Sound change, priming, salience

Producing and perceiving variation in Liverpool English

Marten Juskan

Language Variation 3

./langsci/graphics/lan

Language Variation

Editors: John Nerbonne, Dirk Geeraerts

In this series:

1. Côté, Marie-Hélène, Remco Knooihuizen and John Nerbonne (eds.). The future of dialects.
2. Schäfer, Lea. Sprachliche Imitation: Jiddisch in der deutschsprachigen Literatur (18.–20. Jahrhundert).
3. Juskan, Marten. Sound change, priming, salience: Producing and perceiving variation in Liverpool English.

ISSN: 2366-7818

Sound change, priming, salience

Producing and perceiving variation in Liverpool English

Marten Juskan

Marten Juskan. 2018. *Sound change, priming, salience*: *Producing and perceiving variation in Liverpool English* (Language Variation 3). Berlin: Language Science Press.

This title can be downloaded at:
http://langsci-press.org/catalog/book/210

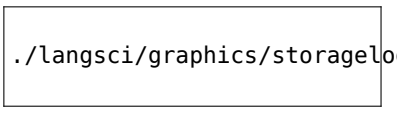
ISBN: 978-3-96110-119-1 (Digital)
978-3-96110-120-7 (Hardcover)

ISSN: 2366-7818
DOI:10.5281/zenodo.1451308
Source code available from www.github.com/langsci/210
Collaborative reading: paperhive.org/documents/remote?type=langsci&id=210

Cover and concept of design: Ulrike Harbort
Fonts: Linux Libertine, Libertinus Math, Arimo, DejaVu Sans Mono
Typesetting software: XeLaTeX

Language Science Press
Unter den Linden 6
10099 Berlin, Germany
langsci-press.org

Storage and cataloguing done by FU Berlin



To Daniela

Contents

7 Consonant production

For the two consonantal variables, the 20 participants of the primary sample provided 7569 data points (3053 for /ŋ(g)/, 4516 for /k/).[1] Once more, by far the biggest share of the data stems from free speech (n = 5733), followed by the reading passage (n = 806), accent performance (n = 640), and finally the word list (n = 390). Table 7.1 provides an overview of how the measurements are distributed across gender, age, and social class. On the whole, the sample appears to be relatively balanced, although there are a couple of 'outliers' (cf. also Table 6.1). The number of /k/ observations among young working-class speakers is a particularly notable one: part of the explanation why the count of observed /k/ realisations is so high in this age group can be found in §7.2.5.

Table 7.1: Consonant observations by age, gender, and social class

		old		middle		young	
		f	m	f	m	f	m
/ŋ(g)/	mc	262	140	224	436	234	230
	wc	123	221	355	152	317	359
/k/	mc	210	129	334	542	298	430
	wc	177	267	619	224	681	605

Just as in Chapter 6, dots mark the mean values of each group in all box plots that will follow. The p-values in these graphs (if present) are the result of t-tests comparing (from left to right) the old to the middle group, the old to the young, and the middle to the young group, respectively. All plots are arranged in a way so that higher values (on the y-axis) indicate more Scouse variants.[2]

[1] A preliminary analysis based on a subset of the results discussed in this chapter was published as Juskan 2015.

[2] There are two exceptions to this rule (Figure 7.1 and Figure 7.6), which are flipped by 90 degrees for better visualisation and where more Scouse variants are found on the right, and more standard realisations on the left of the figure.

7.1 /ŋ(g)/

7.1.1 Overview

After [ɪn]-realisations (which are only possible for *ing*-forms) – but not [ŋ] or [ŋg] realisations in *ing*-forms – had been removed from the data set, a mixed linear effects model was fit to the remaining 1370 tokens (cf. §5.6 for the set of predictors). This maximal model exhibited a degree of collinearity which called for closer inspection (κ = 16.12). As it turned out, a lot of this collinearity was actually due to interactions and could therefore safely be ignored; a model which did not include the two three-way interactions of style and age with gender and social class, respectively, contained only an acceptable amount of collinearity (κ = 9.86). These three-way interactions were therefore re-entered as predictors before this maximal model was reduced based on AIC scores and F-tests comparing nested models. The resulting minimal adequate model (R^2-equivalent = 0.298) is represented in Table 7.2.

Style, age group and gender of participant are all found to be significant main effects. Social class fails to reach significance on its own, but it is present in a significant interaction with age. The second interaction that is retained in the model is that of style and gender of participant. Frequency of the carrier word was eliminated as non-significant from the model, but the other non-social predictor, phonological environment, was found to have a statistically robust impact on PDF of /ŋ(g)/.

7.1.2 Phonological context

Figure 7.1 is a box plot that visualises PDF of /ŋ(g)/ for the different phonological contexts separately. "NA" refers to instances of /ŋ(g)/ that occurred in words for which no phonemic transcription was available – mostly proper names – and which were therefore not coded for phonological environment. These (67) cases will not be discussed here any further. The remaining contexts seem to fall into three groups (cf. Table 7.3 for the exact means): (1) Comparatively high PDF (word-final, intervocalic, followed by liquids), (2) medium PDF (intervocalic across word-boundary, followed by voiceless fricatives), and (3) low PDF (followed by stops, voiced fricatives, and glides). The last group has mean PDF values that are close to 0. The box plot visualises that the median (thick vertical bar) is often 0 as well in these contexts (cf., for instance, "V_#affricate" or "V_#glide"), which means that at least 50% of observations in this category have a PDF of 0, i.e. they are realised by a (standard) [ŋ]. For phonological environments such as

Table 7.2: /ŋ(g)/: mixed linear effects regression

Fixed effects:	Estimate	Std. Error	df	t value	Pr(>|t|)	
(Intercept)	6.69	0.81	182.72	8.29	< 0.001	***
STYLElist	-0.31	0.83	335.30	-0.37	0.71	
STYLEread	1.29	0.61	938.39	2.13	0.03	*
STYLEfree	-1.43	0.62	271.83	-2.35	0.02	*
AGE56-85	-1.63	0.46	1345.23	-3.40	< 0.001	***
AGE30-55	2.30	0.40	1336.20	5.75	< 0.001	***
GENDERf	1.52	0.34	1286.05	4.54	< 0.001	***
CLASSmc	0.34	0.30	1338.34	1.17	0.24	
ENVIRV_V	4.22	1.19	94.01	3.59	< 0.001	***
ENVIRV_#V	1.48	0.84	1104.88	1.77	0.08	.
ENVIRV_#gli	-0.95	1.20	1335.59	-0.79	0.43	
ENVIRV_#	9.33	0.82	1071.55	11.31	< 0.001	***
ENVIRV_#liq	5.75	2.05	1341.73	2.81	0.01	**
ENVIRV_#nasal]	-7.98	2.86	1345.80	-2.78	0.01	**
ENVIRV_#vdfric	-5.61	1.36	1342.96	-4.13	< 0.001	***
ENVIRV_#vlfric	-0.54	1.16	836.32	-0.46	0.65	
ENVIRV_#vdplos	-3.48	1.62	1218.21	-2.15	0.03	*
ENVIRV_#vlplos	-3.37	1.17	1125.44	-2.88	< 0.01	**
STYLElist:GENDERf	-2.27	0.62	1260.35	-3.66	< 0.001	***
STYLEread:GENDERf	1.39	0.53	1267.53	2.61	0.01	**
STYLEfree:GENDERf	-0.34	0.44	1337.26	-0.78	0.44	
AGE56-85:CLASSmc	-2.08	0.46	1348.34	-4.39	< 0.001	***
AGE30-55:CLASSmc	2.26	0.41	1348.25	5.46	< 0.001	***
Random effects:	(number of obs: 1370, groups: WORD, 164)					
Groups	Name	Variance	Std.Dev.			
WORD	(Intercept)	8.727	2.954			
Residual		100.553	10.028			

"V_#nasal" or "V_#vdfricative" no box (in the everyday sense) is generated at all, because the first, second, *and* the third quantile are 0 – the realisation as [ŋ] thus accounts for 75+% of cases in these categories.

