Linking grammaticalization to historical demography

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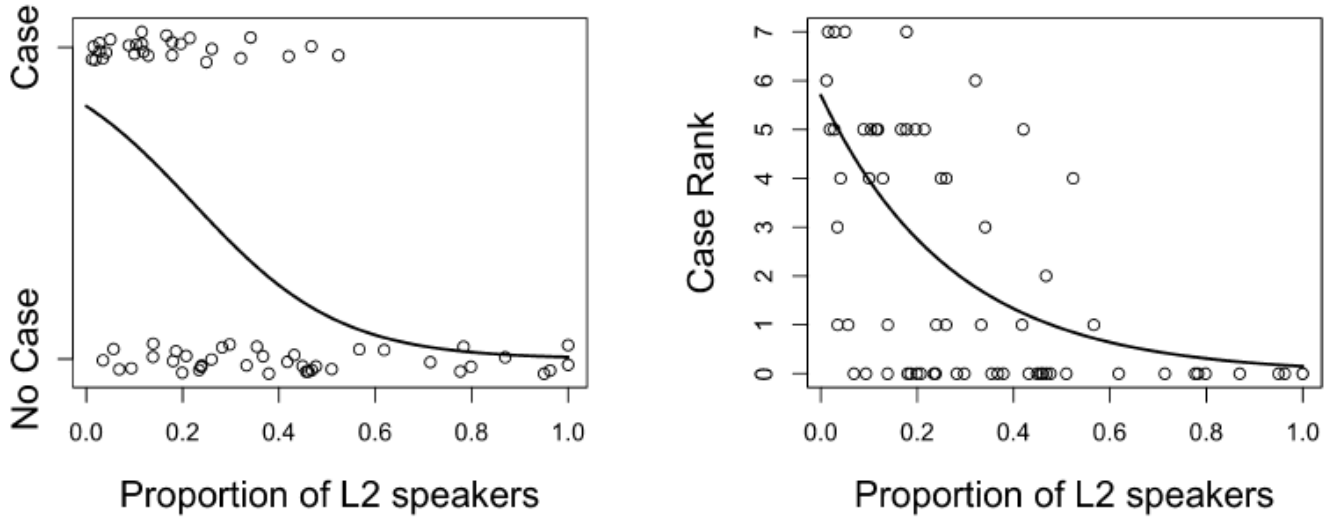
Demography and language change

- Demography has an impact on language change (Milroy & Milroy 1985; Trudgill 2011 ...)
  - Correlation between population size and analyticity (Lupyan & Dale 2010)
  - Correlation between proportion of L2 speakers and analyticity (Bentz & Winter 2013)
  - Diachronic dimension (Kusters 2003: Szmrecsanyi 2012)



(Bentz & Winter 2013)

Demography and language change

- Previous studies:
  - If 'nomothetic', they are mainly broad-scope cross-linguistic studies
  - Have fairly low-level resolution of the demographics
  - Are often synchronic

Case study: *be going to*

- Prime example of grammaticalisation studies
- Analytic future, arose in Early Modern English

  [I am going] [to buy some chocolate] > [I am going to buy some chocolate]
- Source

  [[*go*][motion]] + [[*be* V*ing*][on-goingness]] + [[*to* INF][purpose]]

  I ***am goyng*** *to the Pope,* ***to praie*** *him to place me in mariage.* (1566)
- By 1700 reanalysis is apparent

  There ***is going to be*** *such a calm among us*. (1725)

[Hilpert (2008), Traugott & Trousdale (2013), Traugott (2015), Disney (2009), Budts & Petré (2016), Petré (2016), etc.]

