# Refugee migration, dialect contact, and morphophonemic change in Palestinian Arabic

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# Motivation for the study

- Very little research on the Arabic vocalic system
- Sociophonetic variation within this system is almost completely unexplored (Habib 2014)
- This study aims to begin filling these gaps
  - Links between dialect contact and forced migration in the Middle East

# Arabic Feminine Ending

- Examining variation in the **Arabic feminine ending (ah)**
- Dialectal variation:
  - 'big (f)' - [kbi:ra] ~ [kbi:rɛ] ~ [kbi:re] ~ [kbi:ri]
- This is phonologically conditioned (Al-Wer 2007, Levin 1994):
  - In Levantine Arabic: the default phonetic realization is [e]
  - The realization is [a] after back consonants and after /r/ if proceeding /r/ there is no high front vowel
    - Ex. [tala:te] 'three' but [luɣa] 'language'
    - Ex. [kbi:re] 'big (f)' but [sˁu:ra] 'photograph'

# Sample & Methods

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**Table 1. Speaker demographic backgrounds**

| | Gaza City | | Jaffa Refugees | | Gaza City Refugees | |
|---|---|---|---|---|---|---|
| **Age\|Gender** | **M** | **F** | **M** | **F** | **M** | **F** |
| 17-39 | 3 | 3 | 2 | 1 | 1 | 1 |
| 40-64 | 3 | 3 | 2 | 0 | 3 | 1 |
| 65+ | 2 | 1 | 0 | 2 | 1 | 1 |
| **Total** | 15 | | 7 | | 8 | |

# Hypotheses

- H1: Stability in **Gaza City** since it is considered a non-raising dialect (de Jong 2000; Salonen 1979, 1980).
- H2: Divergence in **Jaffa refugees** from the Jaffan [e] (Shahin 2007) towards [a] as a result of dialect contact
- H3: Convergence in **Gaza refugees** from [a] to the Jordanian [ɛ] (Herin 2014).

# Sample & Methods

- 1172 occurrences of the feminine ending (35-40 per speaker)
  - Sociolinguistic interviews conducted in Gaza ('13) and Jordan ('15)
  - All of which occur in environments where raising would be allowed
- F1 & F2 automatically extracted in Praat (Boersma & Weenink 2016) at 20/40/50/60/80 % of vowel duration
- F1 & F2 averaged across time points for a mean value for each formant for each occurrence

# Sample & Methods

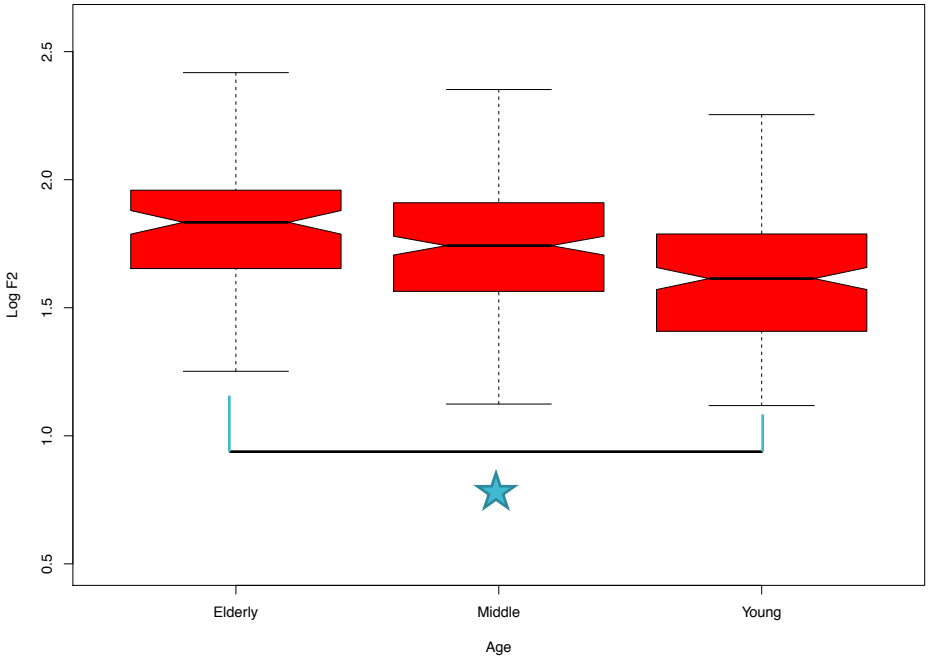
- F1 & F2 were normalized using the Nearey 1 (1978) procedure within NORM (Thomas & Kendall 2007)
- Log F1 & F2 values treated as the dependent variables in the subsequent LME analysis
- Age and Background as fixed factors
- Speaker and Word treated as random intercepts

