

Are GOAT and THOUGHT Merging in Tyneside English? Multiple Methods of analysing a Merger-in-Progress

Jasmine Warburton | Newcastle University

j.warburton@newcastle.ac.uk



1. Introduction

Research on Tyneside English has indicated that a GOAT-THOUGHT merger may be present in the speech community (Watt 1998). However, little has been written about this reported merger on Tyneside in recent years.

Research Questions

- Is there evidence of a GOAT-THOUGHT merger in contemporary Tyneside English?
- What is the quality of this merged vowel (i.e. direction of merger)?
- Who in the speech community exhibits a GOAT-THOUGHT merger?

4. Vowel Overlap

F1 and F2 measurements for each speaker's GOAT and THOUGHT tokens were plotted (ellipses show the 95% confidence interval).

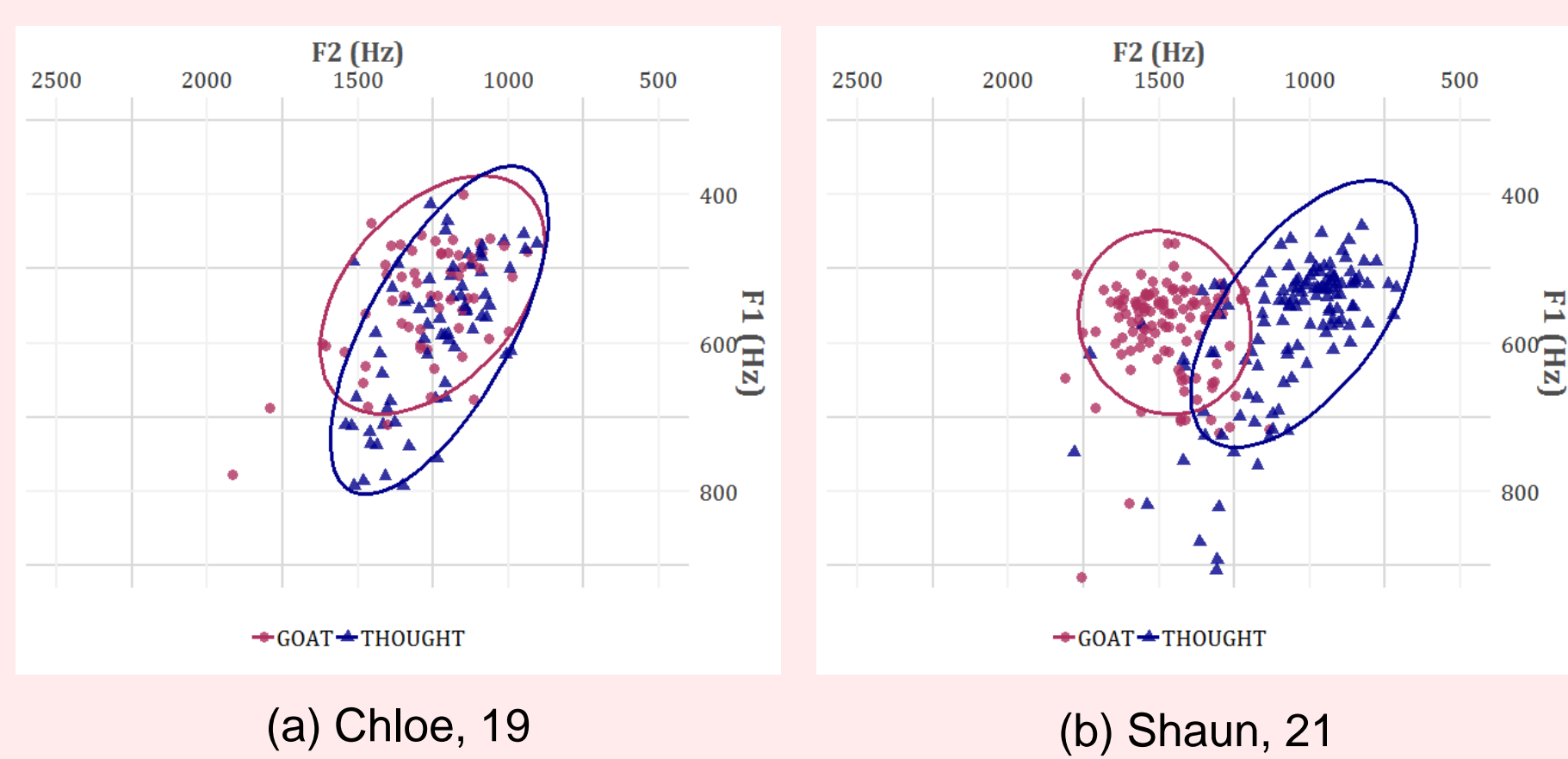


Figure 1. Formant plots for the speakers with the most (L) and least (R) GOAT-THOUGHT overlap

2. Background

The following variants of GOAT have previously been reported in Tyneside English:

[o:]	monophthong
[ʊə]	centring diphthong
[ou]	closing diphthong
[e:]	fronted monophthong

Research suggests that [o:] is now the most frequently used variant in the region (Watt 1998; Beal et al. 2012). The Tyneside English THOUGHT vowel is generally transcribed as [ɔ:].

5. Evidence of Merger: Static Measures

Pillai Scores

Following Hay et al. (2006), Multivariate Analysis of Variance (MANOVA) models calculate Pillai scores: the *difference* between the F1-F2 distributions of two word classes.

Figure 2. shows:

- Young female Tynesiders have the smallest distinction between GOAT and THOUGHT
- Young males have a bigger GOAT-THOUGHT distinction than older male and female speakers

Could young males and females be leading sound change in opposite directions?

Alternative analysis using dynamic measures may help to explain the differences between young males and females in terms of GOAT-THOUGHT mergedness.

3. Method

30 Tynesiders (aged 19-78) interviewed for the Diachronic Electronic Corpus of Tyneside English (Corrigan et al. 2012).

Used FAVE (Rosenfelder et al. 2012) to obtain formant measurements (Lobanov normalised).

For static measures, FAVE default used. Formant measures taken at:

- 30% of vowel duration for THOUGHT
- Midway between vowel onset and F1 maximum for GOAT.

To allow for dynamic analysis of vowel trajectories, the FAVE script was edited to give formant measurements at every 10% of the vowel's duration.

