Data journalism

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LPI, Paris, France

Who am I?
Researcher at CRI Paris France, B.Labs
#mathematics #physics #computer science
Phd in Theoretical physics

Cofounder City Interaction lab, https://www.youtube.com/results?search_query=city+interaction+lab
Lecturers without borders lewibo.org
CorrelAid Paris
Twitter https://twitter.com/luyibov

Transport in networks
City evolution in time
Citizen science
Innovations in science
Closed cities ZATOs @strelka

Today (overview)

1. Introduction to data storytelling
2. Analysis of city systems
3. Projects discussions

Structure of each lecture **theory** **practice**

Data journalism

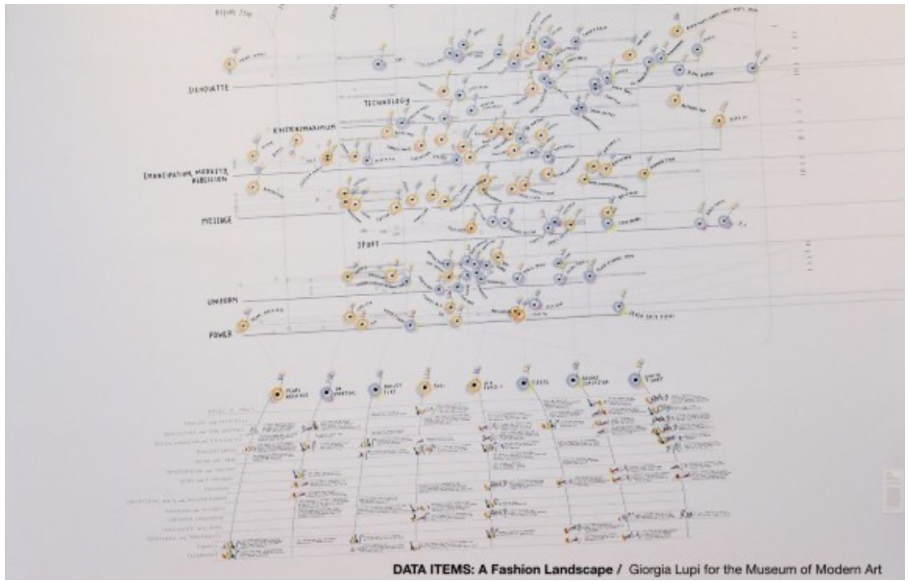
Emerging field of “data journalism” (Gray, Chambers, & Bounegru, 2012; Rogers, 2011), which has played a role in the development of open government data and is based on the idea that data, just like text or photographs, can be a powerful tool to inform and hold governments accountable in cases where needed.

Data Journalism and soft data

Inspiring examples from Giorgia Lupi
https://medium.com/@giorgialupi/bruises-the-data-we-dont-see-1fdec00d0036

question

answer

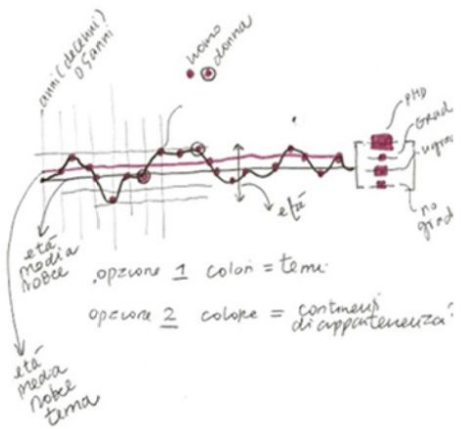


Nobel awarded to more than one person
age
time trend
average age for each for each CATEGORY
average age of Nobel laureate
10 years
1911
1921
1931
1941
1951
1961
1971
1981
1991
2001
2012
Stanford
Caltech
Columbia
Cambridge
Berkeley
total of laureate for each city
12
7
51
7
17
23
7
10
13
8
7
28