# Results

- Same apparent process of change in both F1 & F2 across each of the three communities in question

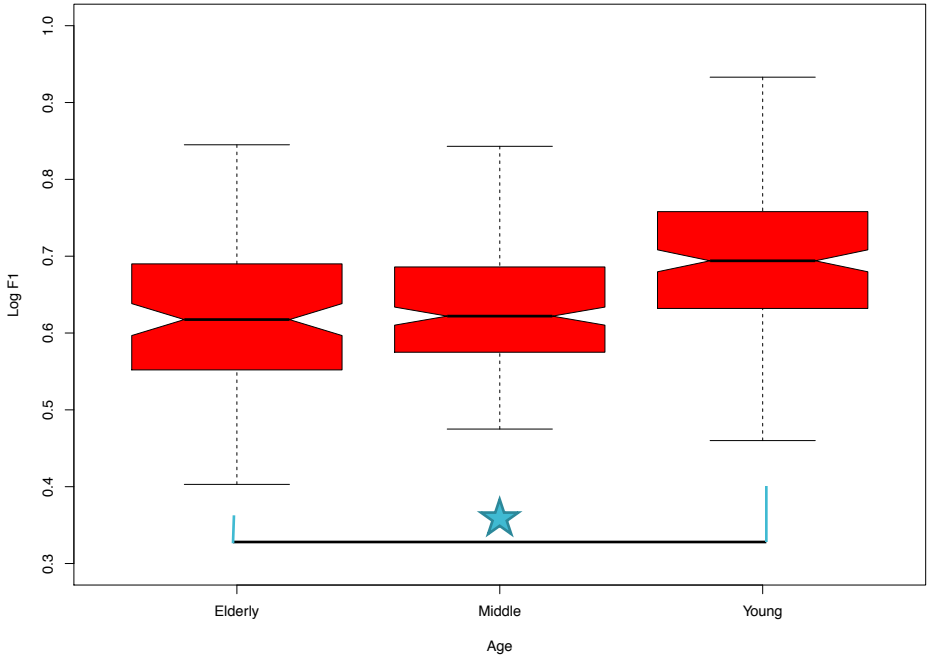
# Results

**Figure 1. F2 lowering in the speech of Indigenous Gazans**




Significant difference between Elderly and Young generations