Corpus & data selection

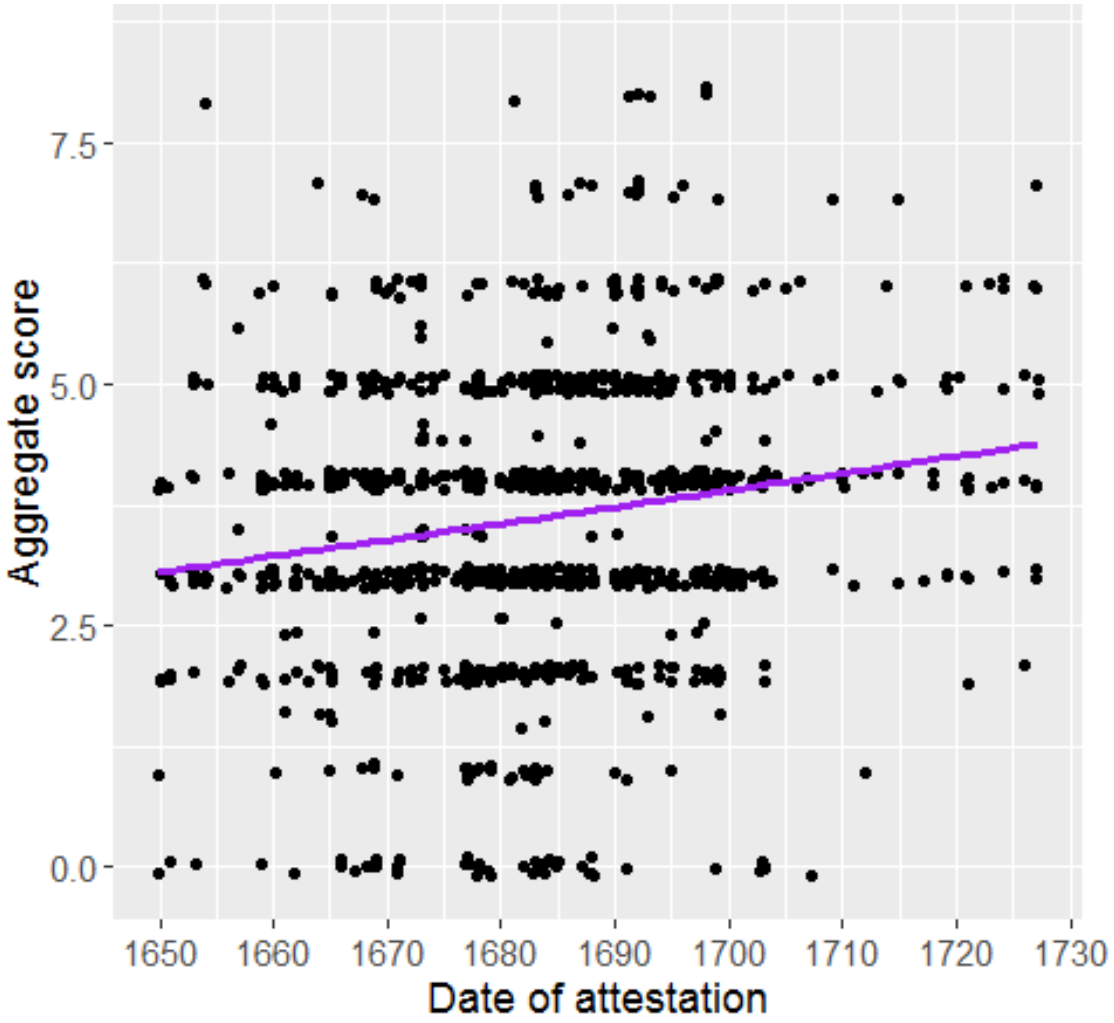
- Corpora/Resources
  - eebo.chadwyck.com: English books printed 1473-1700
  - EEBOCorp 1.0 (Petré 2013)
  - EMMA (*Early Modern Multiloquent Authors*) (Petré et al. 2017)
- Selection of **twenty-two** writers
  1. Prolific
  2. Constant register over time
  3. Roughly same social status.
- 50 million+ tokens
  - 3k – 11m words/author
  - 10,000+ *going* (including variants)
  - **1132** *be going to* INF
  - linked to rich metadata including author mobility history

Analysis

- Coding of
  - formal features
  - semantic features
- Commonly associated with grammaticalisation of *be going to*.
- Each data point is given a score per feature
- Add up to an overall score (max. 10) for the level of grammaticalisation reached in a particular observation

Type	Feature	Example	Value [score]
FORMAL	ADJACENCY	He's going (now) to see some fresher beauties.	Non-adjacent [0]; Adjacent [1]
	FRONTING	that barbarous action he was going to commit.	No [0]; Yes [1]
	VOICE	Are not you going to be married?	Active [0]; Passive [1]
	OTHER	If a Contention should be going to go to Begin	Parenthetical [1]; Coordination with AUX [1]; Raising [2]; go-INF [2]
SEMANTIC	GOAL	I am just now going to a Lawyer to aske	Early [0]; Late [0.5]; No [1]
	MOTION	I was going to be damnably in Love.	Motion [0]; Soul's journey to heaven [0.5]; Indeterminate [1]; No motion [2]
	ANIMACY	Examples which are now going to be Familiar.	Animate [0]; Inanimate [1]
	PREDICTIVENESS	the Devil is going to be Dislodged... God will ... cause him to fall.	Egophoric [0]; Indeterminate [1]; Reporting [1]; Epistemic [2]