It should be noted, however, that almost *all* environments have a median PDF of 0. The only exceptions are cases where velar nasal plus occurs intervocalically within a word or in phrase final position ("V_#"), i.e. when the variable is followed by silence. In these environments, some sort of plosive was observed in more than 75% of cases (the first quantile is greater than 0 for both categories). This clearly sets them apart from the remaining contexts, because in the former velar nasal plus seems to be the norm (at least in my sample), whereas in the latter it is an option, but not – statistically speaking – the default one. Having

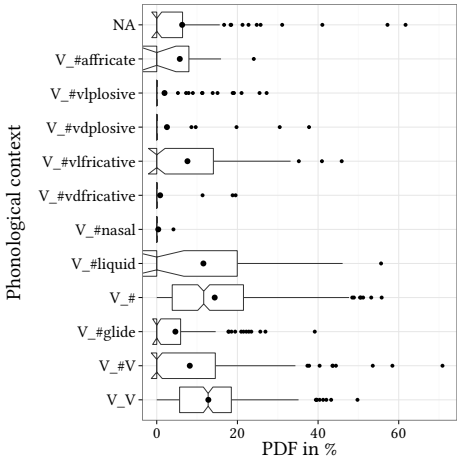


Figure 7.1: /ŋ(g)/: PDF by phonological environment (without [ɪn] realisations)

Table 7.3: /ŋ(g)/: PDF means by phonological environment ([ɪn] excluded)

environment	mean PDF	n
V_V	12.79	288
V_#V	8.19	284
V_#glide	4.62	85
V_#	14.37	360
V_#liquid	11.57	22
V_#nasal	0.38	11
V_#voiced fricative	0.84	59
V_#voiceless fricative	7.62	116
V_#voiced plosive	2.53	42
V_#voiceless plosive	1.93	100
V_#affricate	5.71	7

said that, two caveats need to be mentioned. Firstly, the amount of data that are available for each context varies greatly (cf. Table 7.3): while there is a rather sound basis for “V_V”, “V_#V”, and “V_#”, only 11 (7) observations in the sample, for instance, represent contexts where velar nasal plus is followed by a nasal (affricate). Secondly, only the two environments ‘intervocalic’ (within a word) and ‘word-final’ (pre-pausal) occur in the word list. It is therefore possible that the

high mean PDF values for these environments are at least in part due to their occurrence in the most formal speech style (the relationship between velar nasal plus and careful speech is addressed below).

This fact would constitute a problem if the present study was primarily concerned with identifying and describing the influence (on the realisation of /ŋ(g)/) of different phonological contexts. The focus, however, is on the social predictors on the one hand, and style on the other. Additionally, the intervocalic (within word) and word-final contexts are rather prominent in the sample *generally*. Together with intervocalic (across a word-boundary), an environment that is just as frequent as intervocalic (within word) and which also has a comparatively high mean PDF, these two contexts already account for 68.03% of the /ŋ(g)/ observations ([ɪn] realisations excluded). Crucially, 'V_V' and 'V_#' occur in *all* styles investigated and in roughly equal proportions (with the notable exception of the word list, as explained above). Thus, they dominate the sample by their sheer numbers, but they do not distort it by biasing it towards a particular (formal) register. It is, however, possible that PDF values calculated for the word list are higher than they would be if velar nasal plus had been elicited in more contexts in addition to the two 'plosive-favouring' ones.

7.1.3 Style and gender

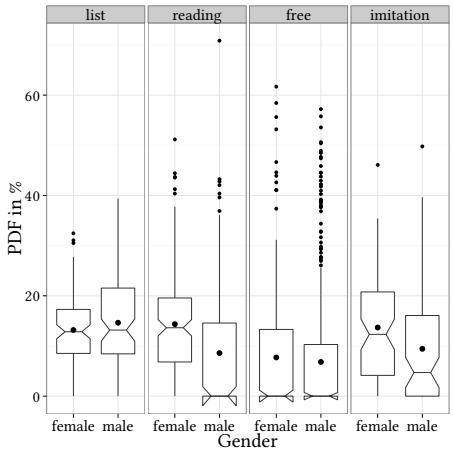


Figure 7.2: /ŋ(g)/: PDF by style and gender (without [ɪn] realisations)

Let us move on to the first interaction of social factors. In Figure 7.2 we see box plots for gender of participant, divided by speaking register. One piece of inform-

ation that we can extract from this graph is that both female and male subjects use the standard [ŋ] at least 50% of the time in spontaneous speech (both medians – represented by thick horizontal bars – in the second panel from the right are 0). A t-test confirms that the difference between genders in this register is not significant (t(683.561) = 1.06, p = 0.289). The same holds true for velar nasal plus realisations observed for the word list: women and men do not differ in a statistically robust way (t(149.982) = -1.145, p = 0.254). However, mean PDF is considerably higher than in spontaneous speech. The first quantiles are to be found at just about over 10% PDF for both genders, which means that in more than 75% of tokens in this speech style a plosive was present. Additionally, subjects probably used variants containing phonetically more prominent plosives (with a higher proportion of frication), which would also raise the mean. In the two remaining styles 'reading' (t(284.859) = 4.212, p < 0.001) and 'imitation' (t(140.233) = 2.228, p = 0.028), the gender difference is significant. This is due to the fact that the means of men in both registers are lower than those of women (who have comparable means for the word list, the reading passage, and accent performance).

Table 7.4: /ŋ(g)/: t-tests of style by gender

test	women			men		
	t	df	p	t	df	p
list-reading	−1.039	251.857	0.300	4.060	213.270	< 0.001
list-free	5.774	283.250	< 0.001	6.569	134.510	< 0.001
list-imitation	−0.350	117.131	0.727	2.908	134.609	0.004
reading-free	6.044	321.775	< 0.001	1.502	224.352	0.135
reading-imitation	0.432	148.046	0.667	−0.482	144.108	0.630
free-imitation	−4.227	117.679	< 0.001	−1.710	90.826	0.091

The t-tests summarised in Table 7.4 confirm that, for female speakers, spontaneous speech is the only style that is significantly different from the other three, which have identical (and rather high) means from a statistical point of view. When we look at the male subjects, we find that 'reading', 'free', and 'imitation' are all statistically identical, 'list' is the only one that is significantly different (cf. again Table 7.4 for the details of the relevant t-tests). The interaction of gender and style can thus be summarised as follows: (1) Women have similar (relatively high) levels of velar nasal plus when reading out a word list, a text passage, or when performing a strong Scouse accent, and only reduce their usage of this feature a bit in free speech. (2) Men have comparatively low mean PDFs in ac-

cent imitation, spontaneous speech, and the reading passage; only in the word list does the use of velar nasal plus increase significantly. (3) As a result, women have a higher overall mean PDF for velar nasal plus, and can be said to favour the local, non-standard realisation [ŋg] more than men do.

7.1.4 Age and social class

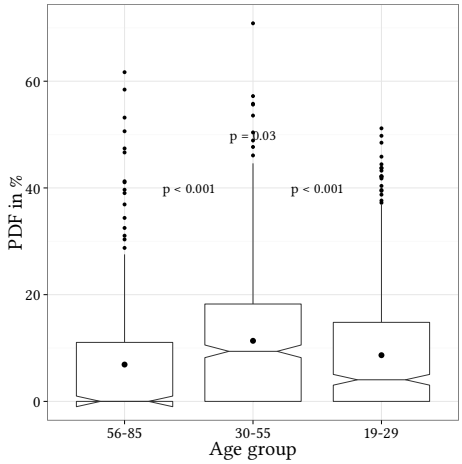
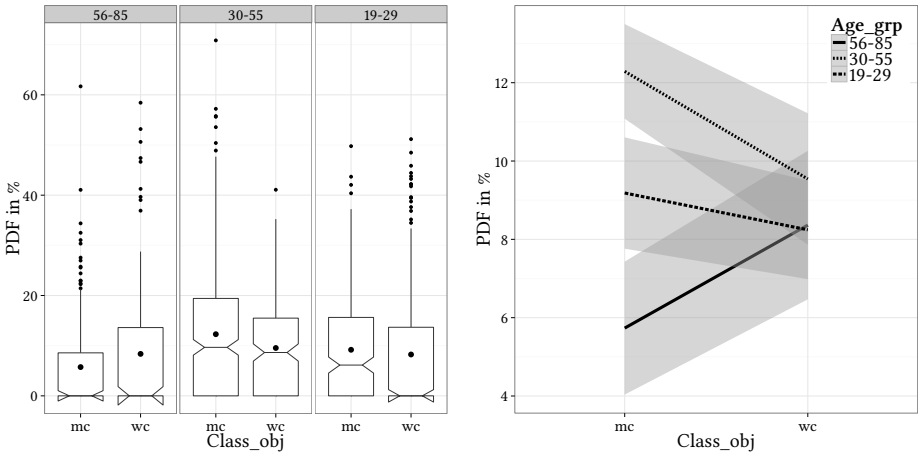


