

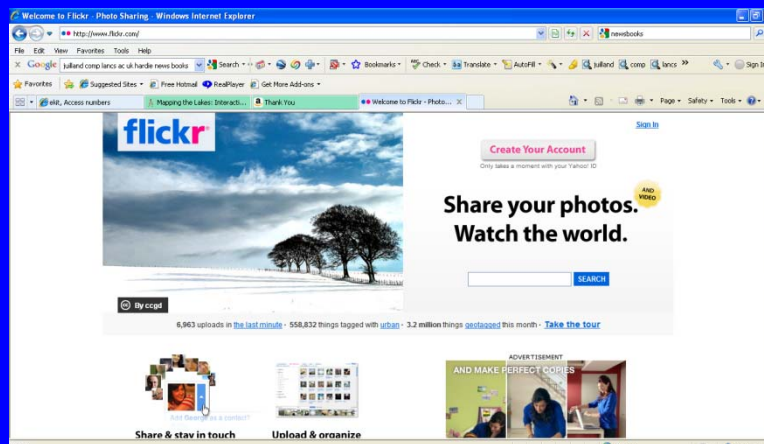
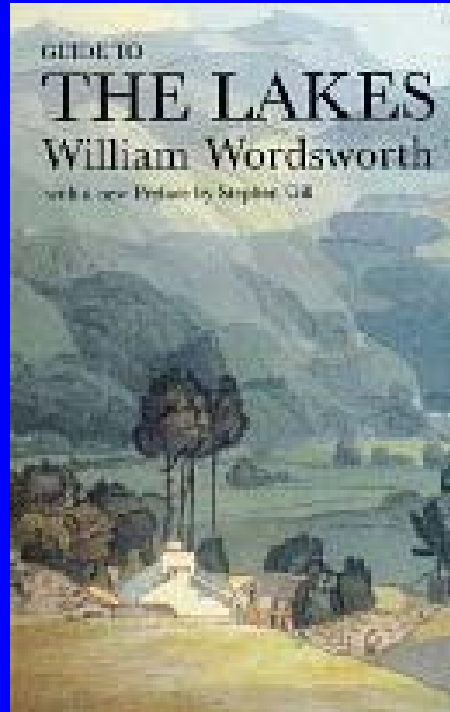
**Censuses, literature and newspapers:
Quantitative and qualitative approaches to
studying the past with GIS**