Example of data storytelling

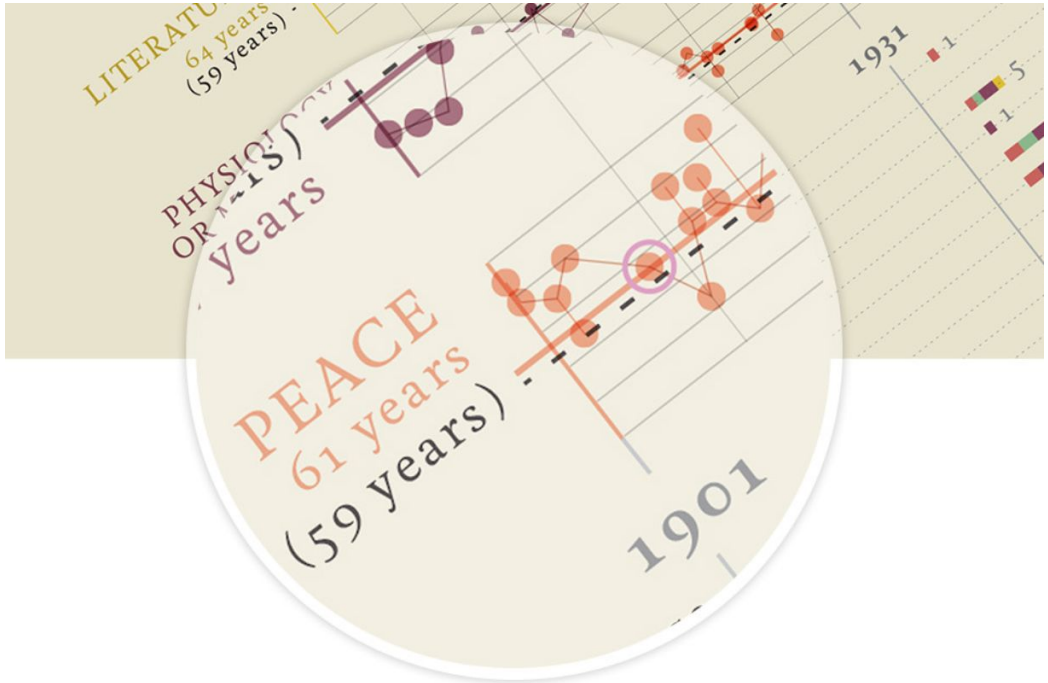
How to start?

Noble prize nominations http://giorgialupi.com/lalettura



Example of data storytelling

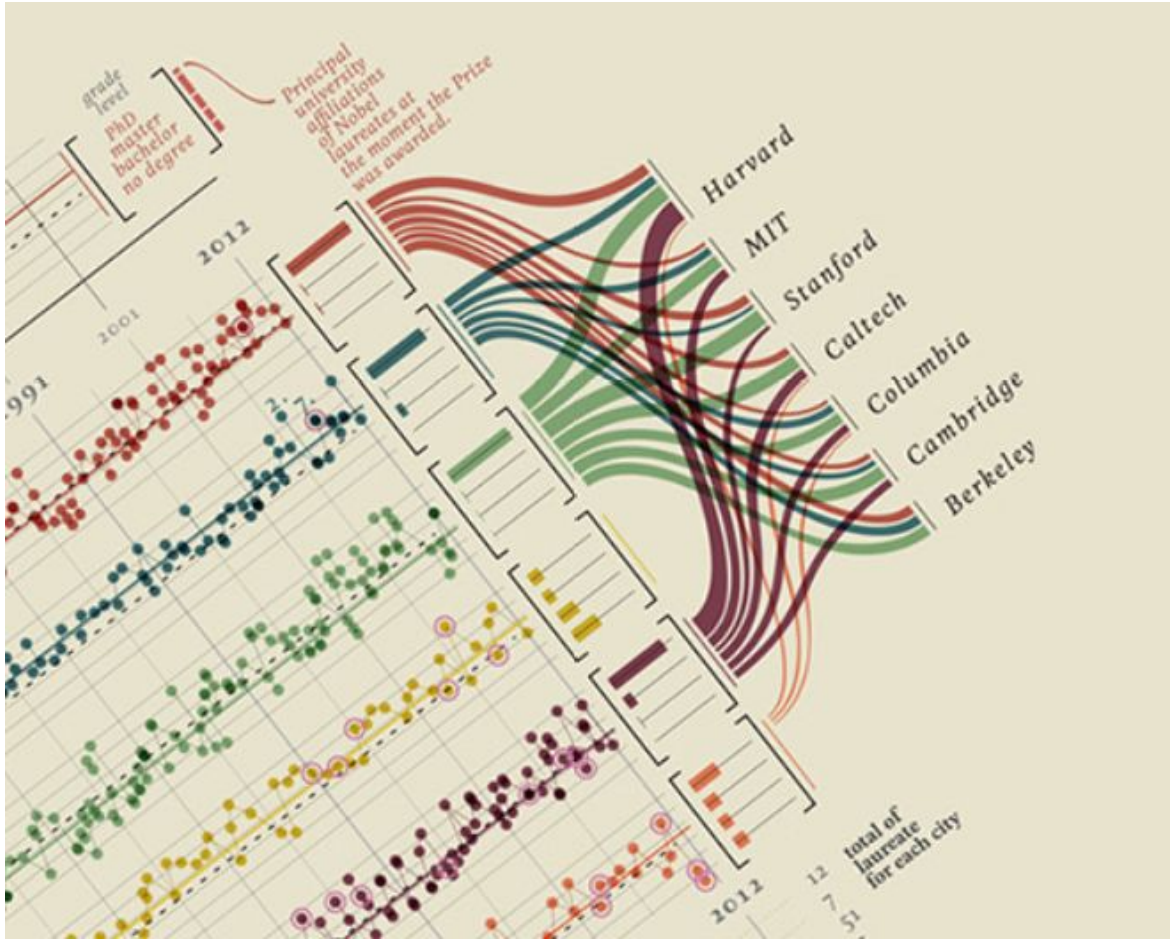
Noble prize nominations http://giorgialupi.com/lalettura