Figure 7.3: /ŋ(g)/: PDF by age ([ɪn] excluded)

Before the second interaction retained in the mixed-effects model (age X social class) is analysed further, we will have a brief look at age of participant as a main effect (Figure 7.3). The relatively high number of outliers in all groups shows that at least occasionally all speakers use variants of /ŋ(g)/ that contain a (prominent) plosive and are thus clearly Scouse. The overall rather low figures (the upper boundaries of all boxes are below 20%) are not really surprising, given the fact that even if a plosive is realised it is preceded by a nasal, so the aspiration phase will almost always be comparatively short in relation to the total duration. It is furthermore obvious that things are not the way we expected. The oldest speakers are the least Scouse with respect to velar nasal plus. Their average PDF is only 6.9%, while that of the middle group is, at 11.35%, almost twice as high. Furthermore, the median in the former group (again symbolised by the thick horizontal bar) is 0, so 50+% of all their /ŋ(g)/ realisations consist of a nasal only. For the middle-aged speakers, on the other hand, the median is found at a PDF of around 10% and only the first quantile is 0, so somewhere between 50 and 75% of tokens have a plosive. The increase in PDF from the oldest to the middle-aged speakers

is highly significant (t(663.417) = 5.437, p < 0.001). From the middle to the young group, however, there is actually a *de*crease in PDF to 8.66%. This means that younger Liverpudlians are not getting "more Scouse" with respect to velar nasal plus, but rather they seem to be reversing the trend begun by the middle group of speakers, although not to the extent that their realisations are identical to those of their grandparents' generation. Rather, they occupy the middle ground, since both their mean and median are higher than in the older and lower than in the middle group. The youngest speakers in the sample use velar nasal plus in a significantly different way from both the old (t(630.154) = 2.178, p = 0.03), *and* the middle-aged group (t(1130.999) = -3.881, p < 0.001).



(a) box plot (b) regression plot

Figure 7.4: /ŋ(g)/: PDF by age and class ([ɪn] excluded)

As briefly mentioned above, age is not only a significant main effect, but also enters into a significant interaction with social class of the speaker. This relationship is visualised in Figure 7.4a and Figure 7.4b. While the box plots in the three separate panels might look rather similar at first glance, they actually tell an interesting story. For the oldest speakers (leftmost panel) we get the picture that we would usually expect to see for a non-standard feature: middle-class speakers have a lower PDF than working-class subjects of the same age group, i.e. the realisations of the former are less Scouse than those of the latter. Both medians are 0 (echoing that older speakers have a low PDF generally), but the means in the two classes are nonetheless significantly different (t(251.286) = -1.978, p = 0.049). When we look at Liverpudlians aged between 30 and 55, social class also seems

to matter, but now it is actually the working-class speakers who use less Scouse variants than their middle-class counterparts. Despite the fact that the medians are once more statistically identical (cf. the overlapping notches), the difference between the means is now even more statistically robust ($t(540.809) = 2.916$, $p = 0.004$) – a fact which could, however, simply be due to the lower number of observations in the old group. In the youngest speakers (panel on the right), finally, the class distinction for this feature has disappeared. Even though the medians clearly are significantly different from one another (consider not only their vertical distance, but also the fact that the notches do not overlap at all), the means are not ($t(515.045) = 0.975$, $p = 0.33$).

Table 7.5: /ŋ(g)/: t-tests of age by social class

test	middle class			working class		
	t	df	p	t	df	p
old-middle	6.454	430.623	< 0.001	0.922	231.023	0.357
middle-young	−3.159	573.452	0.002	−1.406	480.721	0.160
young-old	3.319	386.920	< 0.001	−0.095	235.400	0.924

If we approach the interaction of age and class from the other end, Figure 7.4b tells us that the age dimension is not equally important in both social classes. On the left-hand side of the graph, the estimated PDFs for middle-class speakers are plotted separately for the three age groups. All three regression lines are distinct from each other. Their error bands do not overlap, and the groups can be neatly ordered: old speakers (solid line) have a low PDF, middle-aged ones (dotted) have a high one, and the youngest speakers (dashed) are somewhere in between (cf. Figure 7.3). The differences between all three groups are statistically robust, as the relevant t-tests (cf. Table 7.5) confirm. When we move from the middle class to the working class, however, all three regression lines converge, roughly towards the value of the youngest middle-class speakers. The small differences that seem to remain between the estimates of the working-class speakers are not statistically relevant: t-tests reveal that none of the age groups is significantly different from any of the other two when only working-class subjects are considered. It follows that the change in the overall usage of velar nasal plus that was found for the pooled results is not only driven by, but actually restricted to middle-class Liverpudlians; working-class Scousers do not seem to have changed at all.

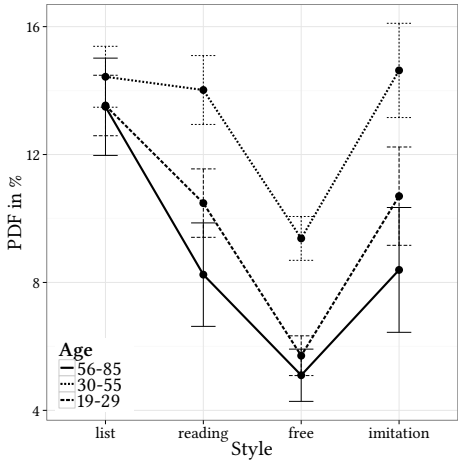


Figure 7.5: /ŋ(g)/: PDF by style ([ɪn] excluded)

7.1.5 Style shifting

The last predictor we will look at is again the style dimension (Figure 7.5), where we find something interesting going on. Not only is there a very clear pattern, but this pattern is essentially identical for all three speaker groups investigated, which is the reason why the mixed linear effects regression did not find a significant interaction of style and age. The pattern we see is not prototypical Labovian style shifting, however. If it were, use of the local variant of /ŋ(g)/ would decrease in more formal contexts like reading a text or a word list. Instead, the data show that velar nasal plus is more *common* in those formal contexts. Both the oldest and the youngest speakers in the sample have means in spontaneous speech, the reading passage, and the word list which are all significantly different from one another (cf. the standard error whiskers, which do not overlap between the styles and within each age group). The only difference that is found for the middle-aged speakers in this respect is that the text passage and the word lists are statistically identical, but these two formal registers are nevertheless significantly different from free speech.

On the other hand, there is an undeniable rise from spontaneous speech towards accent performance. When subjects are asked to put on a particularly strong Scouse accent they *do* make use of velar nasal plus to a certain extent. Compared to free speech, realisations during the accent imitation are clearly significantly more Scouse, irrespective of age group; PDF reaches about the same level as when people read out a text, a register which 'imitation' is not signific-

antly different from (cf. again the (lack of) overlap in the standard error whiskers in Figure 7.5). This graph is somewhat reminiscent of the corresponding figure that was generated for F1 measurements of happʏ (Figure 6.7 on page 91), which also revealed more Scouse values for both the word list and accent imitation when compared to reading and spontaneous speech. It was noted earlier that observations for the register 'word list' only come from contexts that seem to favour higher PDF values generally and this could explain at least parts of the rise from 'reading' to 'word list'. It fails, however, to account for the differences between the other three styles, where these phonological contexts make up about the same proportion of tokens. Just as in the case of happʏ, some additional explanation is needed here (see Chapter 9).

7.2 /k/

7.2.1 Overview

Just as with velar nasal plus, a mixed linear effects model was fit to the data for /k/. Unreleased /k/'s were not included in the model, because these realisations are probably more phonologically than socially conditioned, meaning that, compared to the plosive-fricative continuum, speakers do not have the same degree of choice when to use this variant. The maximal model contained more collinearity than is generally deemed acceptable (κ = 18.8), but once again much of it was unproblematic because it was only caused by the two three-way interactions, as a separate model without these revealed (κ = 12.25). The original maximal model (including the interactions) was therefore retained and served as the point of departure for model selection based on AIC scores and F-tests comparing nested models. The final, reduced model (based on 2862 observations) is reprinted below (Table 7.6, R^2-equivalent = 0.37).