Dr Ian Gregory
Digital Humanities,
Dept. of History,
Lancaster University

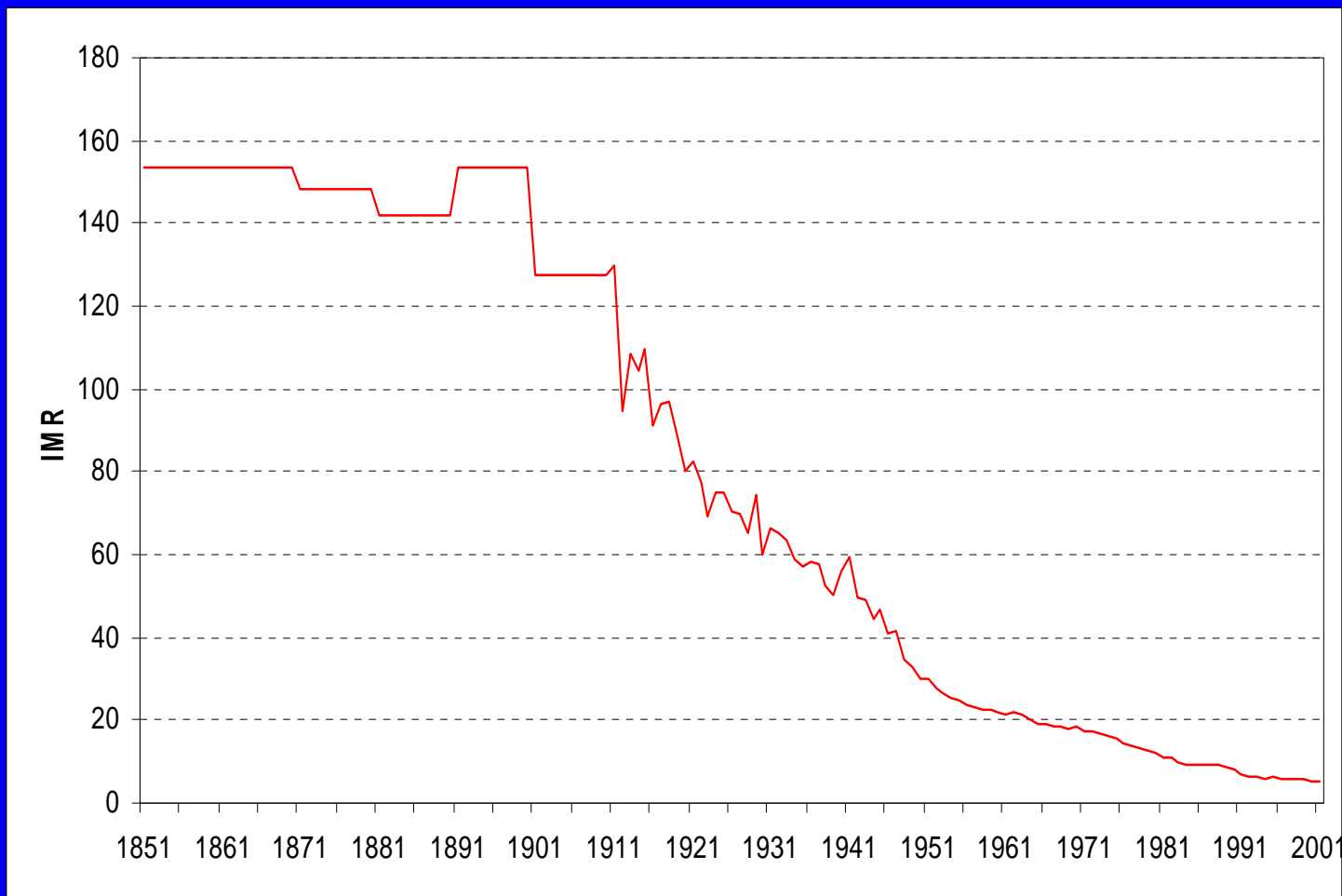
GIS and Sources of Data

Registration Districts	MARRIAGES			BIRTHS			DEATHS			The Living		
	Persons married per 1,000 living	Per 1,000 total pop.	Per 1,000 females aged 15 & up	Crude rate per 1,000 persons living	Stationalized rate per 1,000 living ¹		Deaths under one year per 1,000 births					
					Males	Females	Males	Females	Persons			
I. LONDON (continued).												
1. LONDON (continued).												
27. Camberwell*	15.6	26.7	104	19.1	16.2	18.6	14.3	16.3	129	111	120	105
28. Greenwich*	16.6	26.1	116	19.4	15.2	17.1	13.7	15.8	133	114	124	124
29. Lewisham*	15.2	24.7	86	14.2	12.4	13.4	11.3	12.3	113	88	101	123
30. Woolwich*	15.4	27.7	120	16.8	13.6	15.5	13.2	14.3	118	101	111	141
II. SOUTH EASTERN.												
2. Surrey.												
31. Epsom*	11.0	20.7	78	15.6	17.6	18.7	14.8	16.7	101	83	92	31
32. Clerebury*	12.7	22.7	85	12.9	10.6	11.7	9.1	10.4	91	70	81	121
33. Guildford*	19.8	22.7	89	15.8	13.0	13.7	11.4	12.5	94	75	85	97
34. Merton*	16.1	26.8	124	14.9	10.7	13.3	11.0	12.1	95	86	91	161
35. Hambleton*	13.0	21.0	88	13.8	10.5	10.3	9.5	9.4	82	61	72	103
36. Dorking*	13.6	20.8	83	13.8	12.5	12.4	10.8	10.8	94	67	76	83
37. Haslemere*	12.8	21.1	79	12.9	10.9	11.4	9.2	10.3	92	67	80	102
38. Godalming*	12.0	21.7	87	12.2	12.4	12.5	13.9	13.9	94	74	79	82
39. Dorking**†	14.0	24.8	91	13.1	12.4	13.8	10.8	12.2	119	91	106	124
40. Kingston*	12.4	21.8	84	13.6	11.3	12.7	10.3	11.4	119	91	100	124
41. Richmond*	14.6	22.5	74	12.1	12.3	14.0	10.5	12.1	114	91	103	102
3. Kent.												
42. Bromley*	12.4	22.9	78	12.3	10.5	11.8	9.6	10.8	102	81	92	124
43. Dartford*	12.0	22.2	123	12.3	12.9	17.4	14.0	15.0	118	96	108	129
44. Gravesham*	14.5	24.9	100	17.0	15.2	17.0	13.6	14.7	135	98	117	97
45. Strood*	14.0	22.1	145	12.8	12.9	13.7	11.2	12.4	123	94	114	102
46. Hove*	16.1	25.0	128	14.9	11.3	11.9	9.9	10.6	131	88	110	137
47. Maidway*	10.0	27.6	121	10.1	12.6	10.5	10.2	14.3	128	106	110	149
48. Maidstone*	14.4	25.6	131	12.3	13.0	12.7	10.7	11.6	116	94	106	124
49. Sevenoaks*	12.7	22.6	84	12.3	11.6	11.6	9.4	10.2	85	70	87	94
50. Tonbridge*	14.0	21.5	80	14.8	13.3	13.2	10.5	11.8	109	86	97	80
51. Maidstone**	15.1	22.5	98	12.9	12.0	17.5	14.9	16.2	124	103	113	25
52. Hollingbourne*	12.7	22.6	103	14.8	12.0	11.0	9.6	10.3	107	72	90	97
53. Cranbrook*	12.0	22.2	88	14.7	12.6	10.9	9.6	10.2	102	76	86	74
54. Heverland*	12.7	22.5	104	10.1	13.0	10.1	10.1	10.2	85	68	77	80
55. West Ashford*	12.8	22.3	99	14.3	12.6	11.4	10.1	10.9	101	76	86	97
56. East Ashford*	14.6	23.0	111	14.1	12.9	10.2	9.7	10.0	102	73	88	101
57. Hilden*	12.9	21.8	101	12.1	12.6	12.6	17.0	17.0	101	86	98	97
58. Canterbury*	12.5	22.4	99	12.9	10.5	17.4	12.2	15.2	127	103	120	69
59. Maidstone*	12.5	22.0	89	14.3	13.3	13.1	11.1	11.5	104	86	106	87
60. Faversham*	12.5	22.6	120	12.5	12.1	11.9	10.9	11.4	123	94	108	123
61. Milton*	14.6	27.1	124	12.5	13.1	12.5	11.5	12.0	122	97	110	149
62. Sturry*	12.8	24.2	115	14.2	11.8	13.2	11.8	12.3	120	90	108	124
63. Thanet*	12.7	19.8	72	12.6	14.5	16.1	11.9	13.9	131	101	116	53
64. Eastry*	12.6	22.1	85	12.2	13.7	10.4	11.9	14.8	96	86	101	84
65. Dover*	17.1	24.9	107	12.8	12.9	14.0	10.9	12.4	118	86	102	121
66. Sheppey*	14.2	22.7	84	14.6	12.6	14.7	10.7	12.5	119	94	107	121
67. Romney Marsh*	12.1	22.2	119	14.4	11.8	11.1	9.3	10.2	99	50	75	114
4. Sussex.												
68. Elye*	14.1	21.4	100	12.0	13.2	11.2	9.4	10.3	88	72	85	84
69. Hastings*	12.0	17.6	60	10.1	14.2	14.8	10.6	12.6	112	89	101	94
70. Battle*	12.4	20.5	76	13.7	11.4	13.1	9.7	10.8	102	79	85	91
71. Eastbourne*	12.0	19.3	62	12.6	10.9	12.5	9.8	11.1	107	82	85	84
72. Hailsham*	12.9	22.4	110	14.0	11.1	12.6	12.1	12.5	85	78	81	84
73. Ticehurst*	12.7	19.8	80	12.7	11.1	9.7	8.9	9.8	78	61	83	82

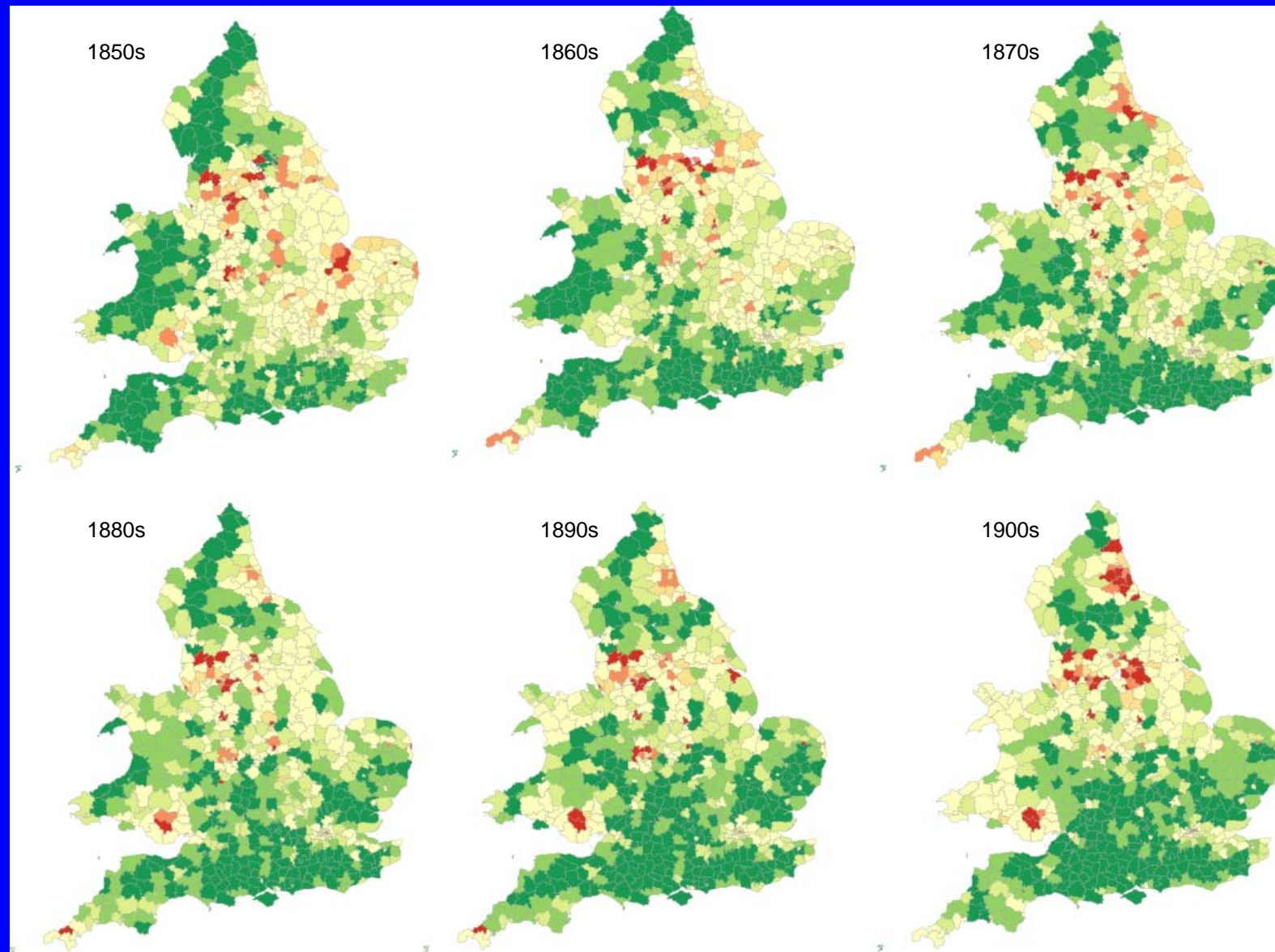
¹ See note on first page of Tables.



