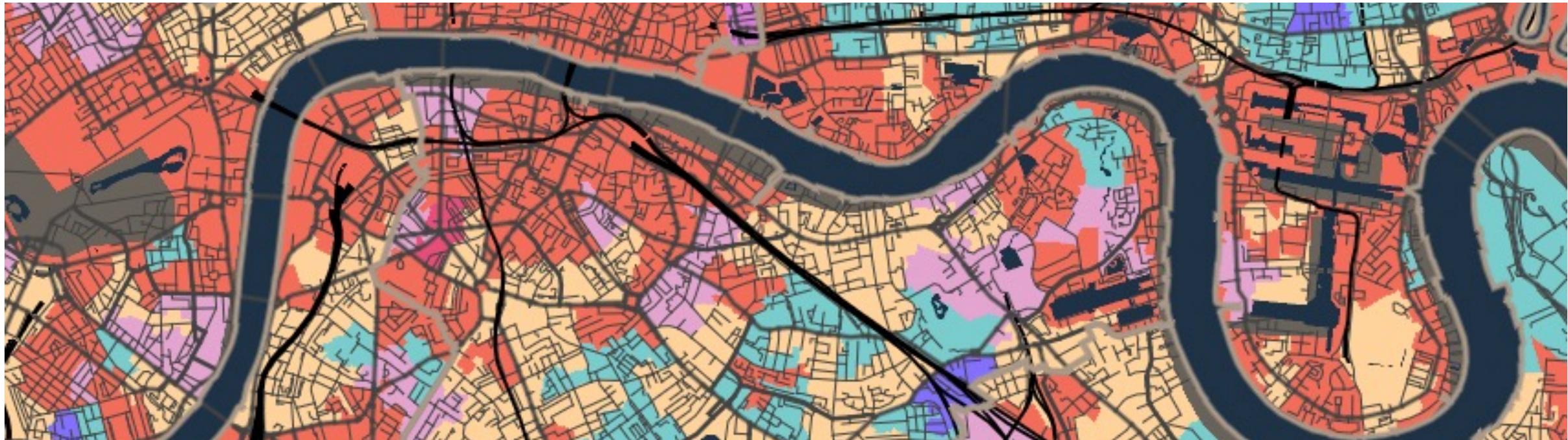


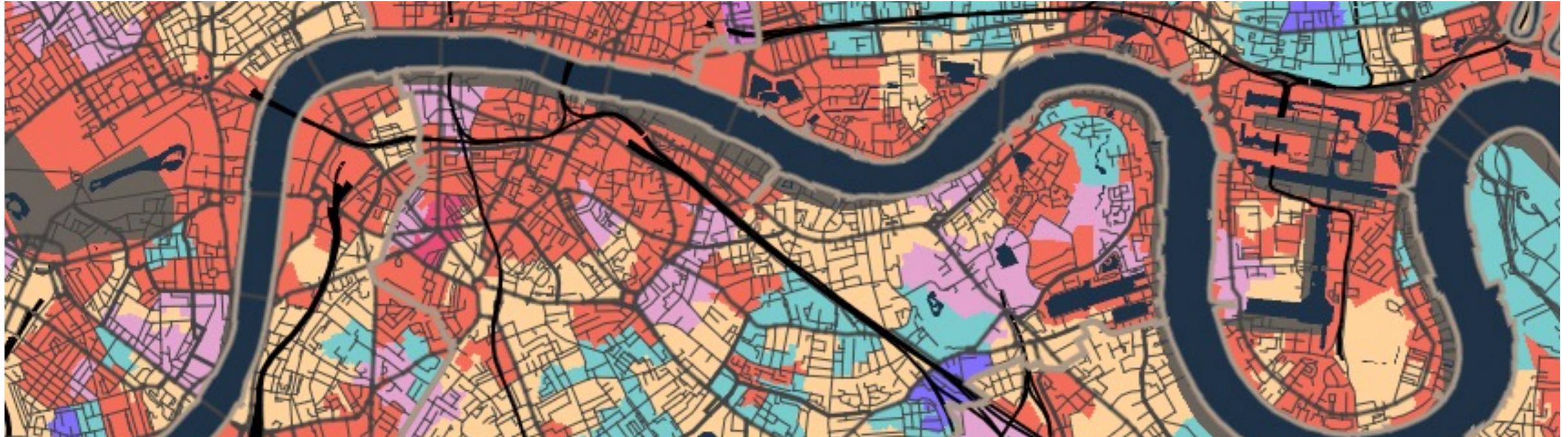
Geography in the Field II

Mapping London



Geography in the Field II

... but mostly: thinking about data and maps



This week

- Why is mapping important?
- How do GIScience and spatial analysis fit in?
- Power and privacy
- Some examples: Mapping London
- GIFT II Practicalities

Before we start

- Go to www.menti.com
- Use code: 1254 5426



This week

- Why is mapping important?
- How do GIScience and spatial analysis fit in?
- Neutrality, power and privacy
- Some examples
- GIF II Practicalities

Importance

Why is mapping important?

- Our world is faced with many challenges and problems, of which many are inherently geographical. To try to address and solve these problems require geographic enquiry and thinking to create knowledge from geographic information. Almost all data is "collected somewhere" and is spatially heterogeneous.
- Helps answer the question: What place is like this place?

Why is mapping important?

(Geo)Visualisation

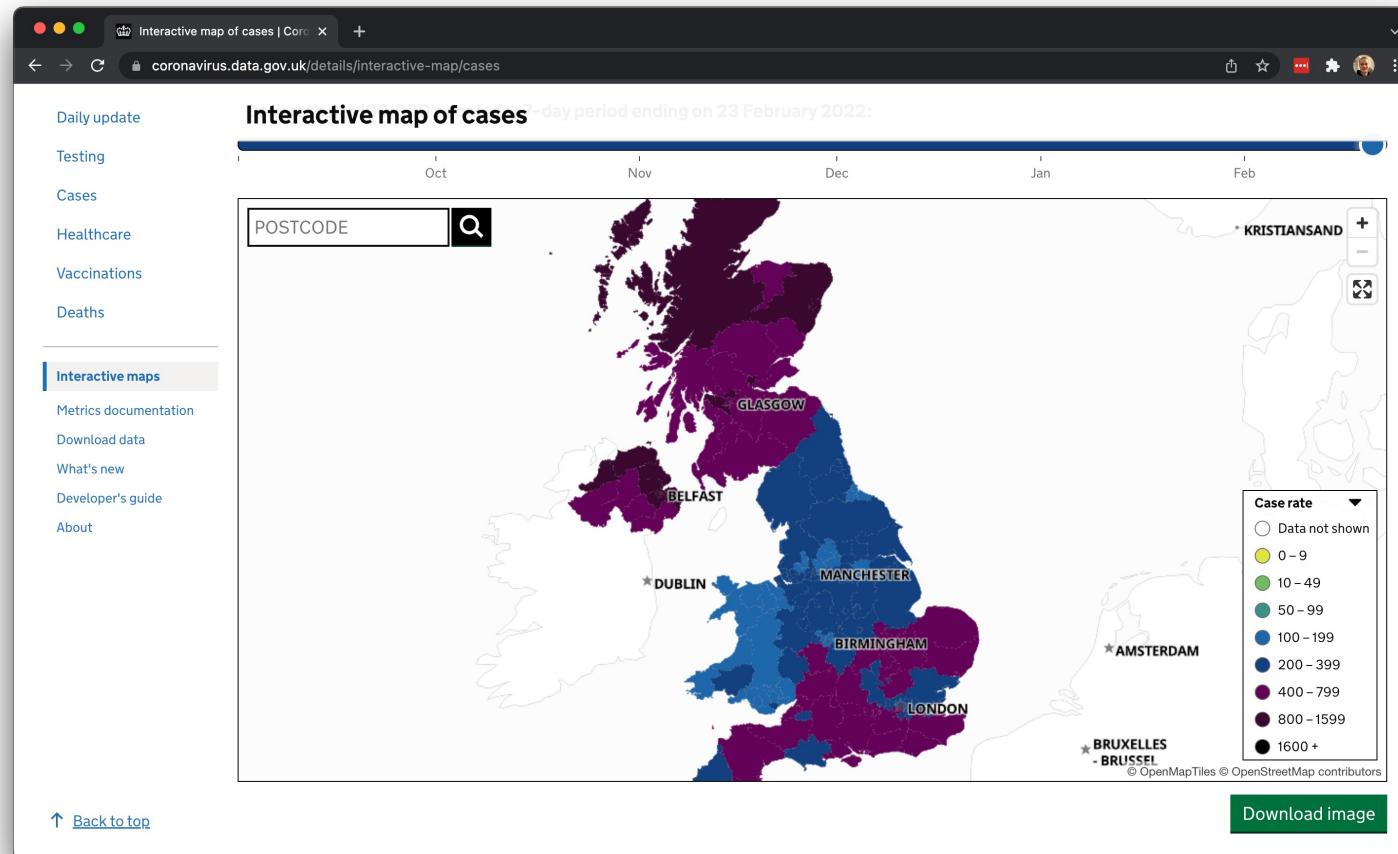
Translating numbers into something that the human brain “understands better”.

Covid Cases in the UK

The screenshot shows a Microsoft Excel window with the title bar "overview_2022-03-04.csv". The ribbon menu is visible with tabs like Home, Insert, Draw, Page Layout, Formulas, Data, Review, View, Tell me, and Share/Comments. A warning message "Possible Data Loss" is displayed, stating that some features might be lost if saved as a CSV file. The main content is a table with columns: areaCode, areaName, areaType, date, and newCasesBySpecimenDate. The data starts at row 1 and continues down to row 38. The first few rows show data for the United Kingdom overview, with dates from 03/03/2022 to 26/01/2022 and case counts ranging from 23726 to 108412.

areaCode	areaName	areaType	date	newCasesBySpecimenDate
2	KO200001	United Kingd overview	03/03/2022	23726
3	KO200001	United Kingd overview	02/03/2022	43923
4	KO200001	United Kingd overview	01/03/2022	43878
5	KO200001	United Kingd overview	28/02/2022	44073
6	KO200001	United Kingd overview	27/02/2022	31063
7	KO200001	United Kingd overview	26/02/2022	24746
8	KO200001	United Kingd overview	25/02/2022	27524
9	KO200001	United Kingd overview	24/02/2022	30218
10	KO200001	United Kingd overview	23/02/2022	36019
11	KO200001	United Kingd overview	22/02/2022	38749
12	KO200001	United Kingd overview	21/02/2022	44835
13	KO200001	United Kingd overview	20/02/2022	37423
14	KO200001	United Kingd overview	19/02/2022	34428
15	KO200001	United Kingd overview	18/02/2022	32948
16	KO200001	United Kingd overview	17/02/2022	44354
17	KO200001	United Kingd overview	16/02/2022	51064
18	KO200001	United Kingd overview	15/02/2022	52019
19	KO200001	United Kingd overview	14/02/2022	54281
20	KO200001	United Kingd overview	13/02/2022	41514
21	KO200001	United Kingd overview	12/02/2022	37251
22	KO200001	United Kingd overview	11/02/2022	44251
23	KO200001	United Kingd overview	10/02/2022	51862
24	KO200001	United Kingd overview	09/02/2022	63721
25	KO200001	United Kingd overview	08/02/2022	68933
26	KO200001	United Kingd overview	07/02/2022	75882
27	KO200001	United Kingd overview	06/02/2022	60208
28	KO200001	United Kingd overview	05/02/2022	52003
29	KO200001	United Kingd overview	04/02/2022	62994
30	KO200001	United Kingd overview	03/02/2022	76415
31	KO200001	United Kingd overview	02/02/2022	88084
32	KO200001	United Kingd overview	01/02/2022	93350
33	KO200001	United Kingd overview	31/01/2022	104680
34	KO200001	United Kingd overview	30/01/2022	87312
35	KO200001	United Kingd overview	29/01/2022	73275
36	KO200001	United Kingd overview	28/01/2022	83869
37	KO200001	United Kingd overview	27/01/2022	95955
38	KO200001	United Kingd overview	26/01/2022	108412

Covid Cases in the UK



Bicycle docking stations in London

Find a docking station - Transport for London

tfl.gov.uk/modes/cycling/santander-cycles/find-a-docking-station

Find a docking station

There are more than 12,000 cycles at circa 800 docking stations across London.

Enter your location in the search box below to find a docking station near you.