Table 7.6: /k/: mixed linear effects regression

Fixed effects:	Estimate	Std. Error	df	t value	Pr(>|t|)	
(Intercept)	58.07	1.49	142.04	39.13	< 0.001	***
STYLElist	-11.44	1.70	884.38	-6.57	< 0.001	***
STYLEread	-2.27	1.28	1729.76	-1.71	0.09	.
STYLEfree	-3.79	1.10	470.85	-3.21	< 0.01	**
AGE56-85	0.74	1.13	2761.75	0.36	0.72	
AGE30-55	-0.21	0.95	2758.04	-0.08	0.94	
GENDERf	-5.53	0.71	2742.23	-7.78	< 0.001	***
CLASSmc	-4.83	0.71	2749.02	-6.58	< 0.001	***

ENVIRV_V	18.76	1.73	124.75	10.62	< 0.001	***
ENVIRV_#V	8.22	1.31	1982.48	6.30	< 0.001	***
ENVIRV_#gli	9.64	2.21	2699.98	4.34	< 0.001	***
ENVIRV_#	10.24	1.29	1339.82	7.87	< 0.001	***
ENVIRV_#liq	6.53	3.95	2798.38	1.78	0.08	.
ENVIRV_#nas	10.43	3.05	2745.07	3.43	< 0.001	***
ENVIRV_#vdfric	-13.69	2.14	2706.45	-6.38	< 0.001	***
ENVIRV_#vlfric	-15.04	2.06	2581.56	-7.23	< 0.001	***
ENVIRV_#vdplos	-2.29	2.85	2737.97	-0.81	0.42	
ENVIRV_#vlplos	-13.86	2.60	2372.19	-5.33	< 0.001	***
STYLElist:AGE56-85	0.83	2.21	2723.94	0.53	0.59	
STYLEread:AGE56-85	-1.26	1.85	2734.49	-0.49	0.62	
STYLEfree:AGE56-85	-2.86	1.33	2815.49	-1.93	0.05	.
STYLElist:AGE30-55	4.17	1.92	2721.76	2.10	0.04	*
STYLEread:AGE30-55	0.31	1.56	2735.38	0.11	0.91	
STYLEfree:AGE30-55	-0.74	1.09	2796.95	-0.90	0.37	
STYLElist:GENDERf	-3.39	1.42	2718.38	-2.36	0.02	*
STYLEread:GENDERf	-2.14	1.17	2731.10	-1.81	0.07	.
STYLEfree:GENDERf	0.47	0.86	2804.23	0.46	0.64	
STYLElist:CLASSmc	-0.50	1.43	2721.77	-0.47	0.64	
STYLEread:CLASSmc	-1.15	1.18	2734.34	-1.12	0.26	
STYLEfree:CLASSmc	-2.16	0.85	2807.04	-2.77	0.01	**
AGE56-85:GENDERf	-4.76	1.11	2735.66	-4.25	< 0.001	***
AGE30-55:GENDERf	5.24	0.98	2749.75	5.34	< 0.001	***
AGE56-85:CLASSmc	6.00	1.12	2754.82	5.70	< 0.001	***
AGE30-55:CLASSmc	-1.72	0.99	2752.61	-1.94	0.05	.
GENDERf:CLASSmc	-2.66	0.51	2826.51	-5.31	< 0.001	***
STYLElist:AGE56-85:GENDERf	-0.80	2.22	2718.25	-0.37	0.71	
STYLEread:AGE56-85:GENDERf	-6.89	1.85	2725.93	-3.73	< 0.001	***
STYLEfree:AGE56-85:GENDERf	-0.91	1.35	2800.05	-0.64	0.53	
STYLElist:AGE30-55:GENDERf	-1.14	1.95	2722.26	-0.58	0.56	
STYLEread:AGE30-55:GENDERf	8.13	1.58	2731.42	5.16	< 0.001	***
STYLEfree:AGE30-55:GENDERf	0.99	1.14	2802.97	0.84	0.40	
STYLElist:AGE56-85:CLASSmc	2.39	2.22	2722.27	0.92	0.36	
STYLEread:AGE56-85:CLASSmc	2.48	1.85	2731.52	1.16	0.25	
STYLEfree:AGE56-85:CLASSmc	1.71	1.37	2811.58	1.03	0.30	
STYLElist:AGE30-55:CLASSmc	-5.56	1.95	2723.95	-2.75	0.01	**

STYLEread:AGE30-55:CLASSmc	-1.18	1.58	2732.59	-0.63	0.53	
STYLEfree:AGE30-55:CLASSmc	4.35	1.16	2801.01	3.85	< 0.001	***
Random effects:	(number of obs: 2862, groups: WORD, 217)					
Groups	Name	Variance	Std.Dev.			
WORD	(Intercept)	39.400	6.277			
Residual		551.900	23.493			

This model is (by far, in most cases) the one that contains the greatest number of significant predictors in this study. In fact, only one factor was eliminated as non-significant, namely frequency of the keyword. Age of the speaker does not reach significance as a main effect (but see §7.2.5 for some thoughts on this), but it does appear in numerous interactions which do and was therefore retained. All the other extralinguistic factors (as well as phonological environment of the dependent variable) are found to be significant main effects. In addition, every single one of the two- and three-way interactions mentioned in §5.6 is found to have a statistically robust impact on PDF measurements of /k/ in this sample.

7.2.2 Phonological context

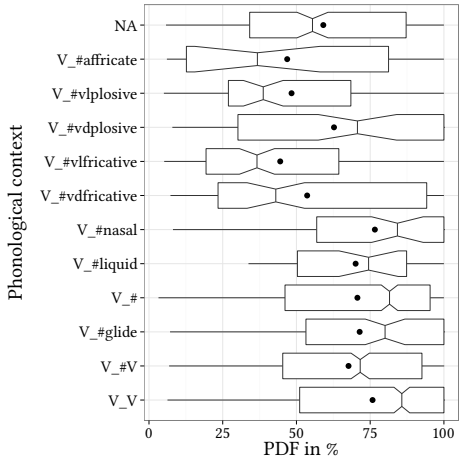


Figure 7.6: /k/: PDF by phonological environment (released only)

I will start once more by describing the effect of phonological environment, which is illustrated in Figure 7.6 (again flipped for better representation, cf. Figure 7.1). 'NA' refers to cases where /k/ was observed in proper names and other

carrier words for which it was not possible to retrieve a phonemic transcription automatically. The phonological contexts present in my data can be roughly divided into two large groups: (1) Environments which come with comparatively low mean PDF values, and (2) environments for which we find a rather high mean PDF. The former include cases where /k/ is followed by a word boundary and then either an affricate, a plosive, or a fricative. These contexts are found in the upper half of Figure 7.6. The latter group is made up of environments where /k/ precedes either a sonorant (a nasal, liquid, glide, or a vowel – the last one either within a word or across a word boundary) or silence at the end of a phrase.

Table 7.7: /k/: PDF means by phonological environment (released only)

environment	mean PDF	n
V_V	75.81	840
V_#V	67.66	578
V_#glide	71.43	121
V_#	70.67	775
V_#liquid	70.06	34
V_#nasal	76.59	61
V_#voiced fricative	53.63	132
V_#voiceless fricative	44.50	143
V_#voiced plosive	62.73	69
V_#voiceless plosive	48.34	95
V_#affricate	46.86	26

Table 7.7 lists the exact means and the number of observations that were collected for each environment (note that this table is inverted relative to Figure 7.6, so contexts favouring lenition are now found at the top). The high PDF values in word-final and intervocalic (within word) environments should not really come as a surprise. These environments have consistently been found to favour lenition in previous research on Liverpool English (cf. §3.3.2), so it was only to be expected that results in this study would be similar. Lenition in intervocalic positions is also a common process from a typological point of view, and can be explained primarily on phonetic grounds. Vowels and plosives constitute the extremes of a continuum, because the former are produced with a virtually unobstructed vocal tract and the latter are defined by a (temporary) complete blockage of the airstream. Realising the phonological plosive intervocalically as a fricative (produced with a narrow, but not blocked vocal tract) can therefore be seen as

an (extreme) connected speech phenomenon motivated by articulatory economy. As such it might attract less social attention than in other positions. Since word boundaries are often non-existent in phonetic terms (i.e. two adjacent words are commonly articulated as one stretch of connected speech, without any silence in between), it is no wonder that high PDF values are also found for V_#V and V_#glide environments, because phonetically speaking these contexts are largely identical to intervocalic occurrences of /k/ *within* a word (glides, or semi-vowels, are, after all, really vowels in phonetic terms). Table 7.7 also shows that, just as for velar nasal plus, the two intervocalic (within or across words) and the word-final environments are the most important in terms of absolute numbers (76.62% of released observations).

