Putting data science in SHAPE: A geographical perspective

Andrea Ballatore

Dept. of Digital Humanities,
King's College London

https://aballatore.space

@a_ballatore

andrea.ballatore@kcl.ac.uk

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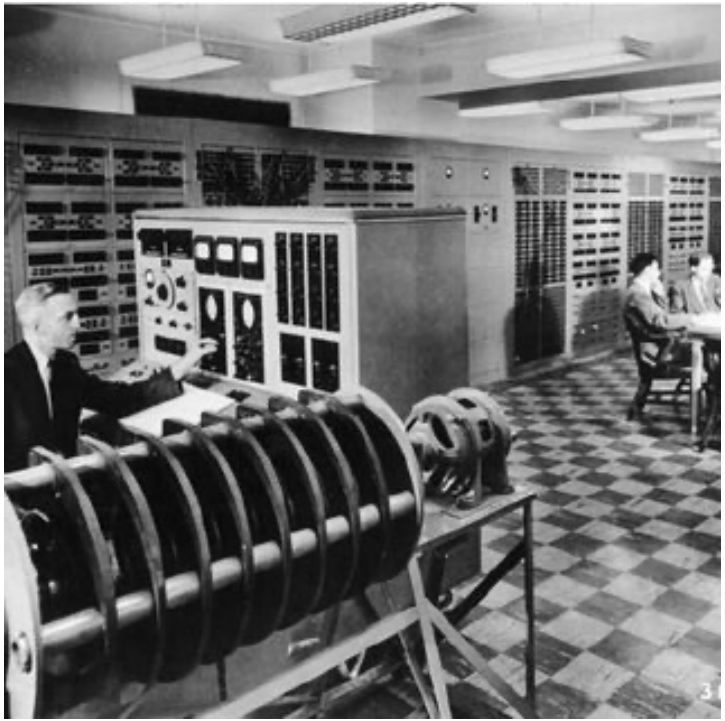
Outline

1. Decolonising data science?
2. Decolonising and anti-STEM sentiment
3. Some practical ideas

Decolonising data science

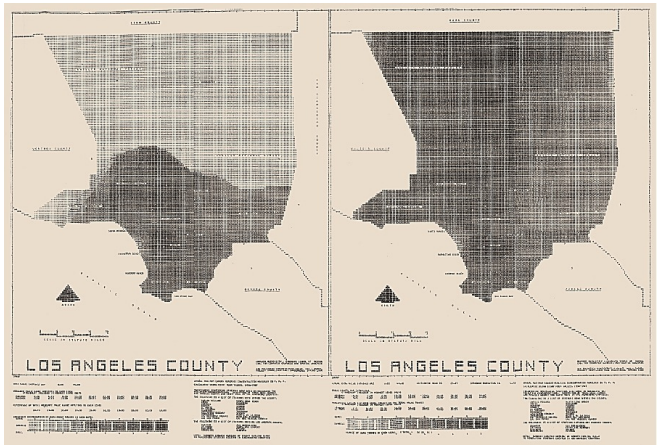
[My context: teaching data science and Geographic Information Systems (GIS) to SHAPE and minority students]

- Applied statistics and computer science
- Quantitative research methods
- "Positivist" ideas
- Techno-science originated in the Global North in the last few centuries, i.e., during colonial times



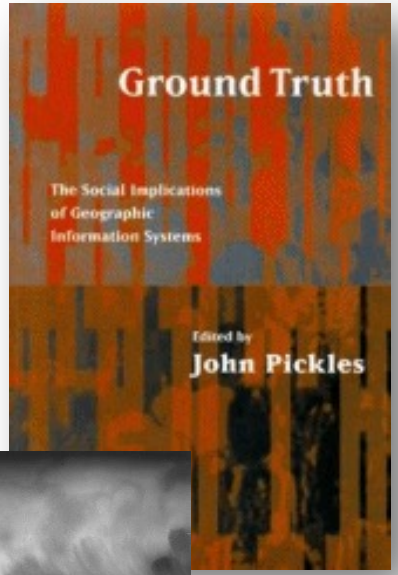
Contextualising data science

- Historical and political context shapes science and technology (e.g., WW2, Cold War, Imperialism, Eugenics, Racism)
- **Philosophy of technology**: instrumentalism vs technological determinism
- **Science and technology studies**: complexity in how people use technologies in different contexts



Critical GIS as a case study

- GIS developed in the 1990s mostly for government use
- Land/environmental management, census, urban planning, defence
- Gulf War as a first deployment of GI tools with GPS positioning
- Wave of critical scholarship that denounced GIS as a tool of oppression
- GIS is doing very well and is crucial to handle most issues in society, with more ethical awareness



Anti-STEM decolonising

- Decolonising rhetoric often shows an anti-STEM bias
- Quantitative methods as colonial, imperialistic, even violent (!)
- Much quantitative research is done for progressive goals
- Extremely ineffectual and counter-productive rhetoric, fostering an anti-science bias among SHAPE students
- This claim associates a set of practices with political positions a-historically

The two cultures (C. P. Snow, 1959)

Anti-STEM rhetoric

"I offer *other* histories, older and newer, to point to the fundamentally violent heart of technoscience as a historical, colonial enterprise. This is not a new point but bears repeating because it brings into question whether repurposing historically violent disciplines, knowledge projects and technologies might realise the decolonial futures we want."

https://spheres-journal.org/contribution/an-agenda-for-decolonizing-data-science/

"Computational and cognitive sciences — fields that both rely on computational methods to carry out research as well as engage in research of computation itself — are built on a foundation of racism, sexism, colonialism, Anglo and Euro-centrism, white supremacy, and all intersections thereof"

(Crenshaw 1990; Lugones 2016)

My modest proposal

- We are not frozen in Victorian times
- Disciplines, epistemologies, and belief systems evolve (SHAPE students know this)
- Uncover straw-man arguments
- Identify actual **harm**, rather than dismiss entire scientific enterprises on ideological grounds
- Promote **inclusive practices** and make issues explicit

Some solutions

- Discuss the historical and geographical **context** of (geo) science and technologies
- Include **ethics** of data science, showing examples of harm and mitigation
- Highlight **minority authors/scientists** (aim at gender and ethnic balance in references)
- Highlight **innovative projects/companies** from the Global South
- Highlight **local agency** in Global South applications
- Use data and case studies that include cities and data in the **Global South** (e.g., Lagos and Tunis, not only London and NYC)

More solutions

- Avoid using humanitarian examples where people in the Global South are “rescued” by Global North actors
- Highlight **colonial biases** induced by training data (e.g., white faces used as “universal” to train ML)
- Highlight that **solutions** to mitigate these biases exist!
- **Balance** positive and negative examples (avoid tech marketing hype, but also anti-STEM content)