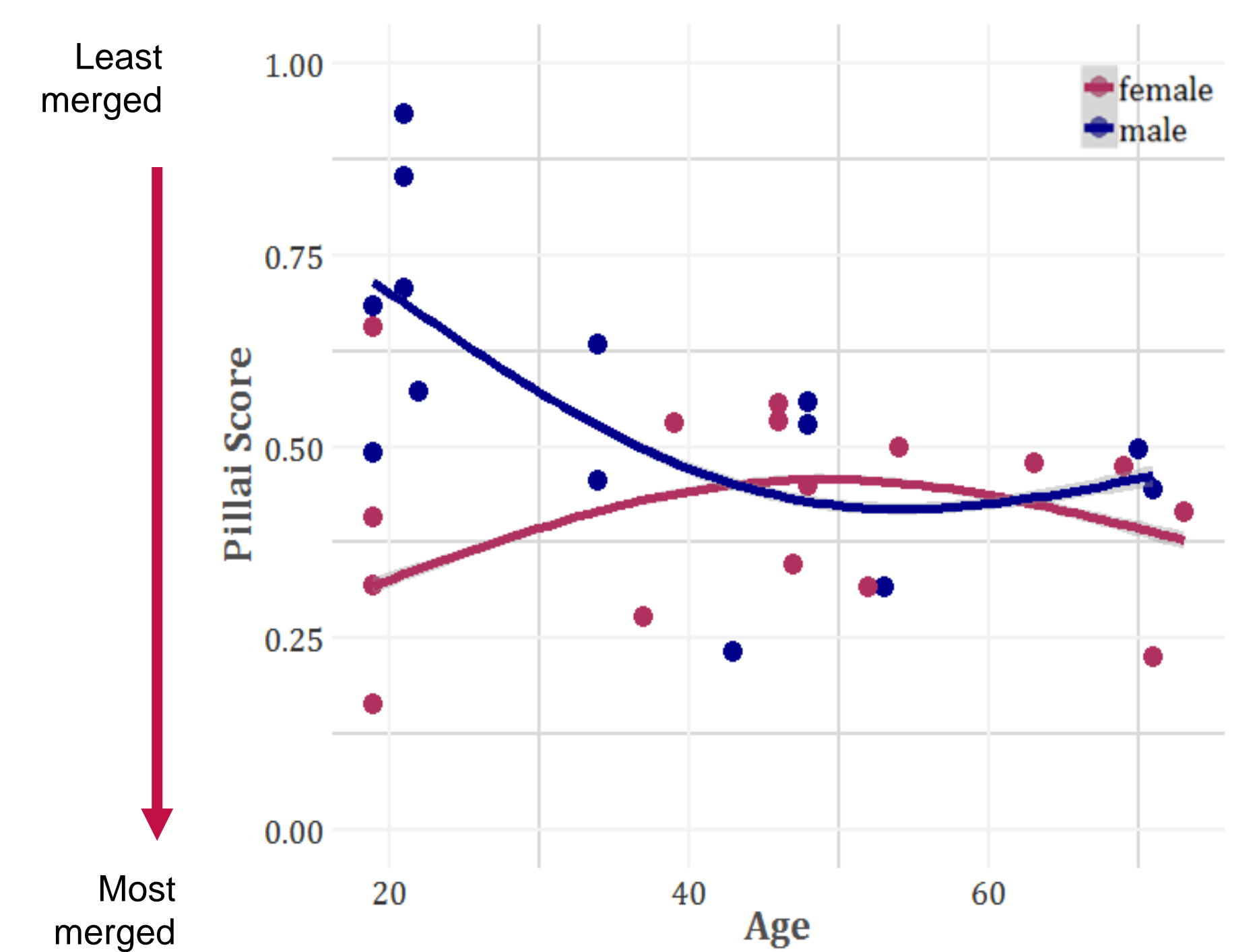


Figure 2. Pillai scores by speaker sex and age

6. Evidence of Merger: Dynamic Measures

GAMMs

Generalized Additive Mixed Models (GAMMs) can be used on vowel trajectory data (Sóskuthy 2017). GAMMs were used to predict the F1 and F2 trajectories for GOAT and THOUGHT in each speaker group, as shown in Figure 3.

Figure 3 shows that:

- Young female speakers have more similar GOAT and THOUGHT trajectories than older female speakers in terms of both F1 and F2.
- Young males have more similar predicted GOAT and THOUGHT trajectories than older males in terms of F1, but an increased difference between the predicted trajectories of GOAT and THOUGHT in F2.

Like the Pillai scores, Gamm output indicates that young females show most evidence of a GOAT-THOUGHT merger-in-progress, while young males are increasing the distinction between these vowels (particularly in terms of vowel frontness).