V_V and V_# are again the only two phonological contexts where observations in relevant numbers are available for all styles, but this fact was considered unproblematic for the same reasons that were outlined in §7.1.2. Once we account for the fact that there are fewer observations for the oldest group of speakers across the board (cf. §5.2), the proportional importance of these phonological environments is also found to be comparable in all three age groups. This means that phonological environment does not act as a confound in this respect (as it would have done if these lenition-favouring contexts were more common in one or two of the age groups). With respect to the cases where /k/ is followed by a word boundary and then a liquid or nasal (which are also categories where PDF was found to be high), the situation is slightly different. For the latter, the oldest speakers contribute only 5 observations (against 25 for the middle-aged, and 31 for the youngest speakers). This means that the average PDF in this context is strongly biased towards realisations by middle-aged and young speakers, who exhibit higher PDF values *generally* (see §7.2.5). V_#liquid is a less extreme case in point, but similar. It is therefore not unlikely that these two phonological contexts do not favour higher PDF rates by themselves but just *appear* to do so in my sample because they are partially confounded with age group.

7.2.3 Style and gender

We will start the analysis of social predictors by looking at the interaction of gender and style, which is visualised by Figure 7.7. One thing that can be gleaned from the box plots is that there is a substantial amount of variation when it comes to the realisation of /k/. With the exception of accent imitation (in the rightmost panel), all boxes have a relatively large vertical extent. As the lower and upper bounds of the boxes mark the first and third quantiles, respectively, large boxes indicate that there is a comparatively large spread of data around the mean. In

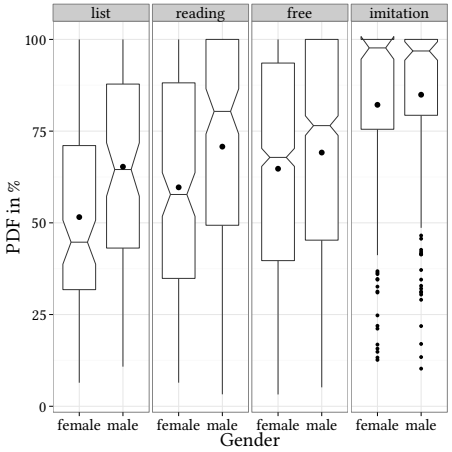


Figure 7.7: /k/: PDF by style and gender (released only)

the case at hand, this means that a wide range of realisations can be found in sizeable numbers (and not just as individual outliers) in the recordings, going from more standard variants (with PDFs of around 30) to clearly Scouse pronunciations (with PDFs of 75+). This large amount of variation seems to be characteristic of /k/ realisations in my sample: it was already present in Figure 7.6, and it will be visible in most of the other graphs that will follow in the remainder of this section.

When we look at the gender difference in the three styles word list, reading passage, and spontaneous speech (first three panels from the left in Figure 7.7), a very clear (and expected) pattern emerges: women have lower PDF values than men, i.e. they use less (or fewer) lenited variants of /k/. The notches in the graph (no overlap) suggest that the medians of women and men are significantly different in all three styles, and t-tests confirm that the same is true for the means. There is thus a statistically robust gender difference for the word list ($t(198.97) = -3.554$, $p < 0.001$), the reading passage ($t(360.608) = -3.589$, $p < 0.001$), and free speech ($t(2201.103) = -3.594$, $p < 0.001$). When subjects are asked to put on a particularly strong Scouse accent, however, /k/ realisations of women and men are no longer significantly different from one another ($t(312.112) = -1.044$, $p = 0.297$). Both genders use strongly lenited variants with PDFs of 75 and higher more than 75% of the time (cf. the position of the first quantiles in the rightmost panel of Figure 7.7).

If we focus on the style dimension within the two gender subgroups separately,

Table 7.8: /k/: t-tests of style by gender

test	women			men		
	t	df	p	t	df	p
list-reading	−2.293	226.274	0.023	−1.583	210.281	0.115
list-free	−4.500	126.152	< 0.001	−1.378	114.832	0.171
list-imitation	−8.881	205.652	< 0.001	−6.201	170.062	< 0.001
reading-free	−2.186	262.723	0.030	0.676	224.321	0.500
reading-imitation	−7.637	354.391	< 0.001	−5.052	313.565	< 0.001
free-imitation	−8.009	217.296	< 0.001	−8.152	262.352	< 0.001

differences emerge as well. The graph shows that accent imitation is clearly separate from the other three styles (the means are much higher than in any of the other registers). This holds true for both women and men, but when the analysis is restricted to female speakers, the styles word list, reading passage, and free speech are also distinguishable from each other. Medians seem to be distinct, and t-tests on the raw data (cf. Table 7.8) show that the differences in means are also statistically robust. For men, on the other hand, means are closer together and there is some overlap between the confidence intervals of the medians as well. T-tests confirm that men have statistically identical /k/ realisations in free speech, the reading, and the word list task; only accent performance is significantly different from these three (cf. again Table 7.8). In my sample, style is therefore less important for men than it is for women.

7.2.4 Style and social class

The box plot visualising the interaction of style and social class of the speaker (Figure 7.8) reminds one very much of the one just discussed. Just as with style and gender, there is a clear difference between middle and working class in the registers word list ($t(186.279) = -3.576$, $p < 0.001$), reading passage ($t(363.849) = -5.048$, $p < 0.001$), and spontaneous speech ($t(1794.172) = -15.7$, $p < 0.001$). When we look at accent imitation, however, the class difference is no longer significant ($t(301.161) = 0.351$, $p = 0.726$), very much like the gender difference, which also disappeared in this speaking style. All the same, there is a subtle difference: In linguistic terms, the class distinction is slightly more pronounced than the gender one. Middle-class /k/ realisations are even more standard than female ones, and working-class speakers, as a group, are even more Scouse in this respect than males.

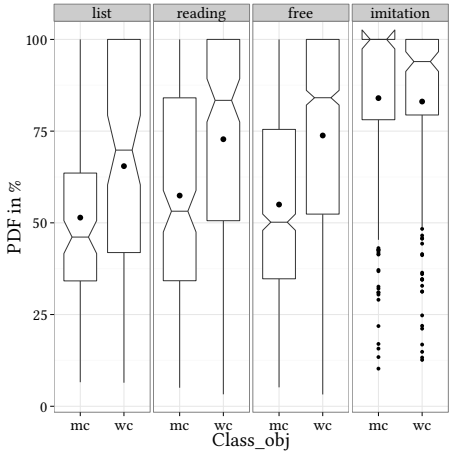


Figure 7.8: /k/: PDF by style and social class (released only)

Table 7.9: /k/: t-tests of style by social class

test	middle class			working class		
	t	df	p	t	df	p
list-reading	−1.829	246.259	0.069	−1.971	185.920	0.050
list-free	−1.340	137.888	0.182	−2.675	104.601	0.009
list-imitation	−10.750	204.745	< 0.001	−4.830	172.248	< 0.001
reading-free	1.044	268.949	0.297	−0.444	217.617	0.658
reading-imitation	−9.651	357.991	< 0.001	−3.468	317.741	< 0.001
free-imitation	−14.745	292.559	< 0.001	−4.290	185.533	< 0.001

Using social class as the 'base' category and investigating the impact of style for middle- and working-class subjects separately also yields similar, but not quite identical results as in the case of the style X gender interaction. We can see that, again, the accent performance task produces /k/ realisations which are extremely Scouse and clearly separate from free speech, reading, and the word list. These last three, however, are very close together and have largely overlapping median confidence intervals within each social class. For middle-class subjects, t-tests on the raw data (cf. Table 7.9) confirm that all of them are significantly different from 'imitation', but none of them is significantly different from the other two. When we focus on working-class speakers, observations made during free speech and the reading passage are even a bit closer than for middle-class sub-

jects (and a t-test does indeed find that they are statistically identical), but on the other hand the distance between those two and the word list is slightly greater. Median confidence intervals still overlap a bit (cf. the notches of the 'wc' boxes for 'reading' and 'list'), but t-tests on the raw data suggest that with the exception of 'reading' and 'free' all styles are significantly different from one another in the working-class sub-sample.