Search

Enter a postcode, address, station, stop or pier

Go

FITZROVIA

BLOOMSBURY

SAINT PANCRAS

Wellcome Collection

Grant Museum of Zoology

UCL Petrie Museum of Egyptian Archaeology

The Foundling Museum

The British Museum

Charles Dickens Museum

Great Ormond Street Hospital for Children

Cartoon Museum

Routes and maps

Cycle Skills

Cycles on public transport

Cycle parking

Santander Cycles

How it works

What you pay

Find a docking station

Santander Cycles membership

Lost, stolen or faulty

Santander Cycles app

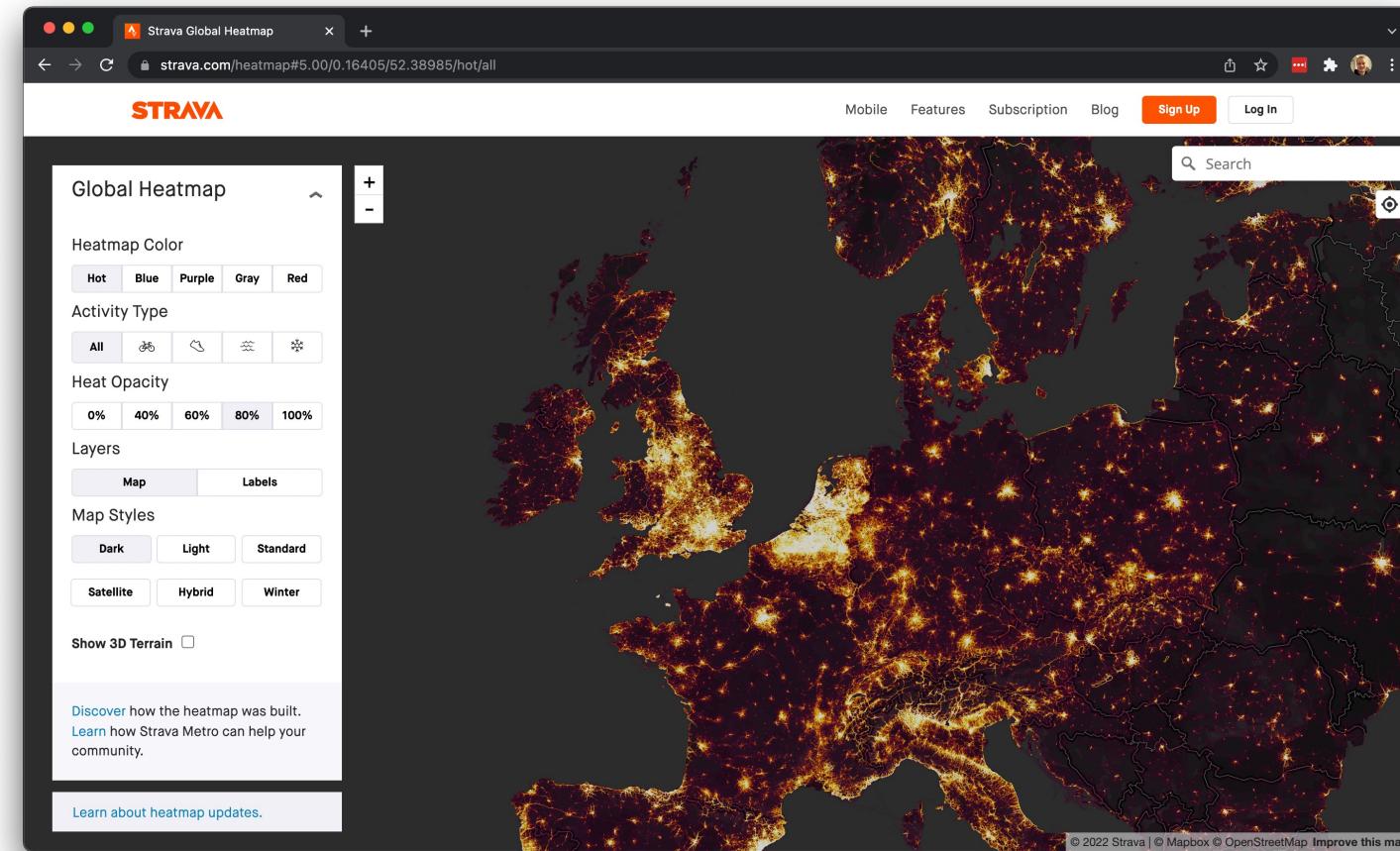
Suggestions & complaints

Santander Cycles business accounts

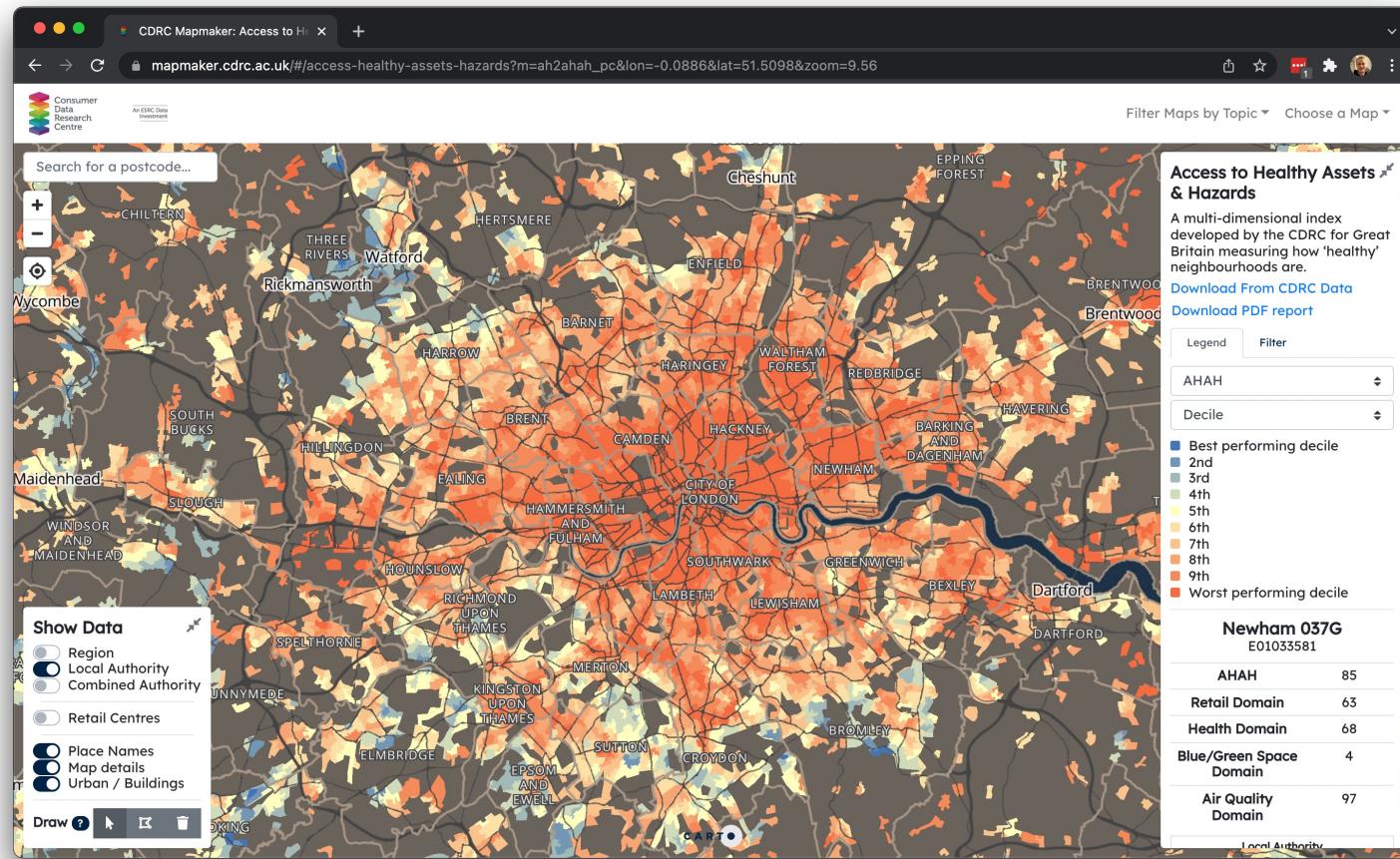
Blaze Laserlights

My account

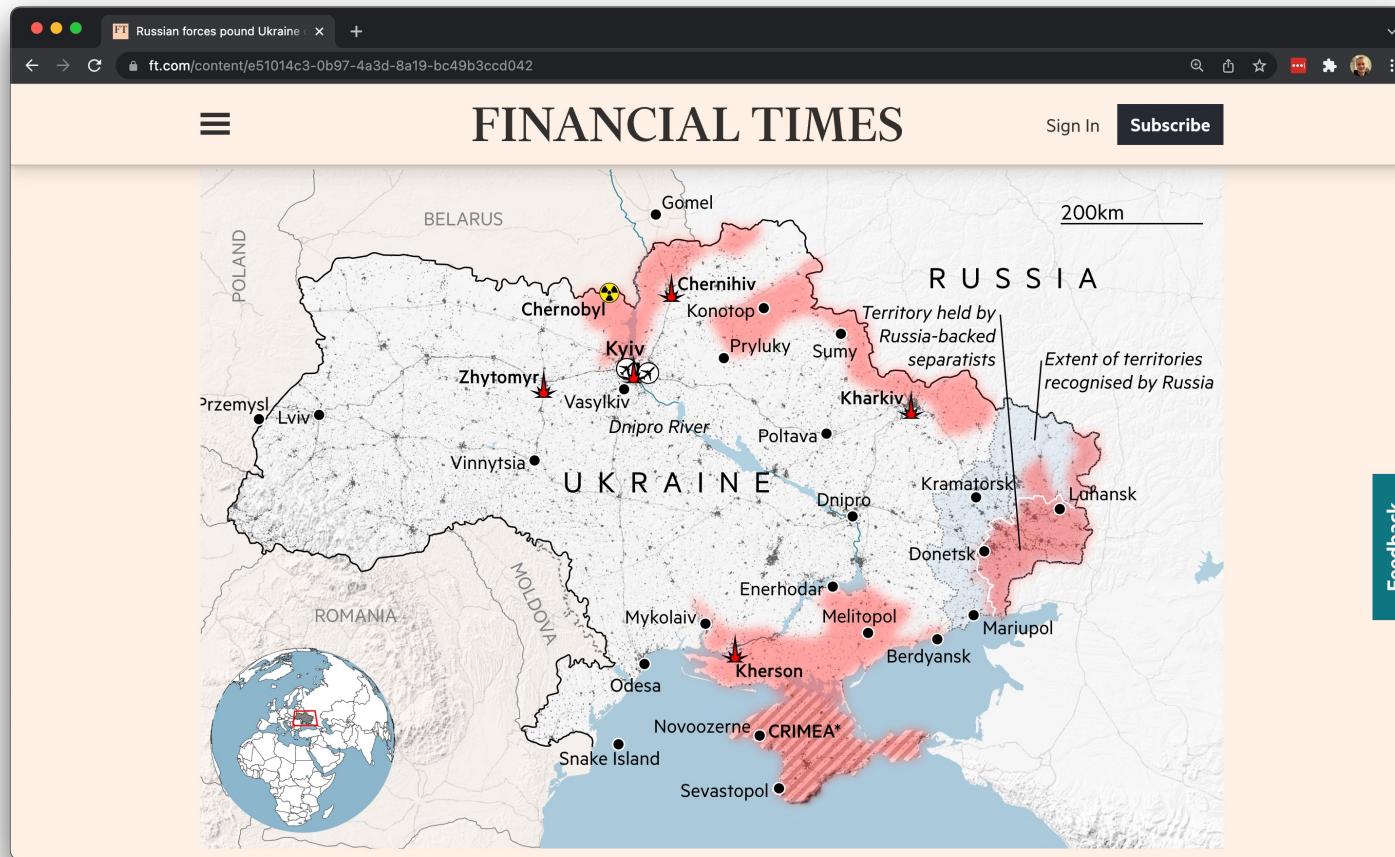
Running in Western-Europe



Access to Healthy Assets and Hazards in the UK



Russian invasion in Ukraine



Requirements

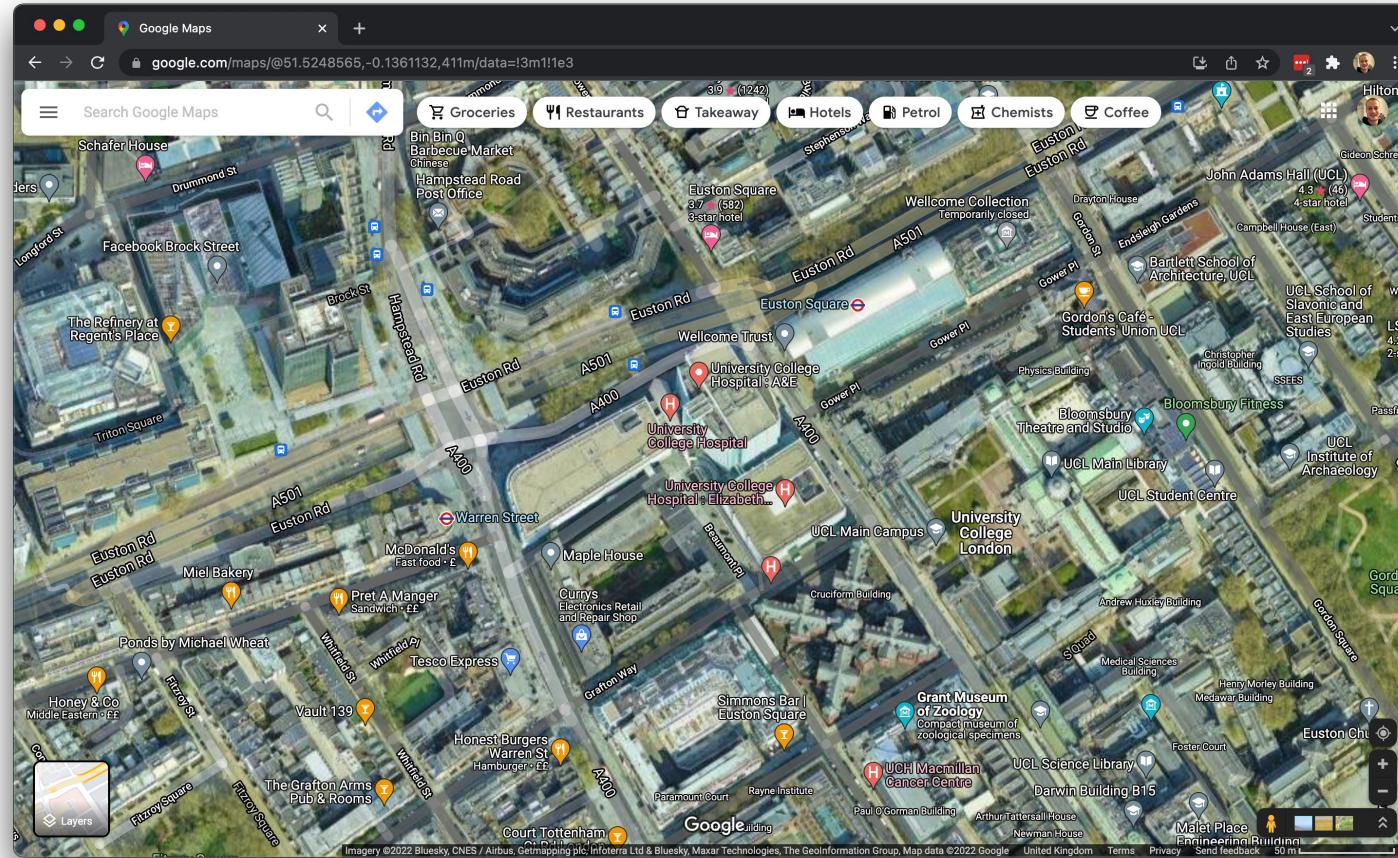
- GIScience
- Spatial analysis

GIScience

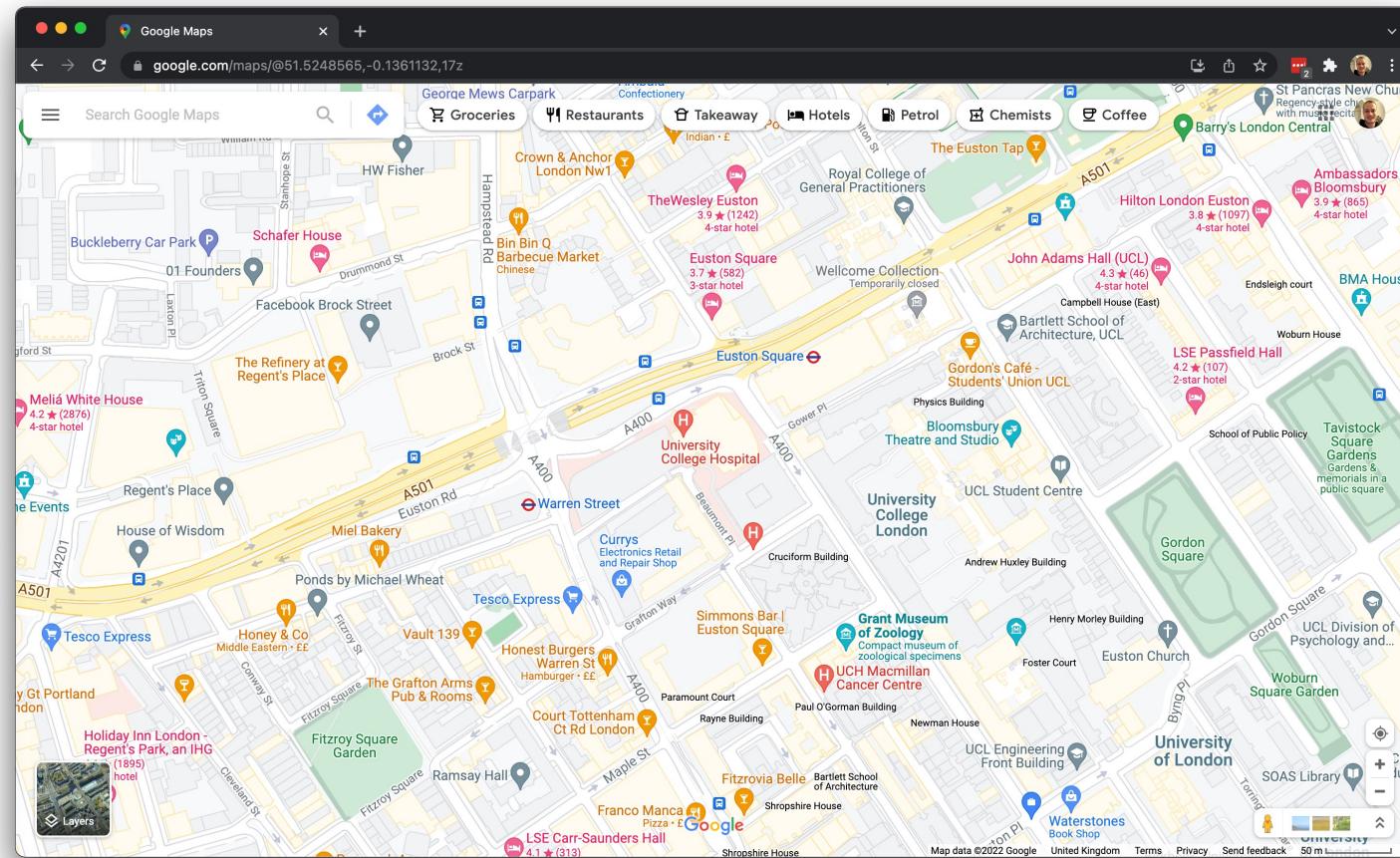
Geographic Information Systems

- Spatial information requires methods and tools that can deal with spatial properties.
- To do this we need to be able to:
 - Collect data that represents our phenomena of study
 - Store this data in a way that we can access it and interact with it
 - Conduct sound analyses on our data
 - Present our results with accuracy and precision to create information