Change in IMR rate, 1851-2001

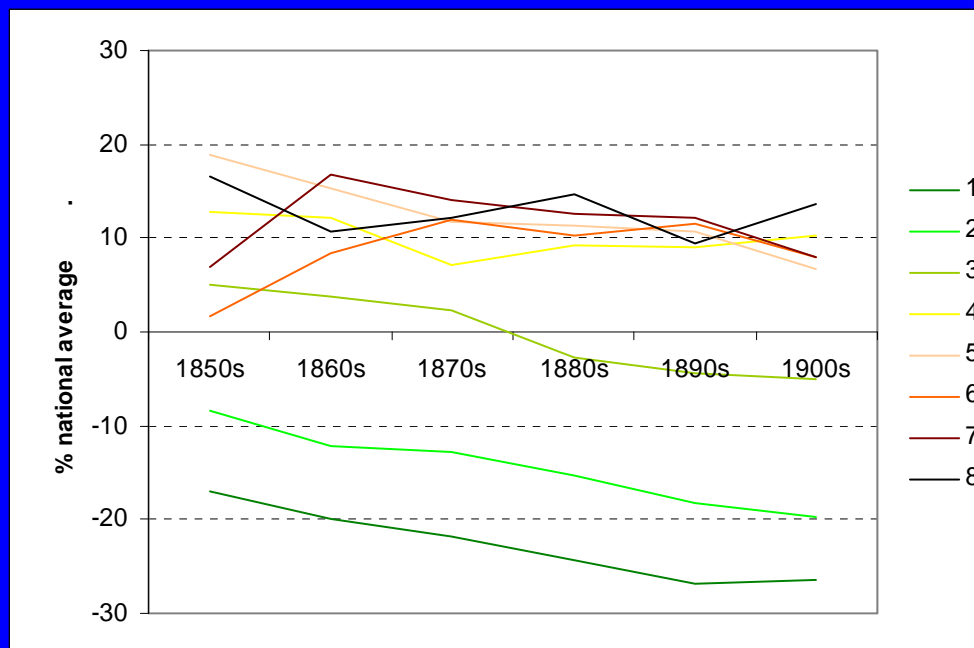


Maps of Infant Mortality, 1851-1911



Legend uses worst three deciles (red), best three (green), and those in between (yellow)

The Urban-Rural divide



	% national pop (1911)	Sample areas
1	9.4	Stow on the Wold (Glou), Whitchurch (Hants.), Hexham (N'humb), Oakham (Rutland), Northallerton (N.Rid.), Holbeach (Lincs)
2	13.0	Cockermouth (Cumb), Chippenham (Wilts), Bridport (Dorset), Bangor (Carn), Alton (Hants), Pembroke (Pembs)
3	17.8	Guildford (Surrey), Redruth (Corn), York (E.Rid), Bucklow (Chesh), Chorley (Lancs), Maidstone (Kent)
4	18.7	Swansea, Canterbury, Hastings, Rochdale, Bolton, Wolverhampton
5	18.0	Sheffield, Leeds, Oxford, Southampton, Coventry, Edmonton (Mdlsex)
6	11.9	Exeter, Hull, Nottingham, Portsmouth, Leicester, Salford (Lancs)
7	9.0	Most of London, also Manchester, Liverpool and Birmingham
8	2.1	Only London, mainly East End

Areal Interpolation approaches to Infant Mortality

- Leighton Buzzard

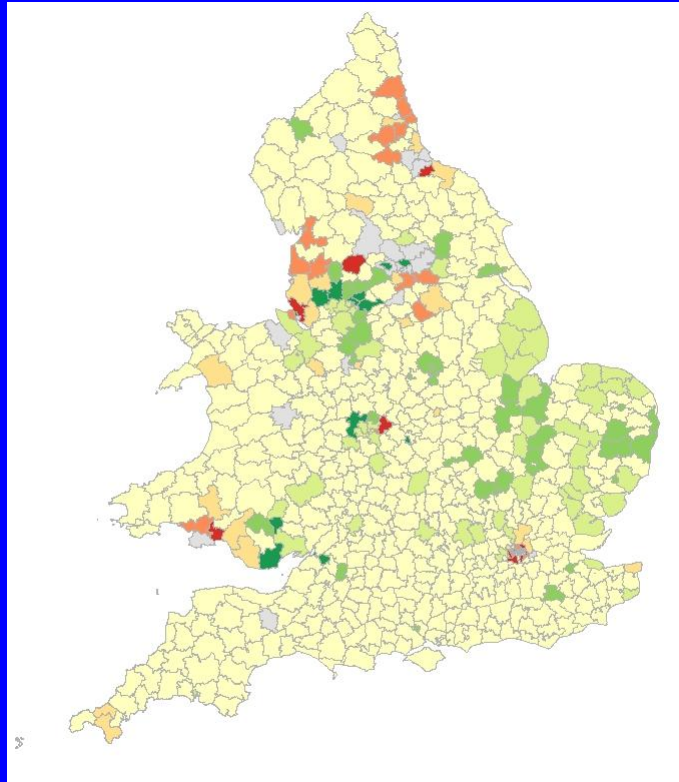
	IMR	Births	Actual deaths	Expected deaths	Deaths averted
1850s	160.64	6701	1076		
1860s	148.56	6870	1021	1104	83
1870s	131.98	6960	919	1118	199
1880s	120.76	6184	747	993	247
1890s	126.63	4762	603	765	162
1900s	82.85	4104	340	659	319

