Pharyngeals and beyond: phonetic differences and phonemic mergers in Hebrew

Roey J. Gafter

Ben-Gurion University of the Negev
Overview of the talk

- Introducing the Hebrew pharyngeal segments
- Social background
- Results from sociolinguistic fieldwork
  - Distribution of the pharyngeals in two field sites
  - Analysis of phonetic variation in the non-pharyngeal forms
- Discussion
On Hebrew and Israel

- Israel is home to 7.5 million people
- Among the Jewish majority (76% of the population), Hebrew is the dominant language
- The recent immigration history of most families and the history of the Hebrew language itself imbue Israel with great potential for socially meaningful linguistic variation
- However, to date surprisingly little sociolinguistic research has been done in Israel
The pharyngeal segments
The Hebrew pharyngeal segments

- Hebrew has two pharyngeal consonants:
  - Voiced pharyngeal approximant (ʕ)
    - maʕagal ‘circle’
  - Voiceless pharyngeal fricative (ħ)
    - maŋar ‘tomorrow’
The Hebrew pharyngeal segments

- Most speakers do not produce the pharyngeals, but rather, merge them with their non-pharyngeal counterparts
The pharyngeals

Original system (with pharyngeals)  Merged system

ʔ ʕ

ʔ Ø

x ħ

x

speaking with het and ayin
Who “speaks with het and ayin”?

- “The pharyngeals are considered to the most obvious indicator of ethnic background, indicating Mizrahi origin” (Matras and Schiff 2005)
- But what “ethnic background” mean in an Israeli context?
Ethnicity in Israel
Background: on ethnicity in Israel

- Among the Jewish Israelis, a salient ethnic distinction is whether one is of European or Middle Eastern descent
  - *Ashkenazi* Jews trace their roots to (Northern and Eastern) Europe
  - *Mizrahi* Jews trace their roots to the Middle East
    - *Sephardi*
Background: on ethnicity in Israel

- The first immigrants to Israel were predominantly Ashkenazi.
- In the 1950’s: massive waves of immigration of Jews from the neighboring Arab countries.
- Inequality in earnings and in education between Ashkenazis and Mizrahis quickly became a fact (Swirski 1990).
- Though this situation has changed, inequality in education and average earnings persist (Dahan et al. 2002, Swirski 2008).
Ethnic Stereotypes

- Shohat’s (1989) survey of ethnic stereotypes in Israeli cinema
  - Ashkenazis: “just Israelis”, the unmarked category
  - Mizrahis: uneducated, primitive, vulgar, and quick tempered; but also warm, hospitable, with good food.

- Swirski (1981), who conducted interviews with several Mizrahis concerning ethnic inequality:
  - Mizrahis: innocent, kind, and warm, but irrational and quick to get angry.
  - Ashkenazis: distant in their relationships, condescending and cunning, but very skilled and rational.
Ethnic Stereotypes

Stereotypical portrayal of Mizrahis in the Israeli movie *Sallah* (1964)
Ethnic Stereotypes
Background: on ethnicity in Israel

- Unsurprisingly, this social stratification is coupled with linguistic variation
- How did the pharyngeals come to be associated with Mizrahi speakers?
A brief history of Modern Hebrew

- Hebrew had not been a spoken language for generations
- It was revitalized in the late 19th and early 20th century by the early Zionists (who were mostly Ashkenazis).
Becoming a social distinction

- Biblical Hebrew had the two pharyngeal segments:
  - Voiced pharyngeal approximant (/ʕ/)
  - Voiceless pharyngeal fricative (/ħ/)

- Blanc (1968) reports two varieties of Modern Hebrew
  - The modern Koiné – the de facto standard used by Ashkenazis → pharyngeals merged with non-pharyngeals
  - Mizrahi Hebrew → the pharyngeals are retained
Pharyngeals and Mizrahis

- Despite the common perception that “speaking with \textit{het} and \textit{ayin}” is something Mizrahis do, many if not most of them do not.

- Blanc (1968): many Mizrahis have adopted the Koiné and that Mizrahi Hebrew is receding.

- Davis (1984), interviewing Mizrahis in predominantly Mizrahi towns notes that younger speakers use them far less than adults.

