Velar nasal plus in the north of (ing)land

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@grbails

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The topic

Velar nasal plus in **the north** of **(ing)**land

- **(ing)** - alternation between [ɪn] and [ɪŋ] in unstressed <-ing> clusters

- **The north** - (ing) behaves differently in the North of England, in ways that aren't well-studied

- **Velar nasal plus** - a third possible variant exclusive to the North West (and West Midlands) of England

T

Velar nasal p

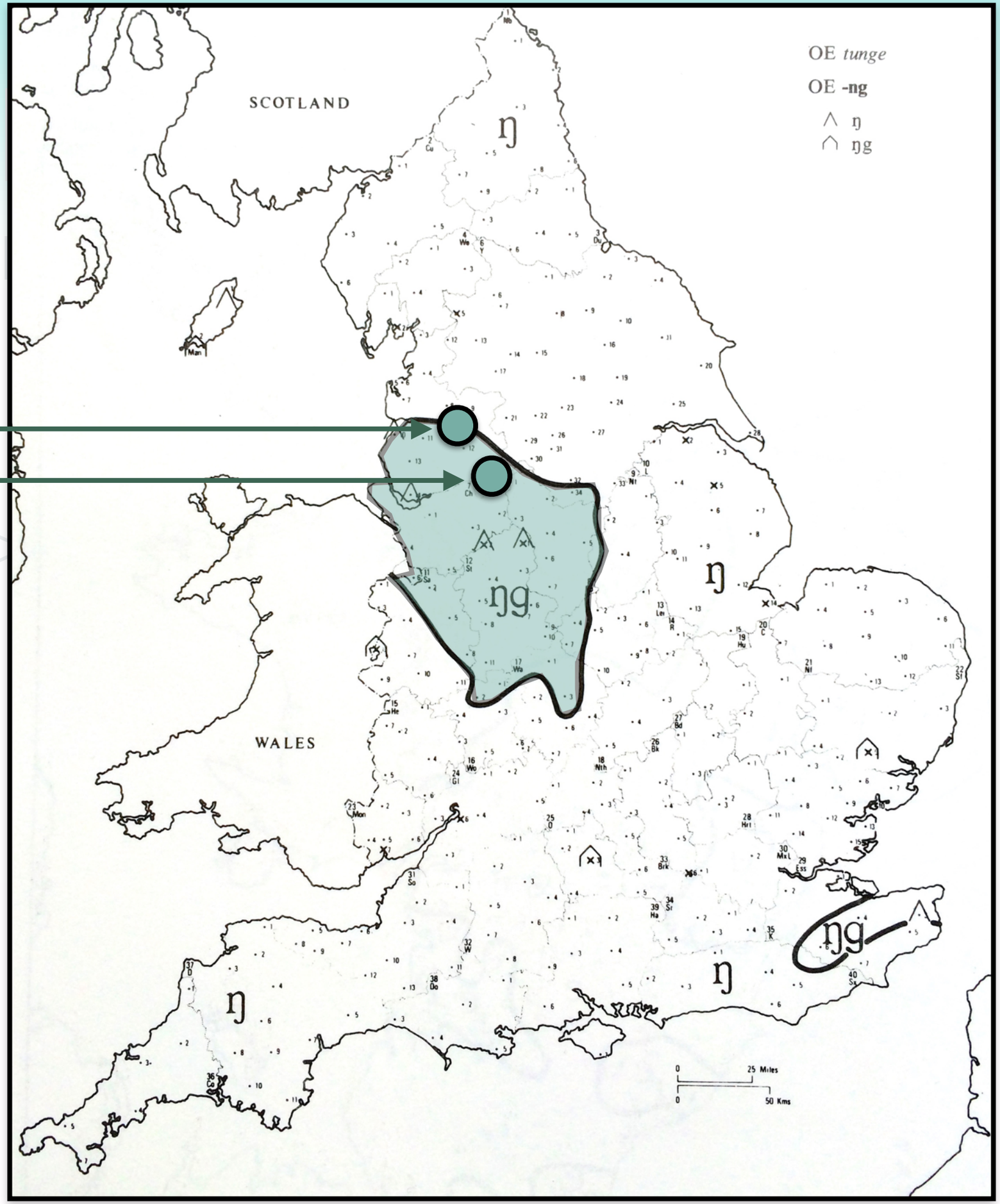
- (ing) alternation
unstressed <-ing>

- **The north** - (ing)
England, in ways

- **Velar nasal plus**
to the North West

Blackburn

Manchester



SED data from the Linguistic Atlas of England - Orton et al. 1978

Velar nasal plus

- Third possible variant, with audible post-nasal /g/ - [ɪŋg]

- Expanded envelope of variation to stressed clusters, e.g. *thing* [θɪŋ]~[θɪŋg]

(ing) ⟶ [ɪn] [ɪŋ] **[ɪŋg]** e.g. *think**ing***

(ng) ⟶ [Vŋ] **[Vŋg]** e.g. *wro**ng***

- This talk: variationist study of how [ŋg] patterns along social dimensions, and how this is constrained by language-internal factors

Historical origin

- Old English present participle *-inde* and verbal noun form *-ynge/-inge* (Visser 1966)

- Reduction (and later deletion) of the final vowels > simplification of the consonant clusters > conflation of two forms

- Simplification of the /ŋg/ cluster never ran to completion in the North West of England, leading to what Wells (1982) terms ‘velar nasal plus’

    - The rule deleting post-nasal /g/ still developed in a very systematic way, following the ‘life cycle of phonological processes’ (Bermúdez-Otero 2011)

The life cycle of phonological processes

- Over time, rule deleting post-nasal coda /g/ progresses into more embedded morphosyntactic domains

1. PHRASE-LEVEL: can see the whole **phrase** — she didn't want to **sing aloud**
2. WORD-LEVEL: can only see the **word** itself — she didn't fancy herself as a **singer** anymore
3. STEM-LEVEL: can only see the **stem** — she didn't fancy herself as a **sing**-er anymore

- The rule is a stem-level process in PDE, evidenced by seemingly opaque deletion in words like *singer*