**Figure 2. F1 raising in the speech of Indigenous Gazans**



# Results

Significant difference between Elderly and Young generations

**Figure 3. F2 lowering in the speech of Jaffa Refugees**

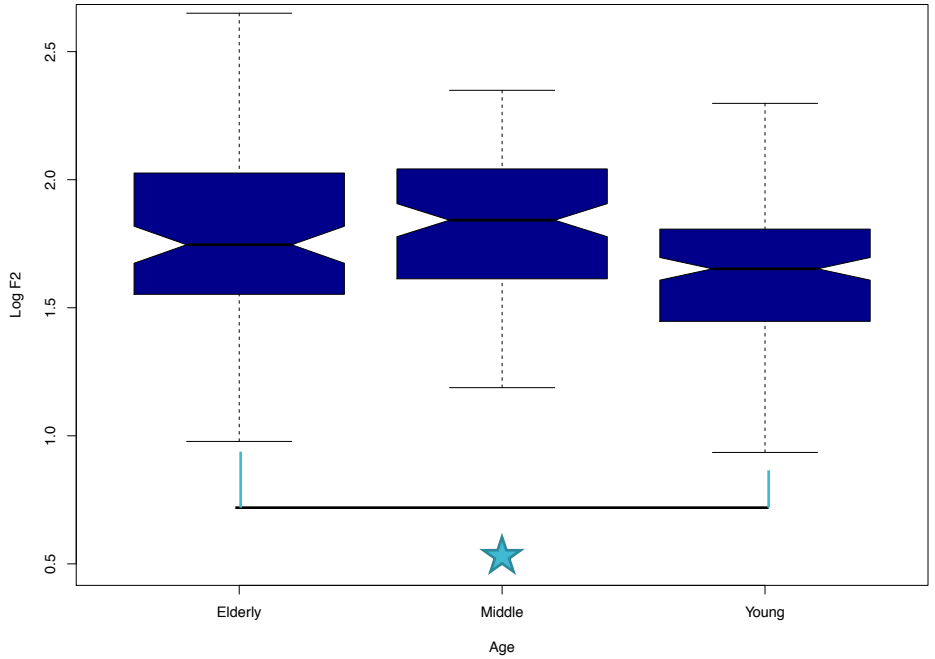
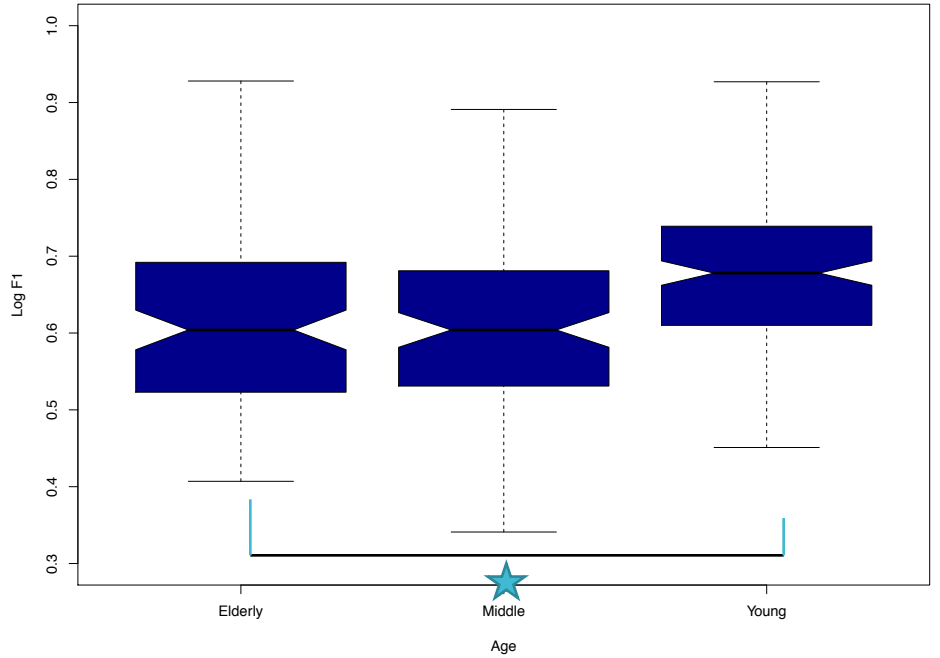
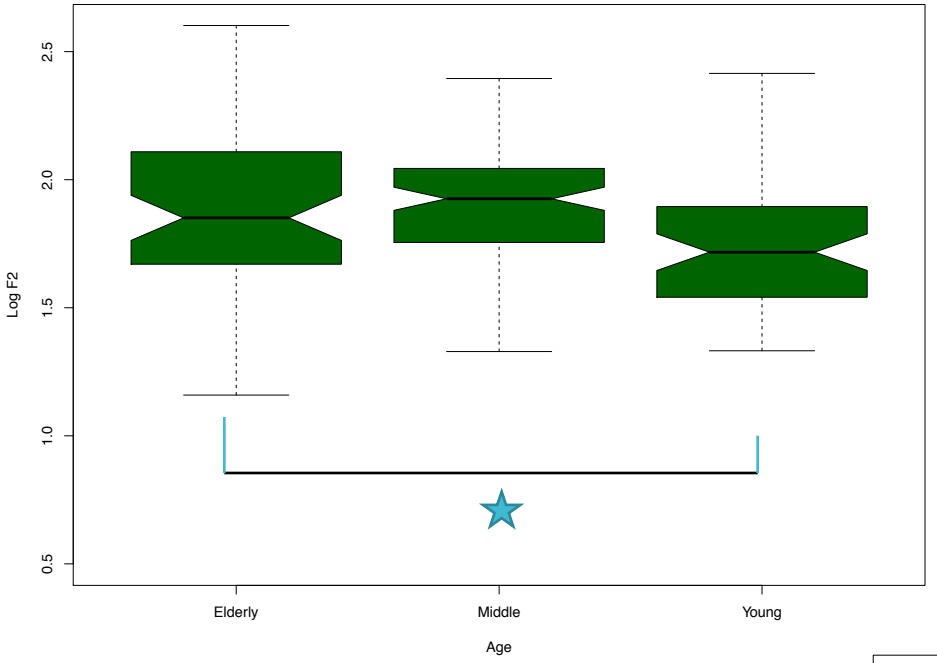



