that the speech community as an aggregate has access to, such that deviations from it are likely to be readily apparent.

Contrast, therefore, the distinction between [d] and [ð] in Arabic to the low-back vowel merger in North American English. The former is much more likely to be in a speaker’s – indeed in a speech community’s – cognition than the latter. Al-Wer, in fact, makes quite a similar statement regarding the Arabic interdentals:

“[I]t is noticeable that the speakers have no problems in re-splitting /t/ into [t] and [θ], and /d/ into [d] and [ð]. The difficulty they show is confined to the distinction between the emphatic variants. I attribute this difference to the fact that in the case of the plain consonants, the phonemic distinction is available in the linguistic experience of the speakers, even if, sometimes, they do not make this distinction phonetically, whereas in the case of the emphatic consonants, there is no such evidence on which speakers can make a phonemic split when required, e.g. speaking or even reading the Standard variety.”

(Al-Wer 2004:28)

From Proto-Semitic to contemporary Palestinian Arabic and Hebrew

In order to illustrate the complexity of the question of mergers in the case of the Jaffa Palestinian Arabic emphatics, I have constructed the two tables below. A complete analysis of the question of contact with Hebrew and its role in the changes in progress discussed in this thesis may, in fact, warrant augmenting these tables with additional rows for pharyngeal, uvular, glottal and velar consonants, as well as additional statistical outputs. I hope to accomplish these tasks in the near future.
Table 3: Emphatic consonants and related phonemes across languages, eras and varieties

<table>
<thead>
<tr>
<th>Proto-Semitic</th>
<th>Classical Arabic</th>
<th>Jaffa Arabic</th>
<th>Biblical Hebrew</th>
<th>Modern Hebrew</th>
</tr>
</thead>
<tbody>
<tr>
<td>d</td>
<td>d</td>
<td>d</td>
<td>/d/ ~ [ð]</td>
<td>d</td>
</tr>
<tr>
<td>ð</td>
<td>ð</td>
<td>d&lt;sup&gt;15&lt;/sup&gt;</td>
<td>/d/</td>
<td>/z/</td>
</tr>
<tr>
<td>ð'</td>
<td>ð&lt;sup&gt;s&lt;/sup&gt;</td>
<td>/ð/ ~ [d]</td>
<td>s&lt;sup&gt;s&lt;/sup&gt;</td>
<td>ts</td>
</tr>
<tr>
<td>b</td>
<td>b</td>
<td>/d&lt;sup&gt;s&lt;/sup&gt;/ ~ [d]</td>
<td>s&lt;sup&gt;s&lt;/sup&gt;</td>
<td>ts</td>
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<td>s</td>
<td>s</td>
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<td>s</td>
<td>s</td>
</tr>
<tr>
<td>s'</td>
<td>s&lt;sup&gt;s&lt;/sup&gt;</td>
<td>/s&lt;sup&gt;s&lt;/sup&gt;/ ~ [s]</td>
<td>s&lt;sup&gt;s&lt;/sup&gt;</td>
<td>ts</td>
</tr>
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<td>ñ</td>
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<td>ñ</td>
<td>ñ</td>
</tr>
<tr>
<td>t</td>
<td>t</td>
<td>t</td>
<td>/t/ ~ [θ]</td>
<td>t</td>
</tr>
<tr>
<td>t'</td>
<td>t&lt;sup&gt;s&lt;/sup&gt;</td>
<td>/t&lt;sup&gt;s&lt;/sup&gt;/ ~ [t]</td>
<td>t&lt;sup&gt;s&lt;/sup&gt;</td>
<td>t</td>
</tr>
</tbody>
</table>

15 My colleague Uri Mor, who is far better versed than I in matters of historical analysis of Hebrew and its pre-Modern phases, has advised me to eliminate the Modern Hebrew column of this table upon hearing a version of this paper at the North American Conference on Afroasiatic Linguistics (NACAL) in Leiden in February 2014. I was just about to delete the column, as I accept Mor’s critique that Biblical Hebrew does not play the same role vis-à-vis Modern Hebrew that Classical Arabic plays vis-à-vis Palestinian Arabic. But then I remembered why I included it in the first place: Hebrew orthography, to this day, is based on that of Tiberian/Biblical Hebrew. The kinds of spelling blunders that I mentioned earlier in this section are a combination of a normative expectation to adhere to these anachronistic standards and a more realistic depiction in writing of the current state of the phonology of the language.