Stage	Surface form of underlying /ŋg/				Language variety/ register
	finger	*sing-er*	*sing it*	*sing* ‖	
0	[ŋg]	[ŋg]	[ŋg]	[ŋg]	Early Modern English
1	[ŋg]	[ŋg]	[ŋg]	[ŋ]	Elphinston (formal)
2	[ŋg]	[ŋg]	[ŋ]	[ŋ]	Elphinston (colloquial)
3	[ŋg]	[ŋ]	[ŋ]	[ŋ]	Present Day English

Adapted from Bermúdez-Otero (2011: 2024)

The life cycle of phonological processes

- Synchronic implication under a cyclic analysis:
    - more cycles that meet the rule's criteria = more chances to apply during the phonological derivation = higher application rate on the surface
- See Guy (1991) on /t,d/-deletion and Turton (2013, 2014) on /l/-darkening

Word	*finger*	*singer*	*sing it*	*sing* ||	*sing carols*
Stem-level	/fɪŋ.**g**ə/	/sɪŋ**g**/	/sɪŋ**g**/	/sɪŋ**g**/	/sɪŋ**g**/
Word-level	/fɪŋ.**g**ə/	/sɪŋ.**g**ə/	/sɪŋ**g**/	/sɪŋ**g**/	/sɪŋ**g**/
Phrase-level	/fɪŋ.**g**ə/	/sɪŋ.**g**ə/	/sɪŋ.**g**ɪt/	/sɪŋ**g**/	/sɪŋ**g**.ka.ɹəlz/
Chances to apply:	0	1	2	3	3

Methodology

- Quantitative approach drawing upon natural language data from fifteen sociolinguistic interviews

    - supplemented with two speakers recorded in 1971 for a real-time component

- Stratified by age, sex, and speech community (Manchester and Blackburn)

- Interviews typically one hour long, followed by a reading passage and word list

- Tokens of (ing) and (ng) coded auditorily

	Conversation	Elicited	Total
(ing)	2265	410	**2675**
(ng)	582	236	**818**
Total	**2847**	**646**	**3493**

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3. Results

Unstressed (ing)
Stressed (ng)

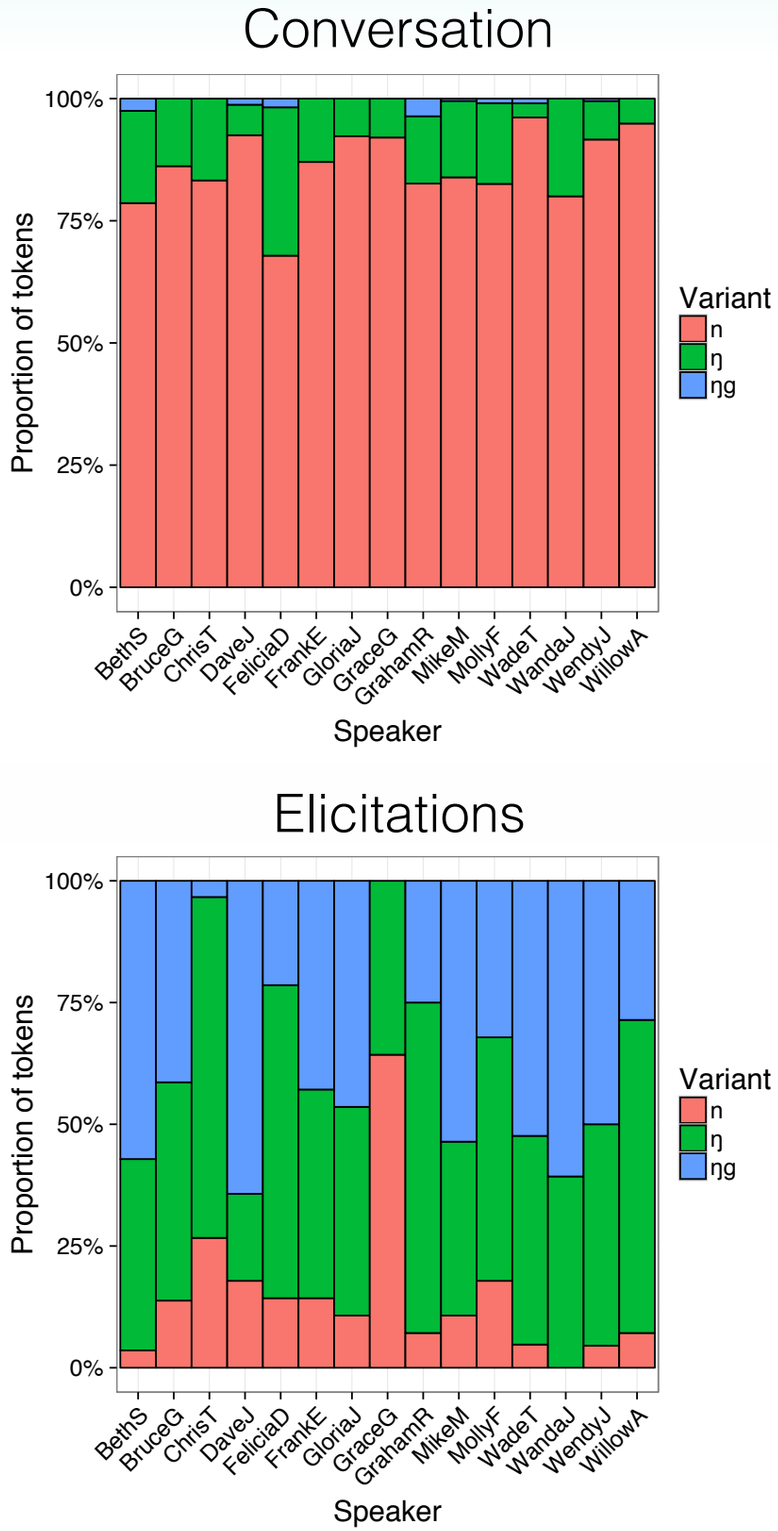
4. Conclusion

Summary
Ongoing work

Results

Unstressed (ing)

- Three-way alternation in the unstressed **-ing** suffix…
- … but it's more like a two-way alternation, at least in the conversation
- Velar nasal plus in unstressed clusters only really present in elicited speech