Spatial modelling and digital representation



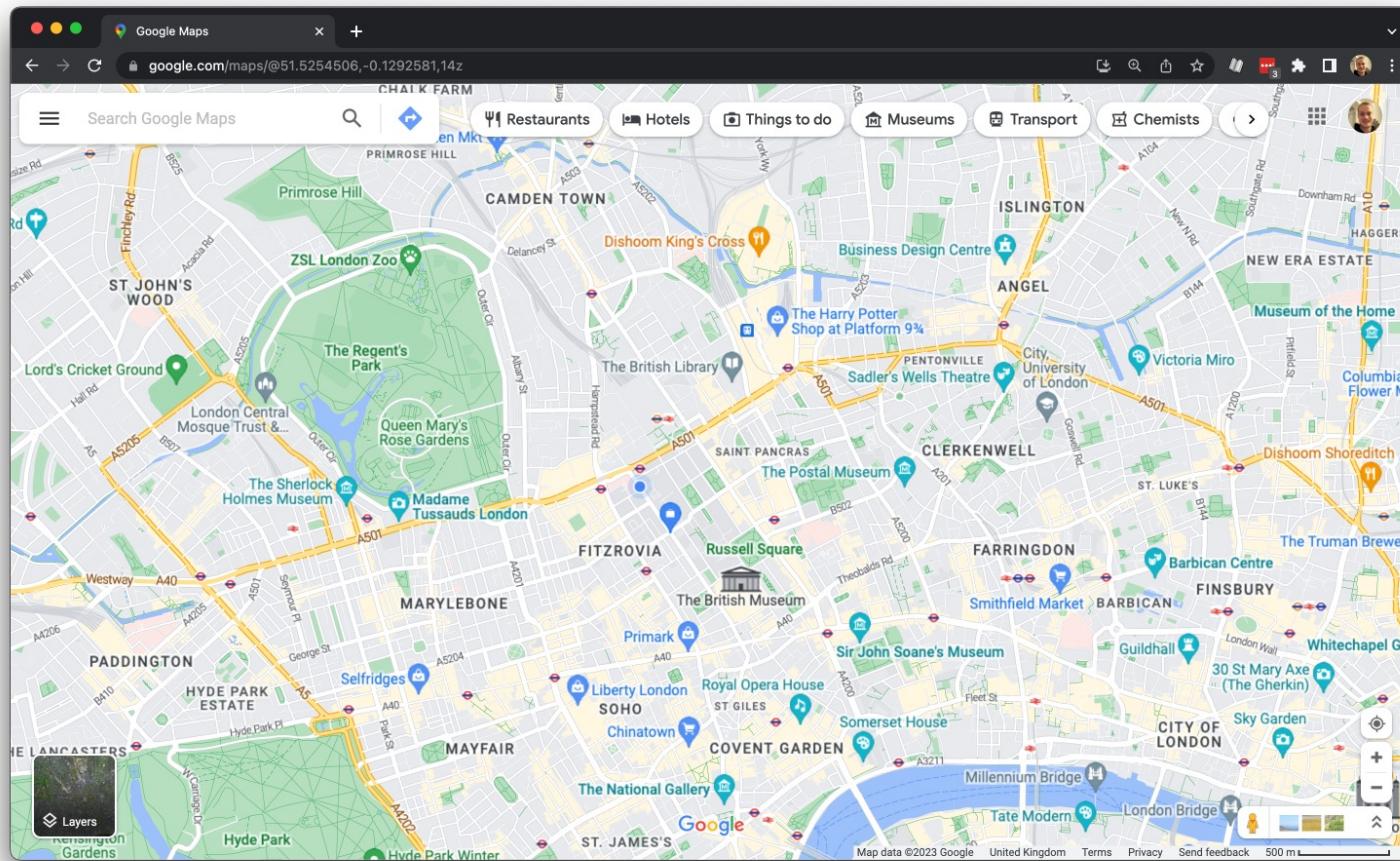
Spatial modelling and digital representation



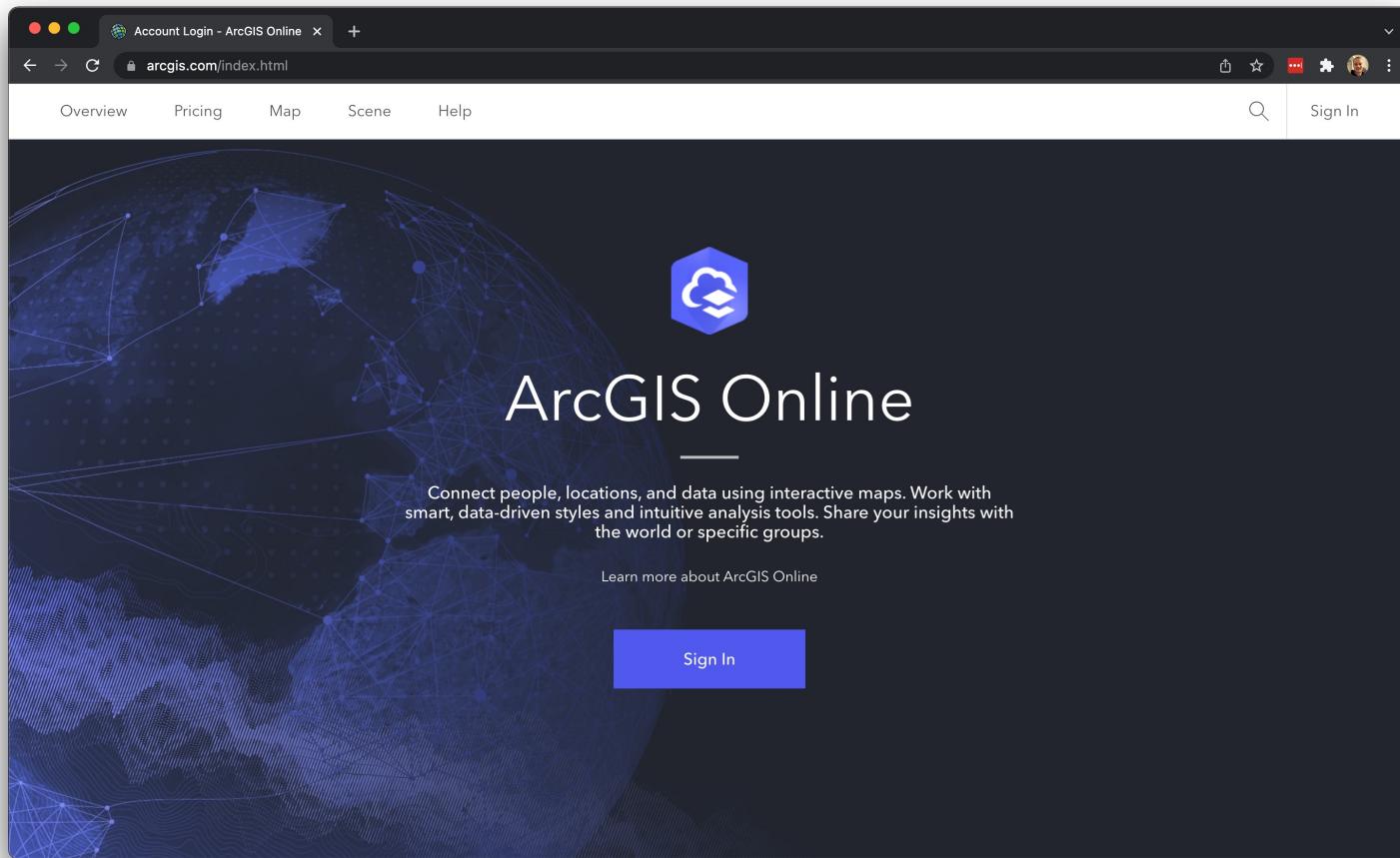
Geographic Information Systems

- GI systems help us to manage spatial data: organisation, storage, access and retrieval, and manipulation.
- We have increasingly changing expectations from these software interfaces and our demands from GI science and systems.