Total lives saved: 1010

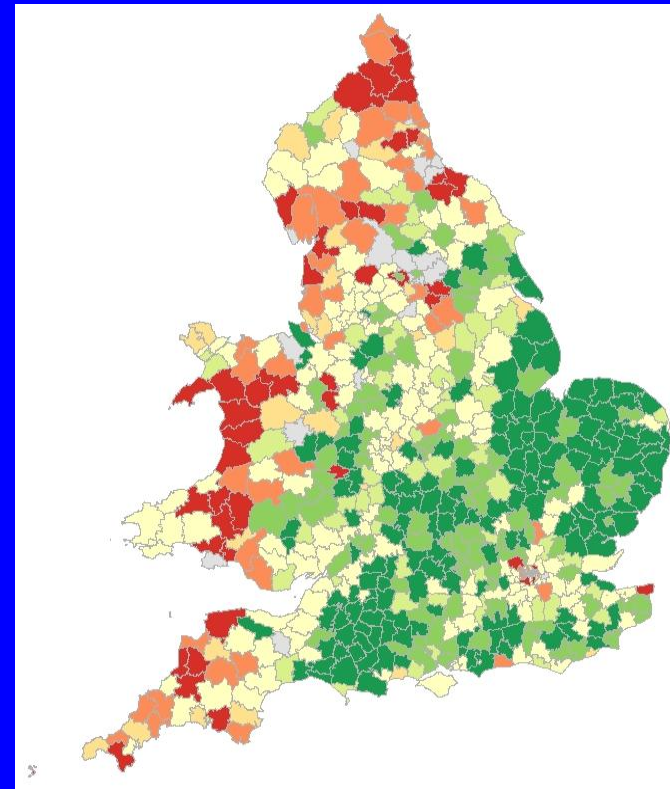
As % of expected deaths: 21.75%

Lives saved by IM decline 1860s-1900s

Total deaths averted

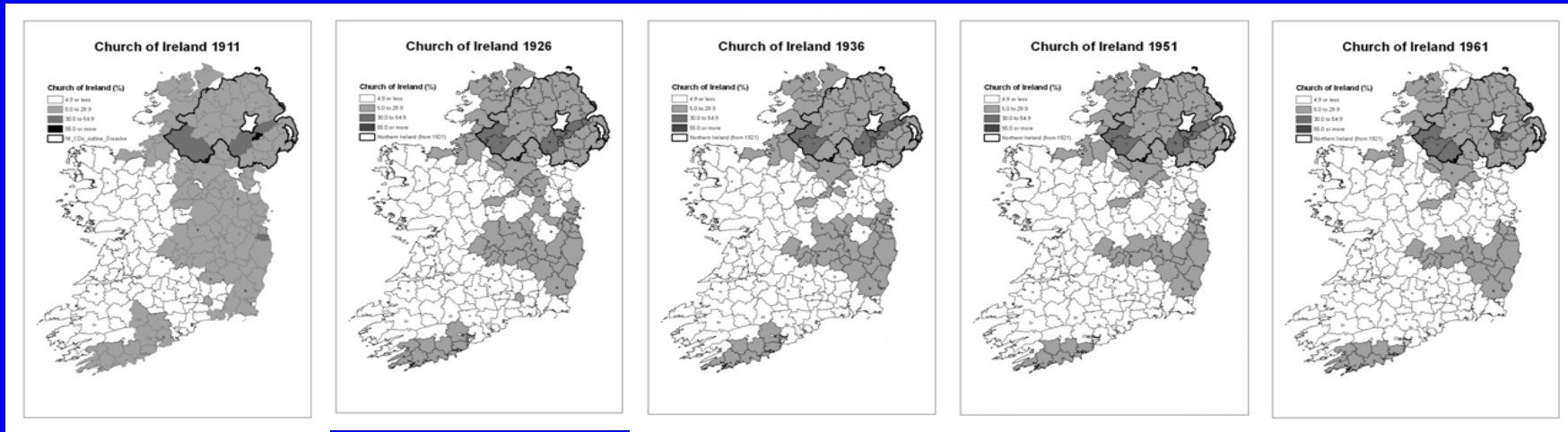


% of expected deaths

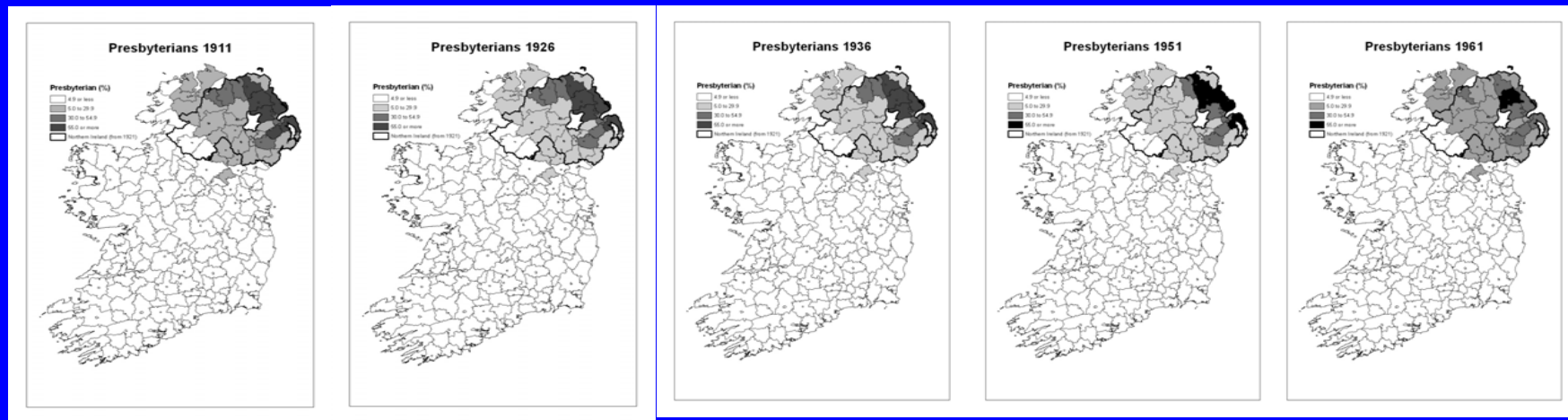


Legend uses
deciles of total
population
(1911)