Social factors

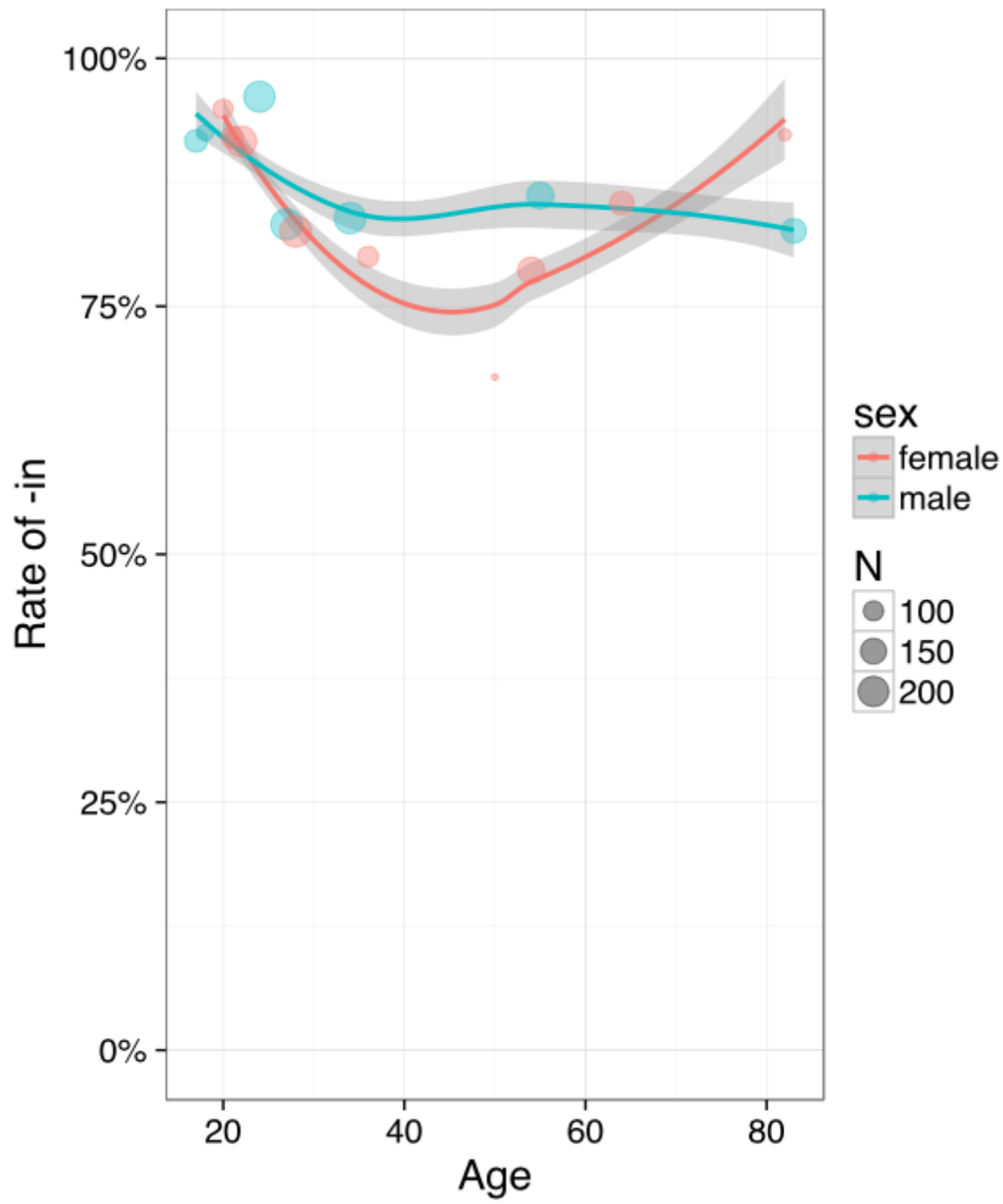
Unstressed (ing)

- Slight age-graded pattern, at least for female speakers, where the very youngest and oldest speakers show the highest rates of *-in*

- Generally speaking, males show more of a preference for *-in*

- Expected results, given the well-established status of (ing) as a stable sociolinguistic variable with high social awareness

- Overall, very high rates of *-in* for male and female speakers of **all** ages



Internal factors

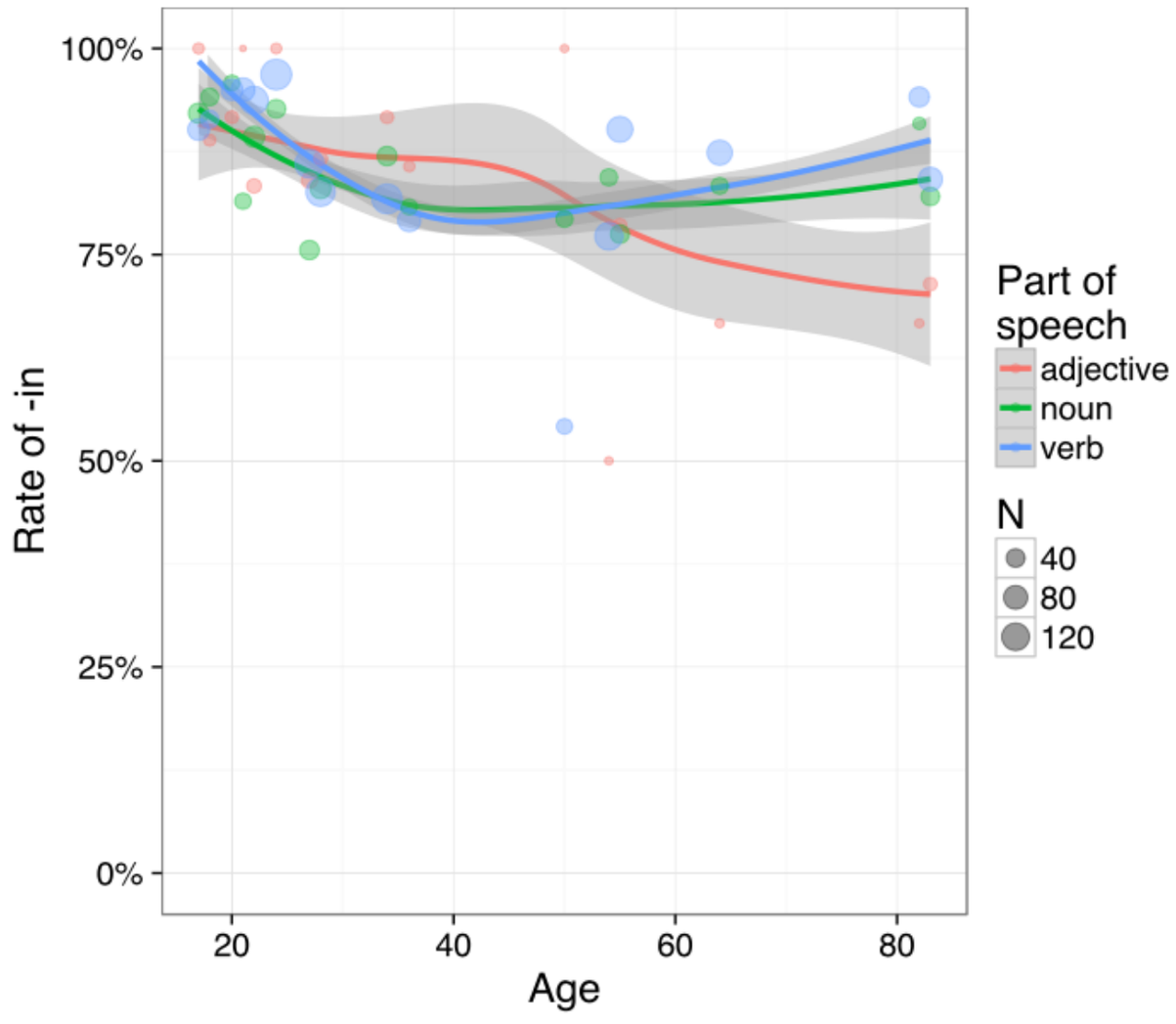
Unstressed (ing)