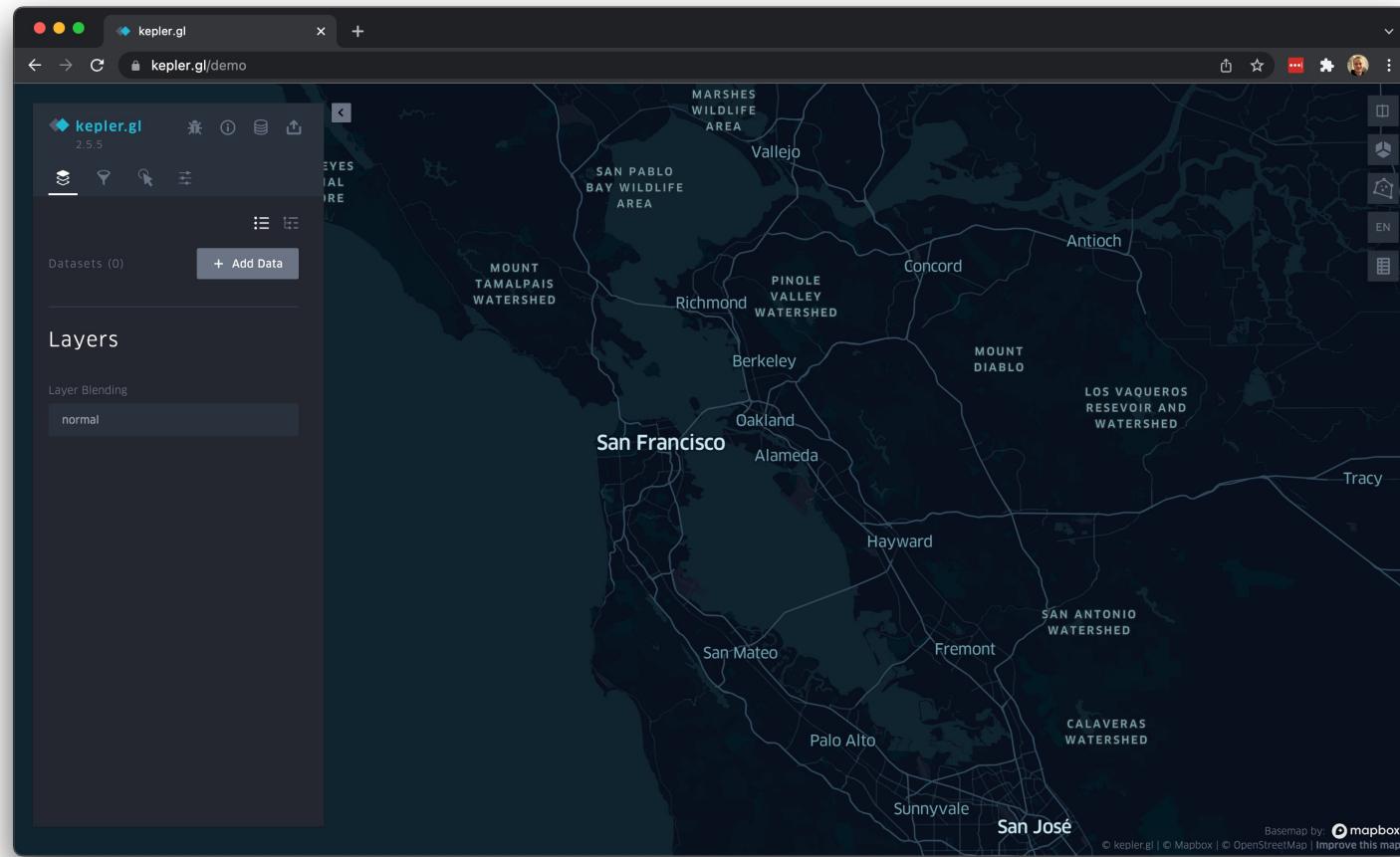
Geographic Information Systems



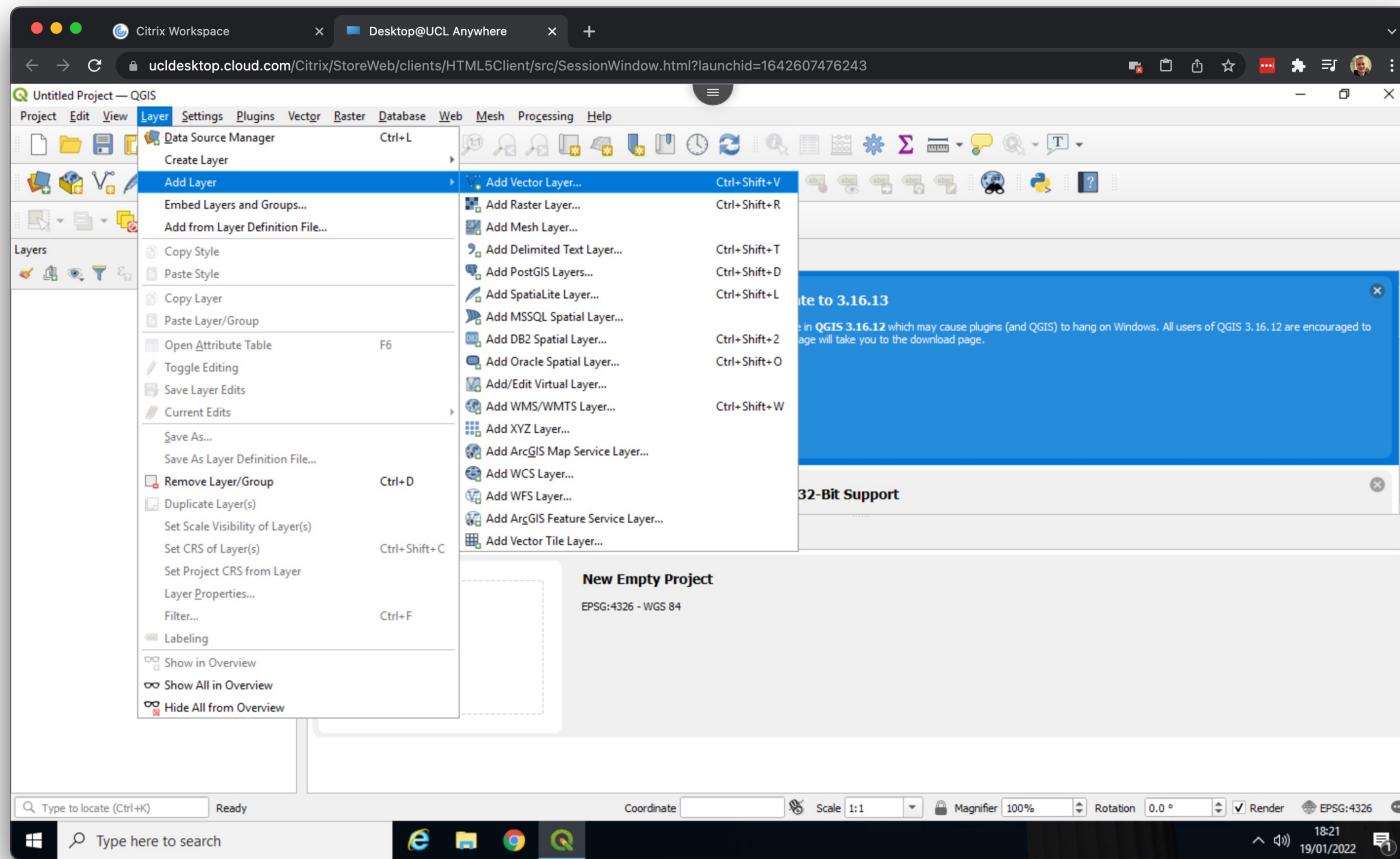
Geographic Information Systems



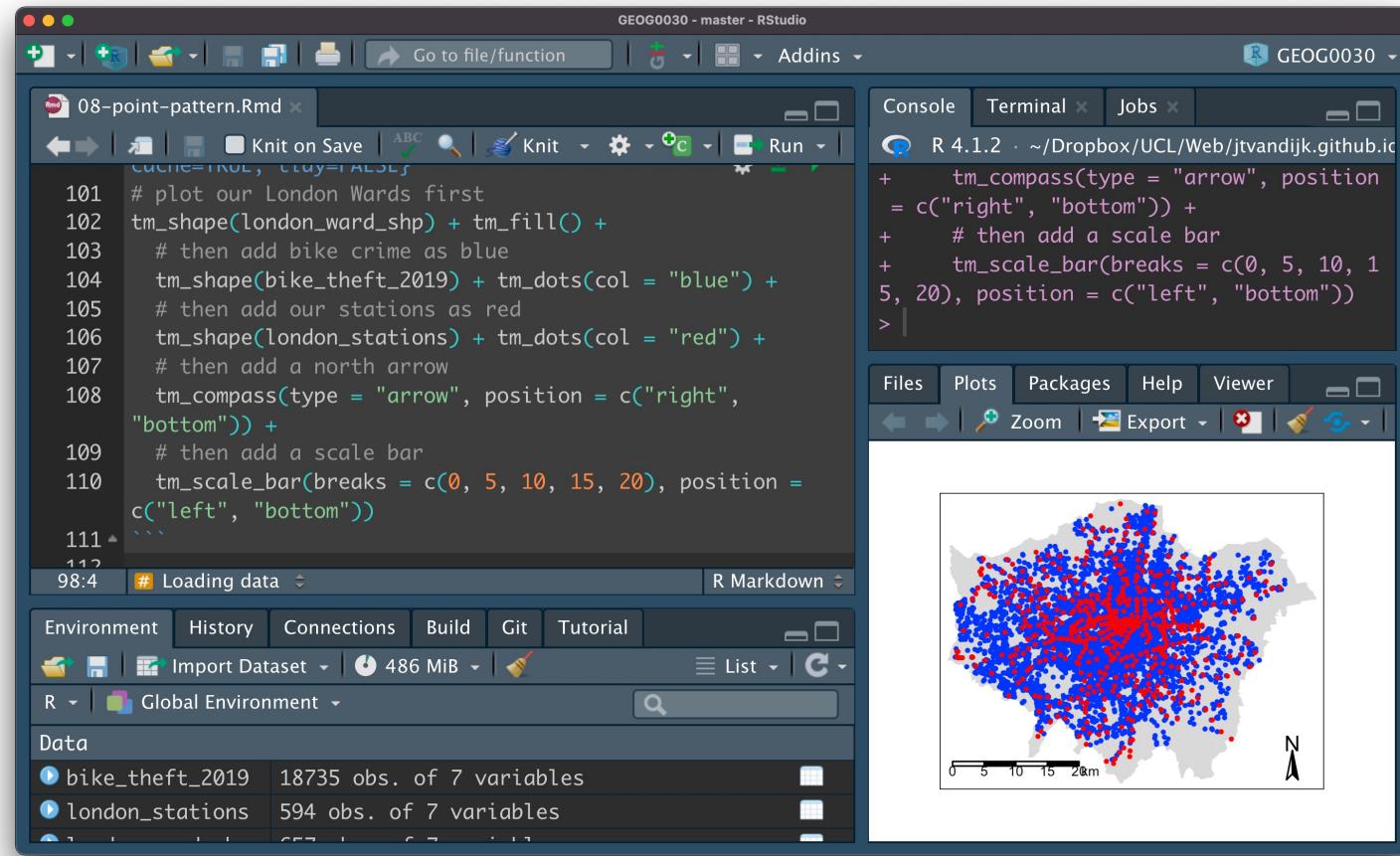
Geographic Information Systems



Geographic Information Systems



Geographic Information Systems

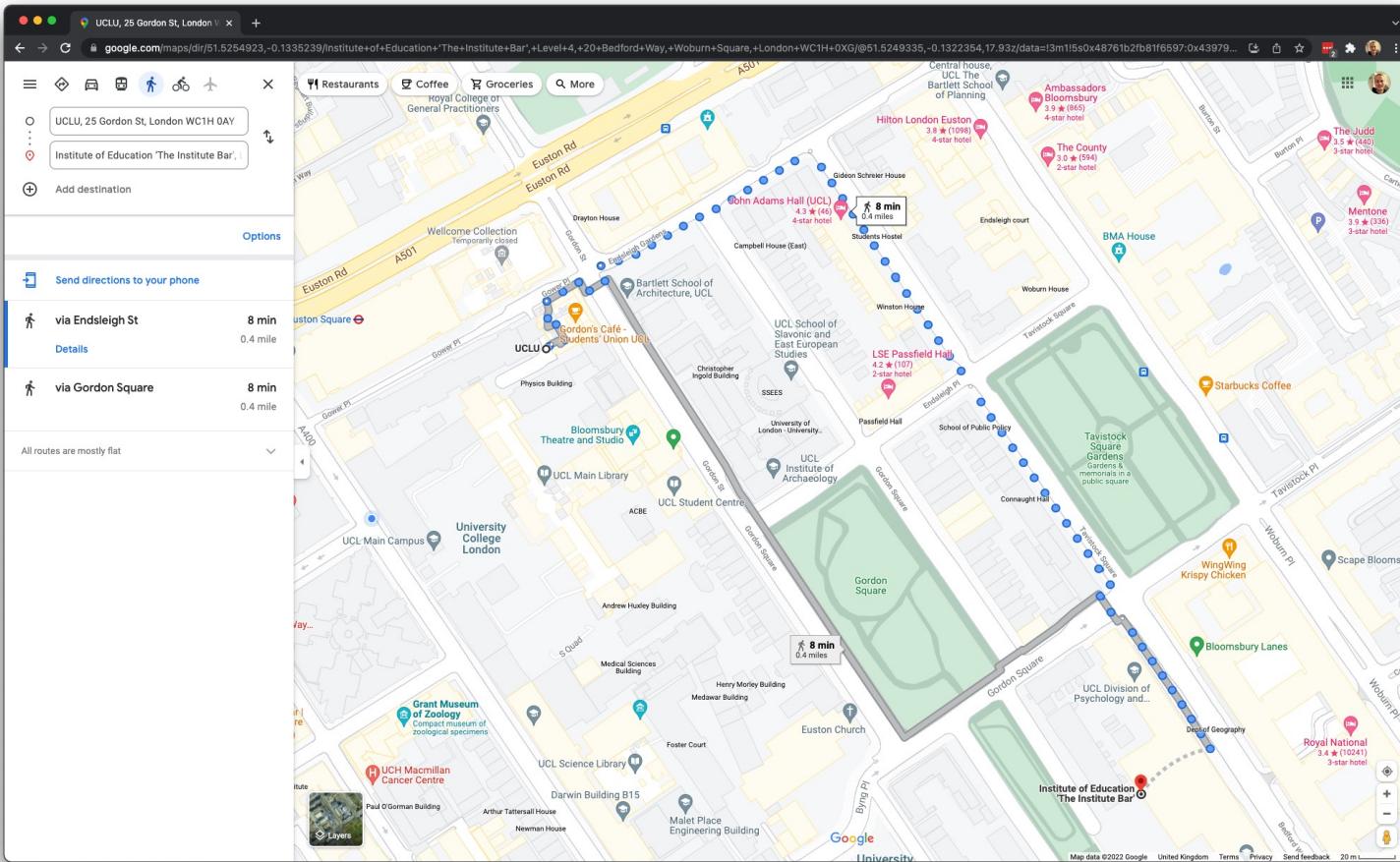


Spatial analysis

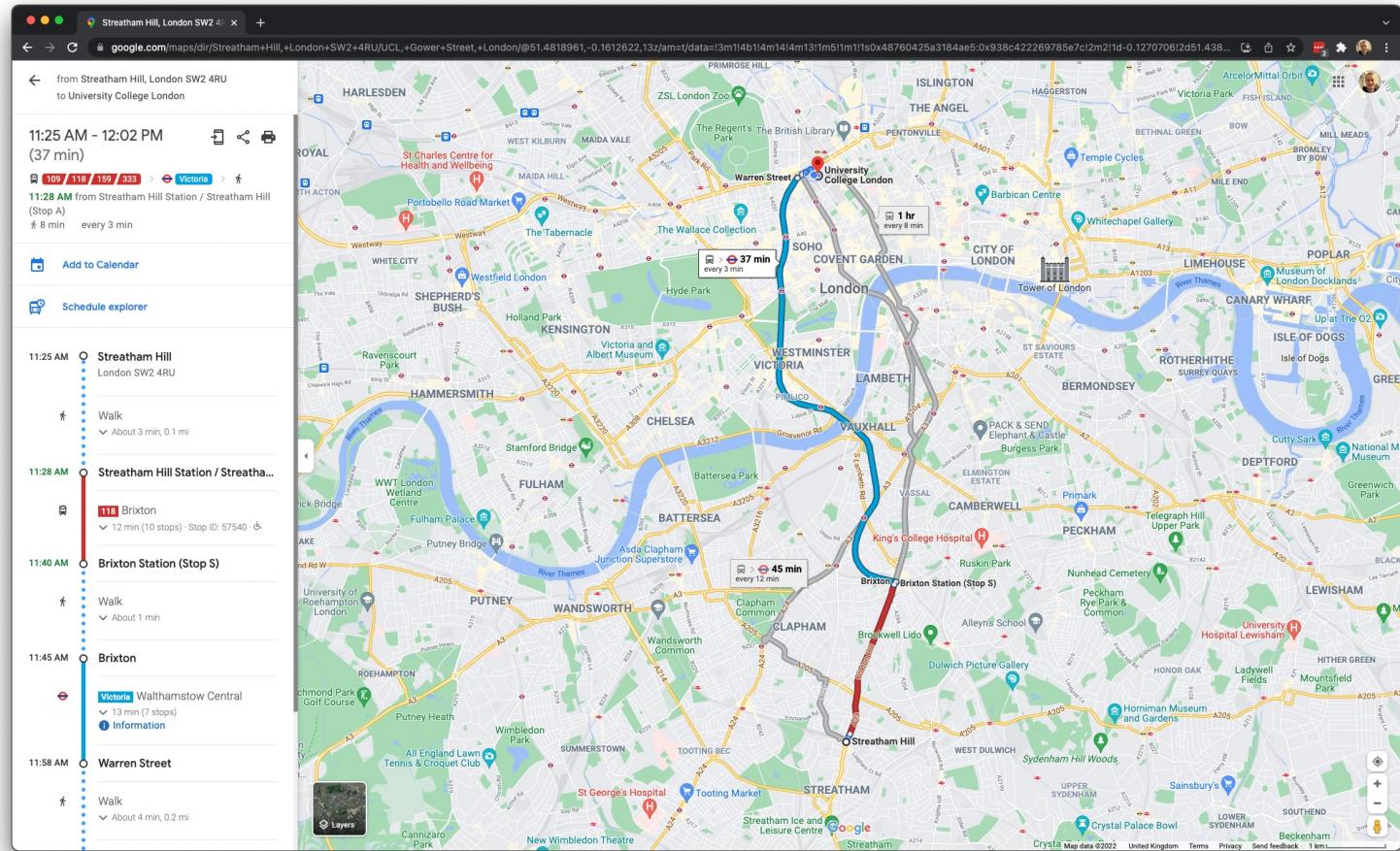
Spatial analysis

The application of formal techniques to analyse specific phenomena or entities, that are represented by spatial data, using their topological, geometric or geographic properties.