16 In a previous account of the Jaffa Arabic phonemic inventory (Horesh 2000:17), I included the alveolar fricatives: [z], [s], [z<sup>s</sup>] (in the original paper I wrote “z”<sup>y</sup>) as possible reflexes for the historical interdentals, commenting that they occur “only in MSA loanwords.” Holes (2004:71) asserts that in urban dialects of Syria, Jordan and Egypt, “educated speakers” in particular use these allophones nowadays, not only in “neologisms imported from MSA,” but more generally in ‘dialectal’ words also, in order to sound more “educated” or convey a sense of “correctness”. Al-Batal (2002:101) goes as far as labeling examples with sibilants read on the Lebanese TV channel LBCI as “Lebanese Colloquial,” alongside other examples with alveolar stops. We should have no qualms adding this Palestinian dialect into the mix (see Palva 2006:607-608). What is important to remember is that the productivity of the sibilants as reflexes of the interdentals is limited in urban dialects (such as Jaffa), and is typically confined to specific lexical sets.
Phonetic realization | Possible phonemic correlates | Hebrew equivalents
---|---|---
[d] | /d/ | /d/ 
/ð/ > /d/ | /d/ | /z/ 
/dˤ/ | /ts/ | [d]
[s] | /s/ | /ʃ/ | [s]
/sˤ/ | /ts/ | [s]
[t] | /t/ | /t/ 
/θ/ > /t/ | /ʃ/ | [t]
/tˤ/ | /t/ | 

Table 4: From Jaffa Arabic phonetics to Arabic phonemics and Hebrew equivalencies

The columns in Table 3 are fairly self-explanatory. Unless otherwise indicated, the sounds in the table are understood to be phonemes. If a column is split, this is an indication that a phoneme in one language or variety has split in one or more languages or varieties into two phonemes. In cases of allophonic variation, this is indicated as: /x/ ~ [y], with the understanding that [x] (as well as [y]) is also an allophone of /x/.

There is a difference between the kind of allophonic variation referred to in the Jaffa Arabic column as opposed to the Biblical Hebrew column. The variation in Jaffa is of the type described throughout this thesis, and is subject to a series of variable rules, not all of which we have managed to figure out quite yet. In the case of Biblical Hebrew, the interdental variants of /d/ and /t/ are the well-attested “spirantized” allophones thereof, which are in the vast majority of cases phonologically conditioned (see, e.g., Khan 1997:86; 89-90).

Note that Modern Hebrew is treated here, unfairly, as a monolith. Bolozky (1997:287) and others rightfully distinguish between the phonologies of Standard (or General) Israeli (or Modern) Hebrew and various, more conservative dialects of contemporary Hebrew, which preserve a larger portion of the original Semitic phonemic inventory. Bolozky calls this “Arabicized’ Hebrew,” and with good reason – it is typically spoken by native speakers of Arabic (including Jews who had immigrated to Palestine from elsewhere in the Middle East or North Africa) and their native Hebrew-speaking offspring. Yet given the paucity of variationist sociolinguistic studies (a handful are currently underway) on dialects of Modern Hebrew, I am basing this analogy on the variety of contemporary Hebrew which is best documented, and probably has the most influence on the speech of Palestinian speakers of Arabic anyway.
What I find to be interesting – and relevant to the question at hand – is that within this analogy across varieties of Arabic and Hebrew – while keeping the history of Semitic languages at-large in mind – there is an incongruence between synchrony and diachrony. In a way, it may very well resemble the conundrum raised by Al-Wer in her critique of the supposition that the voiced emphatic alveolar stop and voiced emphatic interdental fricative of Old Arabic have merged in virtually all of the contemporary dialects known to us, such that in any given dialect, there is either a /ðˤ/-type phoneme or a /dˤ/-type phoneme, but never both (Al-Wer 2004).