- The well-established *nominal-verbal continuum* effect is **not present** here

- Once again we find environments that should disfavour *-in* actually showing high rates of this variant - in this case nominal and adjectival use of the (ing) suffix

- Age-grading makes it difficult to track changes in this effect diachronically, but earlier reports suggests that this effect *used to be* present (Houston 1984)

- Surprising given that the effect is strong in the US (Labov 2001) and even elsewhere in the UK (e.g. York - Tagliamonte 2004)



Inter

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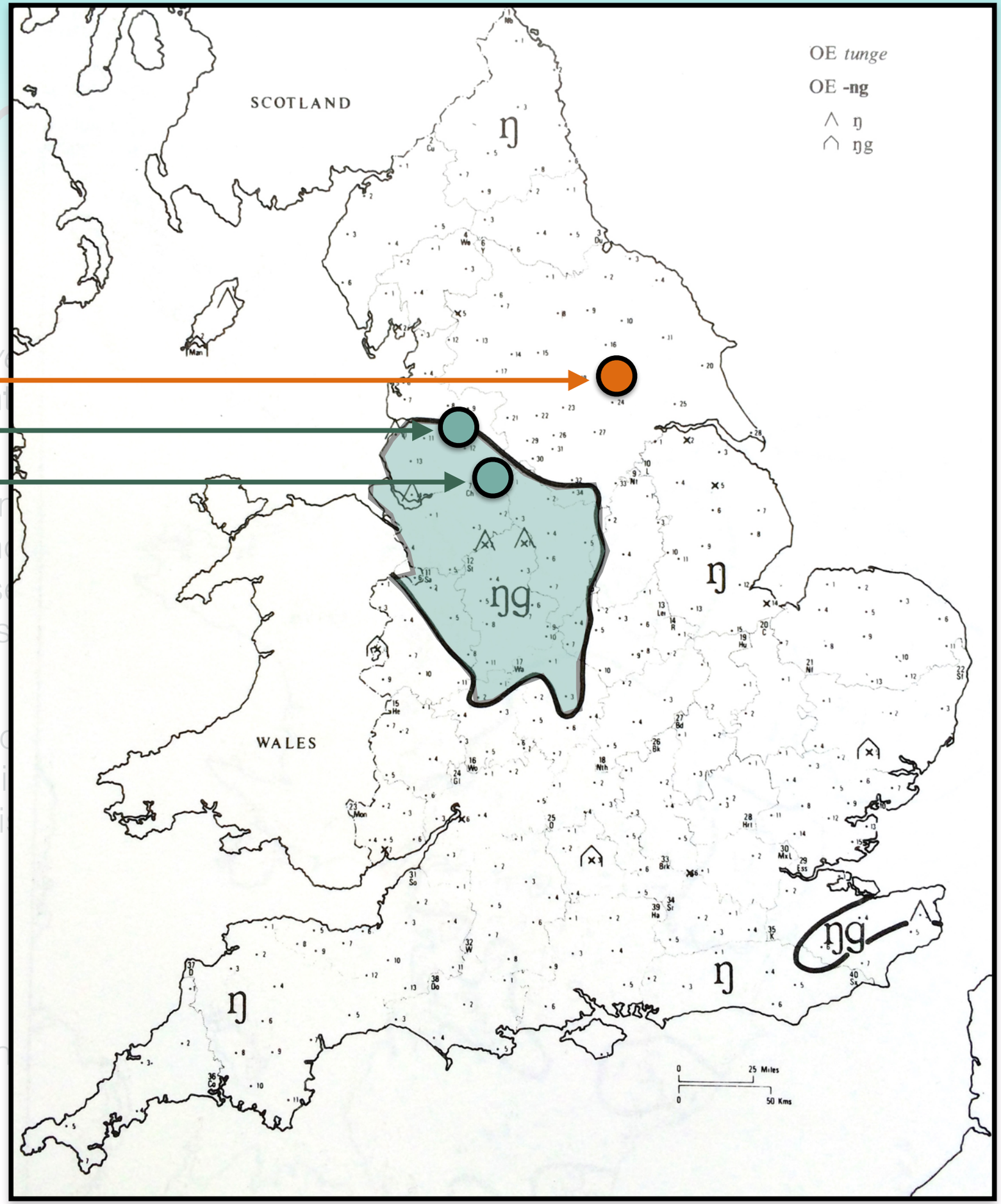
York