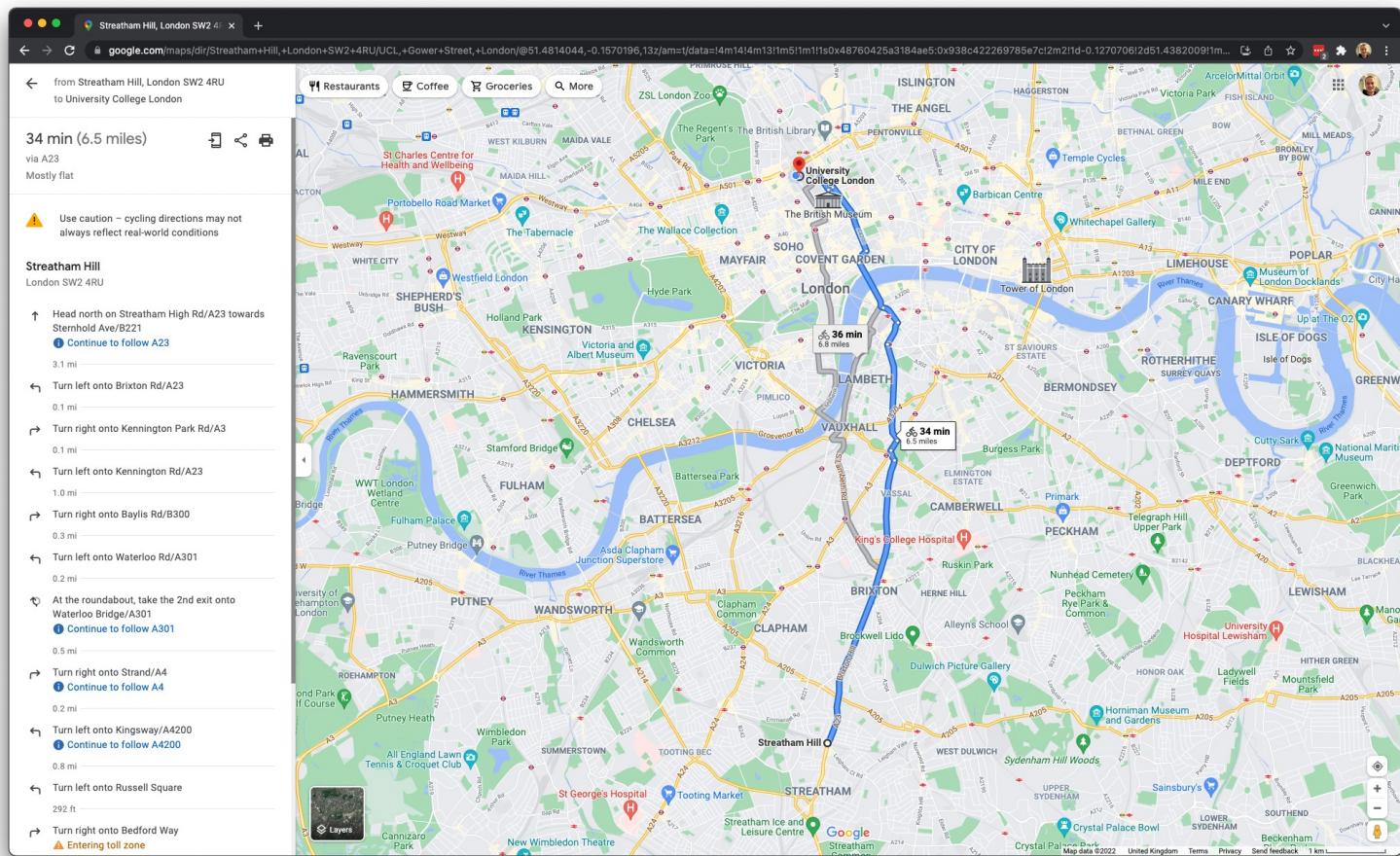
Spatial analysis



Spatial analysis



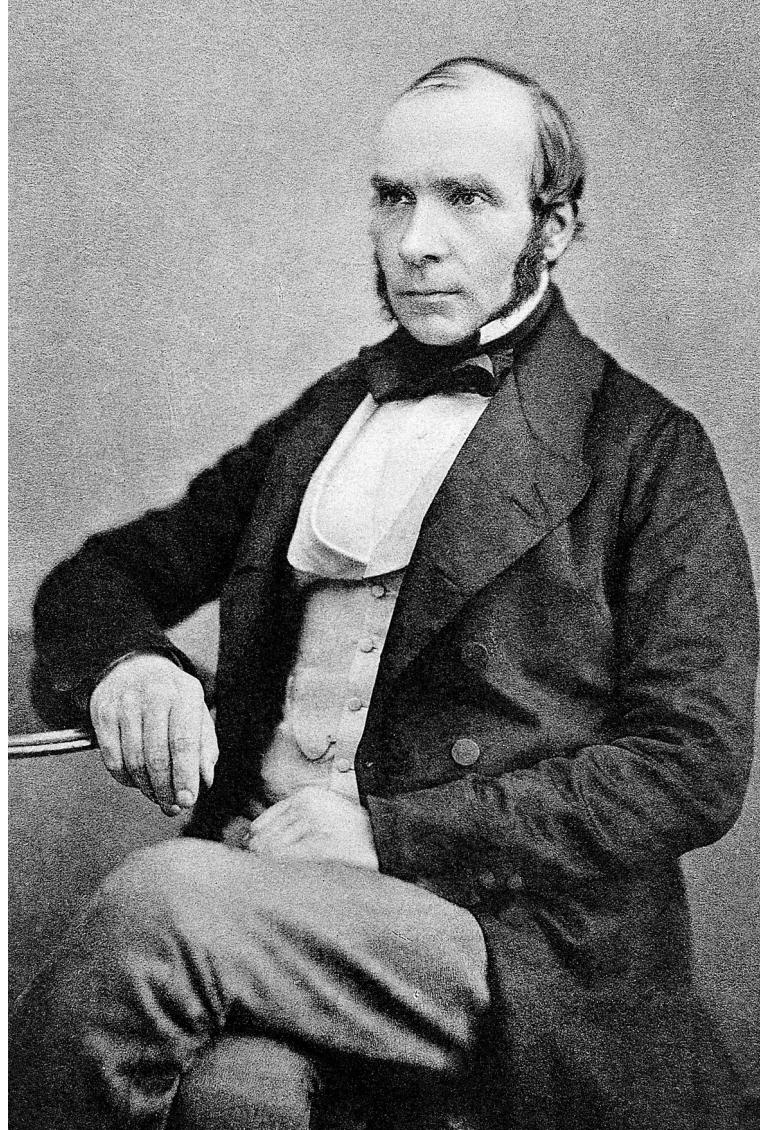
Spatial analysis



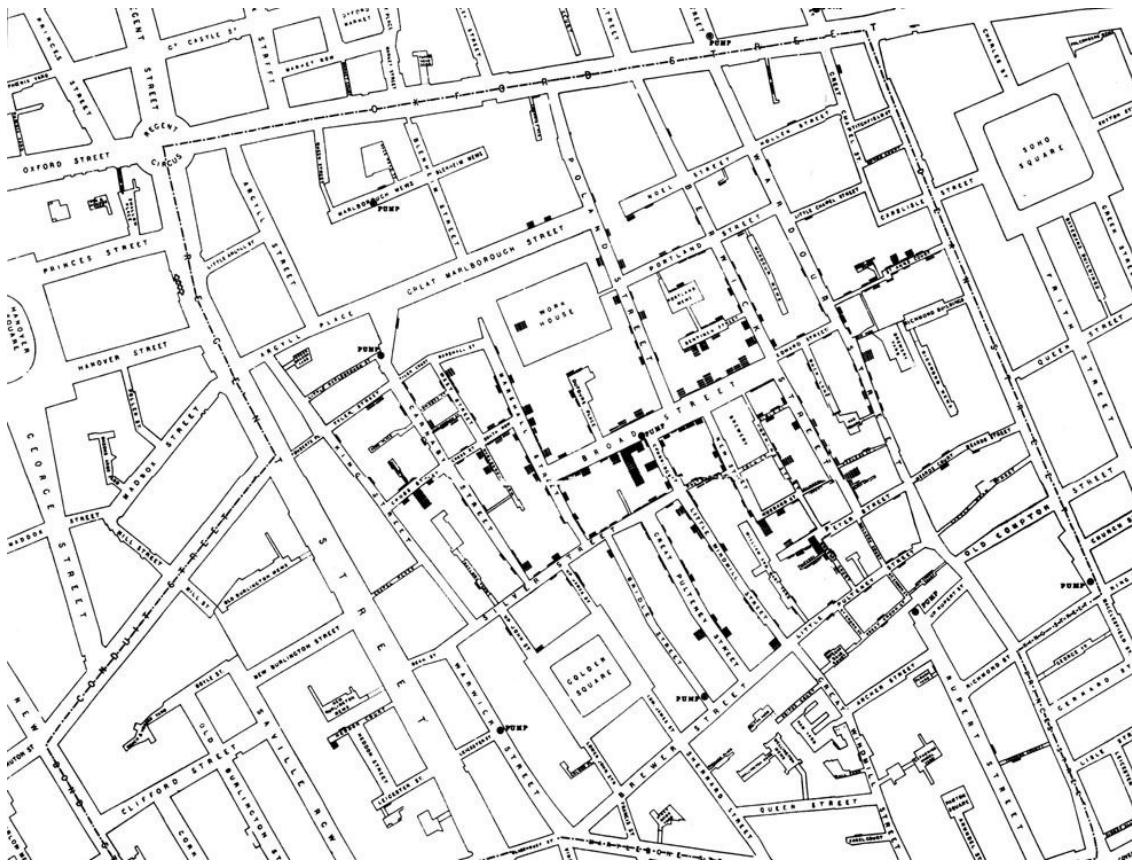
Spatial analysis

Spatial analysis looks to provide knowledge on the world by transforming data into information by quantifying “things” like distributions and spatial processes.

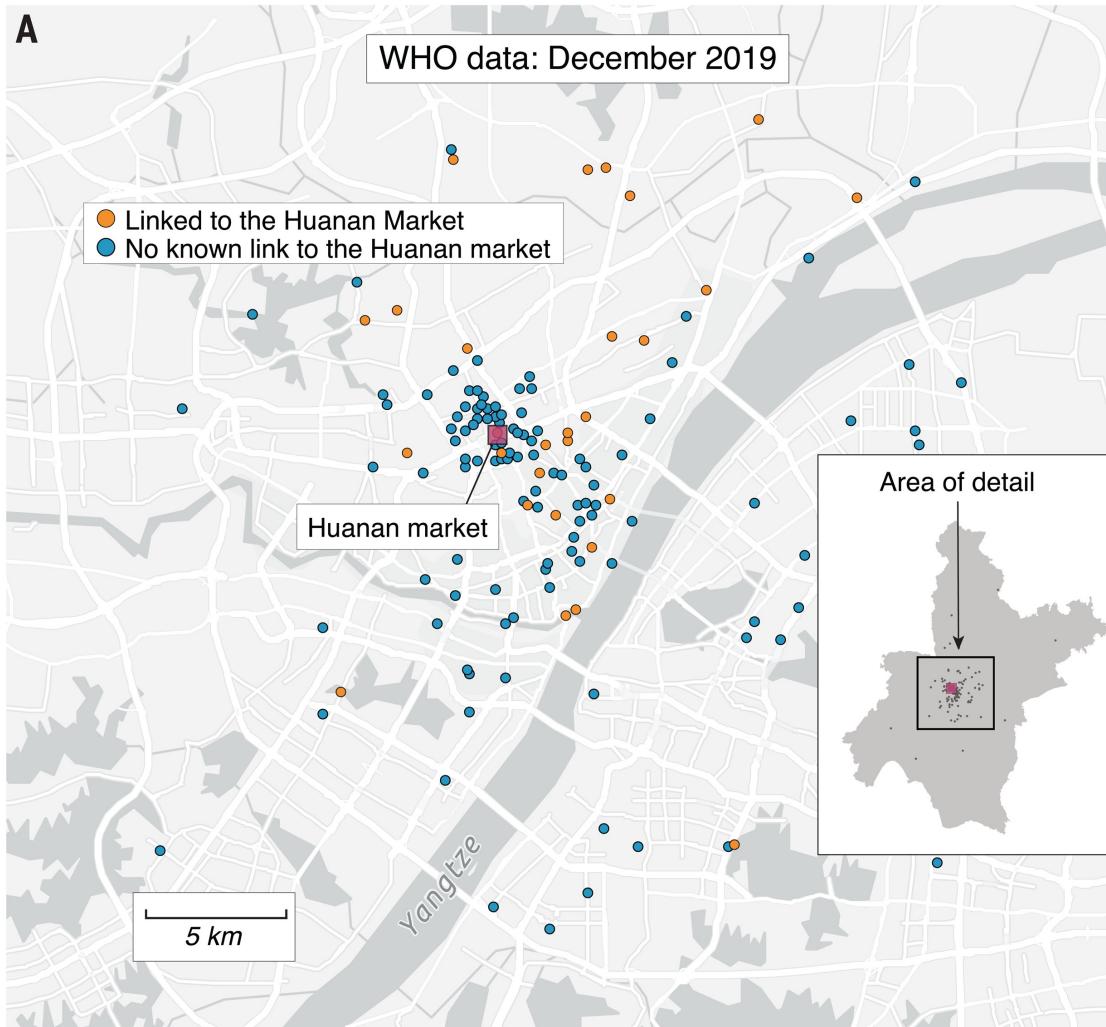
Spatial analysis



Spatial analysis



Spatial analysis



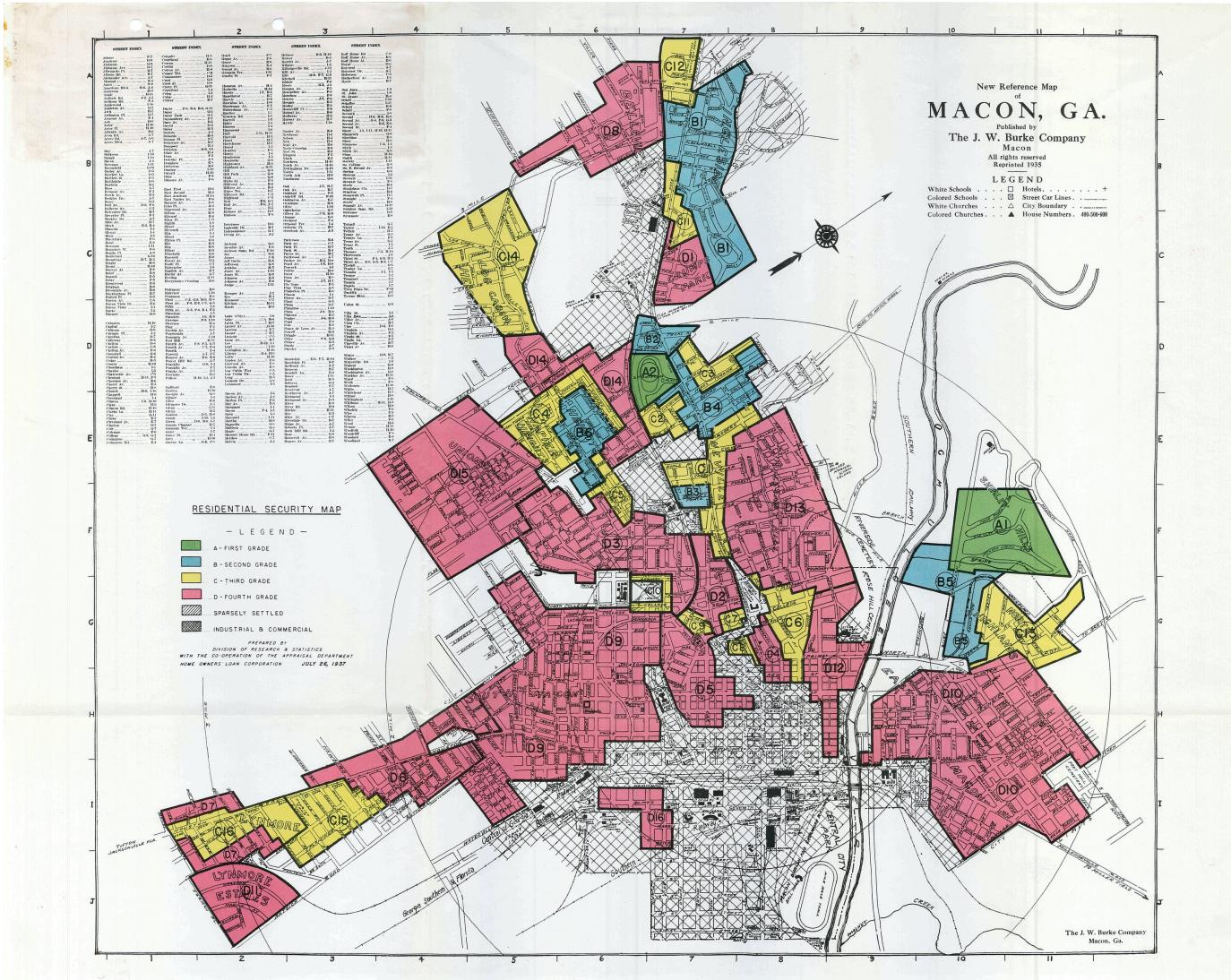
Worobey *et al.* 2022

Spatial analysis

Ultimately, the purpose of spatial analysis is to seek explanations for patterns of human behaviour through its spatial expression in terms of mathematics and geometry in both geographic and non-geographic spaces.

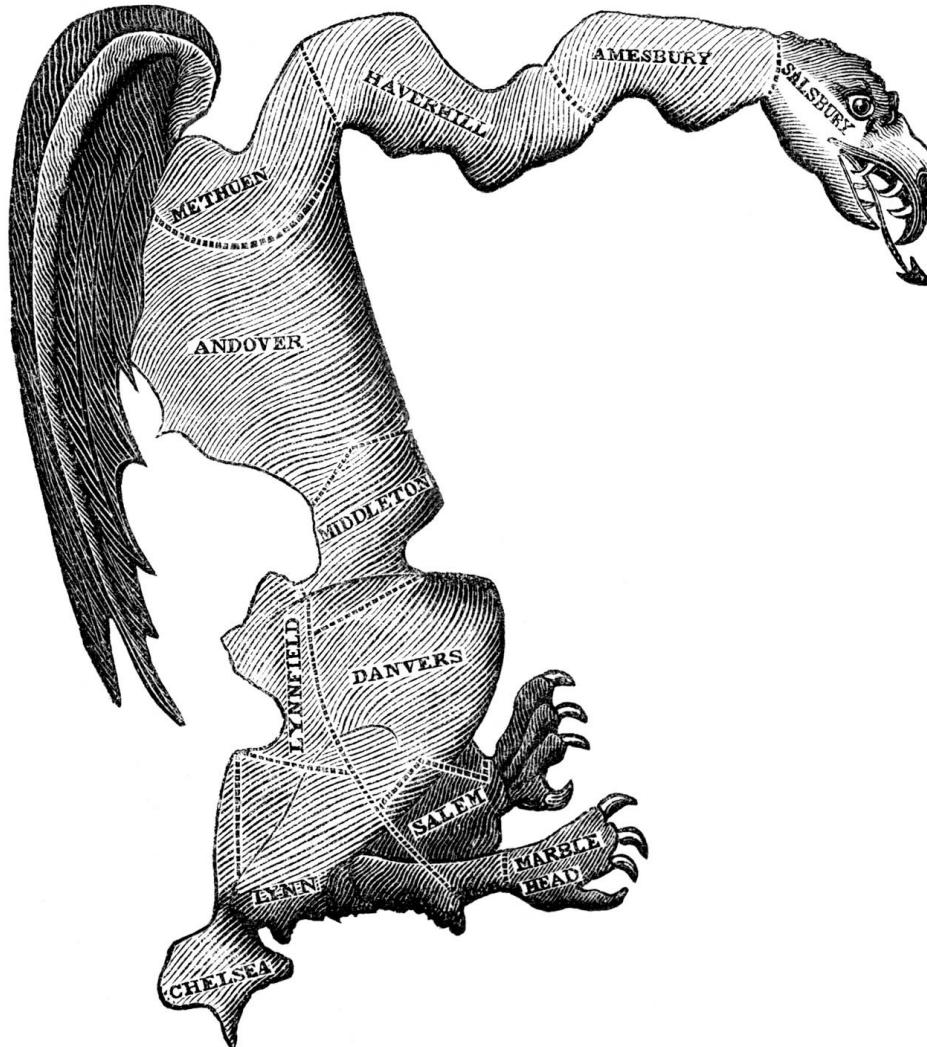
Neutrality

Neutrality and power



Washington Post. 2018. Redlining was banned 50 years ago. It's still hurting minorities today. [Online] <https://www.washingtonpost.com/news/wonk/wp/2018/03/28/redlining-was-banned-50-years-ago-its-still-hurting-minorities-today/>