**Figure 4. F1 raising in the speech of Jaffa Refugees**



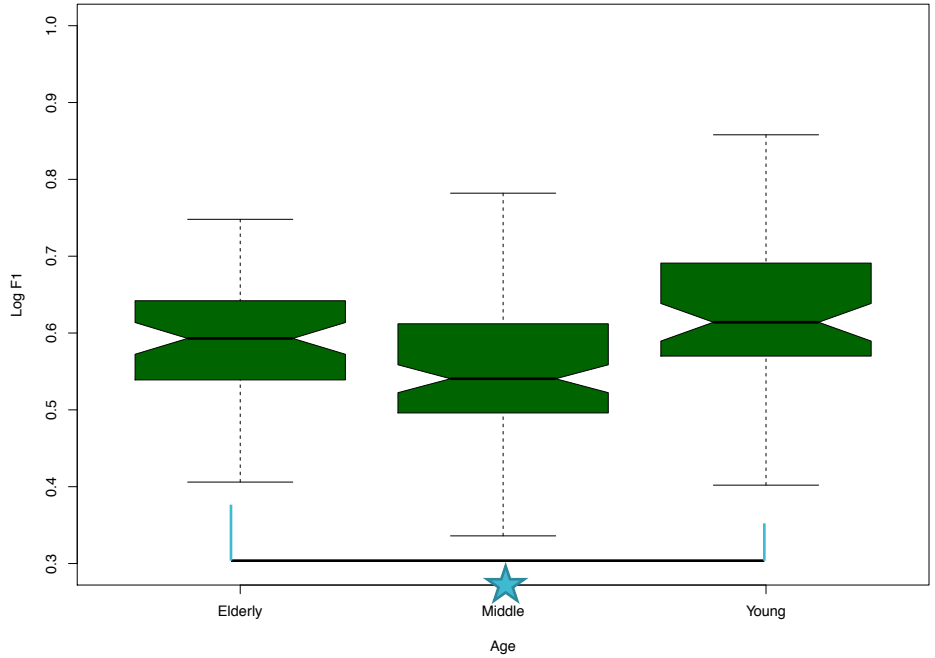
# Results

**Figure 5. F2 lowering in the speech of Gaza Refugees**




Significant difference between Elderly and Young generations

**Figure 6. F1 raising in the speech of Gaza Refugees**



# Discussion

- H1: **Gazans** show lowering and backing correlating with AGE and **do not** reflect the predicted stability in their realization of (ah)
- H2: **Jaffa refugees** show a similar apparent-time correlation with AGE, suggesting **divergence from [e] to [a], as predicted**
- H3: **Gaza refugees** also show this AGE correlation and **do not** show convergence towards the local Jordanian [ɛ] realization of (ah)