Binomial regression



Lowess regression

London: unusually high population turnover

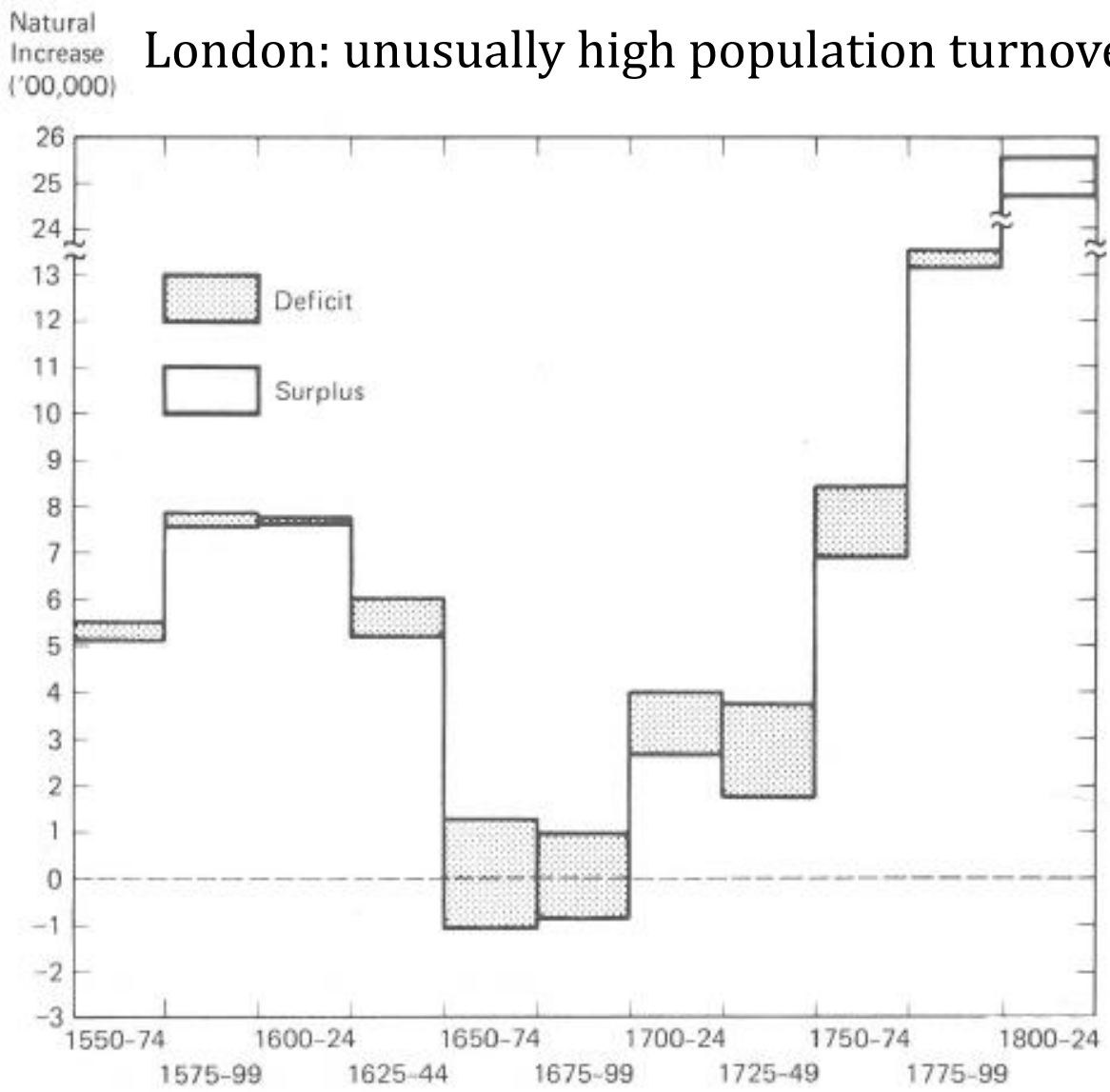


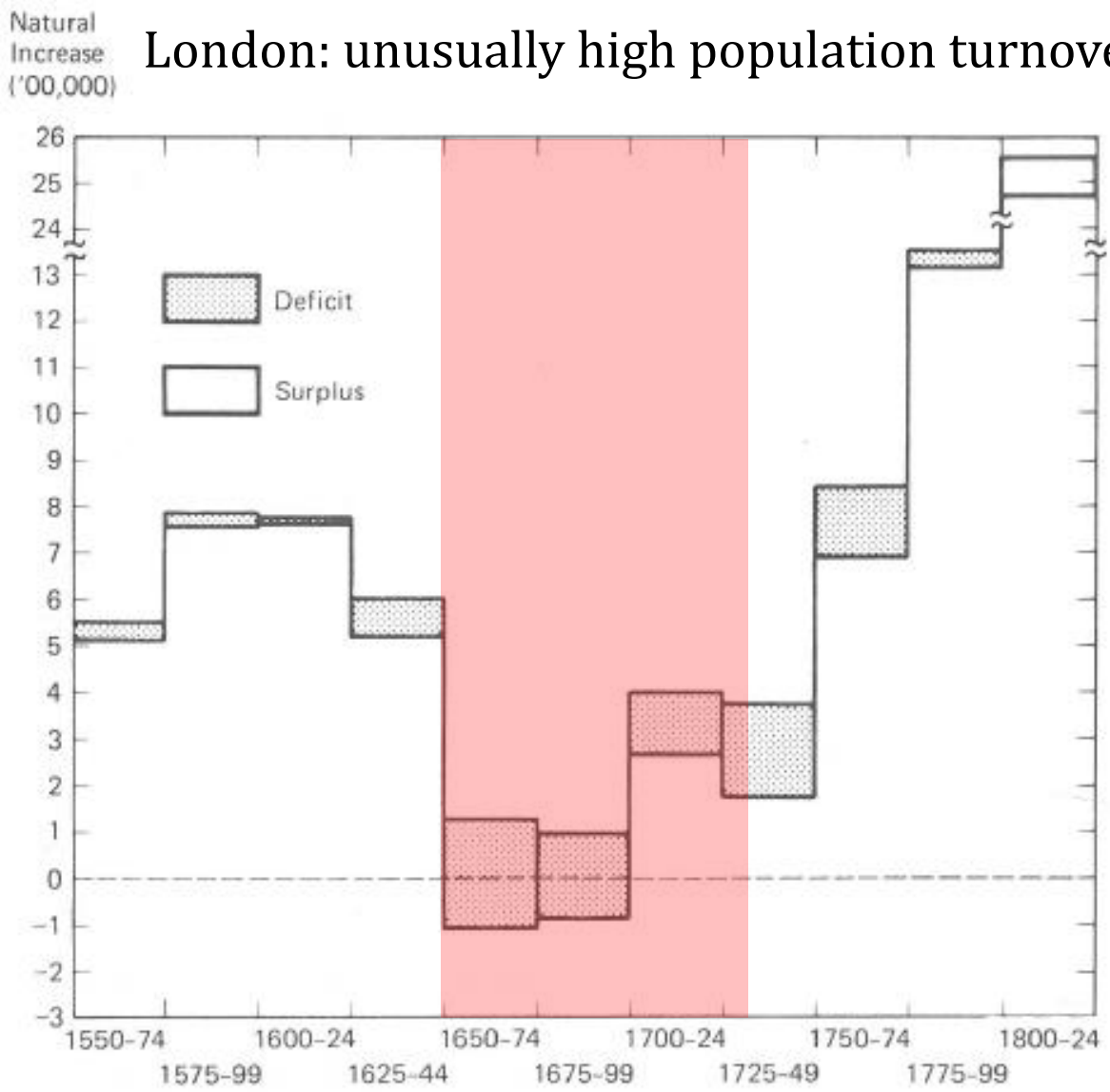
Figure 6.2: Natural increase in London and England by quarter century, 1550–1824