chemistry economic sciences physics literature medicine peace

Example of data storytelling

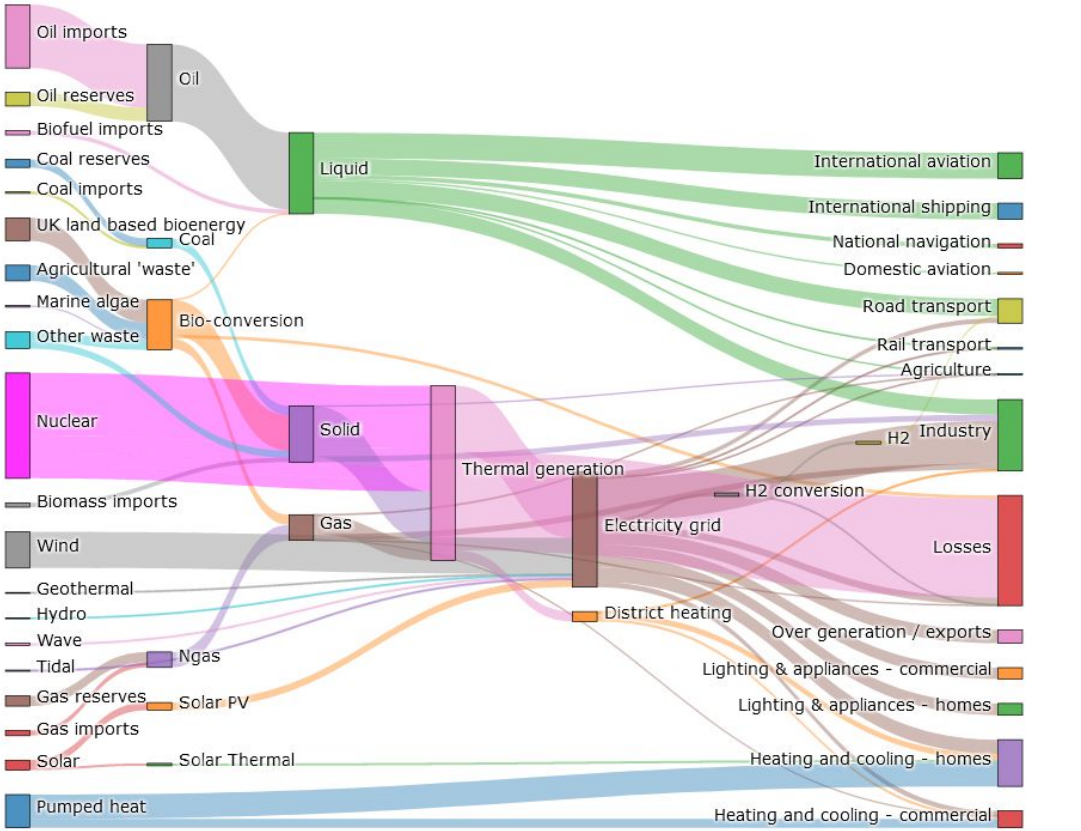
What are important features to connect?



Example of data storytelling

Try yourself:

Sankey plot
https://www.python-graph-gallery.com/sankey-diagram-with-python-and-plotly
Parallel plot
https://www.python-graph-gallery.com/parallel-plot/