Working-class speakers thus have a three-way style distinction for /k/: word list, reading/free speech, and accent performance. Middle-class interviewees, on the other hand, have statistically identical /k/ pronunciations for all three 'traditional' styles, and only distinguish accent imitation from these. It might seem strange that middle-class speakers show fewer style differences than their working-class counterparts, especially for a dependent variable that is supposed to be socially salient. It should be noted, however, that this is due to the fact that middle-class speakers have very low PDF values (comparable to the one found for female subjects in the word list in Figure 7.7) in all but the most informal register. In other words, they are more reluctant to use (pronounced) /k/ lenition even in more informal contexts, unless they are specifically[3] asked to do so (see the value for the accent imitation).

7.2.5 Age and gender

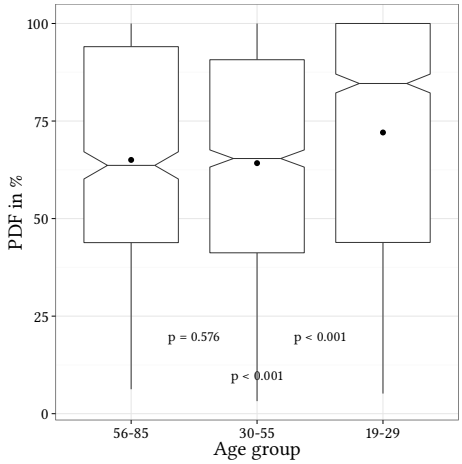


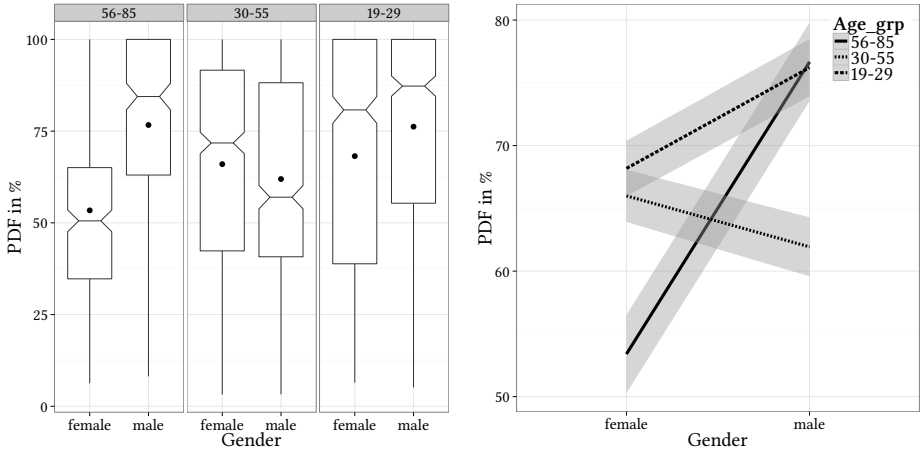
Figure 7.9: /k/: PDF by age (released only)

[3] In a manner of speaking. Subjects were not asked to specifically use /k/ lenition.

Since the age dimension is one of the primary concerns of this study, we will first look at this factor in isolation. This might seem unnecessary, because the mixed-effects model does not list age group among the significant main effects for predicting PDF of /k/. If we consider a plot of the raw data (Figure 7.9), however, the picture changes. First of all, we can see that the upper and lower boundaries of all boxes are around or above 40 and 90%, respectively. This means that (a) there is a lot of variance in all three groups of speakers, and (b) all speakers frequently produce /k/ with quite a bit of aspiration, i.e. at least a Scouse "touch". We also see, however, that the mean (black dots) and median values (thick bars between the notches) remain constant from the old to the middle speakers ($t(968.66) = -0.56$, $p = 0.576$), but rise considerably from the middle to the young group ($t(2606.825) = 6.886$, $p < 0.001$). In contrast to the mixed-effects model, t-tests on the raw data thus do find a statistically significant age difference, at least between the middle and the young group. The cause for these incompatible results is the word *like*. Due to its role as a fashionable quotative particle, *like* is much more frequent in free speech of the young group (57.89% of /k/ tokens) than in the middle and old group (39.38 and 26.18%, respectively).

Young Liverpudlians in this study furthermore realise *like* with a very high average PDF of 71.85% (59.45% for the middle, 55.59% for the old group), which contributes considerably to their overall mean visualised in Figure 7.9 and explains part of the interaction of style and age group in the mixed-effects model as well (cf. Figure 7.13), since it is only in free speech that the preference of young speakers to use *like* (often with a Scouse pronunciation) can fully manifest itself. If we take out *like* completely, the difference between the oldest and the middle-aged speakers is still not significant ($t(900.655) = -0.393$, $p = 0.694$), but that between the middle-aged and the young is ($t(1468.008) = 3.999$, $p < 0.001$). In light of this, I feel justified in claiming that Watson's (2007a) finding has been corroborated and that with respect to /k/, Scouse is indeed "getting Scouser".

At least this is true if we pool the data for all subjects and only focus on the age dimension. However, the mixed linear effects regression found significant interactions of age with gender and social class as well, so a more detailed account of the impact of the predictor age is necessary. In Figure 7.10a the gender difference in the individual age groups is visualised in three separate box plots. The oldest speakers (left panel) show a very pronounced gender difference in the expected direction: women have both a lower mean and median than men, i.e. the former use less lenition than the latter. Both groups also show comparatively little variation around the mean, and in consequence there is only a very small overlap of the interquartile ranges (vertical extent of the boxes). It is therefore not surprising



(a) box plot (b) regression plot

Figure 7.10: /k/: PDF by age and gender (released only)

that a t-test finds the gender difference to be highly significant in this age group (t(515.826) = -10.356, p < 0.001). For middle-aged speakers (panel in the middle), things seem to be a lot less clear. Women and men have clearly distinct medians in this age group (no overlapping notches), but it is now the men who have lower PDF values than the women. The same goes for the mean, which is also lower for men than for women. However, it should be noted that the two genders are somewhat less distinct in this sub-sample due to increased variation in both groups (the interquartile ranges occupy virtually the same space). Nevertheless this difference is still statistically significant (t(1198.637) = 2.543, p = 0.011). When we focus on the youngest speakers in the sample, we find that (a) the gender distinction has become (even) more statistically robust again (t(1339.877) = -4.982, p < 0.001), and (b) it is now once more the female speakers who are less Scouse than their male counterparts (cf. the old group).

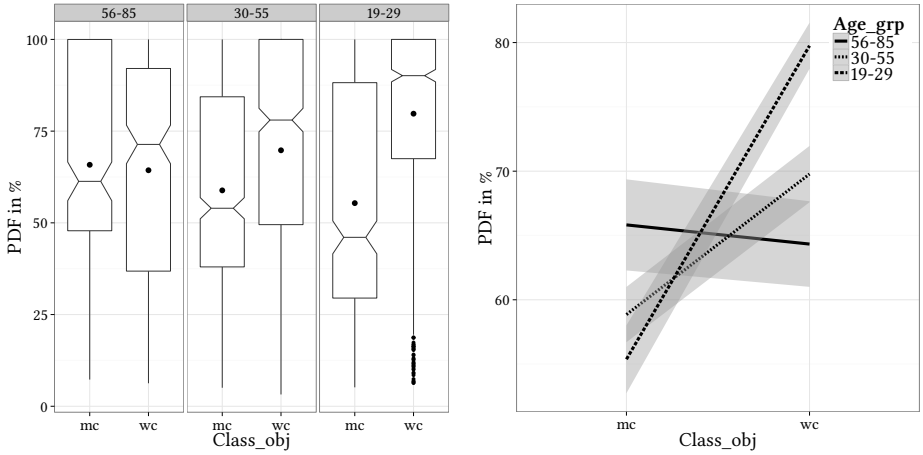
Table 7.10: /k/: t-tests of age by gender

test	women			men		
	t	df	p	t	df	p
old-middle	6.537	502.217	< 0.001	−7.473	551.684	< 0.001
middle-young	1.363	1382.189	0.173	8.881	1169.913	< 0.001
young-old	7.397	558.982	< 0.001	−0.239	514.761	0.811

If regression lines for these three age groups are plotted with gender on the x- and estimated PDF on the y-axis (Figure 7.10b), it becomes obvious that the picture suggested by Figure 7.9 is simplistic. When women and men are analysed separately, we cannot say that there has been no change in /k/ lenition from the oldest to the middle-aged speakers. Instead, for women (left-hand side of the graph) the increase in PDF has taken place between these two very groups: older women (solid line) have a much lower PDF than those who are aged between 30 and 55 (dotted line); this difference is highly significant (cf. Table 7.10). Young women (dashed line), then, do not have a PDF that is significantly higher than that of the middle-aged group (cf. the overlapping error bands in Figure 7.10b and the relevant t-test in Table 7.10). Men, on the other hand, have a considerably higher PDF for both the youngest and the *oldest* speakers, two groups which a t-test found not to differ in a statistically robust way. Male speakers aged between 30 and 55, however, have a PDF which is significantly lower than both those of their young and old counterparts (cf. once more Table 7.10). We can thus say that for women, lenition of /k/ has already increased from the old to the middle-aged generation and has then remained on that level. In opposition to that, male Liverpudlians exhibit a kind of 'back-to-the-roots' pattern: The (rather high) PDF drops about as much from the old to the middle-aged speakers as it rises for the women in the same period, only to return to virtually the same level again for the youngest speakers in the sample.