Long-run religious change in Ireland

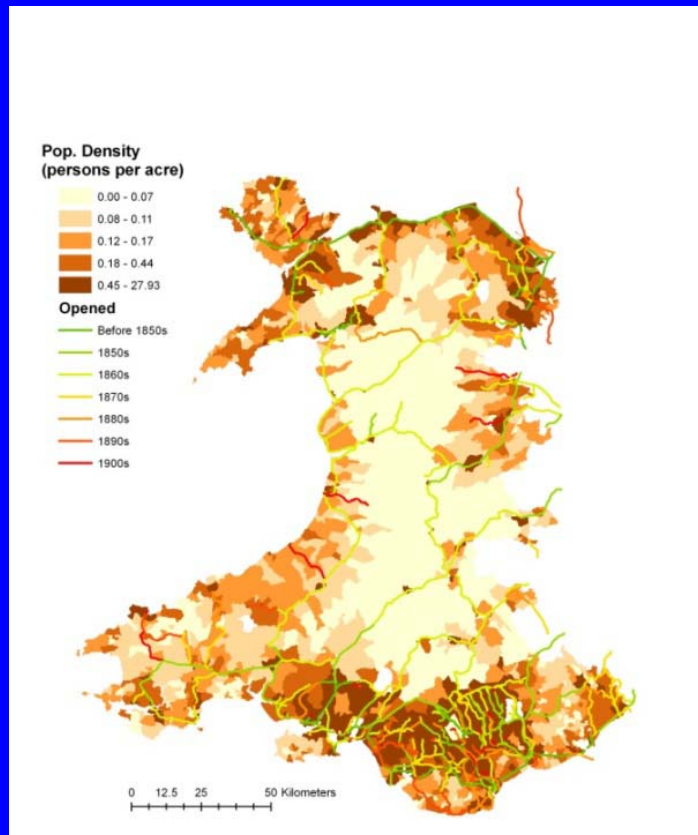


Church of Ireland

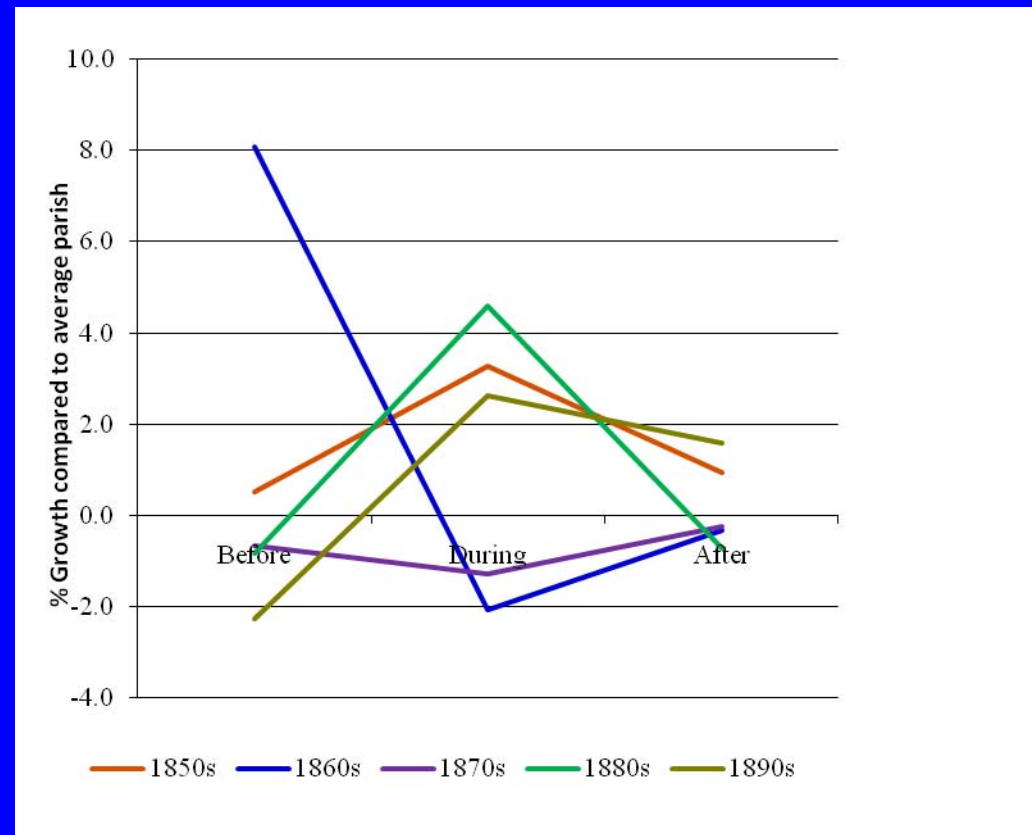


Presbyterian

The Impact of the Railways on Rural Society



The Growth of the Railway Network in Wales, 1825-1911



The Impact of Gaining a Railway Station on rural parishes in Wales, 1851-1891

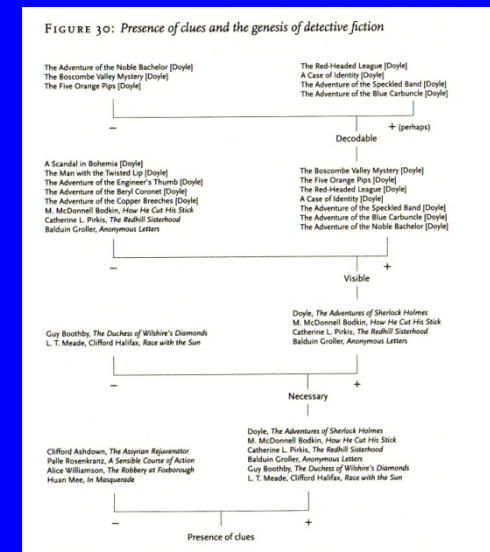
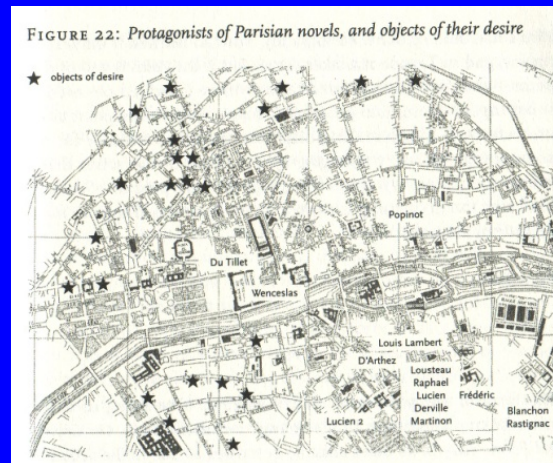
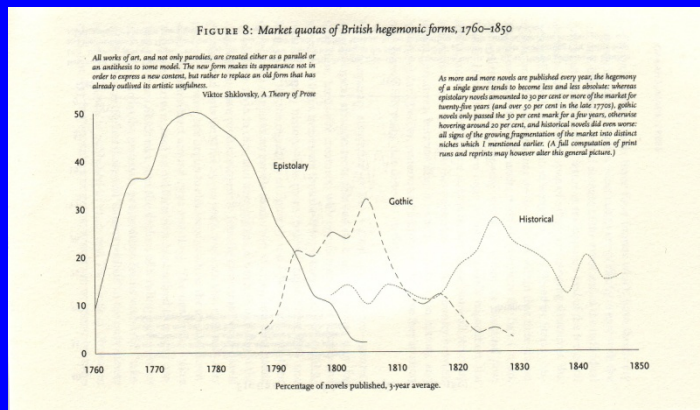
From History to Literature

“...this is an essay on literary history: literature, the old territory (more or less), ...within that old territory, a new object of study: instead of concrete, individual works, a trio of artificial constructs – graphs, maps and trees – in which the reality of the text undergoes a process of deliberate reduction and abstraction. ‘Distant reading’, I have once called this type of approach;” (Moretti, 2005: p. 1)

Graphs (p. 16)

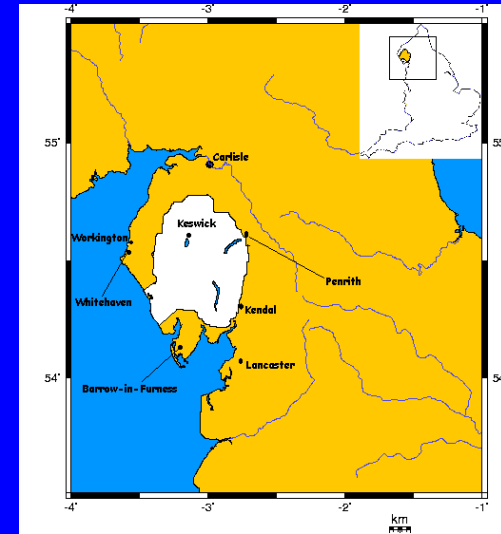
Maps (pp. 45 & 55)

Trees (p. 73)



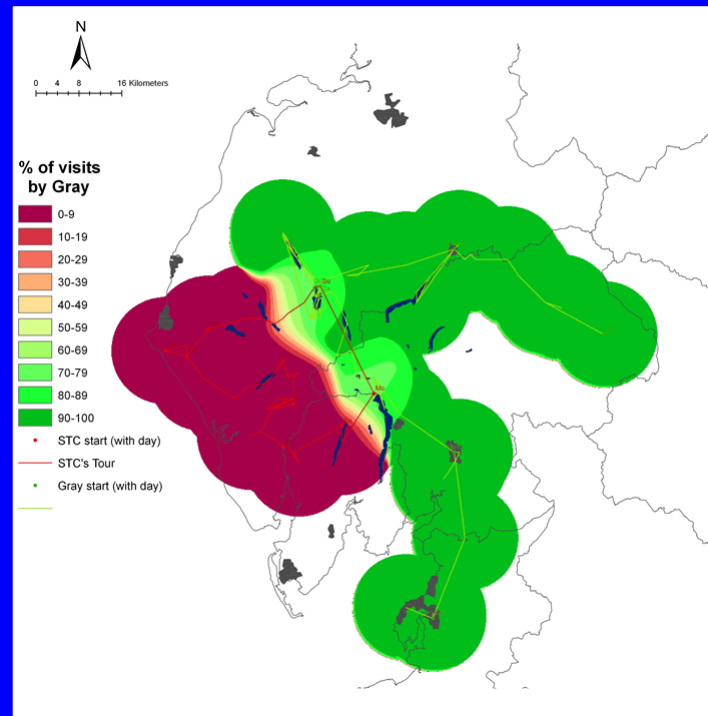
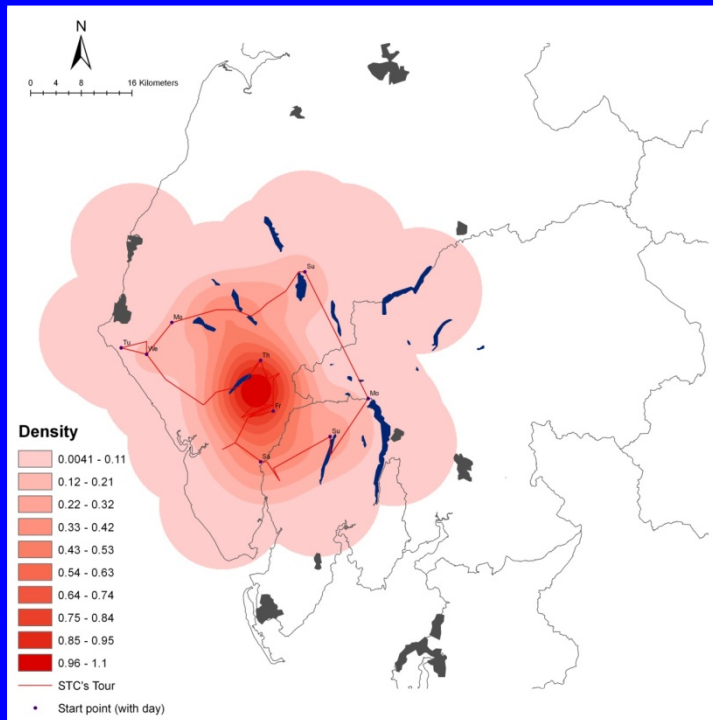
The Lake District