Al-Wer contrasts the surface synchronic data regarding the lack of one phonetic realization or another in the case of the voiced emphatics with that of the plain phonemes in Jordanian and Moroccan Arabic; and she also introduces historical input from Steiner (1976) and others to the effect suggesting that it is quite plausible that in Arabic, such a distinction never really existed, therefore any attempt to discuss a “merger” of the voiced emphatics would be moot.

The current case has some similarities to Al-Wer’s thesis and some attributes for which it is unique. What I wish to focus on is the following. On the one hand, phonetically, the Jaffa Arabic emphatic consonants are variably gaining allophones that are non-emphatic, and which exist in both Palestinian Arabic and Modern Hebrew. However, the historical development of these phonemes in Hebrew has not been precisely parallel to that of their counterparts in Arabic. What the various degrees of shading in the two tables above intend to illustrate are the cases where Arabic and Hebrew phonemes do in fact have similar realizations in contemporary Palestine – even if dissimilar allophones exist as well. Table 4 distills these similar phonetic outcomes and tracks their etymological origins in both languages. What we learn is that only in the case of the voiceless emphatic alveolar stop /tˤ/ is there both a diachronic and a synchronic rationale for merging the emphatic stop with the plain stop, assuming the motivation is contact with Hebrew, especially given that in both languages this merger would further complicate a merger already attested to of an interdental fricative with an alveolar stop (though in Hebrew, this is more complicated).
Synchronic or diachronic? Internal or external?

In both other cases, the Hebrew factor would only be viable as a synchronic, phonetic, on-the-surface justification for merging the emphatics. At this juncture, it would be premature to insist that this change is a direct result of contact with Hebrew. Thomason & Kaufman (1988:57-64) discuss at length the question: “When Is an External Explanation Appropriate?” They note that traditionally, historical linguistics prefer to explain changes language-internally before turning to “external causation,” e.g., contact-induced change. However, they reject the rather dogmatic approaches invoked by such scholars as Martinet, Polomé and Ohala (cited in Thomason & Kaufman 1988:57-58), who only permit resorting to external explanations (Ohala 1974:268, for instance, mentions “social, psychological, or historical facts”) if internal explanations fail. They agree with Ohala that when explaining sound change phonetic explanations should take precedence, but they add that the analysis should be “as complete as possible” (Thomason & Kaufman 1988:58).

I wish I had a better way to convey the conclusion drawn in the following paragraph than to quote it en masse. But it is so succinct and elegant, that I feel as if I have no choice:

“We need a methodological criterion that matches better with theoretical considerations. Here it is. As with the establishment of genetic relationship, a successful criterion for establishing external causation is possible only when we consider a language as a complex whole—a system of systems, of interrelated lexical, phonological, morphosyntactic, and semantic structures. Instead of looking at each subsystem separately, we need to look at the whole language. If a language has undergone structural interference in one subsystem, then it will have undergone structural interference in others as well, from the same source. Not necessarily in all other subsystems: as we have argued above, lexical interference may be negligible in cases of interference through shift; and considerable structural interference may occur without including externally motivated changes in the inflectional morphology. But we have found no cases of completely isolated structural interference in just one linguistic subsystem.”