Wrigley & Schofield 1994: 166-169

"(...) London's particular demographic characteristics of massive immigration and high mortality."

"In the second half of the seventeenth century the extra-metropolitan surpluses fell precipitously while the London deficits rose so that the latter were almost exactly double the former, thereby converting the non-London surplus into a national deficit of almost the same magnitude. In the early eighteenth century the rest of the country bounced back to record more substantial surpluses, but the London deficits continued at a high level and reduced the surpluses in the first two quarters of the century by 33 and 55 per cent respectively."

London: unusually high population turnover



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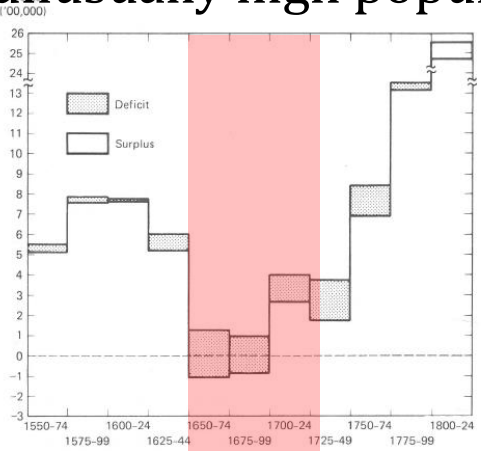

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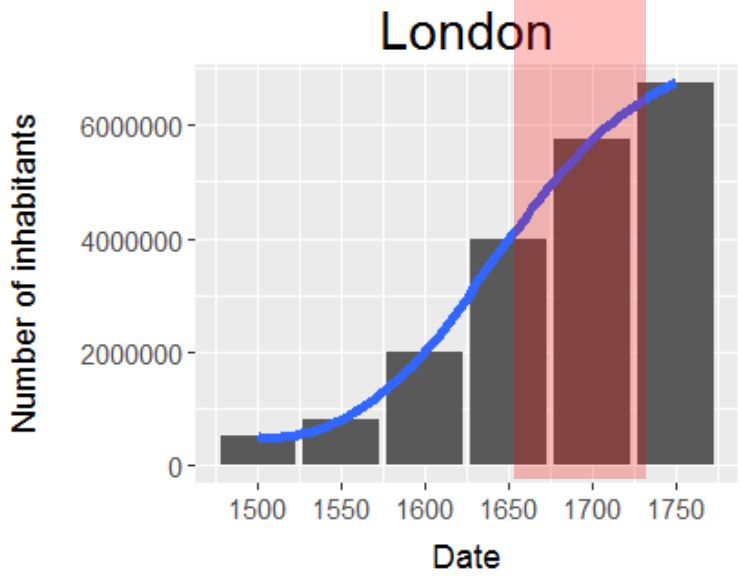