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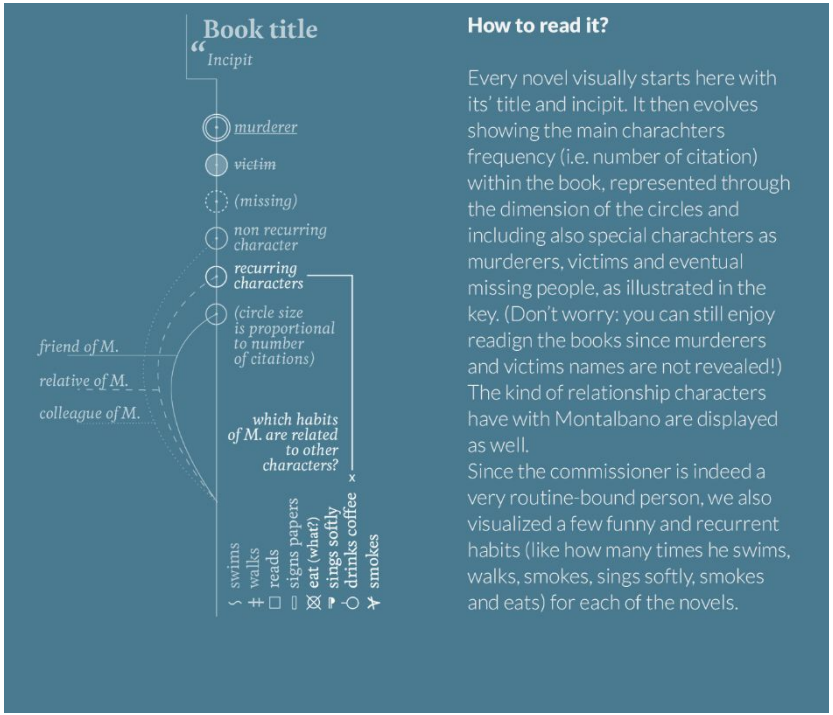
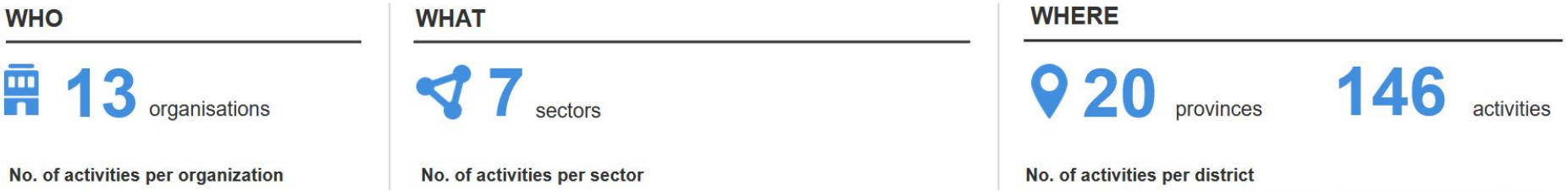
Example of data storytelling

Textual information representation from the books, articles
http://giorgialupi.com/lalettura