(Thomason & Kaufman 1988:60)

The implication of Thomason & Kaufman’s generalization to the Arabic case is quite clear. We should first seek explanations for the (variable) loss of pharyngealization of the emphatic consonants, which are internal to Arabic; since this is a sound change, if we can found explanations grounded in phonetics, such explanations would be preferable; however, given our overall knowledge of the sociohistorical context in which the speech community under investigation has been evolving, as well as other linguistic changes, for which there is evidence—with varying degrees of robustness—of contact being the prime motivation, it is my view that the initial hypothesis (i.e., contact with Modern Hebrew, which lacks emphatics, has induced loss of emphatics in Palestinian Arabic) must be entertained, despite the partial phonemic incongruence from a historical perspective.
A diversion: Other contact-induced changes in Palestinian Arabic

What are some of these additional linguistic changes, which Palestinian Arabic in speech communities such as Jaffa is undergoing, and which contact with Modern Hebrew is a factor in initiating and/or promoting?

1. In Phonology:

   a. The ⟨ʕ⟩ variable: This has been shown above to be a change in progress in more than one variety of Palestinian Arabic, including among speakers who have little or no contact with Hebrew. However, quantitative analysis has revealed that both within the Jaffa community and across the Jaffa—West Bank communities, contact with Hebrew (in its various instantiations) is statistically significant as a factor favoring the various non-pharyngeal variants of the ⟨ʕ⟩ phoneme of Arabic.

   b. Loss of phonemic length: This feature of Palestinian Arabic has yet to be studied from a variationist perspective. We have sporadic evidence from the corpus on which this study is based that in many cases, vowels that are contrastively long in other varieties of Arabic (including other Levantine dialects) are significantly shortened in this Palestinian dialect, which is in contact with Hebrew. While Ancient Hebrew (defined by Rendsburg 1997 as the Hebrew attested between ca. 1100 BCE and ca. 250 CE) is presumed to have distinguished between long and short—and even extra-short (schwa-like)—vowels (see Rendsburg 1997:76-79), the variety of Hebrew which had recorded in writing the Jewish tradition of orating the Old Testament, known as Tiberian Hebrew (7th-9th centuries CE) appears to have only maintained long vowels as allophones of short vowel phonemes, which in turn had developed distinctions that were in vowel quality rather than quantity. See Khan (1997:91-100) for a detailed account of Tiberian Hebrew vowels. Modern Hebrew has no phonemic vowel length distinctions (Bolozy 1997:288). There is some evidence that phonologically conditioned long allophones of vowels are once again emerging in Modern Hebrew. Bolozy (2006) attributes this phenomenon mostly to younger speakers of North African descent, which, if true, would call for an interesting study of the mutual influences of Arabic and Hebrew on one another. Such studies, however, must not fall into the trap of a false symmetry, as the two languages play very different roles both psycholinguistically and socio-politically in their speakers' lives.
c. Loss of gemination: This is yet another feature of Palestinian Arabic, which is emerging, and is a prime candidate for being a product, perhaps partially, of contact with Hebrew. Modern Hebrew “no longer maintains gemination, except phonetically, across morpheme boundary” (Bolozky 1997:288; one example he provides is \( jafan+nu \), ‘we slept’). Note that both Ancient and Tiberian Hebrew varieties maintained gemination, except in the case of laryngeal and pharyngeal consonants and the phoneme /r/. Both Rendsburg (1997:74) and Khan (1997:90) describe these exceptions for each of these historic varieties, respectively, as an inability to geminate. Khan writes: “Some consonants could not be geminated. These included the laryngeals (\( /\text{ʔ}/, /h/ \)) and pharyngeals (\( /\text{ʕ}/, /\text{ḥ}/ \)) and also /r/, except in a few isolated cases.”

2. Morphosyntax—the genitive exponent \( \text{fēːt} \)—It is well known that Arabic dialects have developed a structure largely unavailable in Classical Arabic to express possession in an analytic structure. While the synthetic “construct state” is used as well, genitive exponents (sometimes referred to as “possessive markers,” “possessive pronouns,” “prepositions,” or simply, as by Holes 2004:208, “particles”).