Neutrality and power



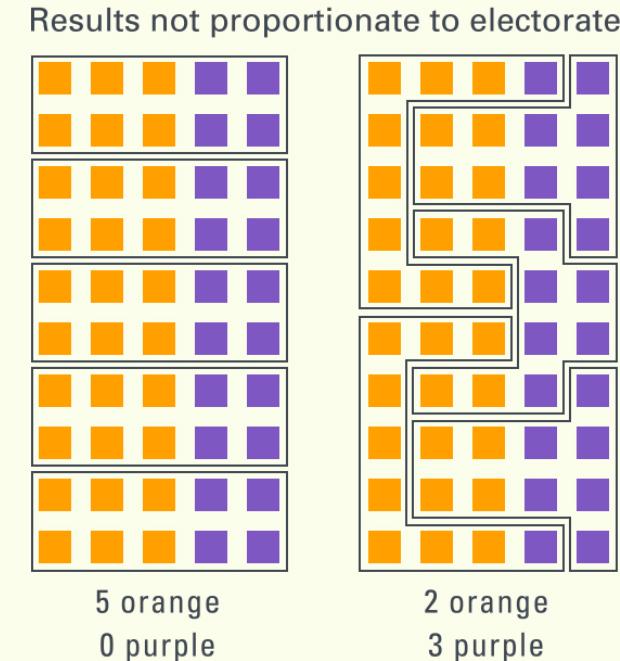
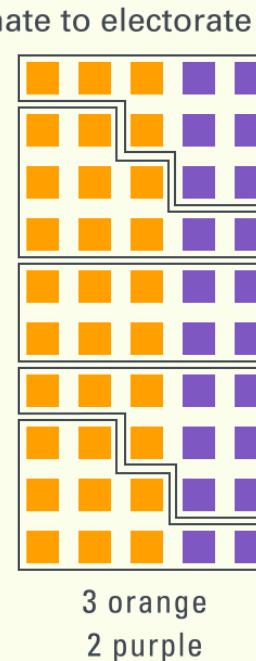
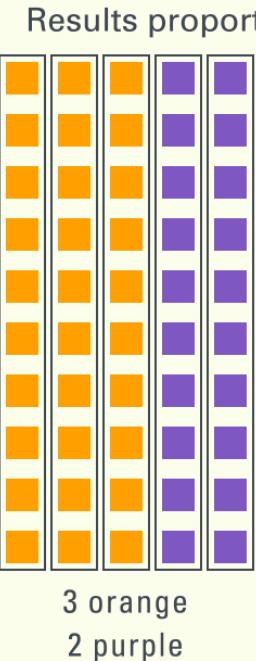
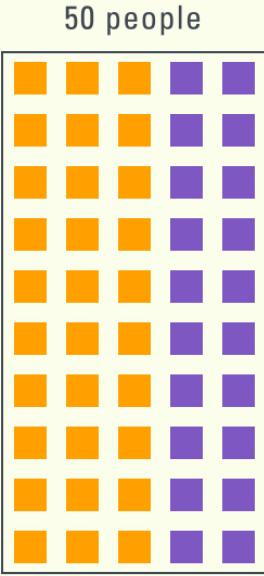
Encyclopaedia Britannica, Inc.. Gerrymandering. [Online]
<https://www.britannica.com/topic/gerrymandering>

Neutrality and power

GERRYMANDERING

How differently drawn district maps produce different electoral results

FOUR WAYS TO DIVIDE 50 PEOPLE INTO 5 DISTRICTS:



© Encyclopædia Britannica, Inc.

Encyclopaedia Britannica, Inc.. Gerrymandering. [Online]
<https://www.britannica.com/topic/gerrymandering>

Neutrality and power

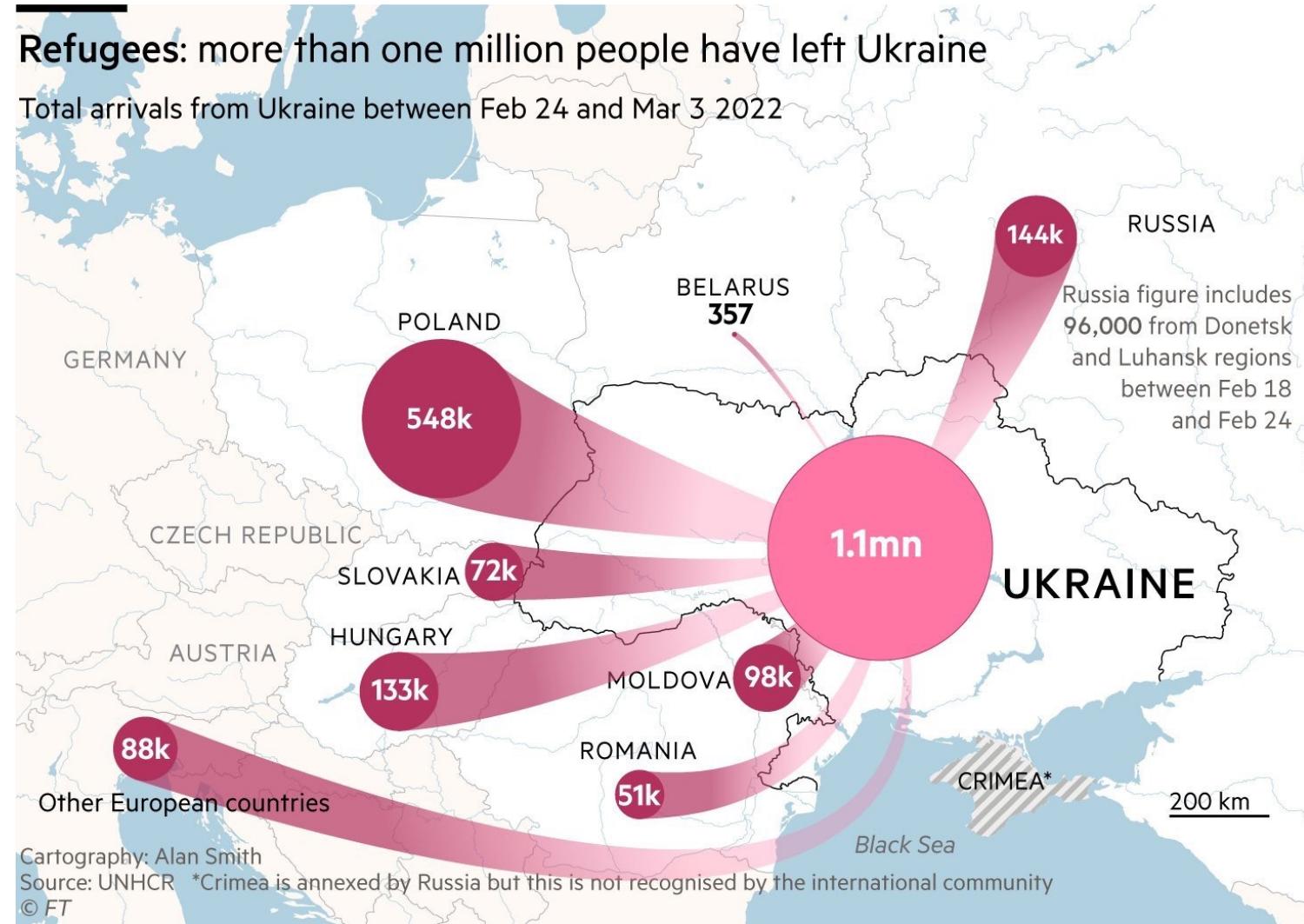
Which countries are Ukrainians fleeing to?



Source: UNHCR

BBC

Neutrality and power



Neutrality and power

Mass exodus

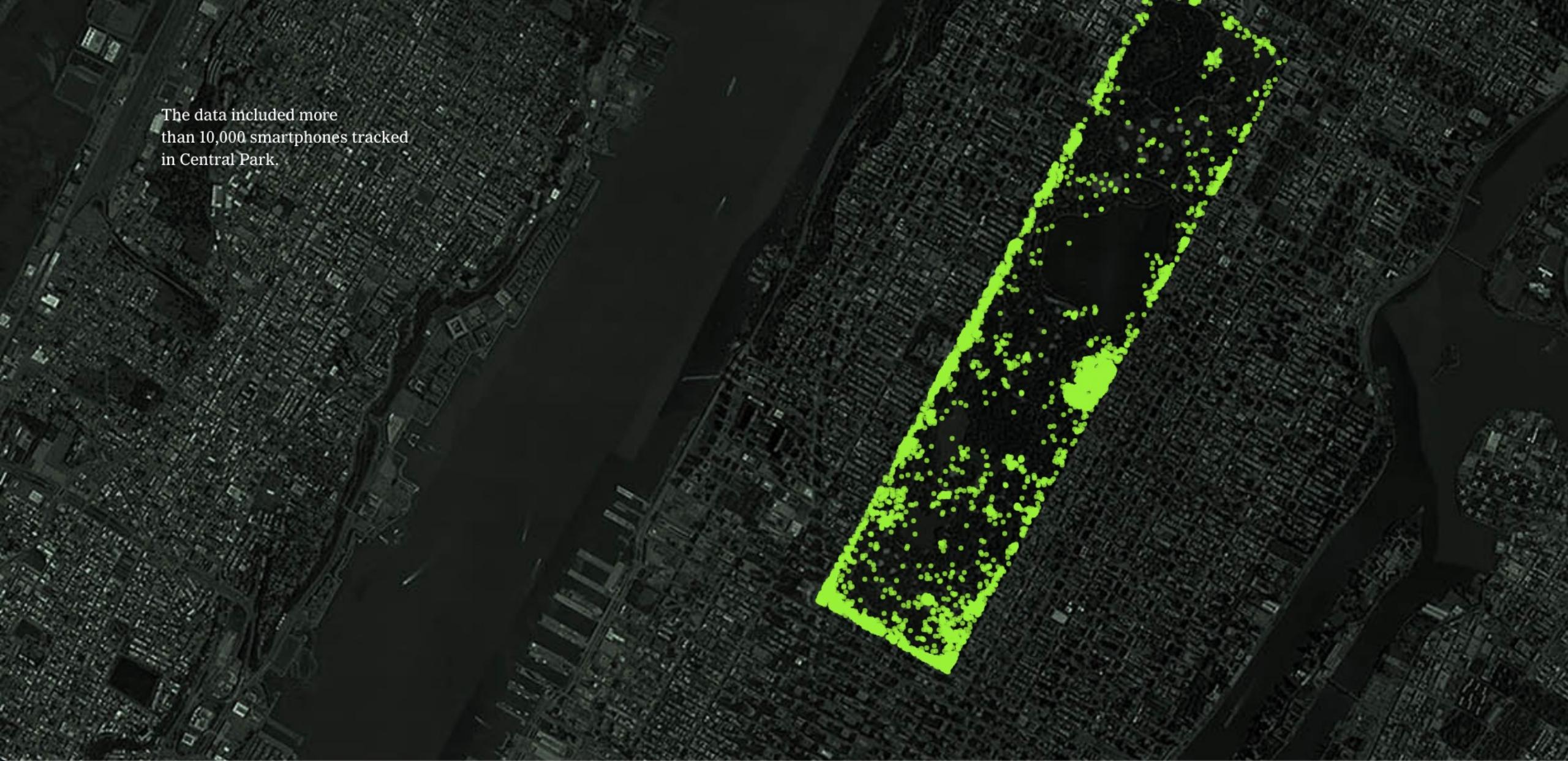
Refugee arrivals from Ukraine, Feb 24th-Mar 2nd 2022



Source: UNHCR

Privacy

The Privacy Project



The data included more than 10,000 smartphones tracked in Central Park.

The Privacy Project



Here is one smartphone, isolated
from the crowd.

The Privacy Project



Here are all pings from
that smartphone over the period
covered by the data.

The Privacy Project



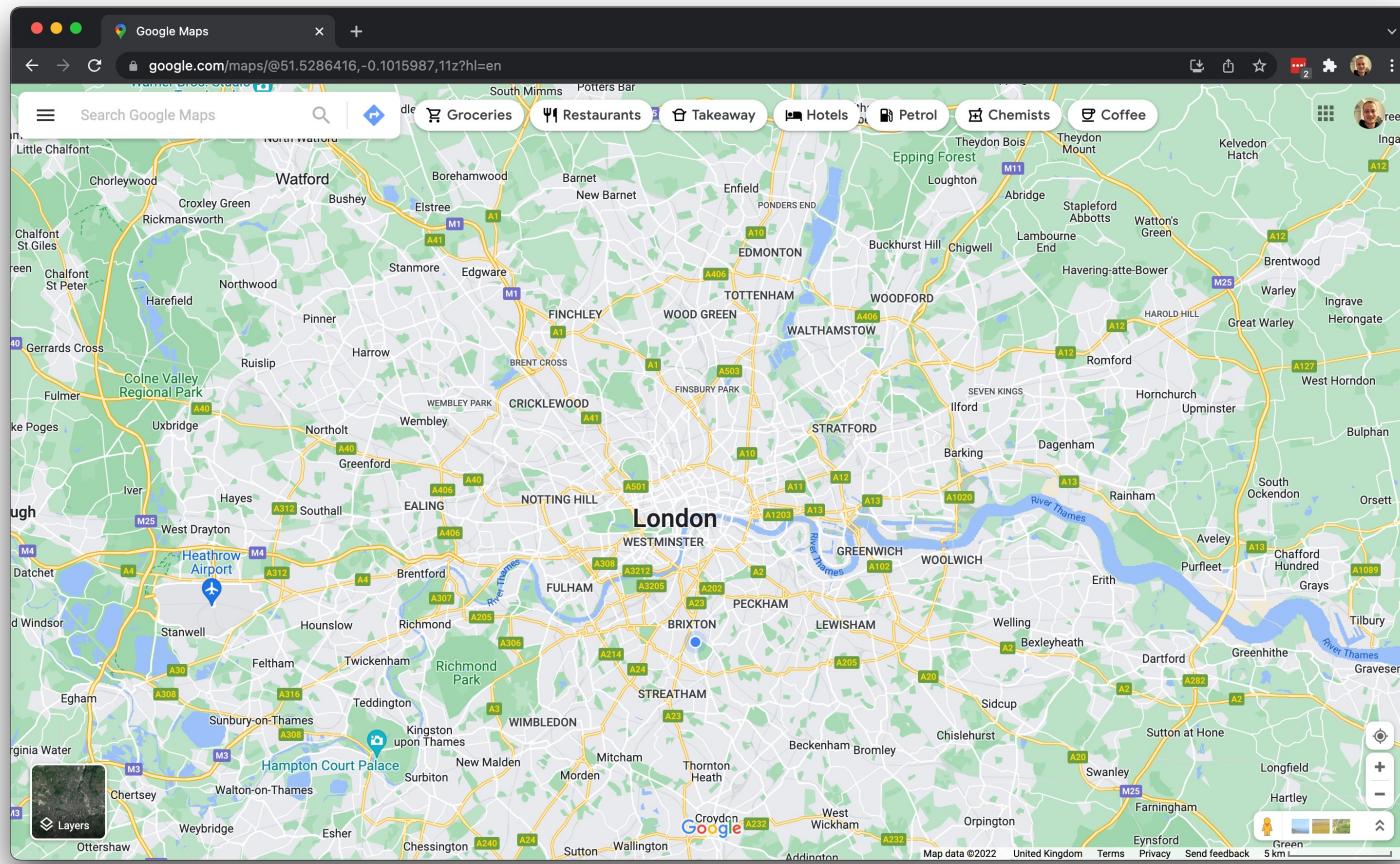
Connecting those pings reveals a diary of the person's life.