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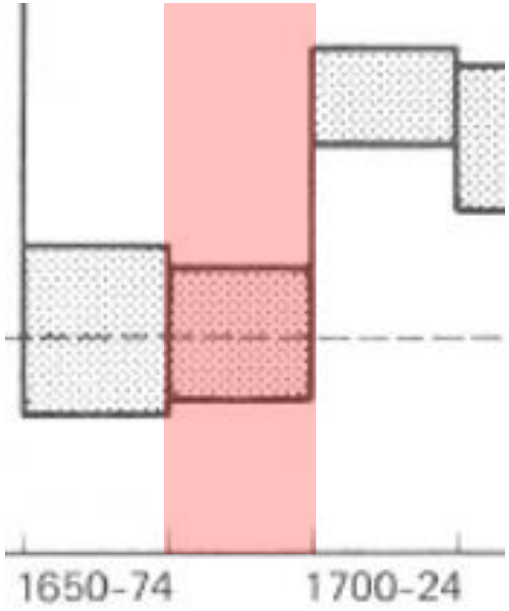
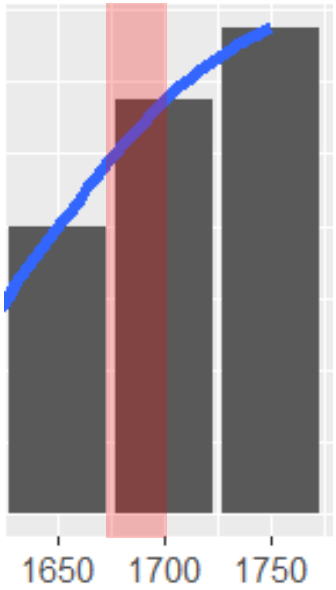
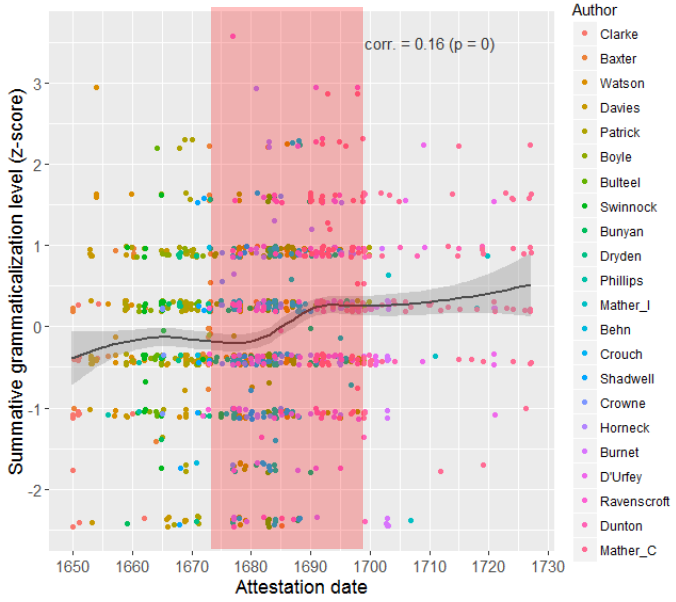
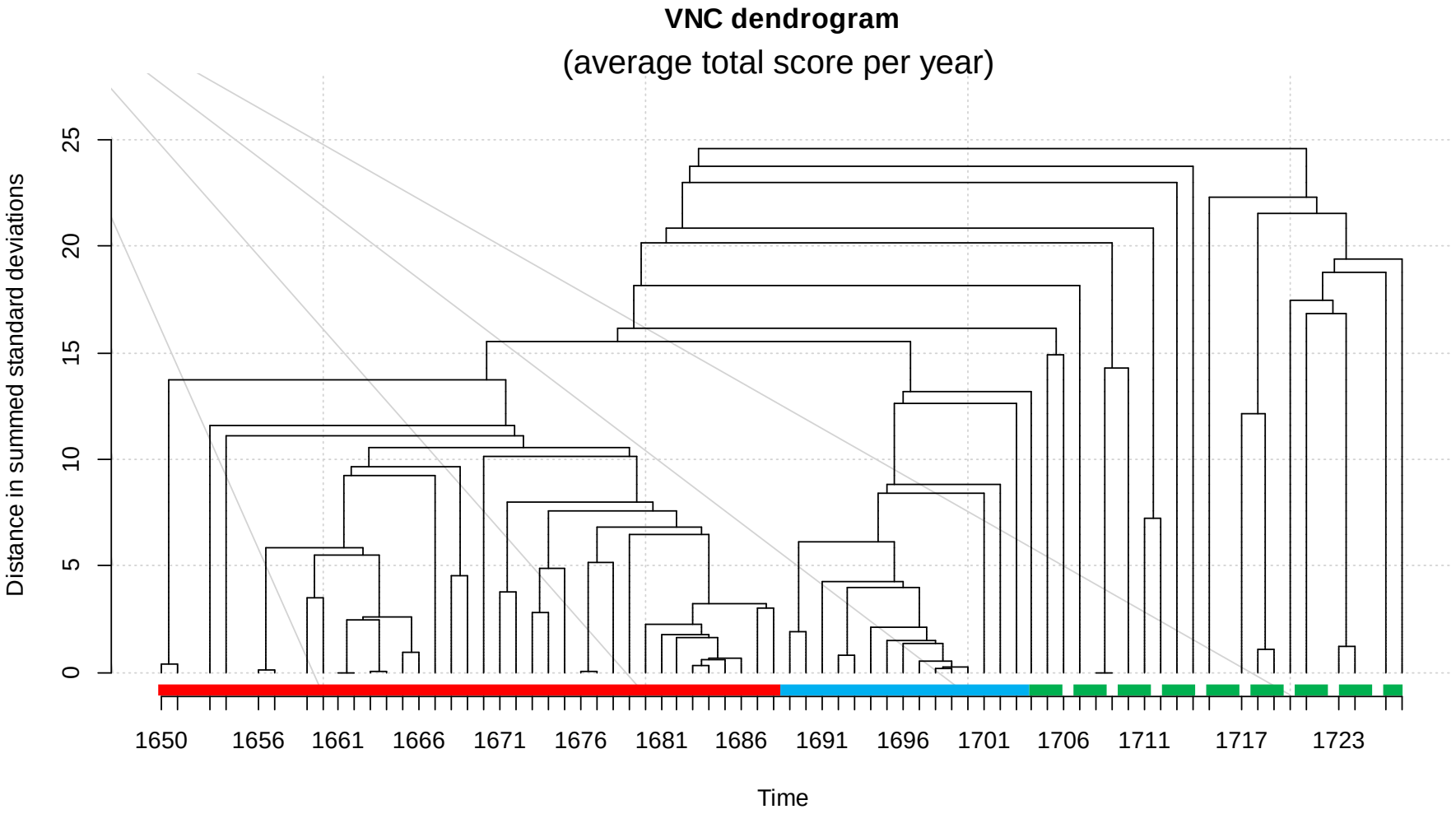