In Palestinian Arabic, the most widespread such particle is probably \( \text{tabaf} \) (see Shahin 2008:535, 537; Rosenhouse 2007:489), but \( \text{fēːt} \) is also attested in Jerusalem (Levin 1994:209-210), and in the corpus I have collected is the most frequently used such particle for most speakers.\(^{17}\) That this analytic structure is rampant in virtually all contemporary dialects and that this particular morpheme is documented in at least one other Palestinian community with significantly less contact with Hebrew appear to run against any hypothesis that this feature would have anything at all to do with contact. But there is much more.

We will soon consider the parallel structures in Hebrew, but prior to doing so, it would be useful to explore whether there are any parameters or constraints for preferring analytic possession over synthetic possession—in Palestinian Arabic and in Arabic dialects in general.

Holes (2004:208) first posits a semantic preference—and this is for Arabic dialects at-large—namely that “[g]enerally speaking, this construction [i.e., the analytic one] is only used to express alienable possession; inalienable possession is expressed by the construct state, as in MSA.” Shahin (2008:537) makes a cursory assertion to that effect regarding \( \text{tabaf} \) in Palestinian Arabic as well.

Holes (2004:209) also adds that analytic dialectal structures may be used in dialectal forms as alternatives to “noun + enclitic pronoun structure.”

\(^{17}\) Incidentally, Versteegh (2001:107) notes that the etymologically cognate \( \text{fajt} \) is the genitive exponent typical of Cypriot Arabic.
Following this introduction, Holes enumerates the “types of noun phrase” that appear to favor such analytic construction over the traditional synthetic ones. Rosenhouse (2007:489) and Levin (1994:209-210) offer somewhat similar phonological and prosodic explanations for triggering the use of *tabaʕ* in Jerusalem Arabic.

What precisely constitutes alienable and inalienable possession is by no means a clear-cut distinction. From a formal semantic perspective, it may also be the case, as in some Austronesian languages, that alienability is not a binary category (see Chappell & McGregor 1989:27). There is interesting work in formal semantics analyzing synthetic and analytic (or periphrastic) possessive constructions in Maltese (e.g., Gatt 2004, Fabri 1996, Koptjevskaja-Tamm 1996). Studies in two North African dialects: Boumans (2006) on Moroccan Arabic in Morocco and the Netherlands and Sayahi (2011a; 2011b) on Tunisian Arabic, offer a new dimension, that of language contact, into the analysis of possessive constructions and the distributions of synthetic versus analytic possessive phrases. Boumans has shown that statistically, Moroccan speakers who were raised in the Netherlands in a bilingual Dutch-Arabic environment had a higher propensity for using genitive exponents (e.g., *djal*) than the construct state. At least in some constructions, this could have been attributed to a calquing of the Dutch particle *van*. Within Morocco, speakers in Tangier differed significantly from speakers in Casablanca, Rabat and Oujda. While it is not certain, one hypothesis Boumans raises for this is that the circumstances that led to the formation of the Tangier dialect in early Medieval times involved much more contact with Amazigh and perhaps Romance speakers than in the other three cities. In Tunisia, Sayahi notes, “the use of the genitive exponent *mtaʕ* to express possession and the use of pre-verbal markers to indicate the future, as part of an overall move towards more analytical forms” (Sayahi 2011a:2) are distinctive features of the local dialect. Furthermore, when Arabic-French code-switching is considered, the analytic construction with *mtaʕ* has been found to occur 64% “with a French word either as the possessor or the possessee” (Sayahi 2011b:131).