Blackburn

Manchester



SED data from the Linguistic Atlas of England - Orton et al. 1978

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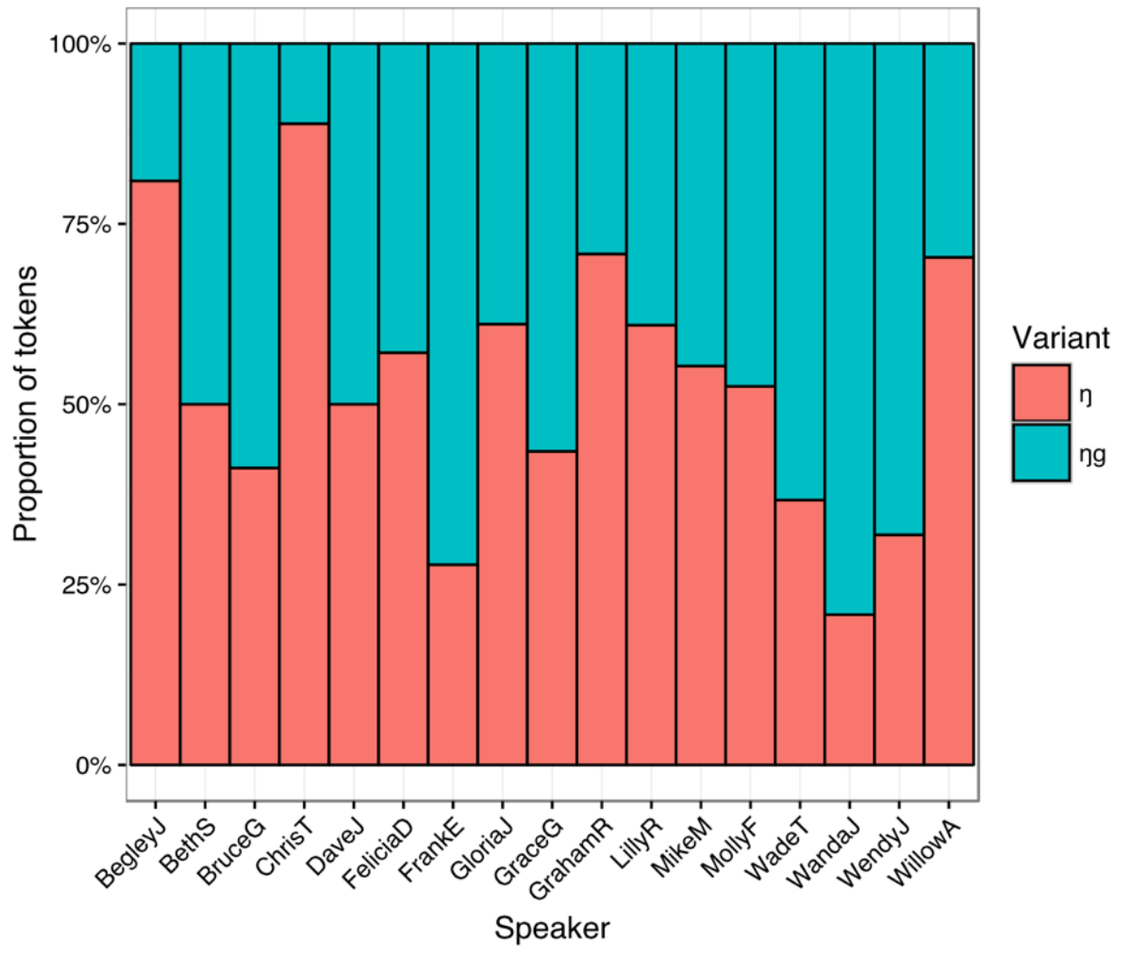
Results

Stressed (ng)

- Two-way alternation between [ŋ] and [ŋg] in stressed contexts; variable application of /g/-deletion rule