1650–74
1700–24

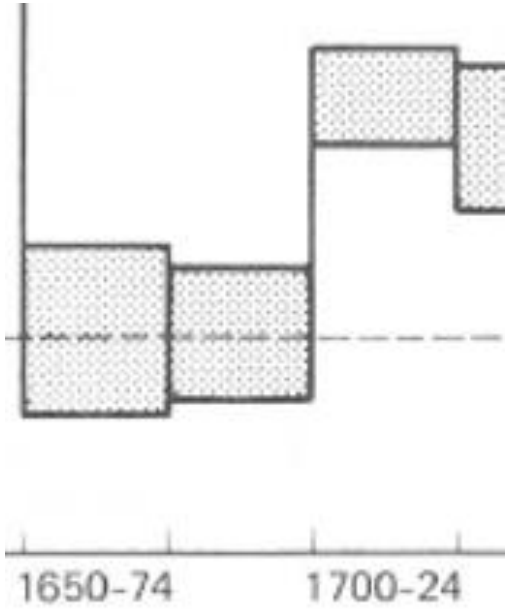

1650
1700
1750


corr. = 0.16 (p = 0)
Summative grammaticalization level (z-score)
3
2
1
0
-1
-2
1650
1660
1670
1680
1690
1700
1710
1720
1730
Attestation date
Author
Clarke
Baxter
Watson
Davies
Patrick
Boyle
Bulteel
Swinnock
Bunyan
Dryden
Phillips
Mather_I
Behn
Crouch
Shadwell
Crowne
Horneck
Burnet
D'Urfey
Ravenscroft
Dunton
Mather_C

Variability-based neighbor clustering

(Gries & Hilpert 2008)




1650–74
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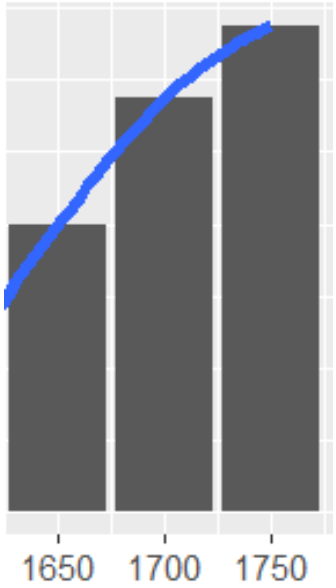
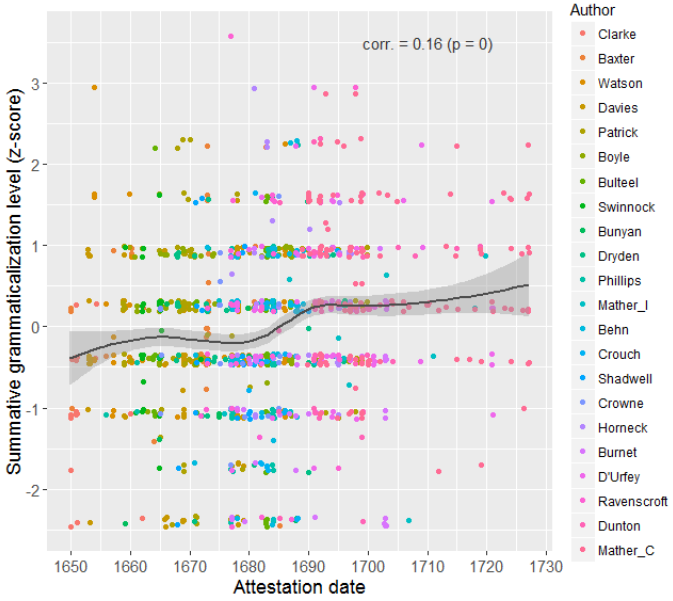
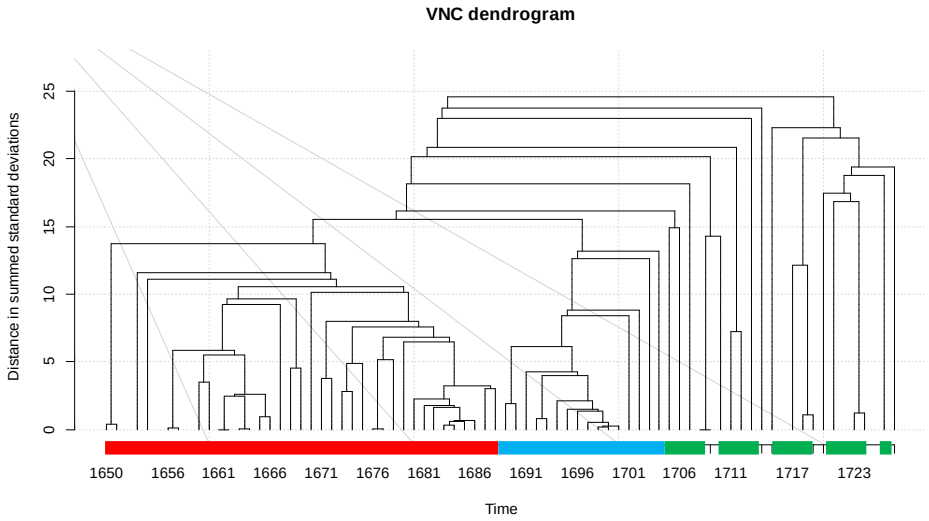
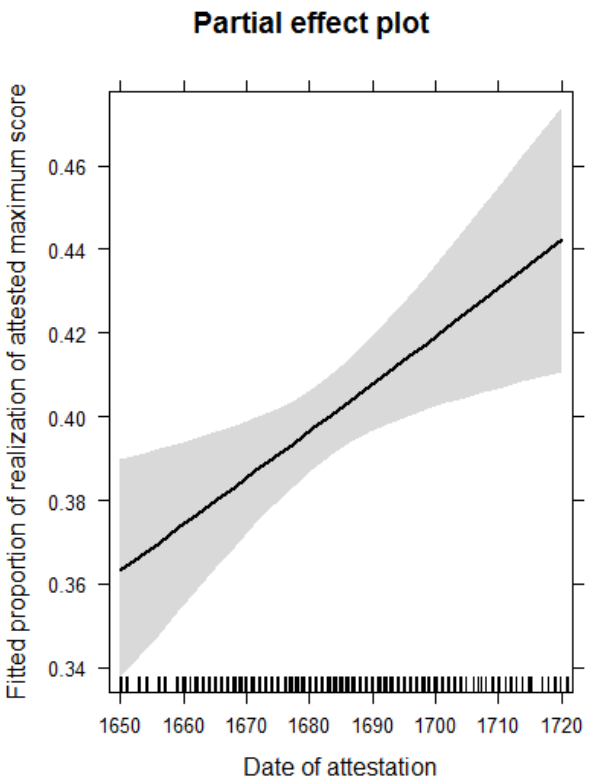