- The pharyngeals are uncommon in the speech of Mizrahi speakers (Zuckerman 2005, Laufer 2009, Pariente 2010)
Pharyngeals and Mizrahis

- Not all Mizrahis use pharyngeals, but rather, if someone uses pharyngeals, they are likely to be Mizrahi.

- This decline of the pharyngeals is not surprising given the social prominence of the Ashkenazi variety of speaking and Ashkenazis more generally (Bentolila 2002).
Pharyngeals and Mizrahis?

- The pharyngeals are not used by most people, so are clearly not just a marker for ethnicity. But:
  - Are pharyngeals still associated with being Mizrahi?
  - Do people still care about talking with *het* and *ayin*?

Yes!
Linguistic Stereotypes

- Despite infrequency in use, pharyngeals are very salient as a Mizrahi feature

**Song lyrics**

I’m from Rosh Ha’ayin, I speak with *het* and *ayin*

clearly a Yemenite

the unchanged original

*From the song “I’m from Rosh Haayin” (1988) by Jacky Mekayten*
Linguistic Stereotypes

From a blog post titled “Am I still ashamed of being Mizrahi?”

“When I was a child I was ashamed of my parents because we were Mizrahi… My dark skinned father, who spoke with guttural het and ayin, never came to my school – something I was relieved about”

From a response to a blog post about child raising practices

“My daughter grew up in a het and ayin household, with a het and ayin mentality (at least as far as I’m concerned)”
Linguistic Stereotypes

On Margalit Tsan’ani, a Mizrahi judge on “Israeli Idol”

“True, sometimes she’s unpolished, talks with het and ayin, she’s not trying to be something she’s not, and sometimes that may sound vulgar or tactless, but it’s a million times better than the sucking up and showing off of her showbiz colleagues”
Prescriptivism in Israel took a funny turn

Israeli prescriptive norms were modeled after Biblical Hebrew, and therefore the pharyngeal distinction was expected in the speech of newscasters (Zuckermann 2005)

The pharyngeals carry an unusual combination of social meanings – at once a feature of a stereotyped ethnic group and of an older style of correct speech.
The love hate relationship with *het* and *ayin*

*On Zohar Argov and Naomi Shemer:*

“Semitic languages put an emphasis on *het* and *ayin*… In spite of Naomi Shemer’s vocabulary, she doesn’t speak correct Hebrew like Zohar Argov does. Even though it’s quite likely that her vocabulary is richer or that her IQ approaches 160”
But do people still use them?

- Are there still speakers who *do* use pharyngeals consistently?
Onwards to fieldwork in Israel!
Onwards to fieldwork in Israel!

- Fieldwork in Summer 2012 (June-August)
The field sites
The field sites
The field sites

- 66 interviews, focusing on two field sites
  - Tel Aviv
  - Rosh Ha’ayin

Map showing the distance between Tel Aviv and Rosh Ha’ayin, approximately 13 miles.
The sociolinguistic interview

- The main part of the interviews was in a free-form style, which began with talking about the interviewee’s experiences growing up, and proceeded to various other topics, including how they see their ethnic identity, both in the context of their home town and with respect to Israel in general.
- After the interview component was over I asked each interviewee to read a word list.
Field site #1: Tel Aviv
Field site #1: Tel Aviv

- Tel Aviv, population: 410,000, center of Israel’s largest metropolitan area
- The so called “first Hebrew city” is an obvious first choice for a field site – as no community studies have been carried out there
- Very ethnically mixed population
Field site #1: Tel Aviv

- Interviewed 43 people, born and raised in Tel Aviv, ages 17-80

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashkenazi</td>
<td>6</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Mizrahi</td>
<td>11</td>
<td>18</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>26</td>
<td>43</td>
</tr>
</tbody>
</table>
Analyzing the pharyngeals

- For each speaker, I manually coded the first 50 words (starting 10 minutes into the conversation) that had a potential pharyngeal environment for each of the two variable (ayin and het)
- This resulted in 4300 tokens
- For each of these tokens I determined a binary value – pharyngealized or not
Results in Tel Aviv

