Professional responsibility and the ethics of geo-information

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Structure

- Professional ethics and research ethics

- What make geoethics unique?

- The ethics of geo-information

1. Professional ethics and research ethics

Professional ethics, or professional responsibility concerns the personal, organizational and corporate standards of behaviour expected of professionals

For *scientists*, professional ethics focuses on three main issues:

- *scientific integrity*: adherence to professional standards of honesty, impartiality, reliability, avoidance and disclosure of conflicts of interests, and collegiality

- *social responsibility*: taking into account potential consequences of research for society

- adherence to standards of *research ethics*, particularly protection of human subjects and humane treatment of animals

Research ethics

- Research ethics concerns the ethical principles that should guide research practices. It is focused not on individuals but on research projects, activities and programs.

- Research ethics committees (RECs) evaluate these activities. They usually do not consider scientific integrity (which is assumed as given), but may consider social responsibility.

2. What make geoethics unique?

Scientific fields raise different ethical issues in research. E.g.,

Medical sciences: relationship between medical researcher and human subject.

- Ethical issues: proper treatment of test subjects: autonomy, informed consent, beneficence, human dignity.

Life sciences: relationship of researchers to living biological systems, ecosystems and the environment.

- Ethical issues: proper treatment of living beings, impacts on ecosystems, animal welfare, sustainability, health and environmental risks, naturalness, playing God.

Engineering sciences: The technological intervention into society

- Ethical issues: responsibility for social, health and environmental impacts, precautionary principle, well-being, the good of society.

Social sciences: relation between the researcher and the social world (human beings, groups, societies, etc.).

- Ethical issues: proper treatment of human subjects, data privacy, equality, confidentiality, non-discrimination, avoidance of cultural and social bias, and respect.

Natural sciences: accurate and truthful depiction of the natural world.

- Ethical issues: Data integrity, freedom from bias, accuracy, verifiability, honesty.

Information sciences: responsibility of researchers for the processing, storage and dissemination of information.

- Ethical issues: informational privacy, information security, intellectual property, censorship and freedom of information.

How about the *geosciences*?

- Combination of ethical issues from:

  - natural sciences (accuracy)
  - social sciences (respect for human subjects, non-discrimination, avoidance of cultural bias)
  - engineering sciences (environment, risks, impacts)
  - information sciences (information privacy, security, censorship, intellectual property)

3. The ethics of geo-information

I will focus on ethical issues in the (visual) representation of geo-information.

Three major issues:

I.   inaccurate representation

II. biased representation

III. sensitive data: privacy and censorship

I. Inaccurate representation (or misrepresentation)

How is this an ethical issue?

Inaccuracies can have great consequences.
E.g., military mistakes, unpreparedness for
disasters, car accidents, land conflict, etc.