- Highly variable in conversational data

    - both within-speaker and between-speaker variation



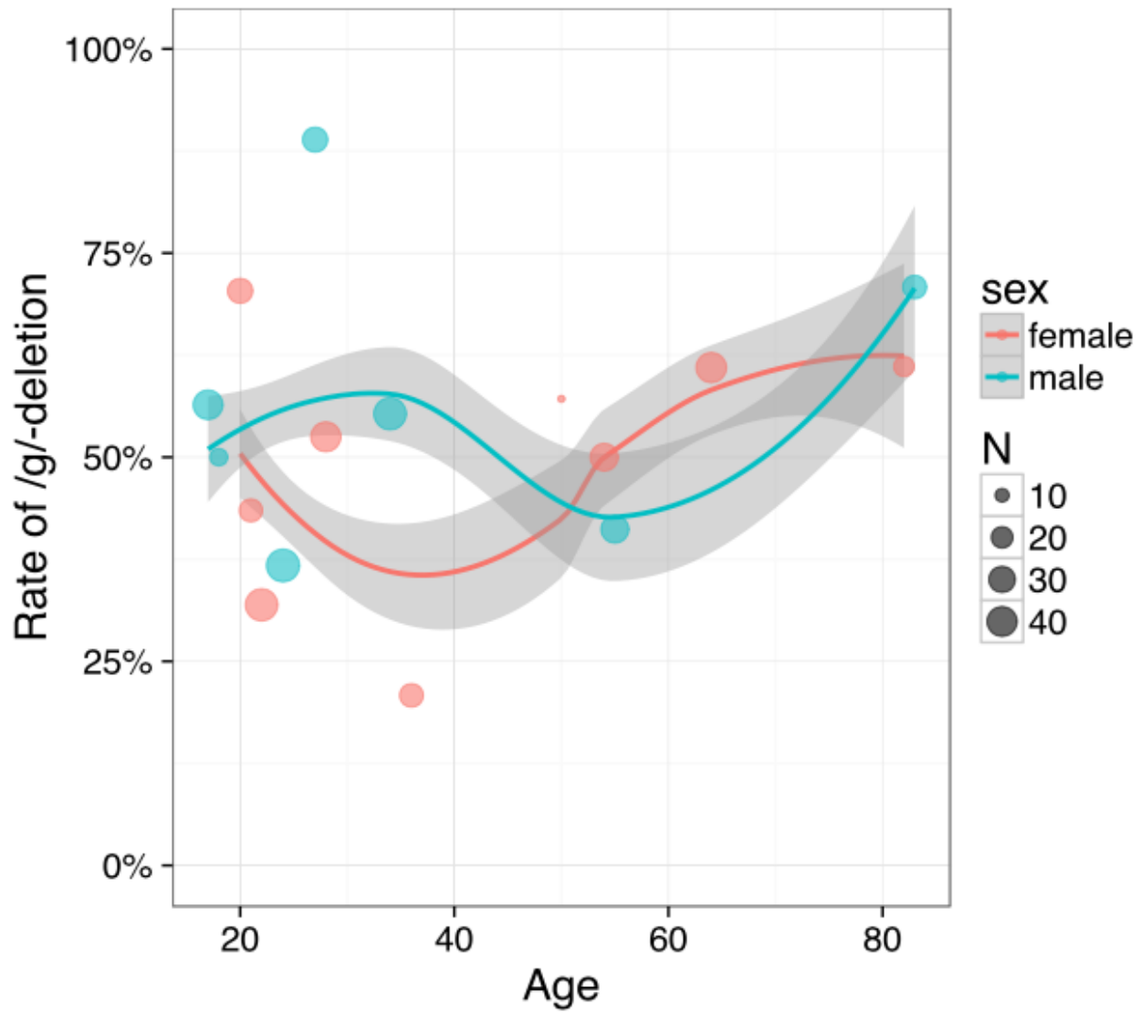
Social factors

Stressed (ng)

- Effect of age and sex somewhat less clear than for unstressed (ing)

- Suggestion that older speakers show more /g/-deletion

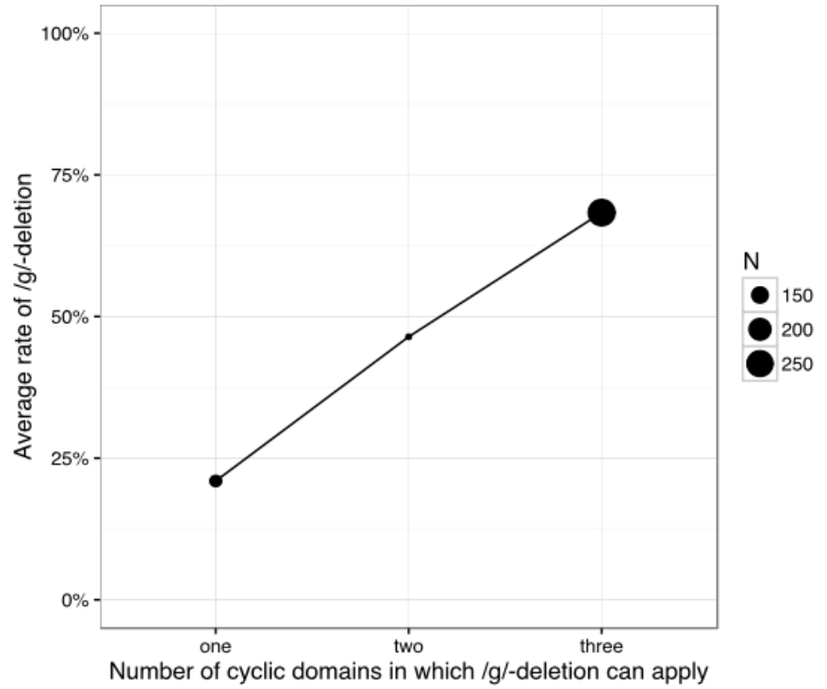
- Despite lots of variation, no clear pattern in terms of age or sex

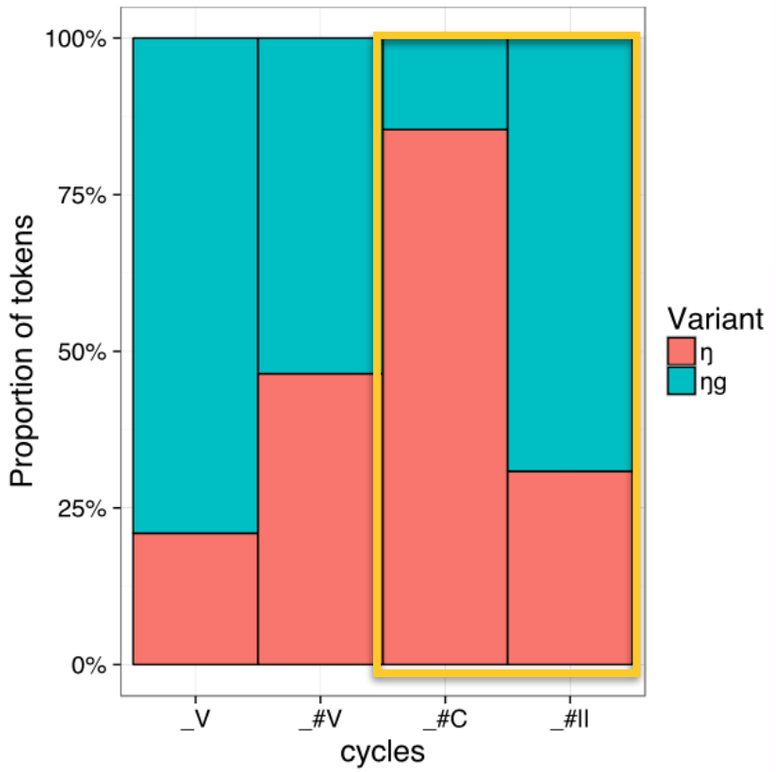


Cyclic analysis

Stressed (ng)

- The diachronic trajectory of /g/-deletion along the life cycle has interesting synchronic implications
- Correlation between surface rate of application and the number of cyclic levels in which it had *chance* to apply
- Strong(est!) predictor
- **BUT**: Word-final /ŋg/ should show comparable behaviour in pre-pausal and pre-consonantal environments
    - the rule has three chances to apply in both
- We actually find high rates of deletion pre-consonantally (as predicted), but extremely *low* rates pre-pausally (not predicted)