- Has England's highest mountain, Scafell Pike, (977 metres/3,200 feet) and largest lake, Windermere (16.5km/10.5miles long).
- Became a National Park in 1951, 2290km²/880 square miles, 55km/34miles across.
- One of the most visited parts of England
- Rich literary history



GIS in literary studies

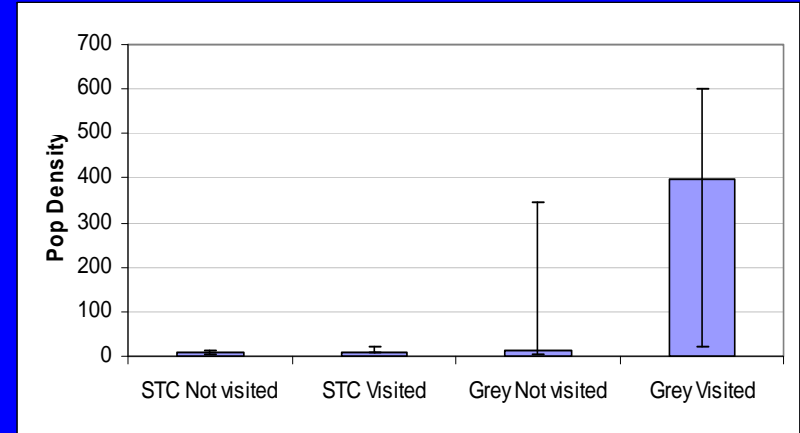
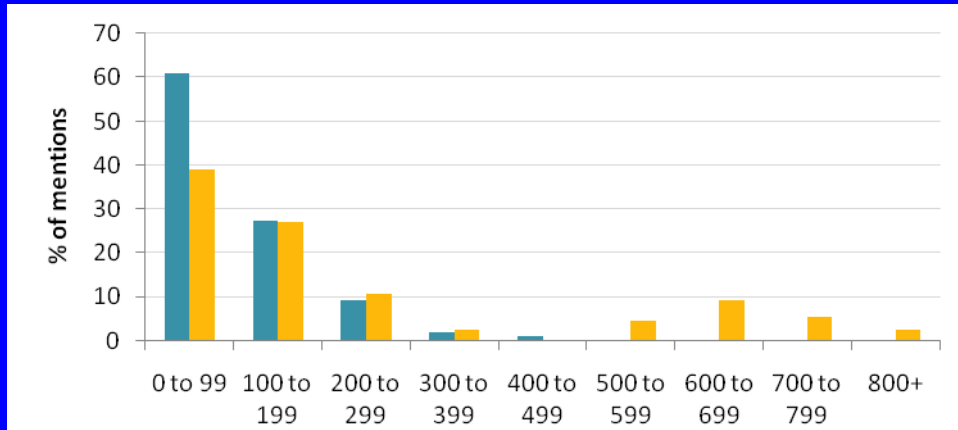
- Early tours of the Lake District:
 - T. Gray (1769): Proto-Picturesque
 - S.T. Coleridge (1802): Romantic



“Distant reading” with
density smoothing

Integrating other data

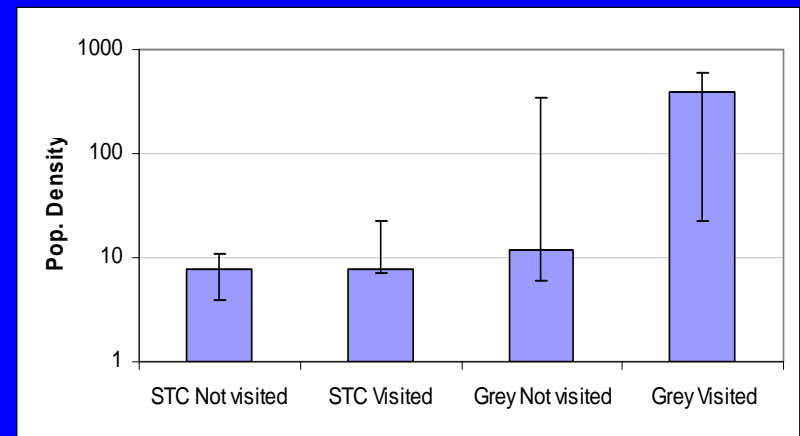
Gray



Coleridge



Normal



Logged

Altitude of mentions

Population density

Close Reading with Google Earth

The screenshot shows the Google Earth interface with a historical map of the Lake District. A pop-up window for 'Buttermere' is open, displaying the following information:

- Standardised: Buttermere
- Author: Coleridge, Seq. no: 14
- Visited: Yes
- Day 1: 1/8/1802 (Sun)
- Photos (External link)
- Directions: [To here](#) - [From here](#)

The map shows several locations marked with red squares: **Flatlam Tan Gale Force**, **Moss Force**, **Buttermere**, **Loweswater**, **Heck Comb**, **Melbreak**, **Mosedale Beck**, **Long Moor**, and **Ennerdale Long Moor**. A scale bar indicates 10.6 km. The coordinates are lat 54.564566° and lon -3.310526°.

The text overlay in the bottom right corner reads:

congruity with the Vale [Newlands Valley] by the semicircular Lines of the Crags, & of the bason-like Concavities. The Cataract [Moss Force] between Newlands & Kescadale had but little water in it / of course, was of no particular Interest- / I passed on thro' the green steep smooth bare Kescadale / a sort of unfurnished Passage or antechamber between Newlands & Buttermere, came out on Buttermere & drank Tea at the little Inn [Fish Inn, Buttermere] , & read the greater part of the Revelations-the only part of the New Testament, which the Scotch Cobler read-because why? Because it was the only part that he understood. O 'twas a wise Cobler! . . .

Conceive an enormous round Bason mountain-high of solid Stone / cracked in half & one half gone / exactly in the remaining half of this enormous Bason, does Buttermere lie, in this {Small diagram at this point which is not reproduced here.} beautiful & stern Embrace of Rock / I left it, passed by Scale Force, the white downfall of which glimmered thro' the Trees, that hang before it like bushy Hair over a madman's Eyes, and climbed 'till I gained the first Level / here it was 'every man his own pathmaker,' & I went directly cross it-upon soft mossy Ground, with many a hop, skip, & jump, & many an occasion for observing the Truth of the old Saying: where Rushes grow, A Man may go. Red Pike, a dolphin-shaped Peak of a deep red, looked in upon me from over the Fell [Dodd] on my Left, on my right I had, first Melbreak (the Mountain on the right of Crummock, as you ascend the Lake [Crummock Water]) then a Vale [Mosedale] running down with a pretty Stream [Mosedale Beck] in it, to Loweswater / then Heck Comb {Hen Comb}, a Fell of the same height & running in the same direction with Melbreak, a Vale on

To Flickr...

A CLOUD OR TWO on Flickr - Photo Sharing! - Windows Internet Explorer

http://www.flickr.com/photos/16872845@N06/3920219406

File Edit View Favorites Tools Help

Google Search Bookmarks Check Translate AutoFill Sign In

ekit, Access numbers Mapping the Lakes: Intera... Thank You Flickr: Explore photos tagg... A CLOUD OR TWO on ...



Another from my trip last month to Buttermere. Quite a climb up but the views make it worth while. This is one of those locations where a return is inevitable.