1650
1700
1750

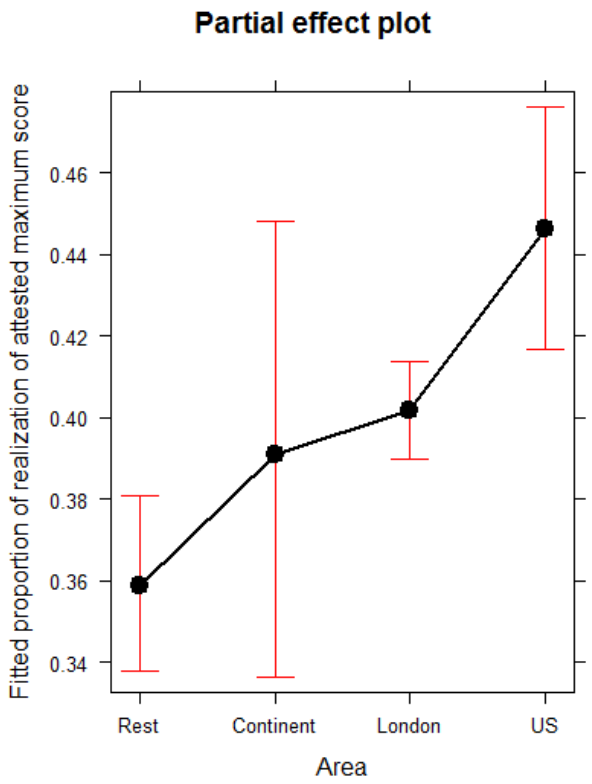

corr. = 0.16 (p = 0)
Summative grammaticalization level (z-score)
Attestation date
Author
Clarke
Baxter
Watson
Davies
Patrick
Boyle
Bulteel
Swinnock
Bunyan
Dryden
Phillips
Mather_I
Behn
Crouch
Shadwell
Crowne
Horneck
Burnet
D'Urfey
Ravenscroft
Dunton
Mather_C


VNC dendrogram
Distance in summed standard deviations
Time

Binomial regression coefficients

	estimate	confidence interval		z-value	p-value
		2.5%	97.5%		
Intercept	-8.488	-13.960	-3.019	-3.041	< 0.01
Date of attestation	0.005	0.001	0.007	2.8826	< 0.01
Area: Continent	0.136	-0.116	0.384	1.068	> 0.05
Area: London	0.182	0.077	0.287	3.380	< 0.001
Area: US	0.365	0.206	0.524	4.498	< 0.001