OCHA data storytelling

Examples from OCHA
https://data.humdata.org/visualization/cambodia-4w/



OCHA data storytelling

Examples from OCHA
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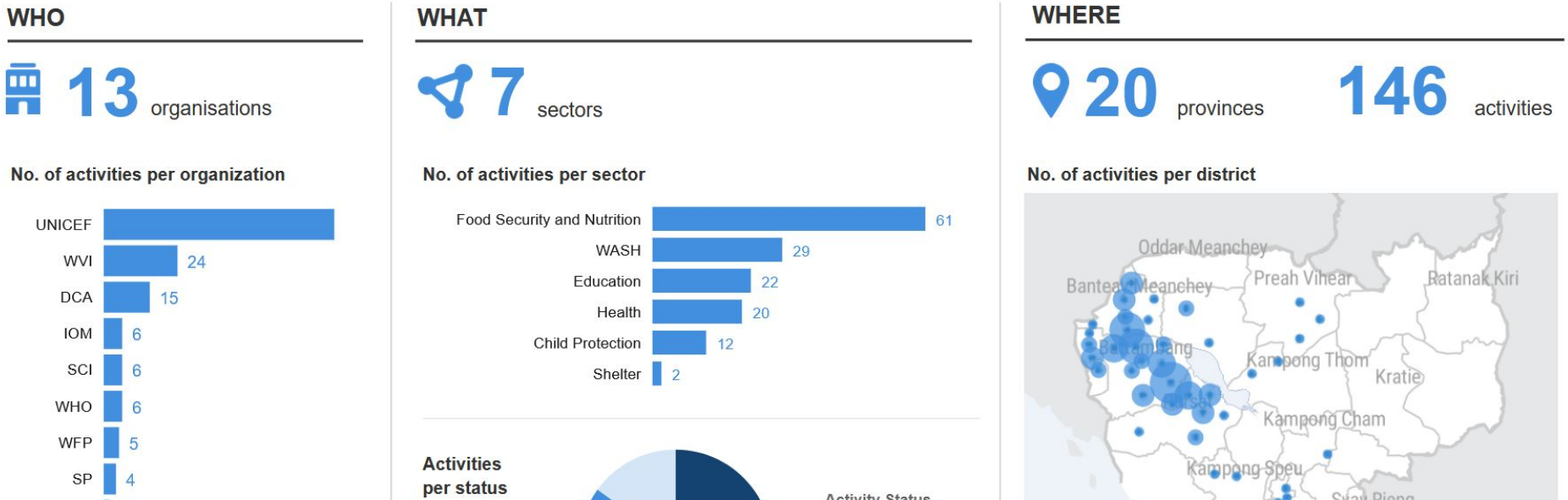
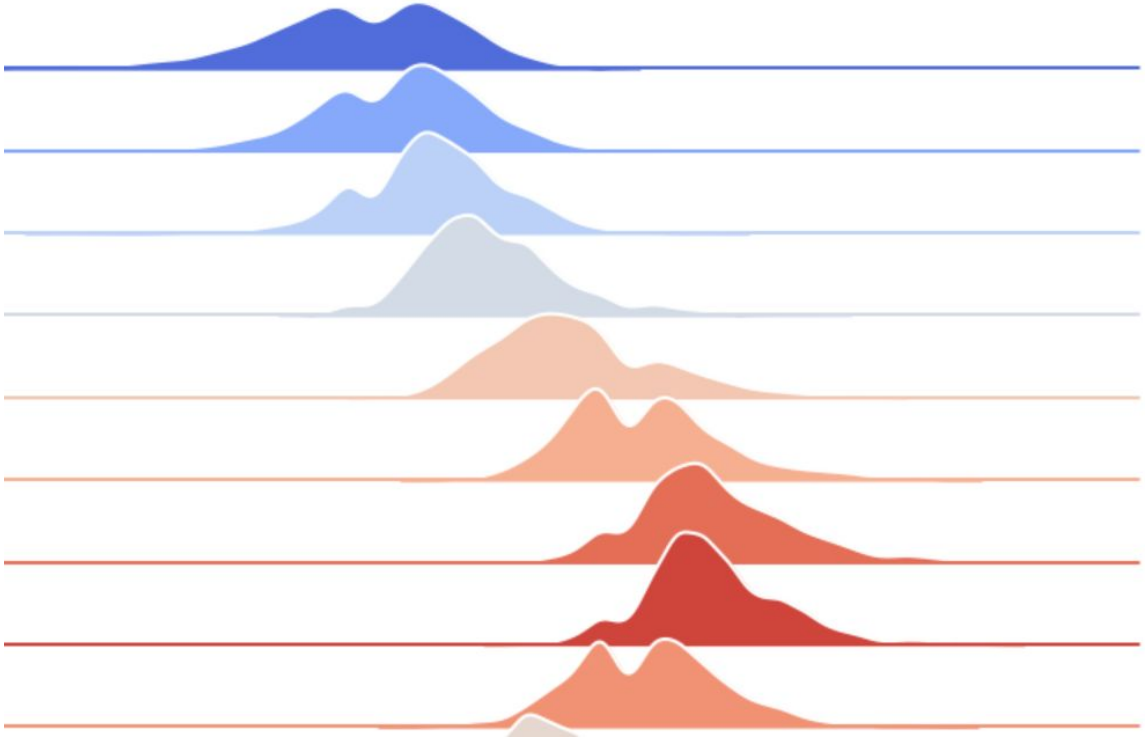


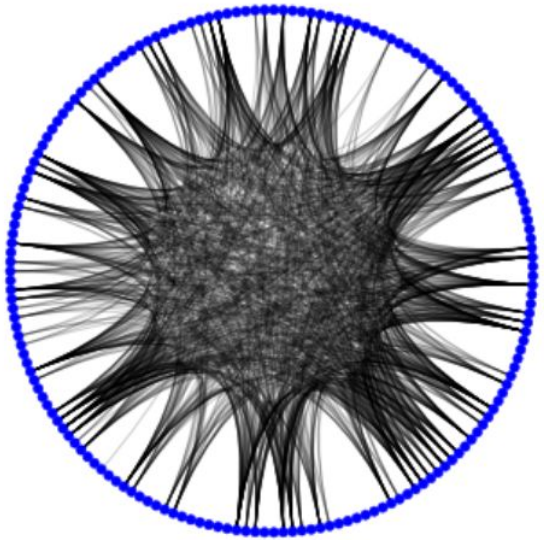
Other resources to check

www.python-graph-gallery.com/



Try yourself

Our repository with materials on [github]



Data resources

working with spatial data:

- how to get data from open street maps?