Responses

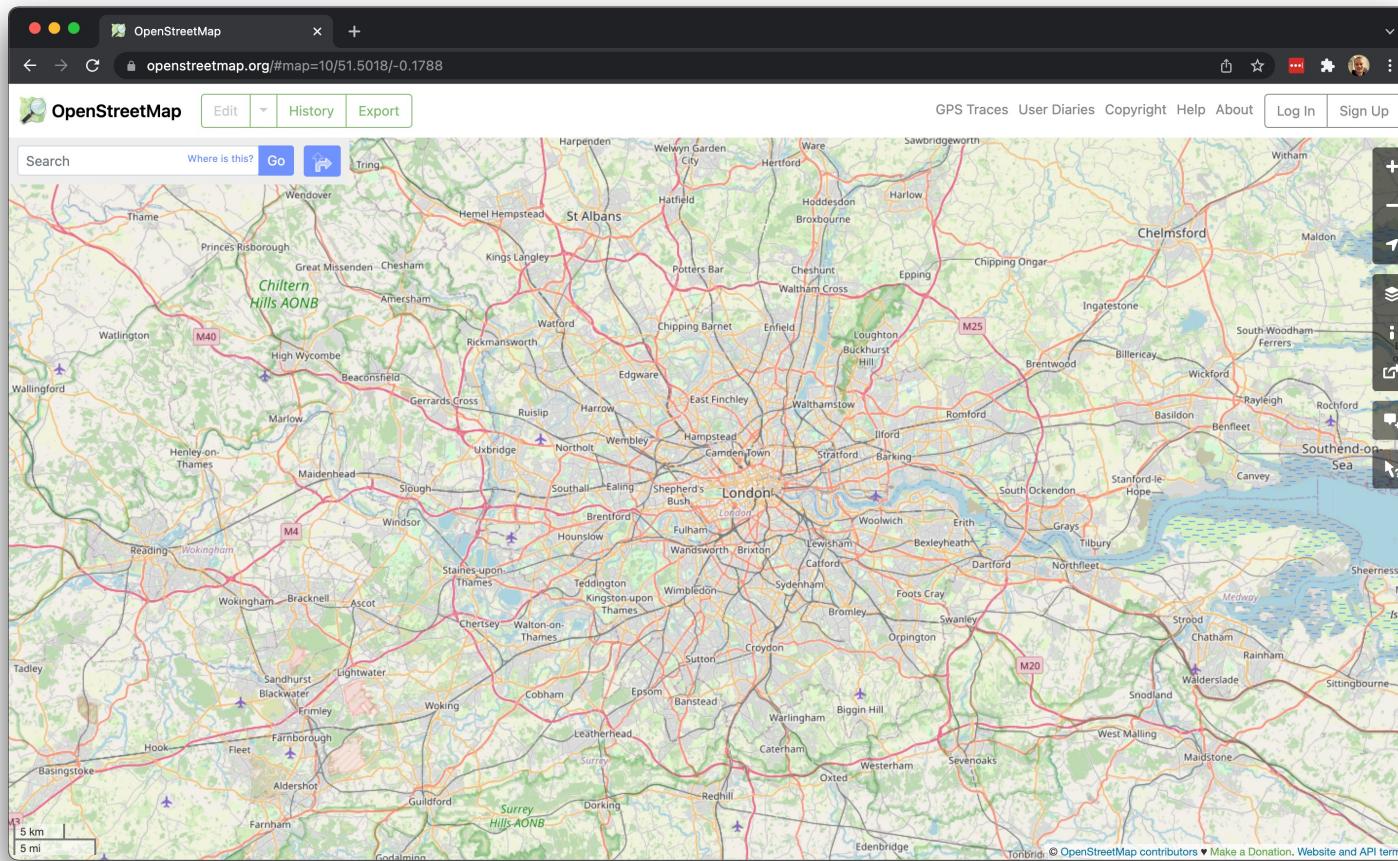
- Critical cartography/GIS is a set of mapping practices and methods of analysis grounded in critical theory, specifically the thesis that maps reflect and perpetuate relations of power, typically in favour of a society's dominant group.
- Includes: non-cartesian representations of lived geographic spaces.