Pharyngeal production in Tel Aviv interviews (by ethnicity)

- Ashkenazi
- Mizrahi

% pharyngealized

0% 5% 10% 15% 20% 25%

ayin het

*
Results in Tel Aviv

Pharyngeal production among Tel Aviv Mizrahis by age

% pharyngealized

- ayin
- het

- Age < 45
- Age >=45
Results in Tel Aviv

- Results (so far) are exactly what one would expect based on the extant research
- Most people don’t phargealize
- Ashkenazis categorically do not pharyngealize. Some Mizrahis do, but only older speakers
- But the plot does thicken…
Is “Mizrahi” the relevant category?

- “Mizrahi” is actually broad cover terms for many sub-groups that have had quite different cultures and settling patterns.
- Yemenites are often seen as the most “authentically Mizrahi” Mizrahis, as they retain much more Middle Eastern traditions and folklore than other groups (Lefkowitz 2004)
- Although the pharyngeals are ideologically linked with Mizrahi-ness in general, meta-linguistic commentary also associates them specifically with Yemenites
Do Yemenites pharyngealize more?

Pharyngeal production among Tel Aviv Mizrahis by ethnicity

<table>
<thead>
<tr>
<th>% Pharyngealized</th>
<th>ayin</th>
<th>het</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mizrahi (non-Yemenite)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yemenite</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Indicates significance
Field site #2: Rosh Ha’ayin
Rosh Ha’ayin

- Rosh Ha’ayin, population 38,000
- Located at the eastern edge of the Tel Aviv sprawl
- Founded in the 1950’s, almost all early residents were Yemenites who had immigrated to Israel in 1949-1950 ("Operation Magic Carpet")
Rosh Ha’ayin

- The town remained almost homogenously Yemenite until only 20 years ago, when new neighborhoods started getting built, attracting a more mixed population.

- The town still retains a strong Yemenite identity:
  - It houses the Yemenite Heritage Museum
  - Downtown is lined with Yemenite restaurants
  - It is associated with Yemeniteness in popular culture
Rosh Ha’ayin

- Interviewed 23 people, born and raised in Rosh Ha’ayin, all of Yemenite descent, ages 16-64

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 45 years old</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Over 45 years old</td>
<td>4</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>15</td>
<td>23</td>
</tr>
</tbody>
</table>
Comparing the two field sites

Pharyngeal production by site

- **Rosh Ha'ayin**
- **Tel Aviv**

<table>
<thead>
<tr>
<th>% pharyngealized</th>
<th>ayin</th>
<th>het</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>10%</td>
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<td>50%</td>
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<td>60%</td>
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<tr>
<td>70%</td>
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<tr>
<td>80%</td>
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</tbody>
</table>
Rosh Ha’ayin Yemenites pharyngealize a lot: older speakers are almost categorical, and even some younger speakers have high rates (unlike Tel Aviv)
Variation in the non-pharyngeal realizations
Variation in non-pharyngeal \textit{het}

\begin{itemize}
  \item \textit{aleph} \rightarrow ? \rightarrow \emptyset
  \item \textit{ayin} \rightarrow \emptyset
  \item \textit{xaf} \rightarrow \textup{x}
  \item \textit{het} \rightarrow \textup{ṭ}
\end{itemize}
What *is* the non-pharyngeal *het*?

- Blanc (1968): the Modern Koiné merged *het* and *xaf* into a voiceless velar fricative *[x]*

- Most other sociolinguistic descriptions appear to agree (Davis 1984, Yaeger-Dror 1988, Matras and Schiff 2005)
What is the non-pharyngeal het?