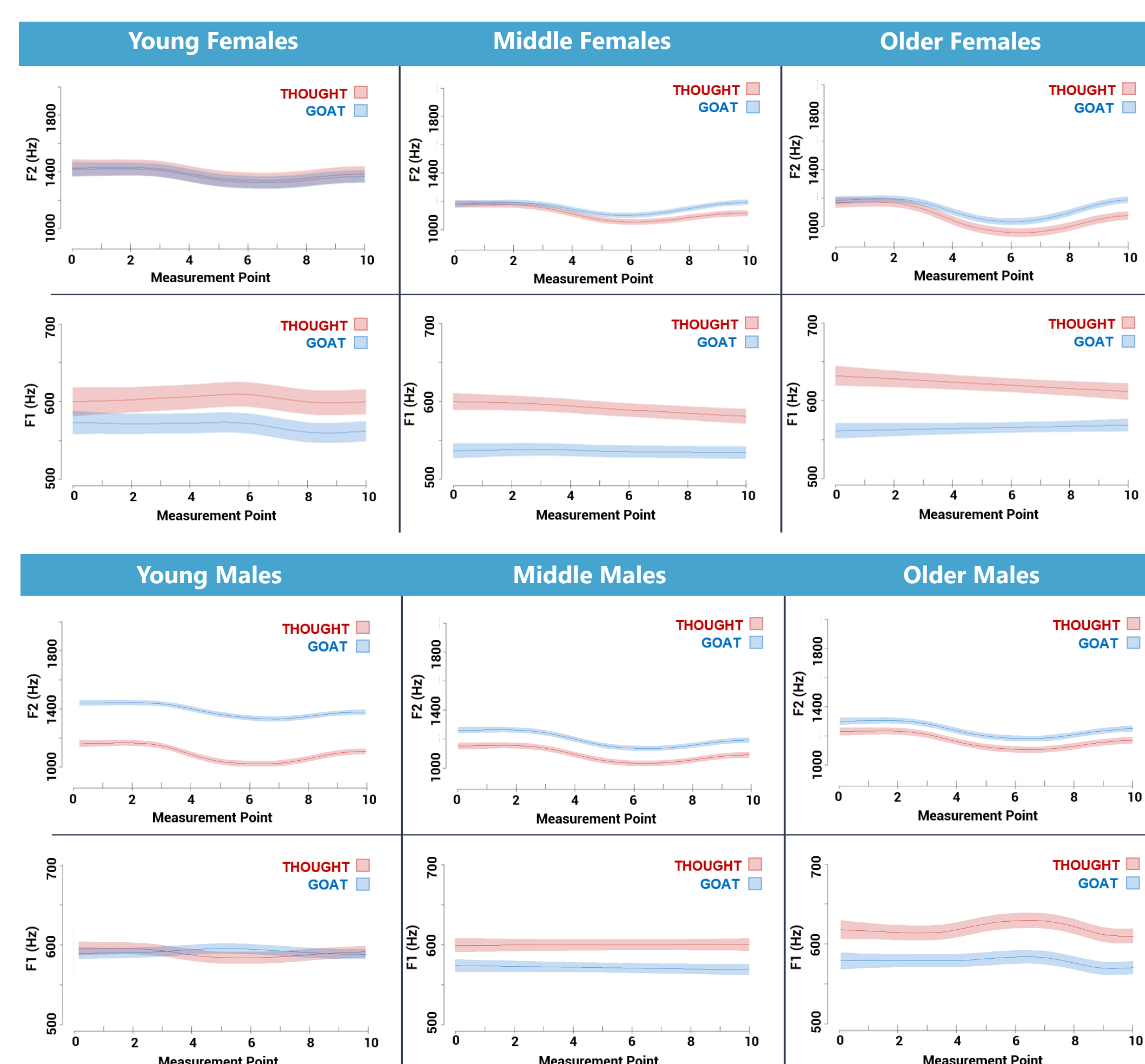


Figure 3. Predicted F1 and F2 trajectories for GOAT and THOUGHT by speaker group

7. GOAT Variation

Results from auditory analysis show continued variation in the realization of GOAT in contemporary Tyneside English, particularly within young males.