- how to load data to python or www.kepler.gl

- how to analyze your data? (packages available and techniques)

Resources to get some examples of geodata files:

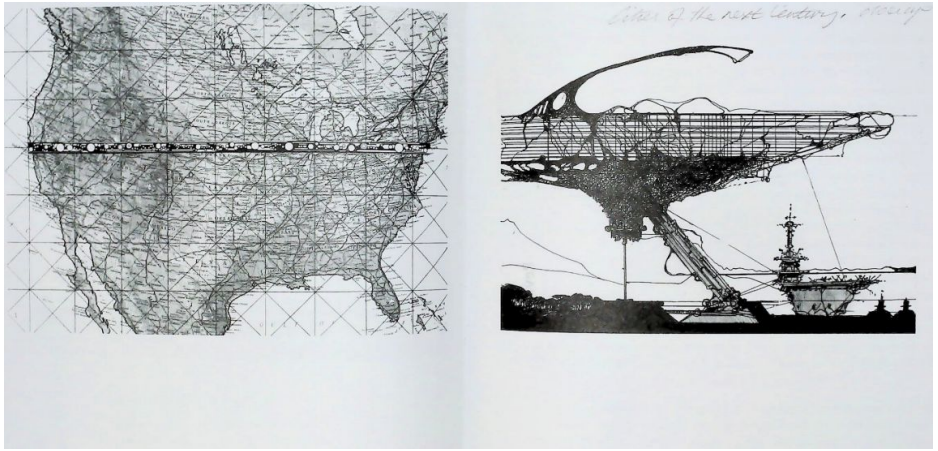
- https://www.hotosm.org/tools-and-data

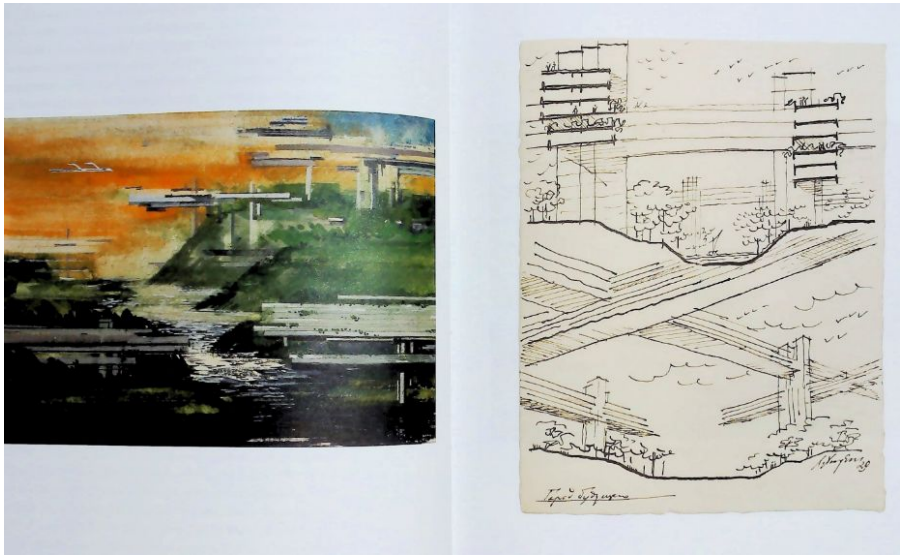
- https://data.humdata.org/

Cities and urban projects

Some books

“The World as an Architectural Project”