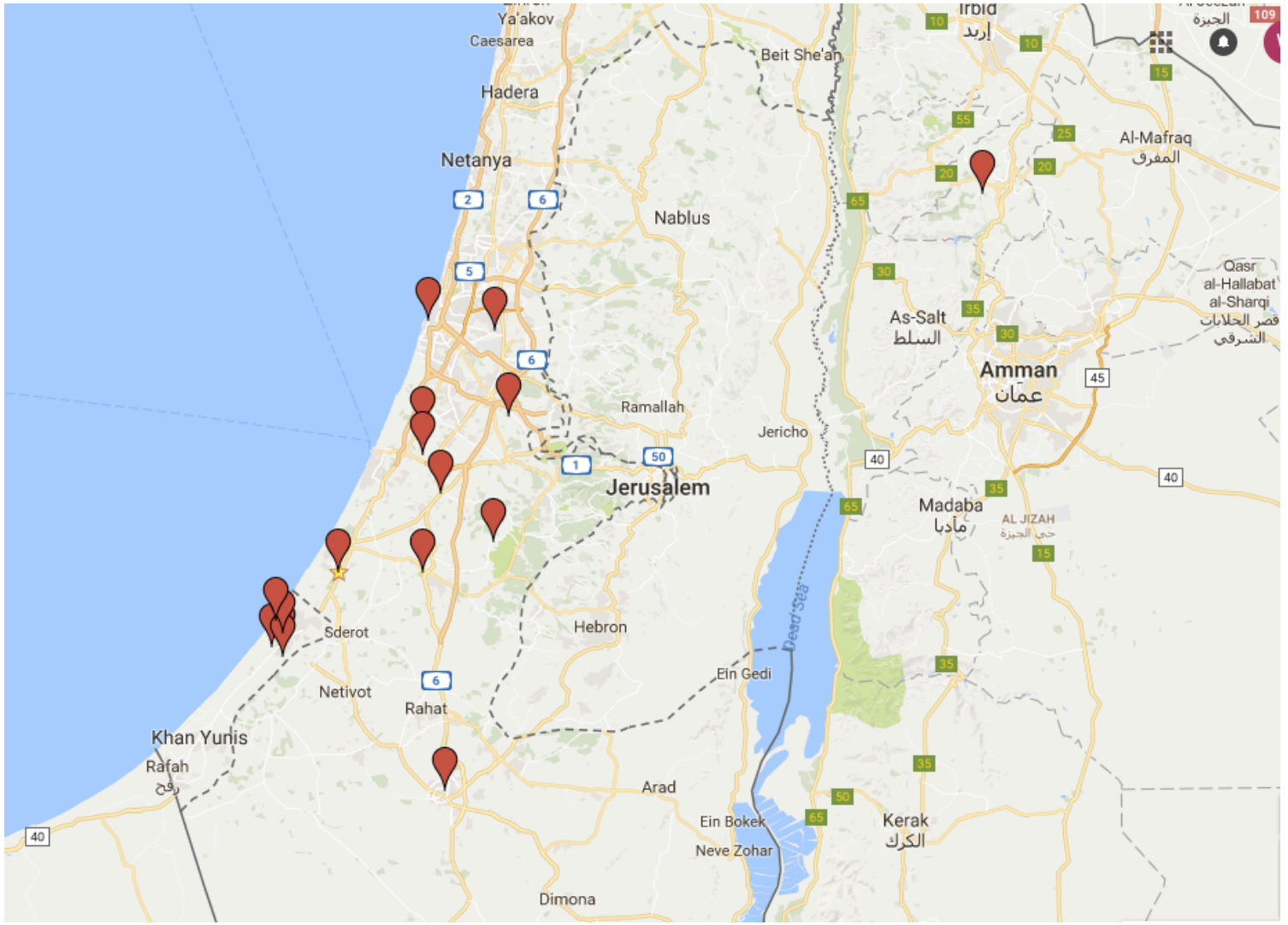
# Conclusions

- These patterns suggest leveling (Al-Wer 2004; Trudgill 1986, 2004) within these communities for (ah) as a result of large waves of refugee migration into both Gaza City and Jordan
- Documented sociophonetic variation in one vocalic context
- One next step is to look at what's going on with the vocalic system more generally
- (ah) for Gaza Refugees in Jordan is moving *away* from the local realization

# Future Directions

- Broader study of (ah) in this camp (22 additional speakers of varied backgrounds not included in this analysis)

# Future Directions



# Future Directions

- There's a potential for camp-wide leveling for this feature, and that's something that needs to be investigated more closely
- Looking more closely at the refugee camp as a spatial and linguistic construct
- Realities of structural violence as part of daily life and the potential effects of daily lived violence on language use

Thanks!