7.2.6 Age and social class

A much more linear development is visible in the interaction of age and social class as it is represented in Figure 7.11a and Figure 7.11b. If we look at the class distinction and restrict ourselves to the oldest speakers in the sample (rightmost panel of Figure 7.11a) we find that, even though the medians seem to be just about significantly different from each other (cf. the notches), the means (black dots) are virtually identical. A t-test on the raw data confirms that the difference in /k/ realisation between middle- and working-class speakers is not statistically robust in the age group 56–85 ($t(515.679) = 0.608$, $p = 0.544$). In the next generation (middle panel), things have already changed. There is now a wider gap between both the medians (cf. the notches) and the means of the two classes. Additionally, the interquartile ranges as visualised by the vertical extent of the boxes now overlap (slightly) less. For this age group, working-class speakers have a significantly higher PDF (and thus more Scouse /k/ realisations) than middle-class Liverpudlians ($t(1253.101) = -6.982$, $p < 0.001$). This difference does not only persist, but actually becomes larger and even more pronounced for the youngest



(a) box plot (b) regression plot

Figure 7.11: /k/: PDF by age and social class (released only)

speakers: the gap between middle and workings class subjects widens (t(698.451) = -13.959, p < 0.001). In terms of social class, the development that has taken place from the oldest to the youngest speakers investigated in this study can thus be described as one of divergence: Middle-class speakers become consistently *less* Scouse (PDF drops), whereas working-class speakers just as consistently become *more* Scouse (PDF rises) across three generations.

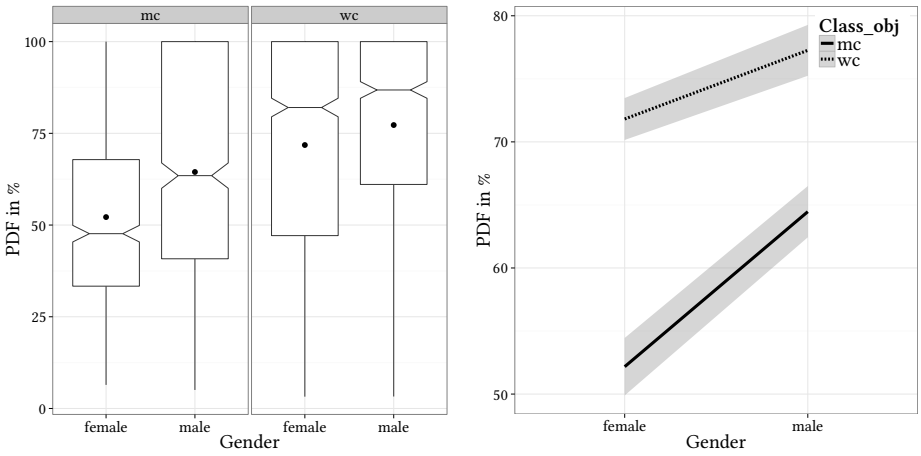
Table 7.11: /k/: t-tests of age by social class

test	middle class			working class		
	t	df	p	t	df	p
old-middle	−3.530	458.418	< 0.001	2.550	499.045	0.011
middle-young	−1.863	817.297	0.063	7.025	1243.562	< 0.001
young-old	−4.641	585.844	< 0.001	7.719	403.276	< 0.001

This divergence can also be seen in Figure 7.11b, where the solid regression line (old speakers) is essentially flat, the dotted one (middle-aged) has a moderate positive slope (which indicates a rise in PDF going from the middle to the working-class speakers), and the dashed line (young subjects) has a very steep positive slope – suggesting that the class effect is in the same direction but more pronounced than in the middle group. If we zoom in on the middle-class speak-

ers, we find that PDF is actually highest in the old group, and decreases towards the middle and the young interviewees. The last two groups are not significantly different from one another as the overlapping standard deviations in the regression plot (dark grey areas) suggest and the t-test reported in Table 7.11 ('middle-young') confirms. In this social class, speakers have thus become less Scouse from the oldest to the middle-aged speakers, and then remained on that level. For working-class Liverpudlians, on the other hand, the order of age groups is completely reversed: Old speakers have a comparatively low estimated PDF, subjects aged 30–55 are in the middle, and the youngest participants have a very high estimated PDF of around 80. T-tests on the raw data find all three age groups to be significantly different from one another (cf. Table 7.11), which means that, with respect to /k/, old working-class speakers are less Scouse than the middle-aged, who in turn use less lenition than the youngest speakers.

7.2.7 Social class and gender



(a) box plot

(b) regression plot

Figure 7.12: /k/: PDF by gender and social class (released only)

Compared to the last two interactions (age X gender, and age X social class), the one of class and gender, albeit highly significant, is a lot less interesting. Box plots (Figure 7.12a) show that gender has roughly the same impact in both classes: men use more lenition than women. This difference is significant in both the middle (t(1293.269) = -8.004, p < 0.001), and the working class (t(1709.667) = -4.196, p < 0.001), although the distance between women and men is smaller in the

latter case. If we take the opposite stance and look at class differences in the two genders separately, we end up with a very similar result. The vertical distance of the regression lines shows that the difference in estimated PDF between middle (solid line) and working class (dotted) is greater for female than for male speakers. However, the effect is in the same direction (working-class speakers use more lenition than middle-class speakers), and it is highly significant for both women ($t(1311.495) = -13.984$, $p < 0.001$) *and* men ($t(1431.826) = -8.893$, $p < 0.001$). The nature of the class (gender) effect is thus essentially the same for both genders (social classes); there is only a difference in degree.

7.2.8 Style shifting

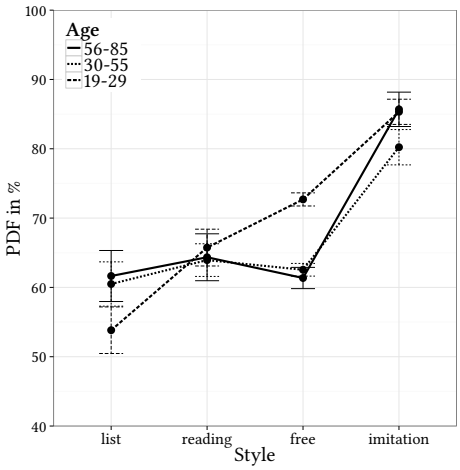
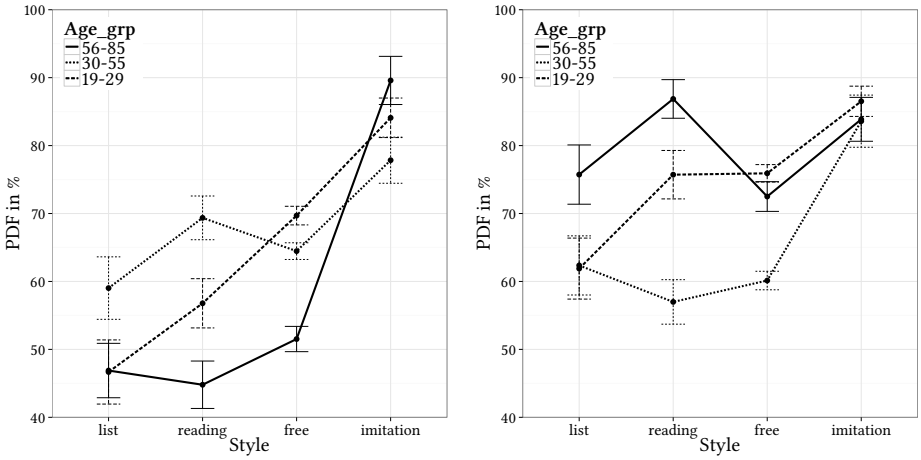