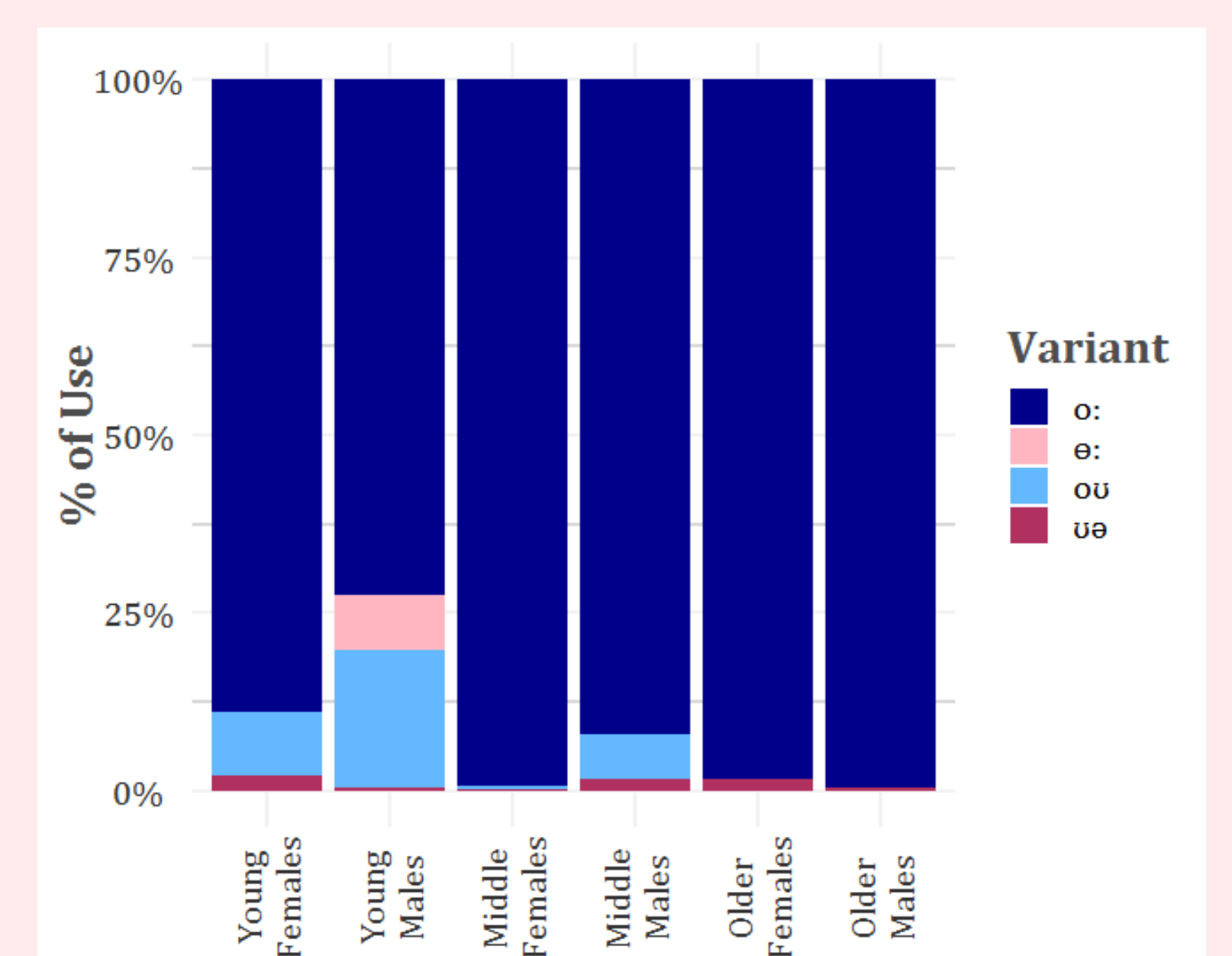


Figure 4. GOAT variants used by speaker groups

Young males may not be increasing the distinction between their GOAT and THOUGHT vowels, but continued usage of multiple GOAT variants among younger Tyneside males may be preventing a GOAT-THOUGHT overlap in their own speech.

Further Questions:

Can a GOAT-THOUGHT merger take place in Tyneside English if multiple GOAT variants survive in the speech community?

References:

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