- However, Laufer (1999) describes the non-pharyngeal dorsal as a voiceless uvular fricative [χ]
- Crucially: Laufer adds that this uvular fricative is sometimes realized as a uvular trill
Fricatives and trills alternate

- In uvular phonemes, alternation between trills and fricatives is often the case (Ladefoged and Maddieson 1996)
- They may be linguistically conditioned allophones: for example, in Lakota, the voiced uvular fricative becomes a uvular trill before /i/ (Rood and Taylor 1996)
Fricatives and trills alternate

- Variation between a fricative and a trill is clearly a phonetically motivated phenomenon.
- However, its rates may also be sensitive to social constraints.
Rinat’s *het* and *xaf*
Anat’s xet and xaf
The patterns of trilling

- This suggests a different pattern:

**Pharyngealizing speakers:**

- $xaf$ /x/ $\rightarrow$ $[\mathring{R}] \sim [x]$
- $het$ /h/ $\rightarrow$ [h]

**Non-pharyngealizing speakers:**

- $xaf$ /x/ $\rightarrow$ $[\mathring{R}] \sim [x]$
- $het$ /h/ $\rightarrow$ [h]
Analyzing the trilled production

- For each speaker, I coded 20 words with an intervocalic \textit{het} and 20 words with an intervocalic \textit{xaf}.
- Divided speakers into pharyngealizers and non-pharyngealizers (based on their production of \textit{het} in the interview).
Analyzing the trilled production

- Phonological Controls:
  - Preceding vowel
  - Following vowel
  - Is it a stressed syllable
  - Duration
Results in Tel Aviv

Trill rates in Tel Aviv

- Results in Tel Aviv
- % trilling for non-pharyngealizers and pharyngealizers
- Bar graph showing trill rates with "het" and "xaf" labels
- Graph indicates a comparison between two groups with a significance note indicated by asterisks

Graph: Trill rates in Tel Aviv
- X-axis: non-pharyngealizers and pharyngealizers
- Y-axis: % trilling from -5% to 55%
- Two bars: orange for "het" and green for "xaf"
Results in Tel Aviv

- Merged speakers are more likely to trill
- Speakers who maintain a distinction between pharyngeal and non-pharyngeal are more likely to produce both as a fricative
- But that’s a little surprising
Results in Tel Aviv

- In a phonemic merger we expect phoneme A and phoneme B to merge into either A or B, or possibly something intermediate (Labov 1994)
- What we apparently see here is neither
- Why would a pharyngeal and non-pharyngeal fricative merge into a trill?
Results in Tel Aviv

- Furthermore, the trill is more distinct from a pharyngeal fricative than a non-pharyngeal fricative.
- From a dispersion theory perspective, it makes sense that it would be the people who do have pharyngeals to produce it more often, to maximize the difference between the pharyngeal and non-pharyngeal phonemes (Flemming 2004).
- But here we see the opposite.
Results in Tel Aviv

- Among non-pharyngealizers:
  - Age is not significant for Ashknazis
  - Age is significant for Mizrahis: younger Mizrahis are more likely to trill
The history of the “merger”

- Recall the history of the variable.
- A “phonemic merger” in the classic sense never happened for Ashkenazis: the earliest revitalizers already had only the merged phoneme.
- As we see no effect of age, the realization was probably always the often trilled one we hear now.
For Mizrahis: a two-stage process

- Among Mizrahis, the early adopters did have the distinction (and some still do)
- For Mizrahis a merger actually did take place, and the older generation, as we expect – merged their pharyngeal and non-pharyngeal realizations, and have lower trill rates
- The younger speakers who have more trilling, are aligning with the high trill rates they hear around them
Comparison with Rosh Ha’ayin…

Rate of trilling in both sites

*
Do people notice this?

- Although the stereotype of “speaking with *het* and *ayin*” is so salient in Israel, most Hebrew speakers do not seem to notice the variation in the non-pharyngeal realization.
- Perhaps precisely because it is so important whether one pharyngealizes or not, all non-pharyngeal realization are perceived as essentially the same.
- Next step: perception study.
Conclusion

- “Speaking with *het* and *ayin*” is the feature most associated with Mizrahi speakers, but the social meaning and social distribution of the pharyngeals is much more complex than simply a marker for ethnicity.
Although Israelis often talk about “speaking with het and ayin”, there are meaningful phonetic distinctions in het beyond whether it is pharyngeal or not.

These distinctions pattern in socially meaningful ways, that also have to do with ethnicity.
Conclusion

- The patterns may appear surprising from a phonological point of view, but can be understood given the different history of the variable among different social groups.
Thank you!

Questions?

שאלות?