Back to Modern Hebrew: In the first book-length complete grammar of Modern Hebrew to be published for a general linguistics readership in English (there had been a number of similar publications in Hebrew beforehand), Berman (1978:231-276) devotes a hefty chapter to “construct state genitives” and recognizes “three surface structures,” all of which, in her view, “are essentially synonymous, and that the choice between them is a stylistic matter alone, with certain important exceptions” (Berman 1978:232). Berman concludes that “everyday colloquial Hebrew usage will today prefer one of the two forms that use the genitive particle *fel*, and the bound form with no particle will be confined to more formal, literary style, with certain quite limited exceptions.”
Subsequent Modern Hebrew grammars, by Glinert (1989:24-49), and Coffin & Bolozky (2005: e.g., 169) are in general agreement that “formal” Modern Hebrew registers tend to use synthetic possessive phrases, whereas “casual” (Glinert) or “common/colloquial” (Coffin & Bolozky) prefer the analytic forms with jel. It is worth mentioning that an even newer form has emerged in recent years in Modern Hebrew, for jel+pronominal suffix in a phonologically reduced form, such that, e.g., jel'li, 'my' is sometimes realized as jel ili; jel' lax, 'your (f.sg.)' as jel lax; jel' xa, 'your (m.sg.)' as jel xa, etc. Cohen (2003) treats these reduced forms as “clitics.” Whether this is a regression towards a synthetic construction is unclear, but may be worth investigating.

At any rate, what we have in Jaffa are speakers whose native Arabic dialect has a genitive exponent fet and whose second language, Modern Hebrew, has a genitive exponent jel. And while it is clear that the two are not etymologically related (see Pat-El 2010, 2013 for the history of analytic possessives in Hebrew), the phonetic similarity, and the much more widespread use of the analytic forms in Modern Hebrew than in any documented dialect of Arabic—with the exception perhaps of Maltese and the other cases mentioned above, where contact was a clear factor driving out the synthetic construct state—there is sufficient evidence to hypothesize that this, too, is a contact-induced change. The next step would have to be a quantitative one.

3. Code-switching: Almost inevitably, some speakers in a place like Jaffa begin their sentences in Arabic, y terminan en hebreo, to paraphrase the title of Poplack’s 1980 article on English—Spanish code-switching among Puerto Ricans in New York City. One speaker, ‘nevi:n,’ was actually so prone to code-switching, that at times it was difficult to ascertain whether she was speaking Arabic as the matrix language and Hebrew as the embedded language or vice versa.18 On this matter it can be useful (though at times it is equally confusing) to consult such debates on these issues as between Myers-Scotton (2001), who is the originator of the Matrix Language Frame model (Myers-Scotton 1993), and Bentahila & Davies (1998). The latter present data in which Moroccan Arabic and French are used interchangeably, often in such a manner that renders it quite difficult not only to identify which is the matrix language and which is the embedded language, but also whether these categories even apply to this brand of “mixed discourse.”

Consider the following sentence uttered by ‘nevi:n’ in Jaffa:

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18 Henkin (2010:62) posits something very similar regarding the code-switching patterns among Palestinian speakers in the Nagab region, where dialects of a Bedouin type are spoken: “Proficient bilinguals engage in intensive code mixing and codeswitching [...] they switch back and forth between the two languages to the degree that the matrix or base-language of an utterance is often hard to discern.”
‘There are many [people] who tell me I’m not right, it’s not right to think like that, but that’s (the) my internal “me”.

In order to capture the complexity of the mixed discourse, I have presented the Hebrew words above in italics, be it in the transcription, in the word-forward glosses, or in the final translation. The genitive exponent (discussed earlier in this section) is presented in boldface. Interestingly, part of the debate between Myers-Scotton and Bentahila & Davies revolves around the function of the Moroccan Arabic genitive exponent *djal* in the discourse. Since it is not the primary goal of this section to analyze cases of code-switching, but rather to contextualize the sound changes that we are analyzing and provide support for there being a plethora of features in Palestinian Arabic influenced by contact with Hebrew, I will leave the detailed analysis of the code-switching phenomena for a separate study.