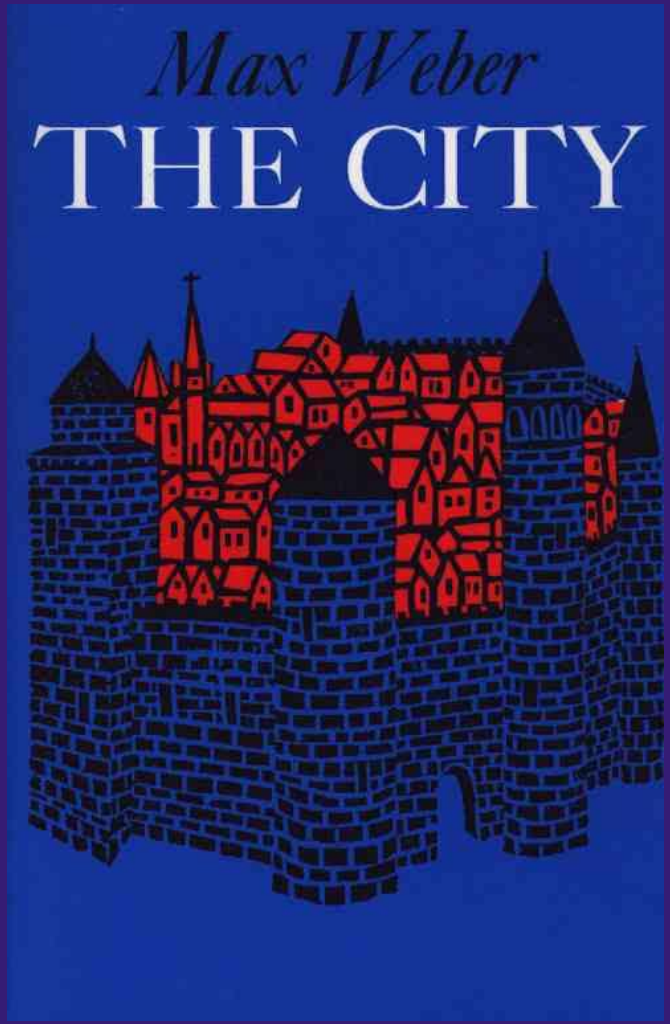


Some links to read and follow

City Interaction lab channel for additional lectures
https://youtu.be/aR4FuIM3VXc

Network book
http://networksciencebook.com/

Traditional old yet new book
M.Weber

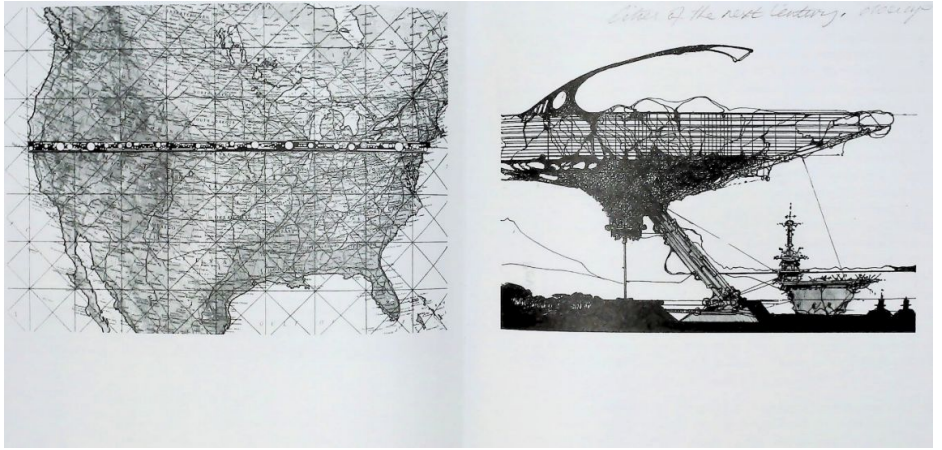


Assignments

1. Describe your projects in the past https://docs.google.com/spreadsheets/d/1mavwYKPbf2fkP-rVforqFhjWeogx8vIgS1m9WlsAtx4/edit?usp=sharing

2. Choose and read one section of the book on networks
(to present or discuss in the next session of the course)http://networksciencebook.com/

3. Choose the subject to work on:
A. connected to your previous project
B. from the list of topics https://docs.google.com/spreadsheets/d/1mavwYKPbf2fkP-rVforqFhjWeogx8vIgS1m9WlsAtx4/edit?usp=sharing
C. from the list of networks in the repository https://networkrepository.com/inf-openflights.php



Ideas on projects

1. Document city evolution (google capture timelapse) of a chosen city in India or elsewhere. Document it qualitatively or quantitatively. Use data on historical maps (*). Explain why you chose the city, what is special in the city evolution. Use network indicators combined with city indicators (economical, social, environmental).

2. Describe a chosen city using network concepts, e.g. degree, or other measures (betweenness) and come up with some additional network concepts, which could help to describe the city. E.g.inspired by the description of Chandigarh city (heart of a city, lungs, vessels). Create new ways to describe city infrastructure nature inspired. What is special in the network of this chosen city?

3. Document urbanisation of a chosen city. Describe existing issues with the urbanisation, which aspects could be shown with the network structures. Use data on planned vs. non-planned cities. Compare planned vs.non-planned cities. What network indicators can be good for documentation of the city urbanisation?