Cyclic analysis

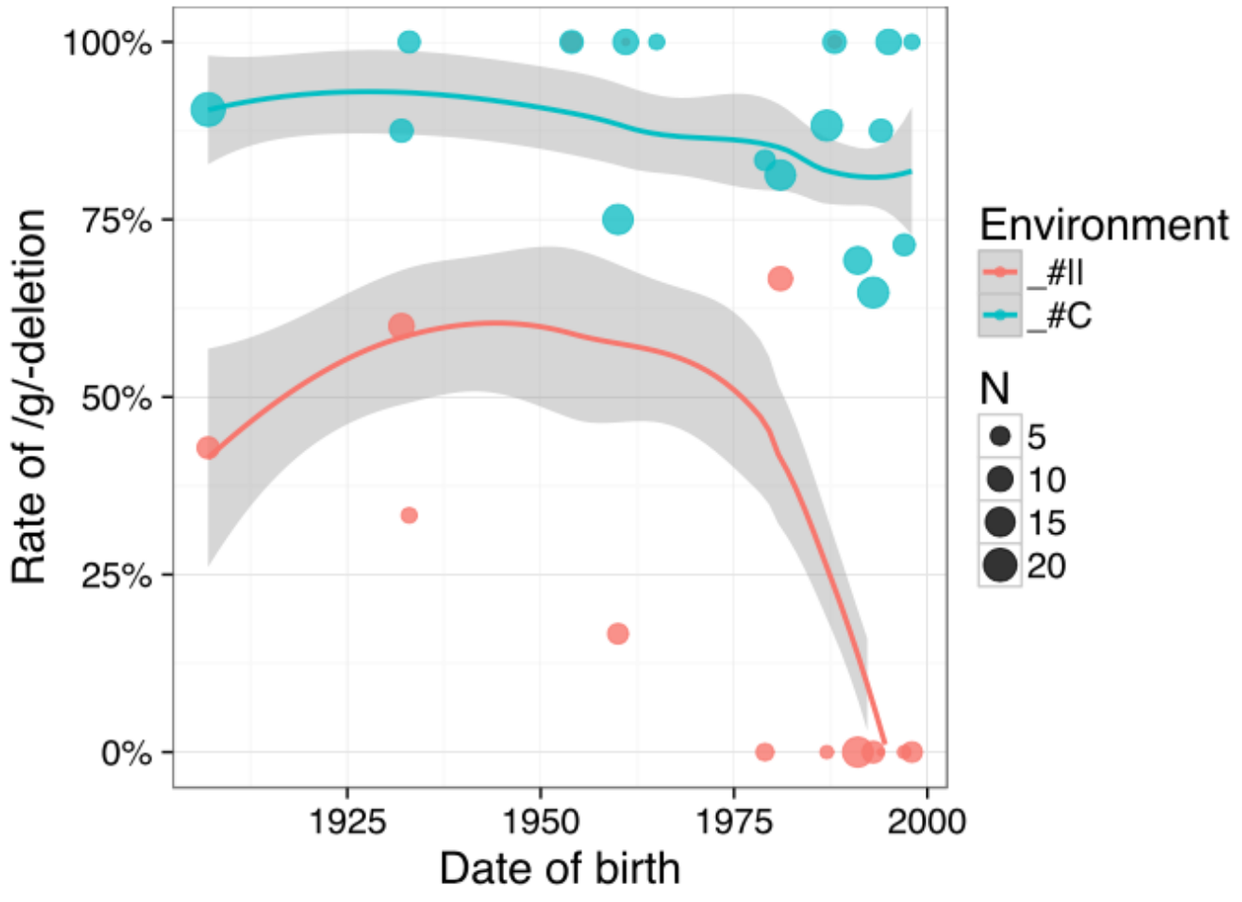
Stressed (ng)

- Despite the overall stability of (ng), phrase-final /g/-retention seems to be a recent phenomenon

- Almost all speakers born after 1975 actually have **categorical /g/-retention** in this environment

- Linked to the trend of younger speakers ejectivising more in phrase-final position (McCarthy & Stuart-Smith 2013)?

    - ejectivisation was also found to be most common for velars, and in particular segmental environments: after /ŋ/ in words like *think*…



Moderate negative correlation between date of birth and pre-pausal deletion rates
r = -0.41

Summary

- Velar nasal plus exists in these two northern varieties of English, in (ing) and (ng)
- For (ing), [ɪŋg] almost entirely absent in conversation, but very common in word list elicitations
    - variation between *-ing* and *-in* shows interesting behaviour in itself though with almost categorical use of the latter across the board, resulting in the loss of a previously-attested syntactic category effect
- For (ng), lots of variation in conversational data but not modelled particularly well by social factors; almost entirely predicted by:
    - assuming cyclic application of /g/-deletion
    - and inhibition of the deletion rule pre-pausally (which seems to be a recent trend)
    - model with just these two predictors better by AIC (447, cf. 461) with only a minimal increase in deviance (435, cf. 423) compared to a model with **all** social/ internal predictors