EXIF....F22....2 SECONDS....ISO 100....10MM....LEE 0.9S ND GRAD +KOOD ND2

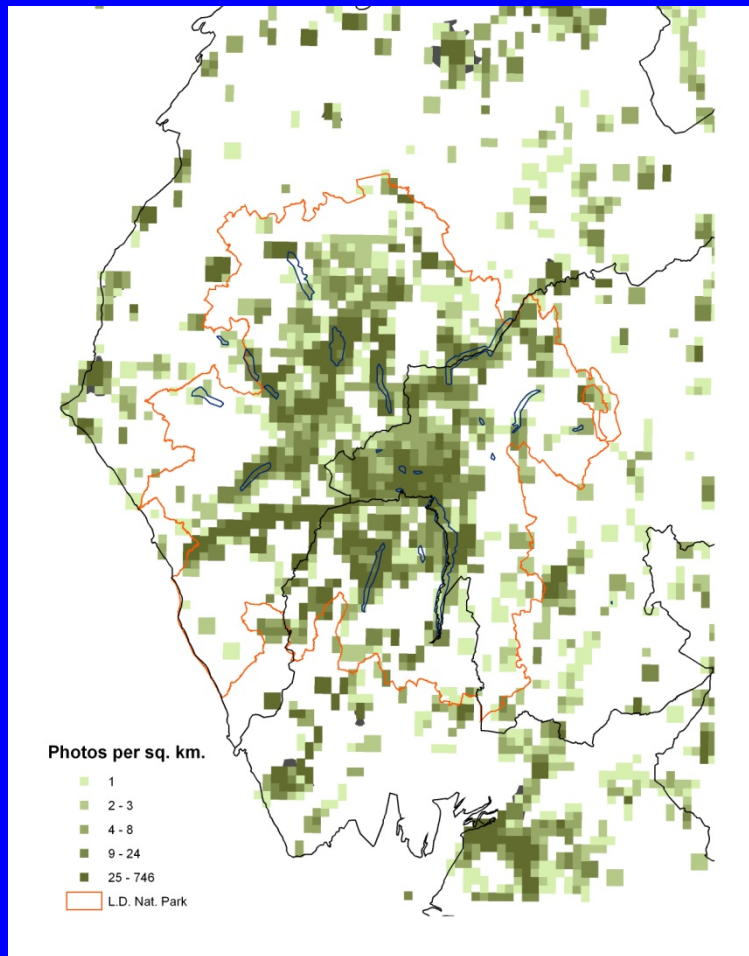
1,067 uploads

This photo also belongs to:

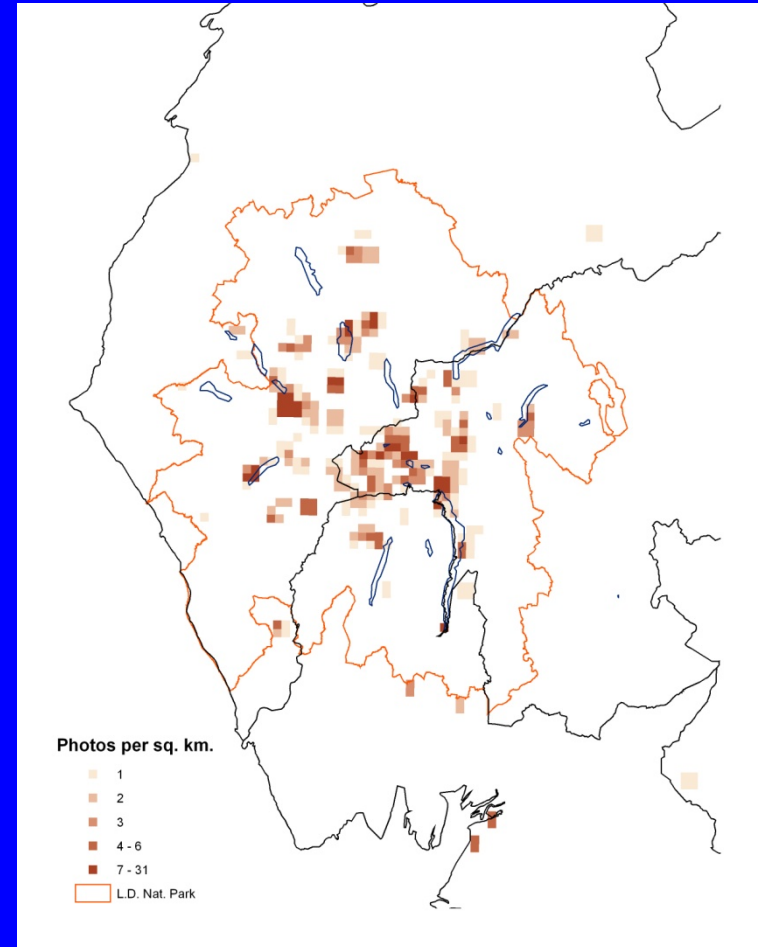
- NEW LAKE DISTRICT SET (Set)
- *PHOTOS EXPLORE GROUP* - (comment photo and pool!!!) (Pool)
- 333 views (Pool)
- Natural Landscapes (Pool)
- Art In One Shot (Invited Photos Only) (Pool)
- Special Touch ADMIN INVITE only / Post1/ Award3 (Pool)
- Photographer Paradise

Done Internet 100%

Incorporating photos from Flickr

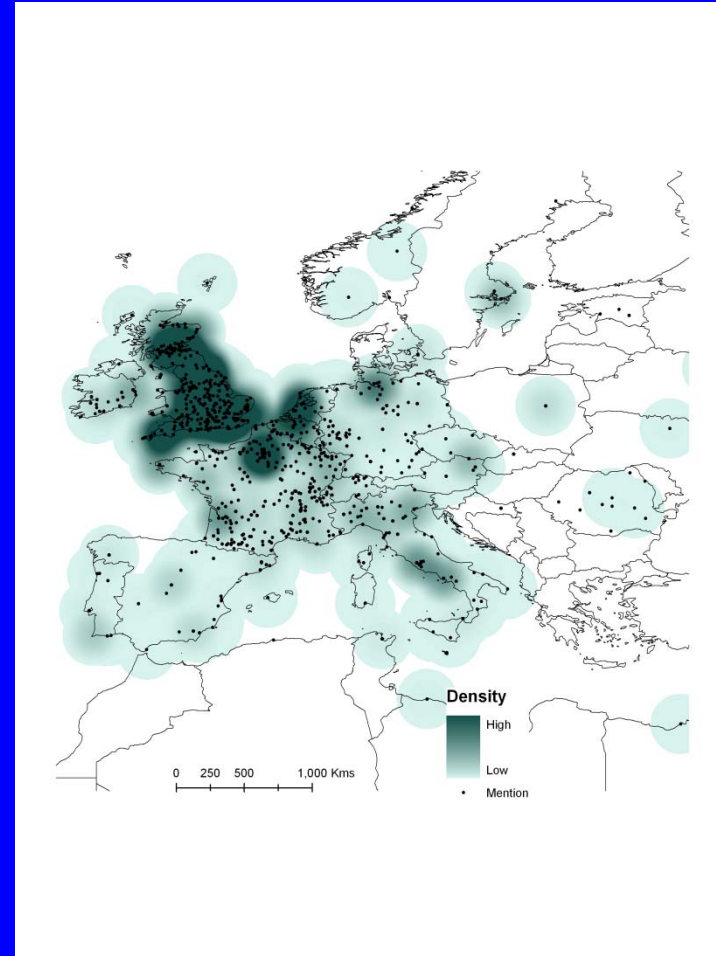
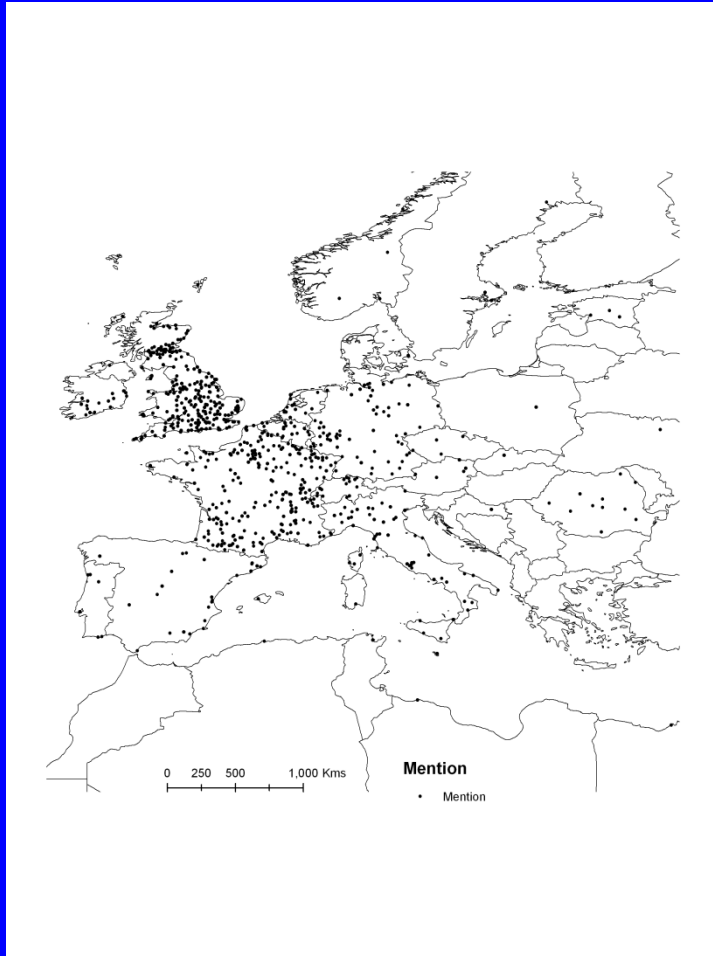