Labov (1982:56-59; 1994:349-370) discusses the concept of “near-mergers” in quite some detail. *Prima facie*, (one of) Labov’s definition(s) of this phenomenon appears to be precisely what we have been grappling with in this section: “It arises when, as the result of sound change, two word classes that are quite distinct in some dialects come into close approximation in a given dialect” (Labov 1994:350). Much of the rest of Labov’s (1994) Chapter 12 on near-mergers is devoted—in addition to providing examples and some theoretical foundations—to offering some tools for empirical testing of the existence of such near-mergers. These tests are very different from the kinds of tests cited above, which were employed by the phoneticians who have attempted to determine the exact place of secondary articulation of the emphatics. Rather these are diagnostics for phonemic contrast between minimal pairs, psycholinguistic intuition quizzes, and so forth, designed to “set aside” (p. 351) much of the phonetic matter in favor of a deeper phonological analysis. This sounds almost counterintuitive coming from someone like Labov, for whom precision is of utmost importance. But we must remember that scholars such as Labov, who rely heavily on precise measurements, do so in relatively large numbers, which add up to formulate generalizations about language and the speech communities who use it. In this light, we should not be surprised that Labov finds himself confronted by die-hard phoneticians, who find his near-merger proposition too imprecise (pp. 367-370).
I would like to end this section with a statement, a conclusion of sorts, as I have thus far asked many a question, raised many a doubt, introduced bits and pieces of data, and I would not like to sum it all up by beating around the bush. The truth of the matter is that I do not know for a fact whether the emphatics in the Palestinian dialect of Arabic of Jaffa are heading toward a merger with their plain counterparts. The data really are inconclusive. However, there is a good deal of evidence—some of it may be considered by legal standards circumstantial evidence—that younger speakers in particular are going precisely in the direction outlined in Labov’s definition of near-mergers. In fact, his definition is ever so elastic, that I am almost willing to sign my name to it.

Here is an annotated version of the definition: two word classes that are quite distinct in some dialects [e.g., emphatics vs. plain coronals in dialects of Arabic that are not in contact with Hebrew] come into close approximation [i.e., speakers do not always distinguish between them phonetically and are unsure regarding their phonemic contrast] in a given dialect [e.g., Palestinian Arabic in bilingual speech communities that are in close contact with speakers of Hebrew].

This does need some substantiation, and within the variationist paradigm this means having the kind of robust quantitative support for this argument as we had for the lenition of the voiced pharyngeal fricative. But the efforts in future research should probably be placed on determining speakers’ perceptions rather than fine-tuning our understanding of their phonetic realizations of these segments.
A Very Brief Conclusion

Palestinian Arabic, in the regions where it is spoken under linguistic and political colonization of Hebrew and its speakers, respectively, is undergoing changes. That’s a no-brainer. Some of these changes are drastic and resemble, even at this “in-progress” stage, processes that a linguistic entity such as Maltese had undergone. In the case of Maltese, some scholars, as well as many of its own native speakers, no longer consider it a variety of Arabic, but some sort of related Semitic language. The variety of Palestinian Arabic spoken today in the parts of Palestine that were ethnically cleansed in 1948 and repopulated by speakers of Hebrew, and by speakers of other languages (including non-Palestinian dialects of Arabic), who have taught themselves Hebrew has been dubbed by some, quite offensively, as “Israeli Arabic” (see Dekel & Brosh 2012).

We may not have the means, or the right—as language is bound to change, regardless of the unfortunate or even sinister powers that may lead to such change—to reverse these processes. But we have linguistic tools at our disposal to document these changes. And just as historians and political scientists and other scholars play a role in documenting and cataloguing the sufferings endured by Palestine and its people, it is incumbent upon linguists, especially sociolinguists, historical linguists and anthropological linguists, to contribute our share to the growing pool of knowledge and work towards a cultural resurrection, which includes a strong linguistic component.
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doi:10.1017/S1366728906002598