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# References


- Al-Wer, Enam. 2004. Variability reproduced: a variationist view of the [d]/[d] opposition in modern Arabic dialects. In: Martine Haak, Rudolph de Jong and Kees Versteegh (eds.). Approaches to Arabic dialects: collection of articles presented to Manfred Woidich on the occasion of his sixtieth birthday. Leiden: Brill.
- Al-Wer, Enam. (2007). The formation of the dialect of Amman: From chaos to order. In C. Miller, E. Al-Wer, D. Caubet & J. C. E. Watson (Eds.), *Arabic in the City: Issues in Dialect Contact and Language Variation*. New York: Routledge. 55–76.
- De Jong, Rudolf E. (2000). *A Grammar of the Bedouin Dialects of the Northern Sinai Littoral: Bridging the Linguistic Gap between the Eastern and Western Arab World*. Leiden: Brill.
- Habib, Rania. (2014). Vowel variation and reverse acquisition in rural Syrian child and adolescent language. *Language Variation and Change* 26: 45-75.
- Herin, Bruno. (2014). The Dialect of Salt. In K. Versteegh (Ed.) *Encyclopedia of Arabic Language and Linguistics (Online)*. Leiden: Brill.
- Levin, Aryeh. (1994). *A Grammar of the Arabic Dialect of Jerusalem [in Hebrew]*. Jerusalem: Magnes Press, the Hebrew University.
- Nearey, Terrance Michael. (1978). Phonetic feature systems for vowels. Bloomington: Indiana University Linguistics Club.
- Salonen, Erkki. (1979). *Zum arabischen Dialekt von Gaza, Teil I*. Helsinki: Finnish Oriental Society.
- Salonen, Erkki. (1980). *Zum arabischen Dialekt von Gaza, Teil II*. Helsinki: Suomalainen Tiedeakatemia.
- Shahin, Kimary. (2007). Palestinian Arabic. In K. Versteegh (Ed.), *Encyclopedia of Arabic Language and Linguistics*. Leiden: Brill. 526–538.
- Thomas, Erik R. and Tyler Kendall. 2007. NORM: The vowel normalization and plotting suite. [ Online Resource: http://ncslaap.lib.ncsu.edu/tools/norm/ ]
- Trudgill, Peter. (1986). *Dialects in Contac*t. New York: Basil Blackwell
- Trudgill, Peter. (2004). *New-dialect Formation: The Inevitability of Colonial Englishes*. Oxford: Oxford University Press.

**Table 2**: Summary of fixed factor effects on the normalized Log value of the first formant of (ah), with reference levels Elderly (Age) and Gaza (Background). Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

| | Estimate | Std. Error | df | t value | Pr(>\|t\|) |
|---|---|---|---|---|---|
| (Intercept) | 0.626253 | 0.016104 | 29.282000 | 38.889 | <2e-16 *** |
| BackgroundJaffa | -0.009874 | 0.017664 | 24.282000 | -0.559 | 0.58130 |
| BackgroundGazaRefugee | -0.047072 | 0.017595 | 28.300000 | -2.675 | 0.01227 * |
| AgeMiddle | 0.008436 | 0.018545 | 25.465000 | 0.455 | 0.65304 |
| AgeYoung | 0.058291 | 0.018050 | 26.685000 | 3.229 | 0.00328 ** |