All photos



Tagged as "mountain(s)"

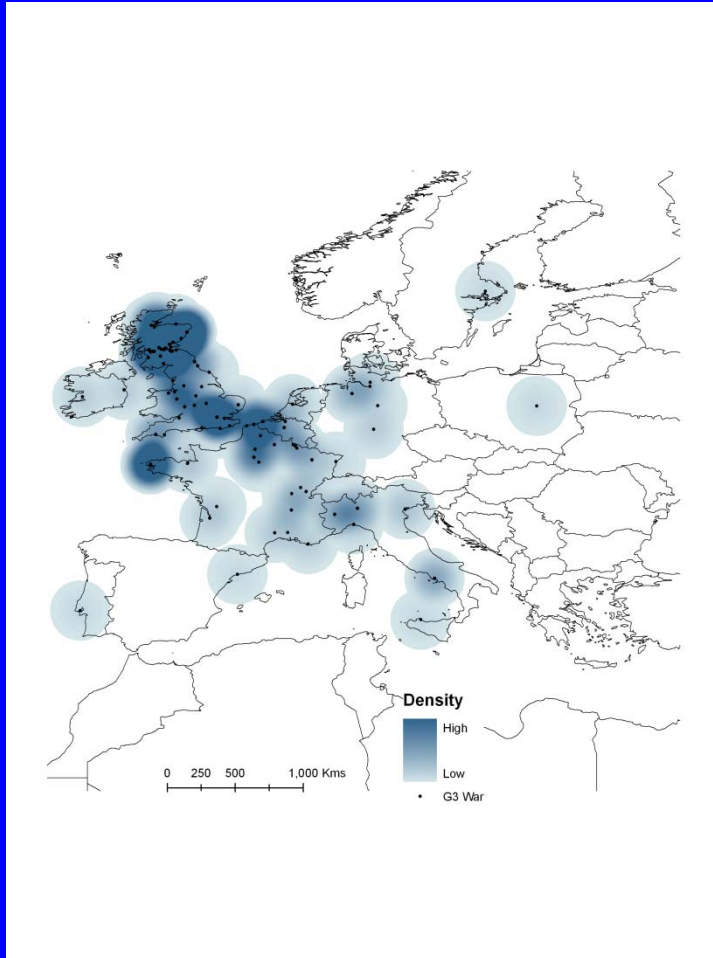
London-based newspapers, 1653-4



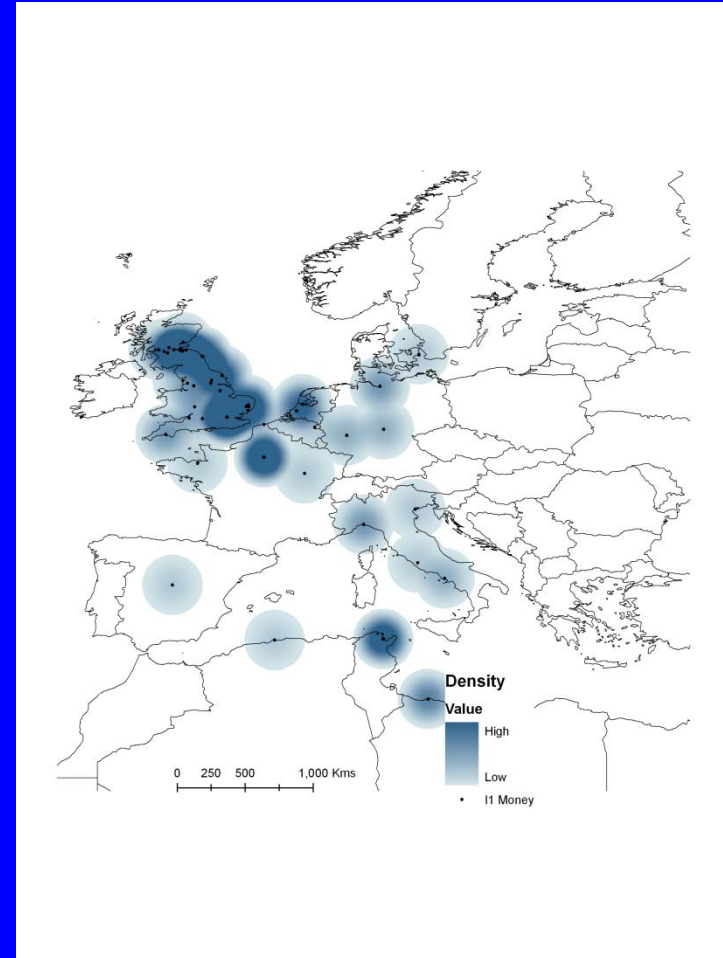
Corpus of 800,000 words

Thanks to Dr. A. Hardie (Department
of Linguistics, Lancaster University)

What are they talking about?



G3 War



I1 Money

Back to the texts...

Lancaster Newsbooks Corpus: Concordance results - Windows Internet Explorer

http://juiland.comp.lancs.ac.uk/hardiea/newsbooks/concord.php?dmode=kwic&corpus=newsbooks&qstring=stirling&searchtype=word&matchtype=%3D

Concordance 1 to 50 of 50

Text	Concordance 1 to 50 of 50
DutchDiurn15	them . The General intends next week to march towards Stirling , and so for the Hills . The Lord Graighall ,
FScout156	to be their Commander in chief , their coming near Stirling , and col . Lilburne 's forcing them to the Hills
FScout156	(though the weather was unreasonable) to march from Stirling against them ; but as he appeared , they quitted
FScout175	divers soldiers out of Leith , and about 50 from Stirling are gone to the Hills ; from whence they descend down
FScout178	it is certified , That Gen. Monk is advancing towards Stirling , and intends to cut his passage through the Hills ,
FScout180	, whereby he signified , That he was advanced beyond Stirling toward the Highlanders from whence he intends , after securing of
PerfAcc175	companies are come up . The General will be at Stirling next week . From Milford Haven , May 8 . All
PerfAcc175	Scotland do advertise , that General Monk was lately in Stirling , and is now on his advance towards the Highlanders ,
PerfAcc176	May 9 . The General marcheth tomorrow from Dalkeith towards Stirling , and from thence to some of our frontier Garrisons and
PerfAcc176	General Monk hath yesterday removed his Headquarters from Dalkeith to Stirling from whence he intends , after securing of some new passes
PerfAcc177	, provisions being so exceeding scarce in those parts . Stirling May 16 . Thursday last the General came hither with part
PerfAcc177	to and from the hills , about 12 miles from Stirling , General Monk is marched that way to observe the several
PerfDiOcc02	that General Monk is upon his march on this side Stirling , to join with us , his coming may prove very
PerfDiOcc03	. May . General Monk is gone from hence to Stirling , at his coming to this city here was a great
PerfDiOcc03	, that he was advanced a day 's march beyond Stirling towards the Highlanders , and that he doubteth not (by

Done Internet 100%

Explaining C19th Infant Mortality Decline