Figure 7.13: /k/: PDF by style and age (released only)

The last two-way interaction that was found to be significant in the mixed linear effects regression is the one between speaking style and age group of speaker. Just as for the other three test variables, this relationship (as well as the two three-way interactions of style, age, and gender/social class) will be visualised by a line plot (Figure 7.13), which shows register on the x-, and average PDF on the y-axis. Line type codes age of the participants, while the whiskers above and below the means mark the standard errors. The lines representing the old (solid) and the middle-aged speakers (dotted) are remarkably similar, not to say identical. There is no style shifting at all for the first three styles (word list, reading passage and free speech). The means are slightly different, but the error whiskers of any style overlap with those of the other two, which indicates that these subtle

differences are not statistically significant. Only when we get to accent imitation do we see a real change: PDF values increase dramatically in both age groups. This suggests that there has to be some (sub-conscious) awareness of the variable in these groups, but it must be very limited – otherwise we would expect differences between the other styles as well.

When we look at the dashed line, which represents data collected from the youngest speakers, however, we are faced with a virtually perfect textbook case of Labovian style shifting. In this age group, average PDF of /k/ increases in an almost straight line from most formal to most informal context. When reading out a word list, these speakers use significantly less lenition than both subjects of their parents' or grandparents' generation. For the reading passage, all three groups are on the same level, but in free speech, /k/ realisations of the youngest speakers are significantly (and considerably!) more Scouse than those of the other two groups (cf. §7.2.5). During accent performance, Scousers aged between 19 and 29 reach the same level of lenition as the oldest interviewees. For the youngest speakers, every register is significantly different from the other three (no overlap between the dashed whiskers). We have thus consistent and significant style shifting for /k/-lenition in this age group.



(a) women (b) men

Figure 7.14: /k/: PDF by style, age group, and gender (released only)

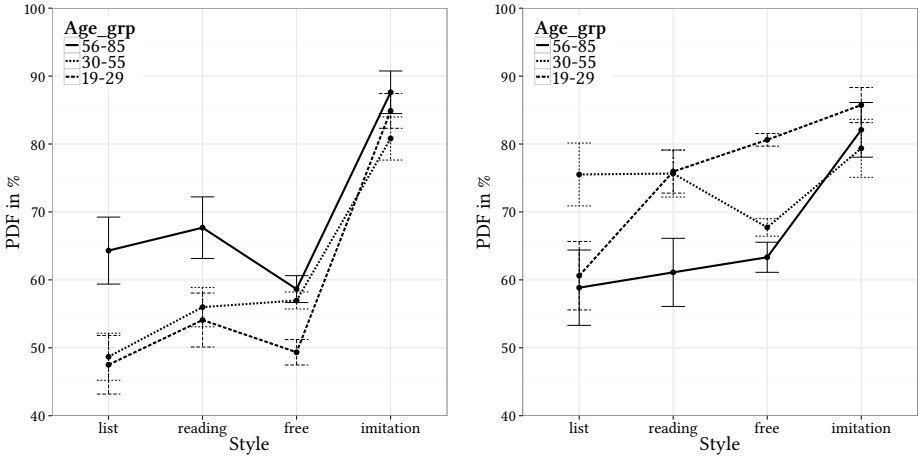
Since the mixed linear effects regression model found significant three-way interactions of style and age group with gender and social class, respectively, we will look at both of these as well before closing this section. Figure 7.14a and Fig-

ure 7.14b visualise the style X age interaction for women and men separately. If we focus on the old speakers, women show much more systematic style shifting than men. Provided we ignore the word list, there is actually a near linear (and significant) rise from the text passage to spontaneous speech to accent performance. This rather clear picture is only spoilt by the fact that the word list is not significantly different from the reading passage, or from observations made during spontaneous speech (although in the latter case the difference is close to significance, error whiskers only just overlap). Old men, on the other hand, show a zigzag pattern, which does not look at all like Labovian style shifting. Mean PDF is high in all registers, but there are still significant differences between the two blocks 'list'/'free' and 'reading'/'imitation': /k/ realisations are even more lenited in the latter case than in the former.

In the middle aged group (dotted line) differences are smaller. Women exhibit a trend towards the typical style shifting pattern (increasing PDF from left to right), although some curious results were obtained for the registers 'reading' and 'free' – women actually use (slightly, but significantly) more Scouse realisations in the more formal text reading task than in spontaneous speech. Men, on the other hand, have the same mean PDF, statistically speaking, in the three 'natural' styles word list, reading passage, and free speech. This is followed by a steep rise into accent performance on the right-hand side of the graph, which is similar to the one found for women of this age group. All in all, the pattern found for middle-aged men looks very much like the one revealed in Figure 7.13 for the entire age group.

For the youngest speakers (dashed) we find systematic style shifting in both genders. Women in particular have a virtually perfect straight line, running from the bottom-left to the top-right corner of Figure 7.14a, just like we would expect for a socially salient variable. Each mean in this sub-sample is (highly) significantly different from each of the other three. Young men also show a general trend for PDF to raise from the more formal registers on the left to the less formal ones on the right of the graph. Two things need to be mentioned, though: (1) Means in the three styles 'list', 'reading', and 'free' are all higher than those of women in these registers, so the rise is less extreme, and (2) the reading passage and free speech do not differ in a statistically robust way, so men only have a three-way style distinction: word list, reading/spontaneous, accent performance. On the whole, however, I would consider these differences in degree, not in nature. Both men and women aged between 19 and 29 can be said to style-shift.

In Figure 7.15a and Figure 7.15b the style-age interaction is shown with respect to how it is influenced by social class of the speaker. For old middle-class speakers



(a) middle class (b) working class

Figure 7.15: /k/: PDF by style, age group, and social class (released only)

(solid line in Figure 7.15a) we find again that there is no significant difference between the word list and the text reading task. The, by now familiar, steep rise to a very high PDF for accent imitation is also present. In between, however, /k/ variants become more standard in free speech – PDF drops. While the difference between realisations in spontaneous speech and while reading out the word list is not statistically robust, that between free speech and the text passage is. Old working-class speakers behave in very much the same way as the pooled age group in Figure 7.13: 'list', 'reading', and 'free' are not significantly different, but there is a steep and statistically robust increase of PDF during accent imitation.

Middle-class speakers aged between 30 and 55 show exactly the same style shifting pattern that was found for young male subjects (cf. Figure 7.14b). The reading passage and spontaneous speech are statistically identical, but apart from that, there is a steady increase in PDF from left (more formal) to right (less formal). Their working-class counterparts (dotted line in Figure 7.15b) are interesting because they echo the phenomenon just described for old middle-class speakers: 'list' and 'reading' are identical, followed by a significant drop in PDF towards spontaneous speech, and then by a significant rise for accent imitation. The only difference is that for middle-aged working-class speakers /k/ realisations in the word list and the reading passage are just as Scouse as when people put on a particularly strong Liverpool accent.

Young middle-class participants, finally, exhibit a style pattern which looks

like an attenuated version of the one revealed for old middle-class speakers. In this age group, however, the drop in PDF from 'reading' to 'free' is not significant. As a result, the three styles word list, reading passage, and spontaneous speech are all identical, statistically speaking. The following increase in PDF during accent performance is then even (slightly) more extreme than for the other two age groups. Somewhat surprisingly, working-class speakers (dashed line in Figure 7.15b) do distinguish all four styles. Not only is each of them significantly different from each of the other three, but there is also a steady increase in PDF from left to right – just as one would expect for a socially salient variable that people are aware of to a certain degree. We are thus faced with the interesting situation that, among the youngest subjects, it is actually the working-class speakers who exhibit more pronounced and more systematic style shifting. It should be noted, however, that this might just be due to the fact that young middle-class speakers have considerably lower PDF values than working-class Liverpudlians of the same age in the first three styles; young middle-class speakers might just try not to use /k/ lenition at all (as far as they are able to do so, cf. §8.2.3.2), irrespective of speaking style, unless they are told to do so.


9 783961 10119