4. Document rural,urban communities in fixed spatial areas. If you do not have access to data, try to design what is needed to collect (survey). What are the most plausible methods to document them using technologies vs. using alternative documentation methods: define research questions of the study, define possible outcomes, define available methods and time-line

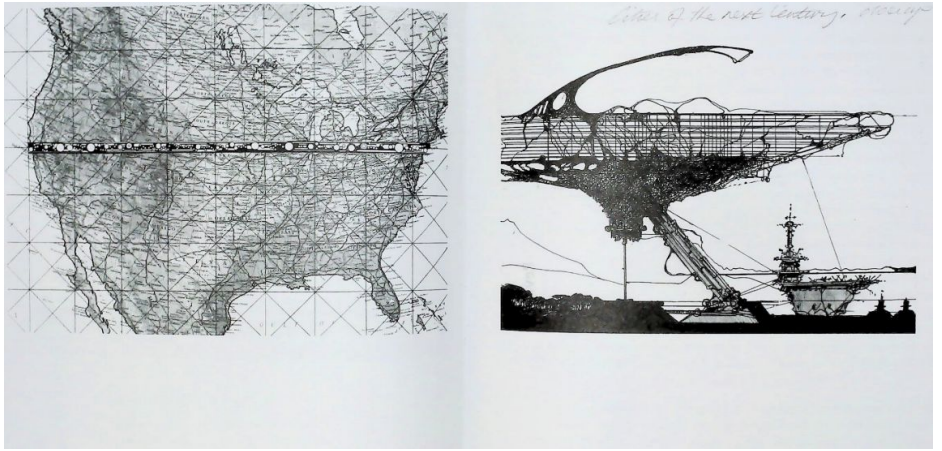
5. Choose the city in India or other country, try to find some open data for this city and visualise this data on the map of the city. Open data on pollution or noise in cities.

6. Green areas in cities: choose the city, find information missing trees or green spaces in cities (in India or elsewhere), try to find illustrate with data (number of trees, density) E.g.https://github.com/Liyubov/open_tree_data_analysis
7. Data inspired speculations: 3D vs. 2D networks of cities:
   Compare networks geometry pf cities and city amenities: are there simpler ways to make cities greener or making them more sparse? Calculating Utopia for our cities (depends on data for Indian cities). Design network infrastructure in space (Autocad, blender)
8. OPEN project!!

Assignments

Projects delivery (share in google document or slides, pdf):

1. **Formulate research questions** you want to answer (1-2)
2. Describe the motivation of your project, why did you choose to work on it
3. Describe methods you would like to use (network methods, quantitative or qualitative)
4. What data do you have? Describe if you have any missing data. How would you use it if you would have the data
5. **Present 2-3 images you did** to illustrate your project, e.g. plot of a city, diagrams of data visualised (with google charts, python, Gephi, autocad, blender etc.)



Research project ideas

Private vs. public space distribution

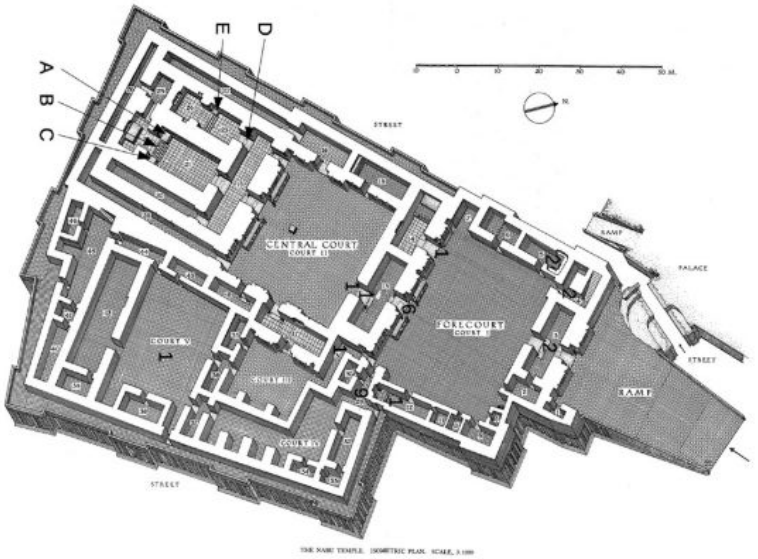


Figure 3.7: Plan of the Ezida temple in Dur-Šarruken, with the locations of inscribed elements (marked with letters A–E abandoned tablets (marked by numerals) added by the author. The bridge to the palace is to the northwest, tablet storage the west wall (5, 15), and the gods' cellas to the southwest (21–4). The *akītu*-suite with throne room (42) and 'seven-day (35) is in the southeast wing. Maximum dimensions *c.* 170 × *c.* 120 metres (Loud and Altman 1938: pl. 67; courtesy of th ental Institute of the University of Chicago).

Any questions?

Please contact me at

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```
G = ox.graph_from_address('Manhattan, New York')
edges = ox.graph_to_gdfs(G, nodes=False)

edges.explore(column="length",
     tooltip="length",
     popup=True,
     tiles="CartoDB dark_matter",
     cmap="inferno_r",
    )
```