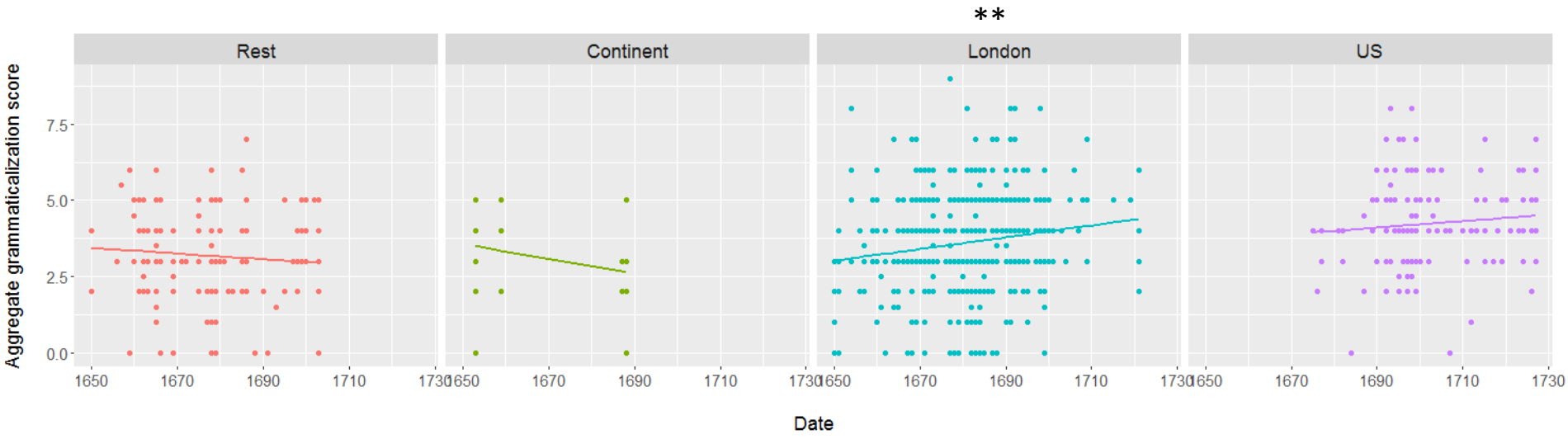




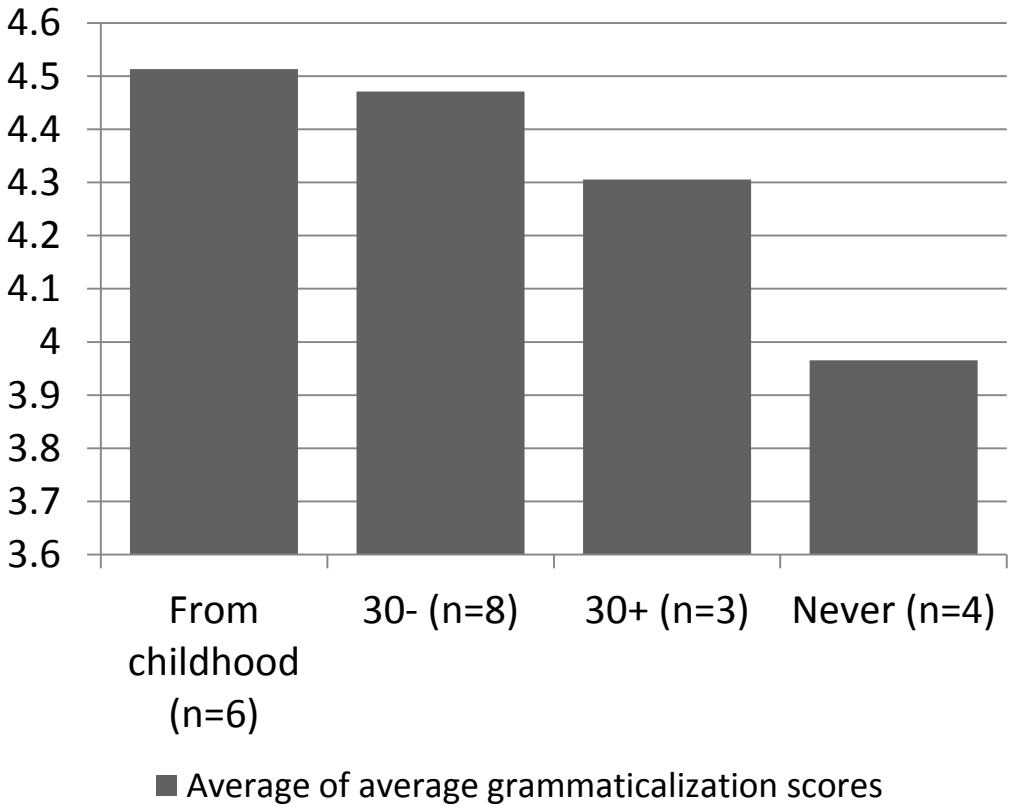
Interaction ‘Date : Area’

(binomial regression)

	estimate	confidence interval		z-value	p-value
		2.5%	97.5%		
Intercept	7.083	-4.757	18.995	1.169	> 0.05
Date of attestation	-0.005	-0.012	0.002	-1.269	> 0.05
Date of attestation : Continent	-0.007	-0.029	0.013	-0.716	> 0.05
Date of attestation : London	0.014	0.005	0.022	3.209	< 0.01
Date of attestation : US	0.009	-0.001	0.020	1.699	> 0.05



Living in London



Summary and conclusion

- *Be going to* is grammaticalising between 1650-1725
- London is centre of change
  - Melting pot of cultures
  - More deaths than births in London
  - Sustained growth solely through incoming migration
- Grammaticalisation rate peaks
  - Between 1680-1690
  - Whole of England suffers from increased death rate
  - Migration to London peaks
  - Incoming migrants are *young*

Sparked your interest?

- wwwling.arts.kuleuven.be/qlvl/freek.htm
- @mbgantwerp