**Table 3**: Summary of fixed factor effects on the normalized Log value of the second formant of (ah), with reference levels Elderly (Age) and Gaza (Background). Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

| | Estimate | Std. Error | df | t value | Pr(>\|t\|) |
|---|---|---|---|---|---|
| (Intercept) | 1.81951 | 0.04060 | 27.40200 | 44.812 | <2e-16 *** |
| BackgroundJaffa | -0.01857 | 0.04393 | 21.42000 | -0.423 | 0.6767 |
| BackgroundGazaRefugee | 0.08665 | 0.04396 | 25.34800 | 1.971 | 0.0597 . |
| AgeMiddle | -0.02509 | 0.04614 | 22.48800 | -0.544 | 0.5920 |
| AgeYoung | -0.11814 | 0.04495 | 23.64300 | -2.628 | 0.0148 * |

**Table 4**: Summary of fixed factor effects on the normalized Log value of the first formant of (ah), with reference levels Elderly (Age) and Jaffa (Background). Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

| | Estimate | Std. Error | df | t value | Pr(>\|t\|) |
|---|---|---|---|---|---|
| (Intercept) | 0.616380 | 0.018651 | 25.056000 | 33.048 | < 2e-16 *** |
| BackgroundGaza | 0.009874 | 0.017664 | 24.282000 | 0.559 | 0.58130 |
| BackgroundGazaRefugee | -0.037198 | 0.020280 | 25.524000 | -1.834 | 0.07830 . |
| AgeMiddle | 0.008436 | 0.018545 | 25.465000 | 0.455 | 0.65304 |
| AgeYoung | 0.058291 | 0.018050 | 26.685000 | 3.229 | 0.00328 ** |

**Table 5**: Summary of fixed factor effects on the normalized Log value of the second formant of (ah), with reference levels Elderly (Age) and Jaffa (Background). Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

| | Estimate | Std. Error | df | t value | Pr(>\|t\|) |
|---|---|---|---|---|---|
| (Intercept) | 1.80094 | 0.04673 | 22.83000 | 38.539 | <2e-16 *** |
| BackgroundGaza | 0.01857 | 0.04393 | 21.42000 | 0.423 | 0.6767 |
| BackgroundGazaRefugee | 0.10523 | 0.05048 | 22.55700 | 2.084 | 0.0486 * |
| AgeMiddle | -0.02509 | 0.04614 | 22.48800 | -0.544 | 0.5920 |
| AgeYoung | -0.11814 | 0.04495 | 23.64300 | -2.628 | 0.0148 * |

**Table 6**: Summary of fixed factor effects on the normalized Log value of the first formant of (ah), with reference levels Elderly (Age) and Gaza Refugee (Background). Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

| | Estimate | Std. Error | df | t value | Pr(>\|t\|) |
|---|---|---|---|---|---|
| (Intercept) | 0.579181 | 0.018934 | 28.712000 | 30.589 | < 2e-16 *** |
| BackgroundJaffa | 0.037198 | 0.020280 | 25.524000 | 1.834 | 0.07830 |
| BackgroundGaza | 0.047072 | 0.017595 | 28.300000 | 2.675 | 0.01227 * |
| AgeMiddle | 0.008436 | 0.018545 | 25.465000 | 0.455 | 0.65304 |
| AgeYoung | 0.058291 | 0.018050 | 26.685000 | 3.229 | 0.00328 ** |

**Table 7**: Summary of fixed factor effects on the normalized Log value of the second formant of (ah), with reference levels Elderly (Age) and Gaza Refugee (Background). Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

| | Estimate | Std. Error | df | t value | Pr(>\|t\|) |
|---|---|---|---|---|---|
| (Intercept) | 1.90617 | 0.04764 | 26.61700 | 40.010 | <2e-16 *** |
| BackgroundJaffa | -0.10523 | 0.05048 | 22.55700 | -2.084 | 0.0486 * |
| BackgroundGaza | -0.08665 | 0.04396 | 25.34800 | -1.971 | 0.0597 . |
| AgeMiddle | -0.02509 | 0.04614 | 22.48800 | -0.544 | 0.5920 |
| AgeYoung | -0.11814 | 0.04495 | 23.64300 | -2.628 | 0.0148 * |