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Ongoing work

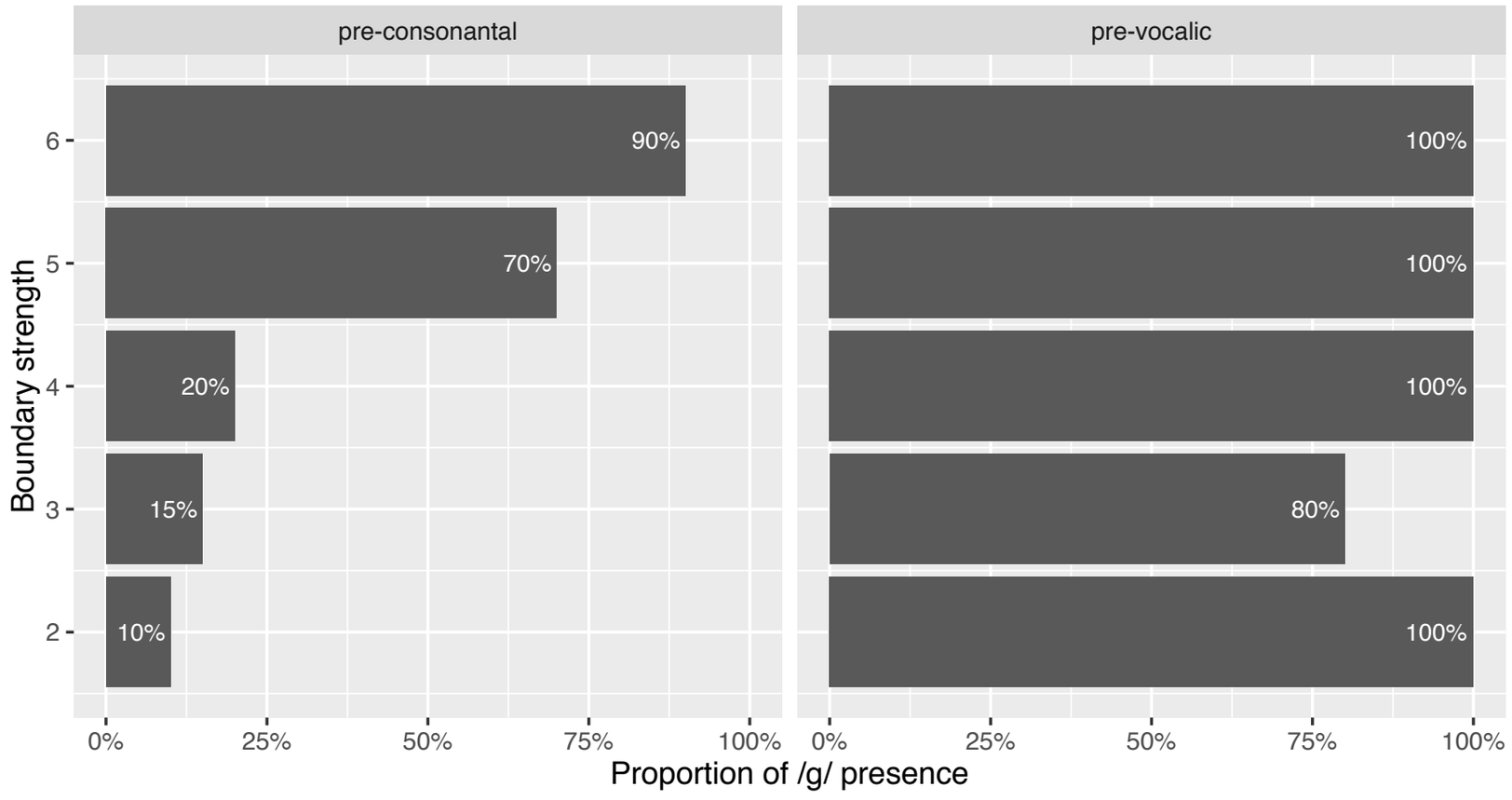
Pre-boundary Lengthening

- **Research questions**: is /g/-deletion inhibited phrase-finally due to the segmental lengthening effects of pre-boundary lengthening? Do we see a gradient scale of /g/-presence correlating with boundary strength and/or rime duration?

- **Methodology**: elicit word-final /ŋg/ before prosodic/syntactic boundaries of different ‘strengths’

- **Results**: more categorical than gradient - the crucial distinction between intonational phrase boundary (#5) and VP-boundary (#4)

- Phrase-final behaviour is not simply a durational mechanism



Thanks for listen[ɪŋg]

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Appendix

Logistic regression model for (ng); /g/-deletion as application value

Predictor	**Log-odds**	**Std. error**	**z-value**	***p*-value**
cyclic levels *three*	3.2631	0.4830	6.756	**<0.001**
cyclic levels *two*	1.1996	0.4673	2.567	**0.01026**
pre-pausal *yes*	-3.2544	0.4374	-7.440	**<0.001**
AIC: 447.4	Deviance: 435.4	*C*: 0.790	D_{xy}: 0.581	

(speaker and word entered as random factors)

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Logistic regression model for (ng); /g/-deletion as application value

Predictor	**Log-odds**	**Std. error**	**z-value**	***p*-value**
sex - *male*	-0.08703	0.97621	-0.089	0.929
age - *old*	0.89791	1.28125	0.701	0.483
age - *young*	0.04535	0.85882	0.053	0.958
location - *Manchester*	0.34596	0.66449	0.521	0.603
speech rate	0.07116	0.14398	0.494	0.621
cyclic levels - *three*	2.94629	0.51926	5.674	**1.40E-08**
cyclic levels - *two*	0.80181	0.51639	1.553	0.12
word frequency	0.33294	0.30688	1.085	0.278
pos - *adverb*	-12.93915	1547.52842	-0.008	0.993
pos - *adjective*	-12.93268	1547.52839	-0.008	0.993
pos - *noun*	-12.67719	1547.52841	-0.008	0.993
pos - *pronoun*	-12.41297	1547.52871	-0.008	0.994
pos - *verb*	-12.63804	1547.52847	-0.008	0.993
pre-pausal - *yes*	-3.40533	0.45095	-7.551	**4.30E-14**
male:old	1.20136	1.83021	0.656	0.512
male:young	0.55798	1.22213	0.457	0.648
AIC: 460.8	Deviance: 422.8	*C*: 0.828	D_{xy}: 0.657	

(speaker and word entered as random factors)

Appendix

Logistic regression model for (ing); *-in* as application value

Predictor	Log-odds	Std. error	z-value	*p*-value
age *old*	1.003	0.553	1.814	0.070
age *young*	1.184	0.344	3.441	**0.001**
speech rate	0.305	0.077	3.982	**6.84E-05**
preceding segment *apical consonant*	-0.364	0.204	-1.784	0.074
following segment *velar consonant*	-1.302	0.227	-5.730	**1.01E-08**
following segment *vowel*	0.630	0.181	3.472	**0.001**
style *reading passage*	-3.438	0.242	-14.207	**< 2e-16**
style *word list*	-4.143	0.415	-9.985	**< 2e-16**
AIC: 1834.7	Deviance: 1784.7	*C*: 0.857	D_{xy}: 0.714	

(speaker and word entered as random factors)

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Logistic regression model for (ing); *-ingg* as application value

Predictor	Log-odds	Std. error	z-value	*p*-value
age *young*	-1.802	1.052	-1.712	0.087
speech rate	-0.582	0.285	-2.041	**0.041**
preceding segment *velar consonant*	-1.334	0.544	-2.453	**0.014**
preceding segment *vowel*	1.895	1.028	1.843	0.065
following segment *vowel*	1.126	0.505	2.228	**0.026**
style *reading passage*	4.217	0.492	8.571	**< 2E-16**
style *word list*	5.737	0.782	7.336	**2.2E-13**
AIC: 598.6	Deviance: 552.6	*C*: 0.951	D_{xy}: 0.901	

(speaker and word entered as random factors)