Some examples

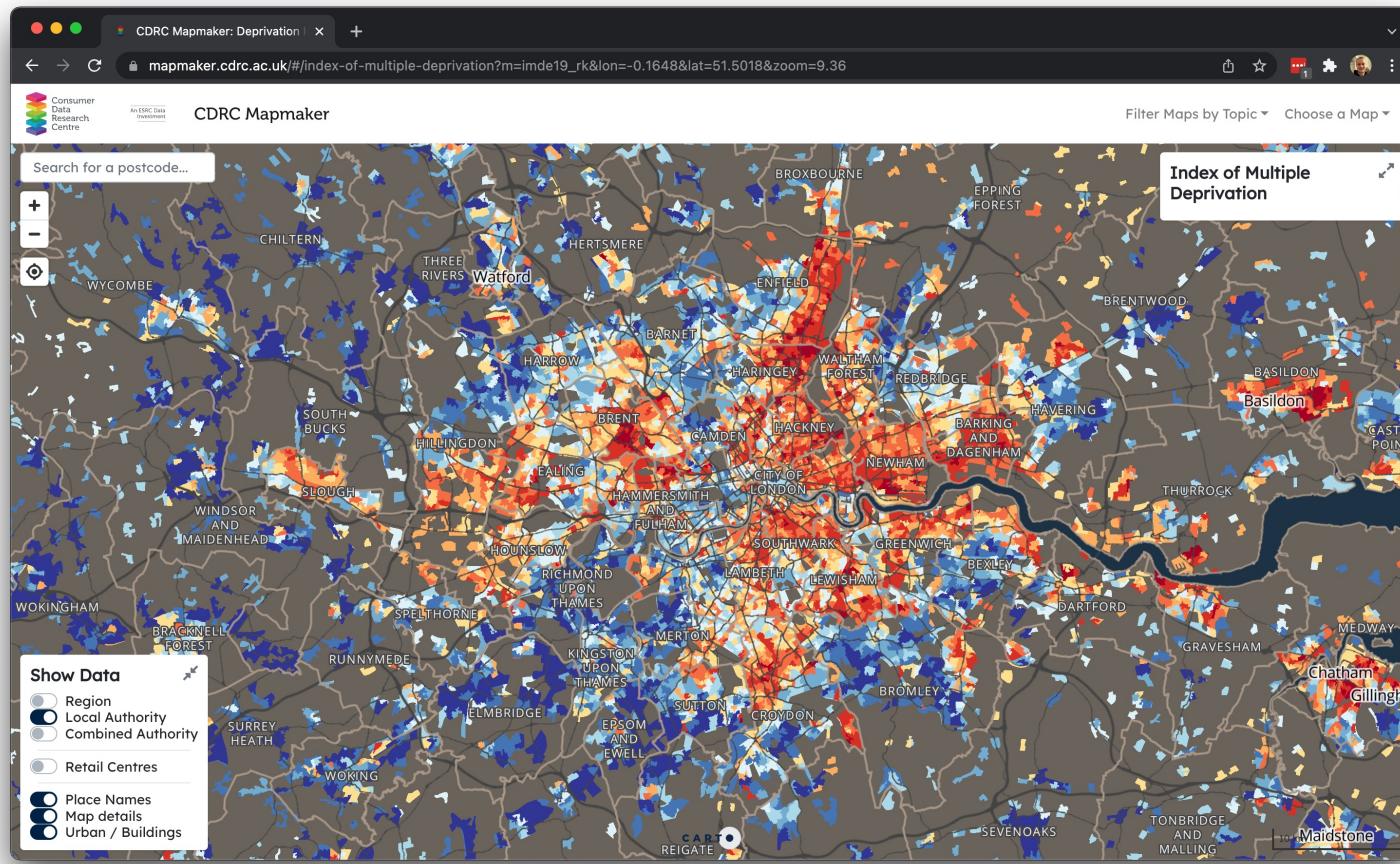
Mapping London



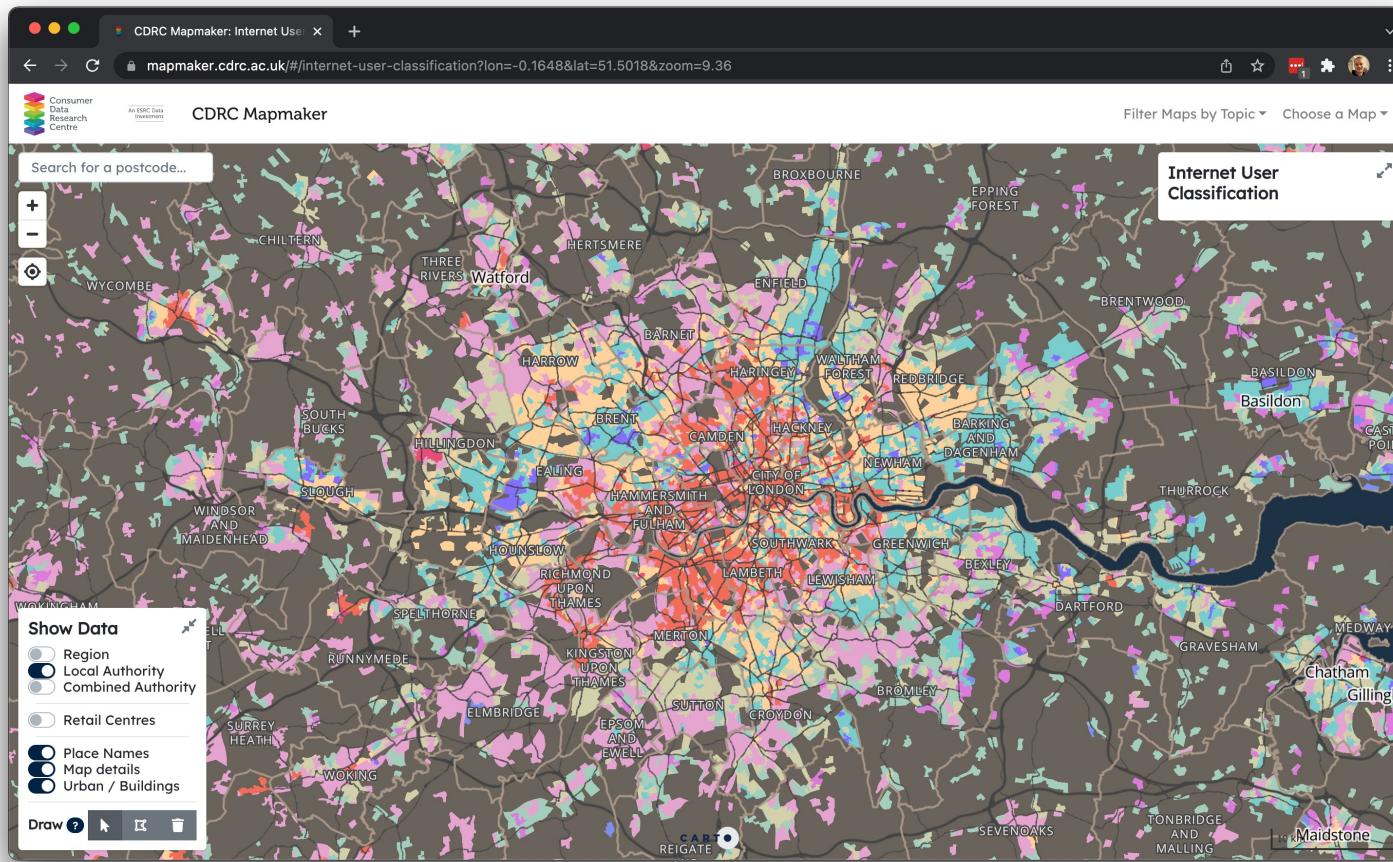
Mapping London



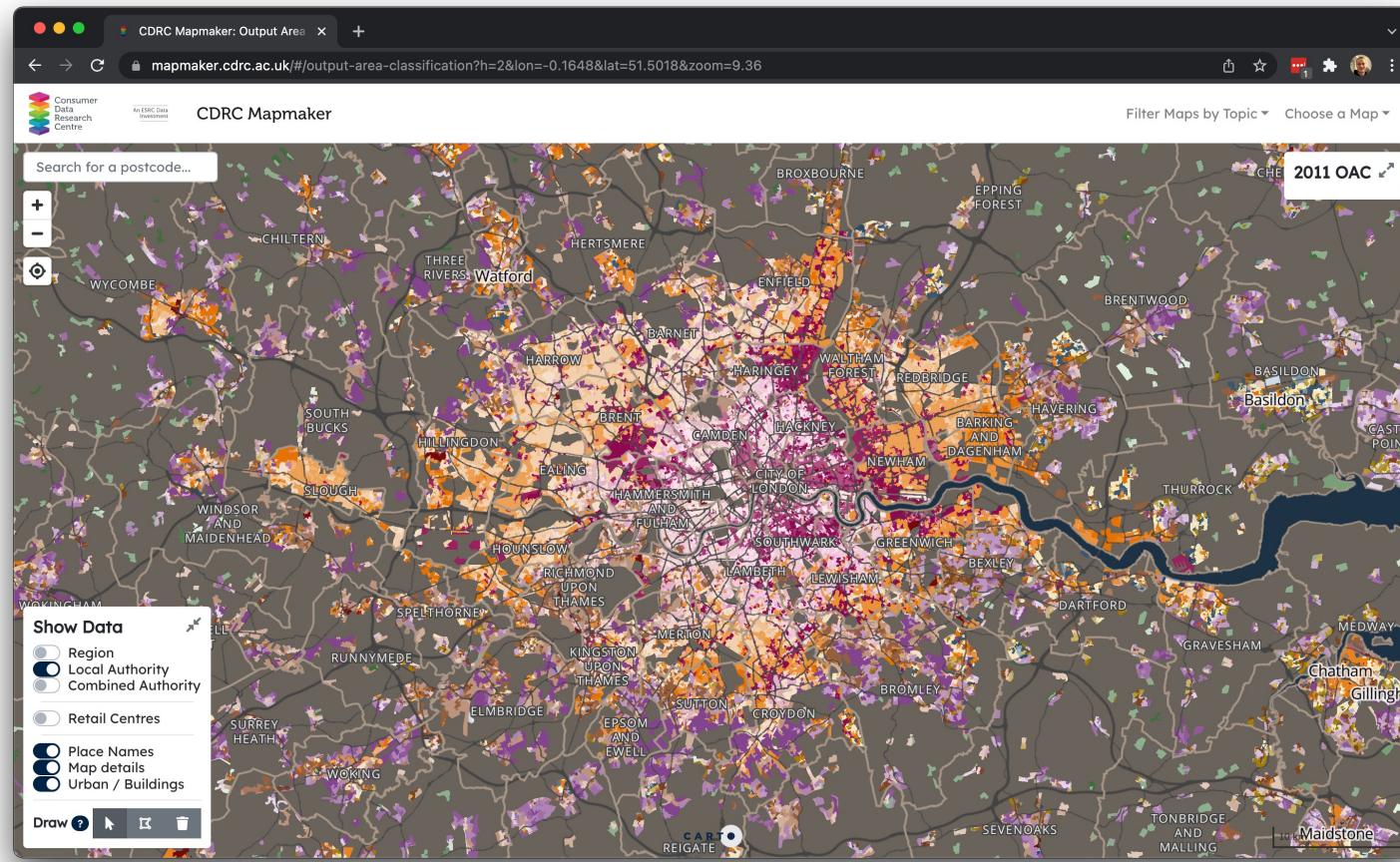
Mapping London



Mapping London



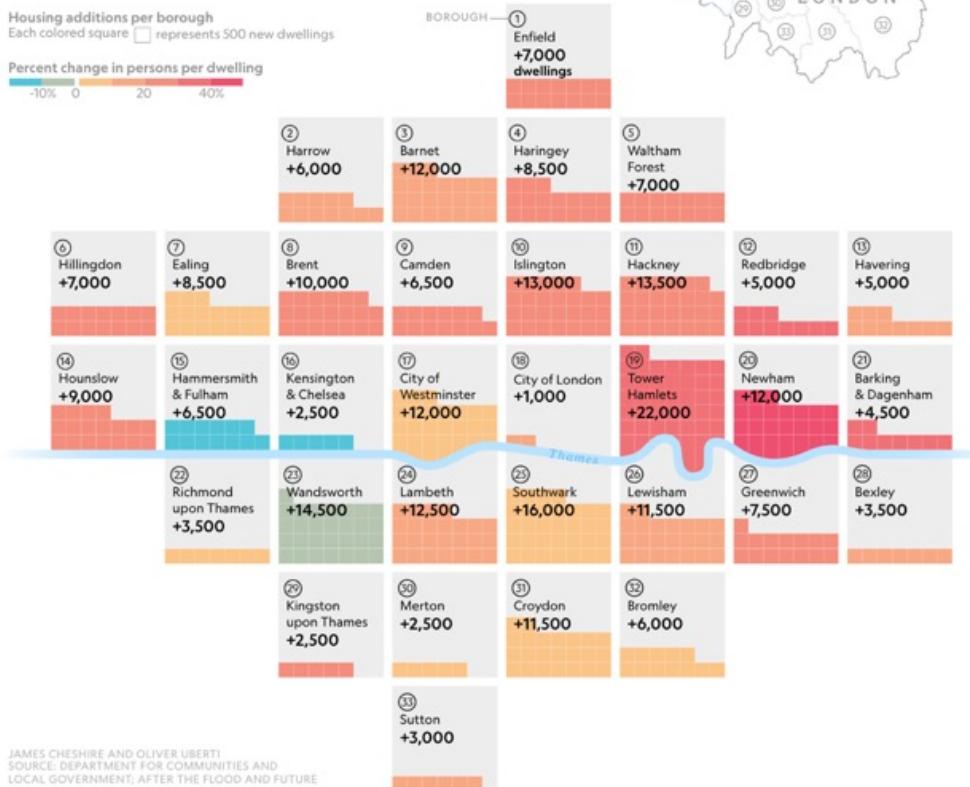
Mapping London



Mapping London

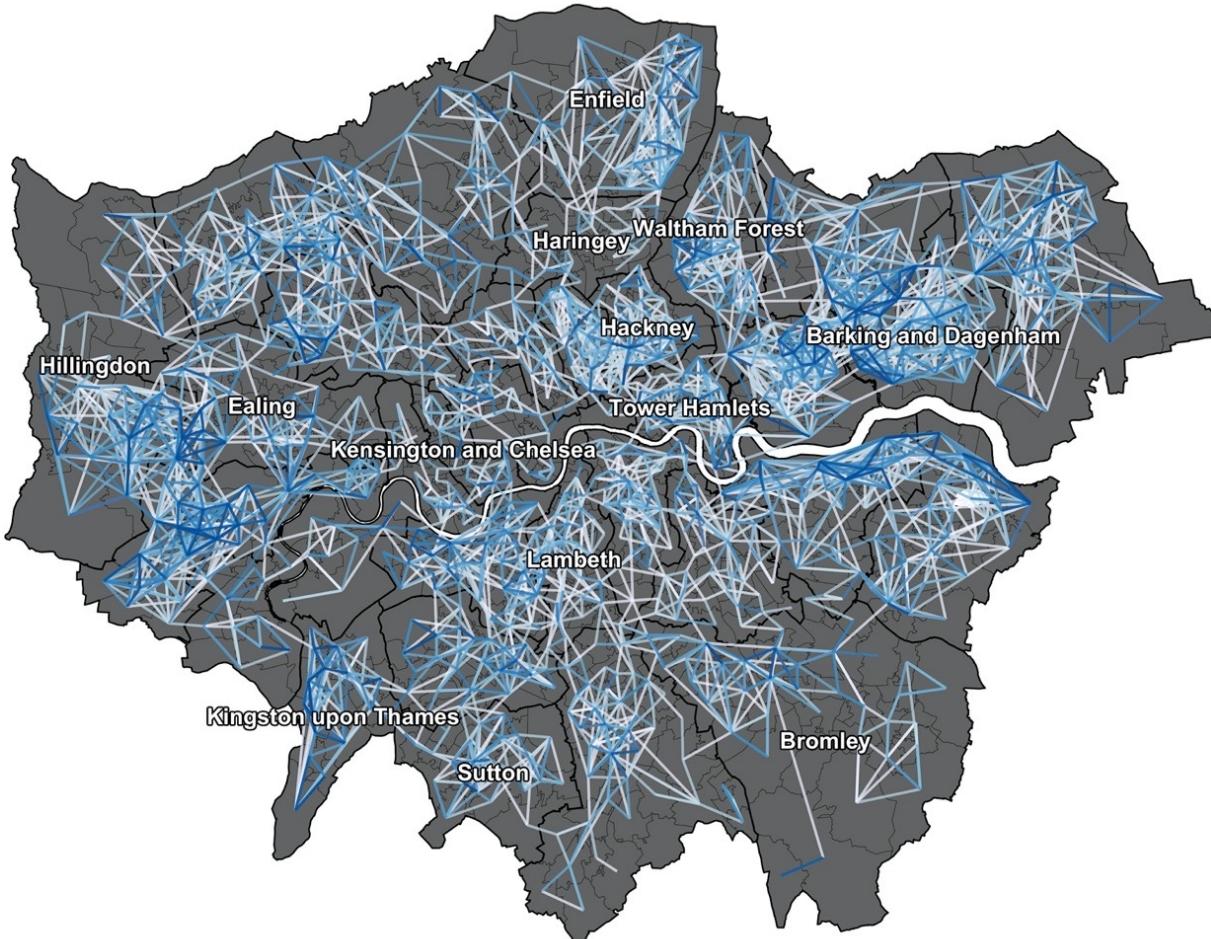
Rising Residential Areas

London's population grew by 1.2 million between 2006 and 2016. **Tower Hamlets** is the fastest-growing borough, particularly around Canary Wharf, Blackwall, and Cubitt Town on the Isle of Dogs. The borough also draws a diverse group of international migrants; in the most recent census, 43 percent of its residents were born outside Britain. In boroughs with some of the highest real estate prices, such as **Kensington and Chelsea**, more residents are moving out than in.

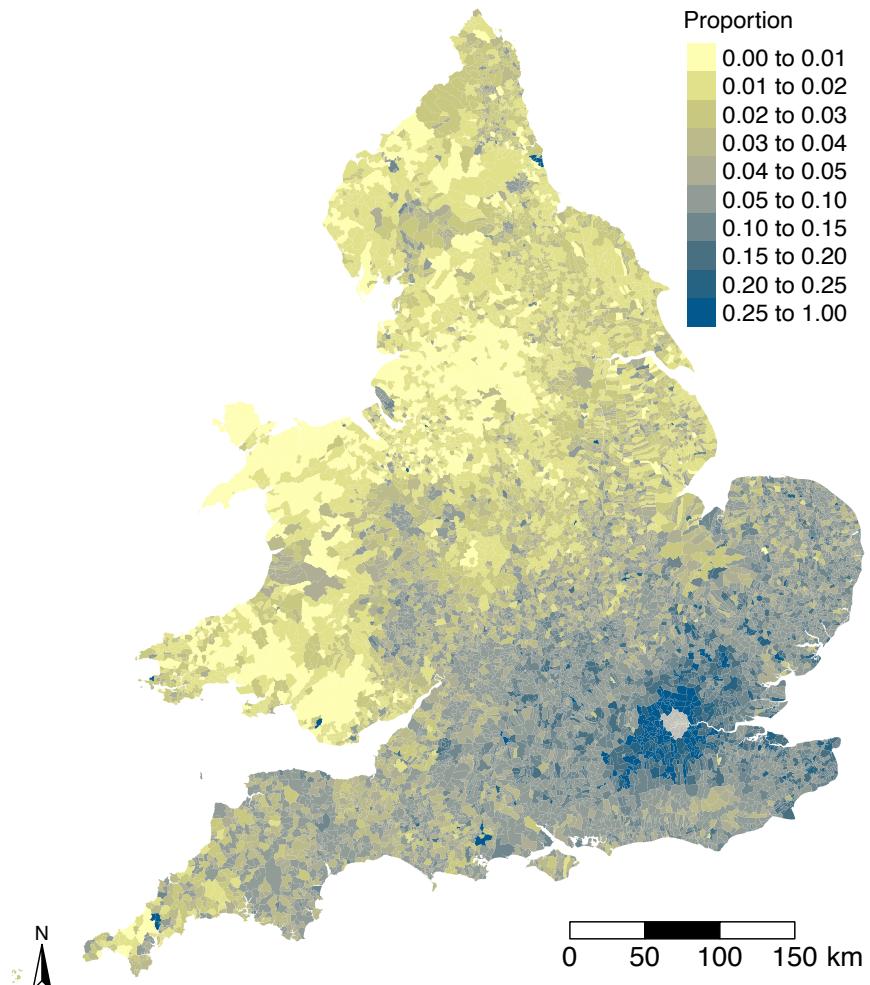


National Geographic. How London became the centre of the world.
<https://www.nationalgeographic.com/environment/article/london-population-city-planning>

Mapping London



Mapping London



Longley, P. A. Van Dijk, J. T., & Lan, T. 2021. The geography of intergenerational social mobility in Great Britain. *Nature Communications* 12: 6050.

Conclusion

- Making maps and visualisations is important to convey information.
- At least two things are required: GIScience (with GI software) and spatial analysis.
- Maps are never neutral but tell a story.
- There is no one map to rule them all.
- It is an exciting time to be a quantitative geographer.

Practicalities

Coming days

- Monday: Lecture
- Tuesday/Thursday: Seminar on Social Change now and Then (see Moodle)
- Before Friday: QGIS Computer Tutorial (independently, online)
- Friday: Field visit (1-2 pages in field notebook)

Coming days

UCL

- Why London?
- This week
- Getting started
- Downloading crime data
- Starting QGIS
- Loading spatial data
- Organising our layers
- Inspecting our data in Excel
- Loading our data into QGIS
- Making selections
- Visualising data
- Creating a map
- Worksheet
- Further questions

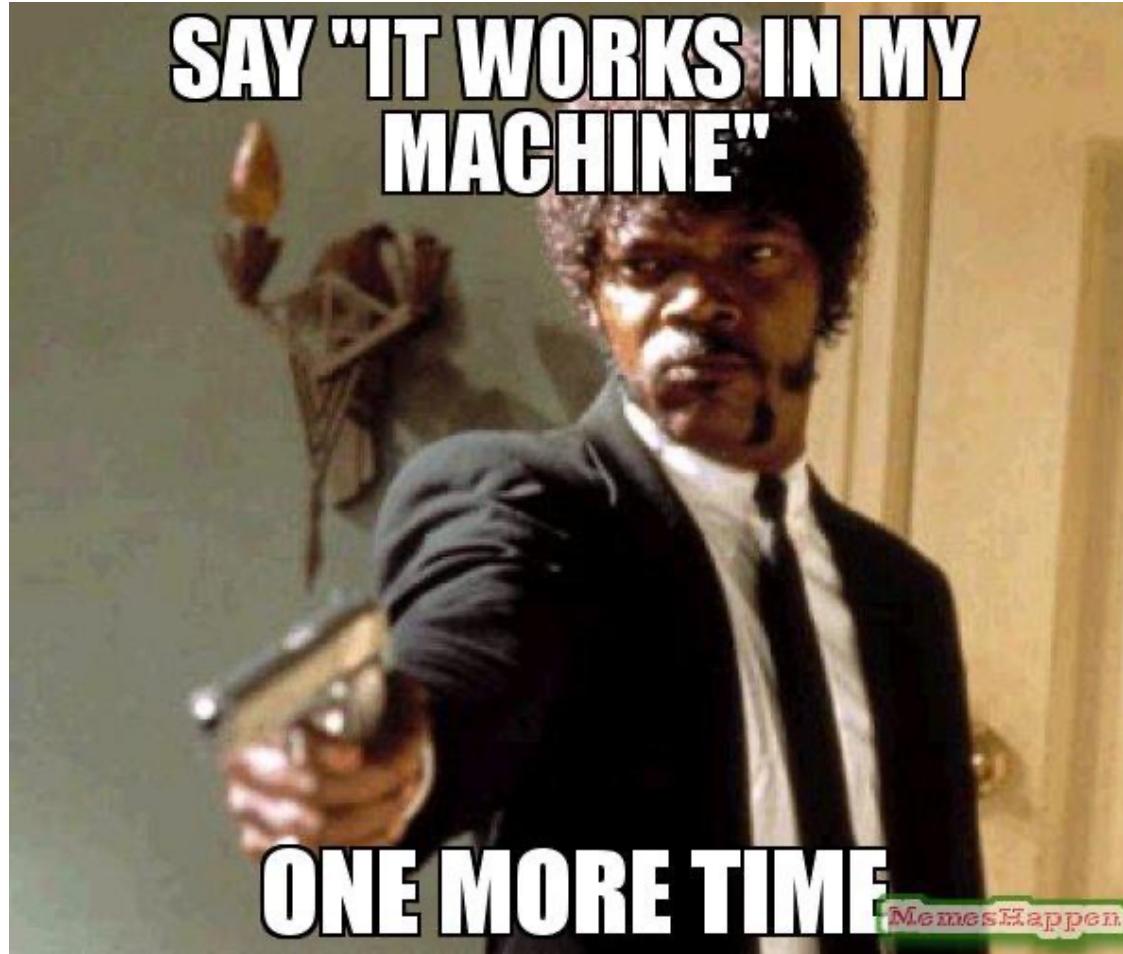
Why London?

It is an exciting time to be a quantitative geographer in London. The city is generating more data for us to work with than ever before. Maps, graphics and infographics about the city are everywhere more people live here than at any time in London's history. A great example of the variety of data that is available for London is captured in the book [London: The Information Capital](#) by James Cheshire and Oliver Uberti. As geographers, we are in a critical position both to be able to capitalise on these developments for our own research but also view them a little more critically than others who have not had the benefit of decades of social and spatial research.

The book cover features a complex, abstract map of London composed of numerous small, colorful icons and symbols representing various data layers. The title 'LONDON' is at the top, followed by 'The Information Capital' and '100 maps and graphics that will change how you view the city'. The authors' names, 'James Cheshire' and 'Oliver Uberti', are at the bottom left, and a quote at the bottom right reads, 'This is London as you've never seen it before' - *Geographer*.

Figure 1: London: The Information Capital by Professor James Cheshire and Oliver Uberti.

Coming days



Worksheet assignment – Part I

- Using what you have learnt in the computer tutorial, create two heatmaps for Camden and Islington.
- Field visit to look at features of the built environment at crime hot spots.
- 1-2 pages in your field notebook, may take photographs.
- Full details on Moodle.

Worksheet assignment – Part II

- Analyse crime types at your allocated street.
- Explore whether **crime patterns** change over time.
- Full details on Moodle.

Worksheet assignment - Submission

- Answer the questions in a short group report: no more than 500 words, maximum 4 maps, and, if using, a maximum of 2 photographs.
- Deadline: noon Monday 20 March.
- One submission per group by the allocated team lead. Make sure to include the group work coversheet in your submission and you follow the guidelines for group submissions.
- Submission link for this final worksheet task on Moodle (GEOG0014 Worksheet 4 London mapping).

Further questions

- Dedicated **Q&A Forum** for this week's material (link on Moodle).
- Any other questions with regard to this week's material: j.t.vandijk@ucl.ac.uk

Questions

Justin van Dijk

j.t.vandijk@ucl.ac.uk

