

# Vowel dynamics and social meaning in York, Northern England

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As time-varying acoustic events, speech sounds offer a wide range of variable cues which could potentially attach to the social meanings available in a speech community. However, research into the social perception of phonetic variation has typically focused on ‘static’ properties of speech events – for example, by testing listeners’ ability to use variation in average formant frequencies as a cue to social identity (Fridland, Bartlett & Kreuz, 2004). To address this gap, the present study tested listeners’ sensitivity to dynamic properties of the GOAT vowel in York, Northern England, with a view to discovering whether some aspects of variation in this vowel might be more salient as social-indexical cues than others.

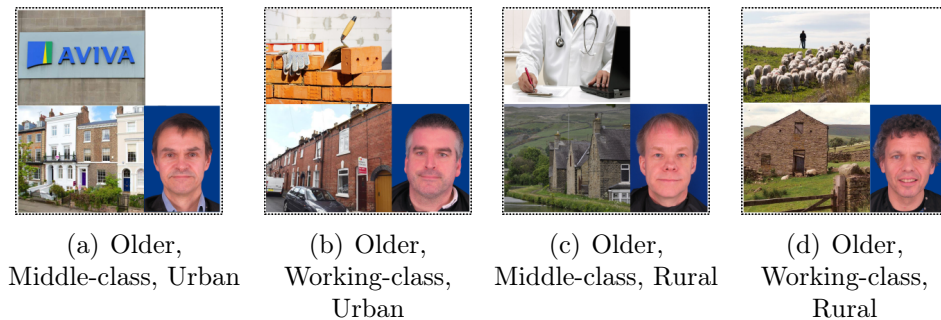
In York, the GOAT vowel is involved in two related processes of change: fronting and diphthongization. The interaction of these processes result in a range of realizational possibilities for this vowel. Monophthongal and diphthongal GOAT can be fronted to different degrees, and the fronting of diphthongal GOAT may target either the onset or offglide of the diphthong.

Figure 1: Realizational possibilities for GOAT in York

	<i>Fronting</i>		
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<i>Diphthongization</i> ↓	<b>øː</b> Mid-front monophthong	<b>ɵː</b> Mid-central monophthong	<b>oː</b> Mid-back monophthong
	<b>eʊ</b> Mid-front diphthong (fronted onset)	<b>əʊ</b> Mid-central diphthong (centralized onset)	<b>oʊ</b> Mid-back diphthong
	<b>əy</b> Mid-front diphthong (fronted offglide)	<b>əʏ</b> Mid-central diphthong (centralized offglide)	

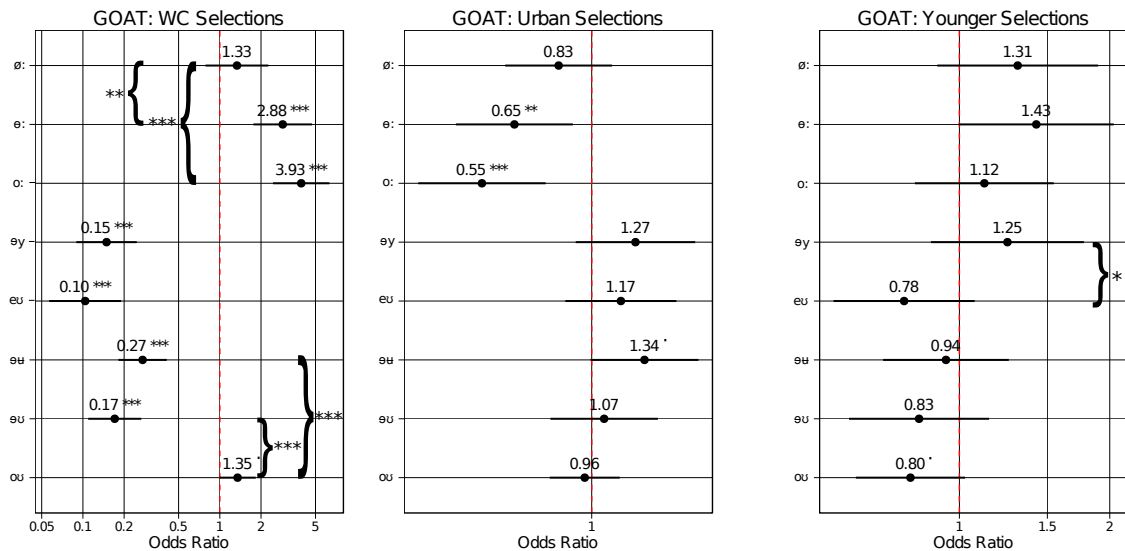
In order to test whether these aspects of variation are sociolinguistically meaningful in this speech community, an experiment was devised to test listeners’ ability to interpret variation on each phonetic dimension as a social cue. Participants matched resynthesized word tokens to a set of characters representing local stereotypes. Characters were portrayed using a set of faces, along with images of locally-meaningful places and practices which were established through ethnographic interviews. These characters varied systematically in terms of three social dimensions: their age, social class, and urban/rural identity. The validity of these stimuli in representing the target social dimensions was verified through independent ratings tasks. Participants saw two characters at a time, heard a speech token, and were asked to identify the character most likely to speak in that way.

Figure 2: Sample visual stimuli



The strength of each variant as a social cue is estimated from the odds ratios of logistic regression models predicting each social selection as a function of the variant heard. *Figure 3* plots these for each variant on each social dimension. Symbols on the y-axes reflect the variants described in *Figure 1*. Braces express significant/near-significant differences between individual variants.

*Figure 3: Odds ratios estimated from logistic regression models of selections on each social dimension. ‘.’:  $p < 0.1$ ; ‘\*’:  $p < 0.05$ ; ‘\*\*’:  $p < 0.01$ ; ‘\*\*\*’:  $p < 0.001$ .*



(a) Odds ratios of ‘working-class’ selections for each variant.

(b) Odds ratios of ‘urban’ selections for each variant.

(c) Odds ratios of ‘younger’ selections for each variant.

The results indicate that diphthongization is the most salient cue for social evaluation, with monophthongs more likely to cue the selection of rural and working-class characters than diphthongs. This pattern is mediated by the degree of fronting – for diphthongal stimuli, fronting resulted in higher rates of middle-class selections, and for monophthongal stimuli, fronting resulted in lower rates of working-class selections. Differences in the temporal implementation of fronting were the least socially salient, but fronting at the offglide of diphthongal GOAT appears to result in a slight bias toward the selection of younger, urban characters, consistent with the productive distribution of these forms.

These findings challenge recent claims regarding the role of social meaning in constraining sound change in this community, where it has been suggested that internal pressures favoring GOAT fronting are resisted due to a stigmatized, class-based social meaning (Haddican et al., 2013). More generally, they contribute our growing understanding of the nature of sociophonetic knowledge, providing further evidence that part of what individuals know about their languages must include representations of the dynamic properties of speech sounds, alongside aspects of their possible social meanings.

## References

- Fridland, V., Bartlett, K., & Kreuz, R. (2004). Do you hear what I hear? Experimental measurement of the perceptual salience of acoustically manipulated vowel variants by Southern speakers in Memphis, TN. *Language Variation and Change*, 16(01), 1-16.
- Haddican, B., Foulkes, P., Hughes, V., & Richards, H. (2013). Interaction of social and linguistic constraints on two vowel changes in northern England. *Language Variation and Change*, 25(03), 371-403.