Geo-information scientists therefore have a social responsibility
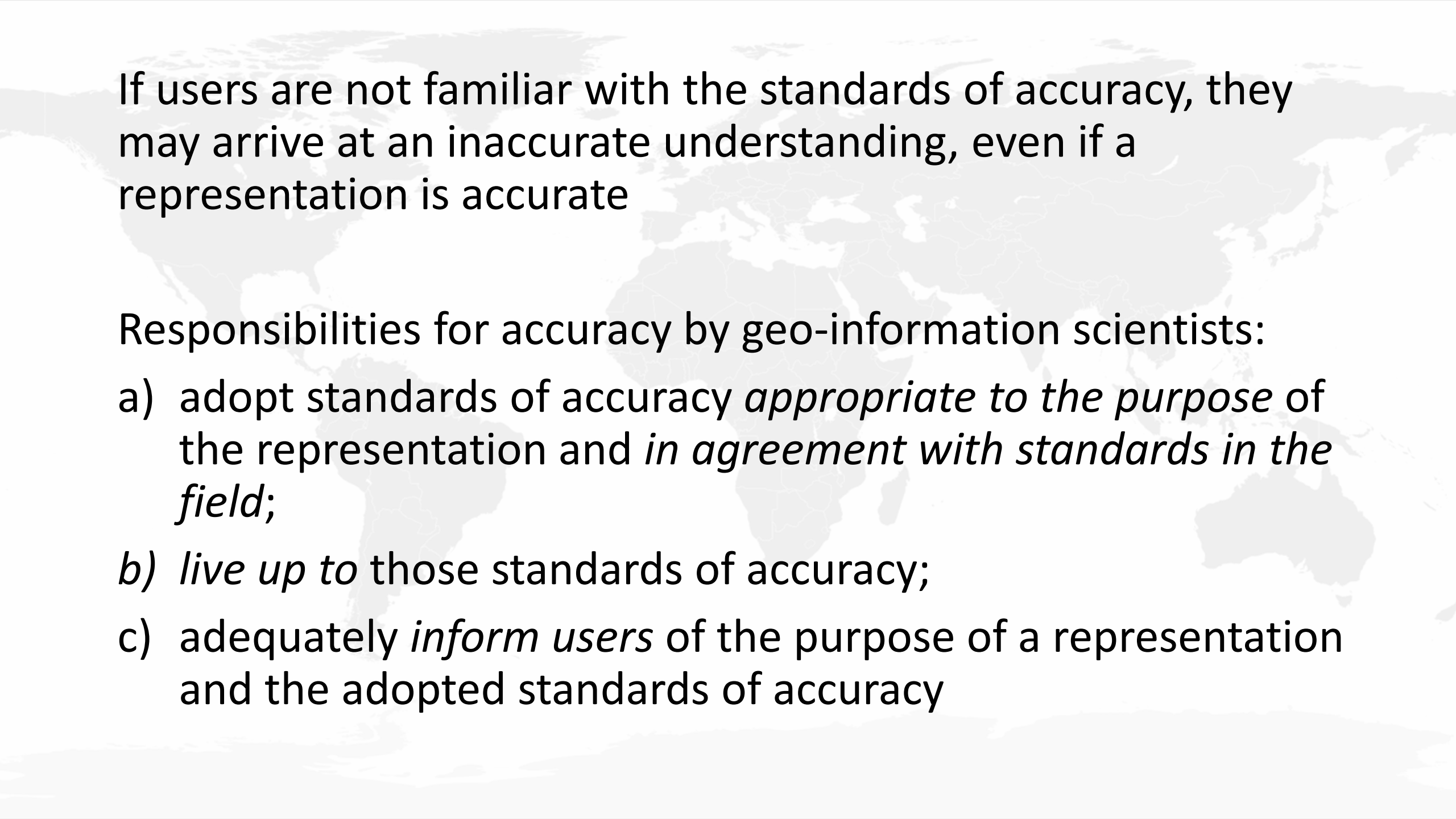for the accuracy and reliability of data.
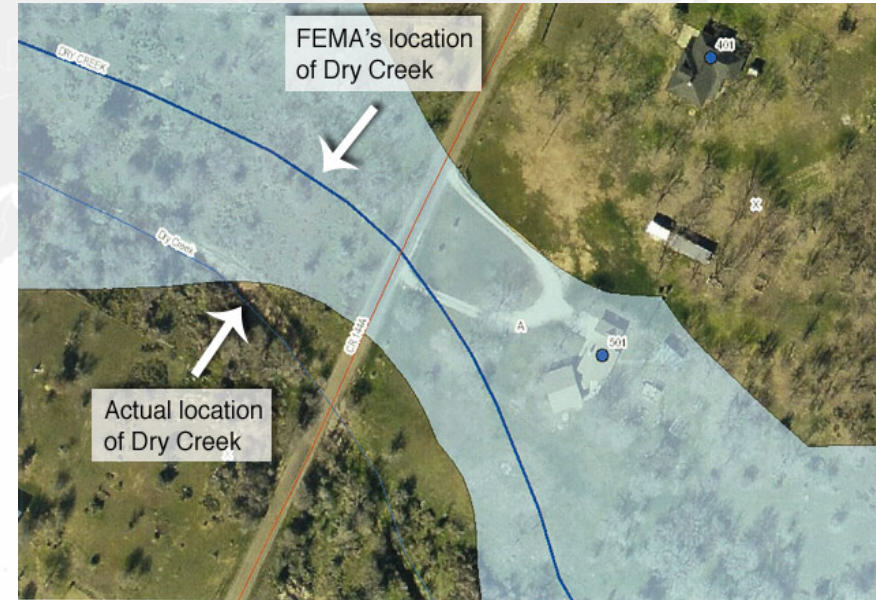
Accuracy is always defined relative to *standards of accuracy* that are defined relative to the *purpose* of a representation.

They specify the *level of detail* by which reality is depicted, *criteria of relevance* for whether or not something should be depicted, and *meanings* of iconic and symbolic forms

- E.g., smaller cities are not depicted because they would crowd the map
- E.g., no cities are depicted because they are not relevant
- E.g., oceans are depicted as blue, depth by shades of blue
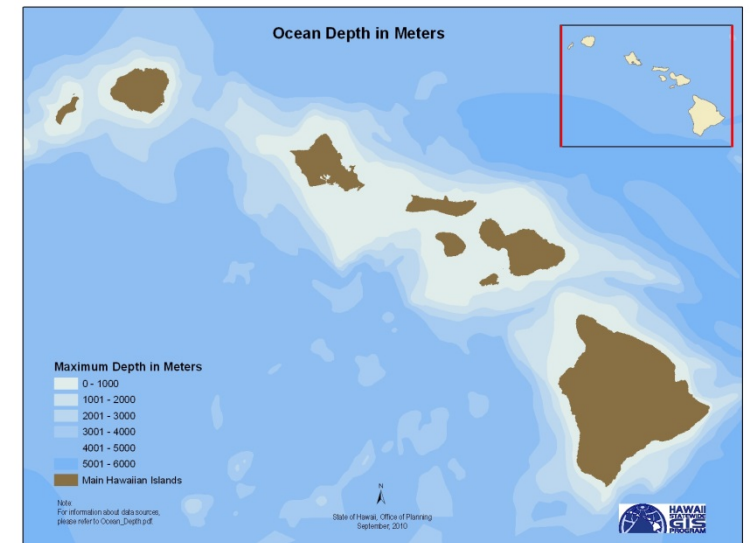
If users are not familiar with the standards of accuracy, they may arrive at an inaccurate understanding, even if a representation is accurate

Responsibilities for accuracy by geo-information scientists:

a) adopt standards of accuracy *appropriate to the purpose* of the representation and *in agreement with standards in the field*;

b) *live up to* those standards of accuracy;

c) adequately *inform users* of the purpose of a representation and the adopted standards of accuracy

II. Biased representation

Representations in which the rights, values or interests of some stakeholders are insufficiently accounted for

Types:

(i) Selectively including or excluding information in the

representation

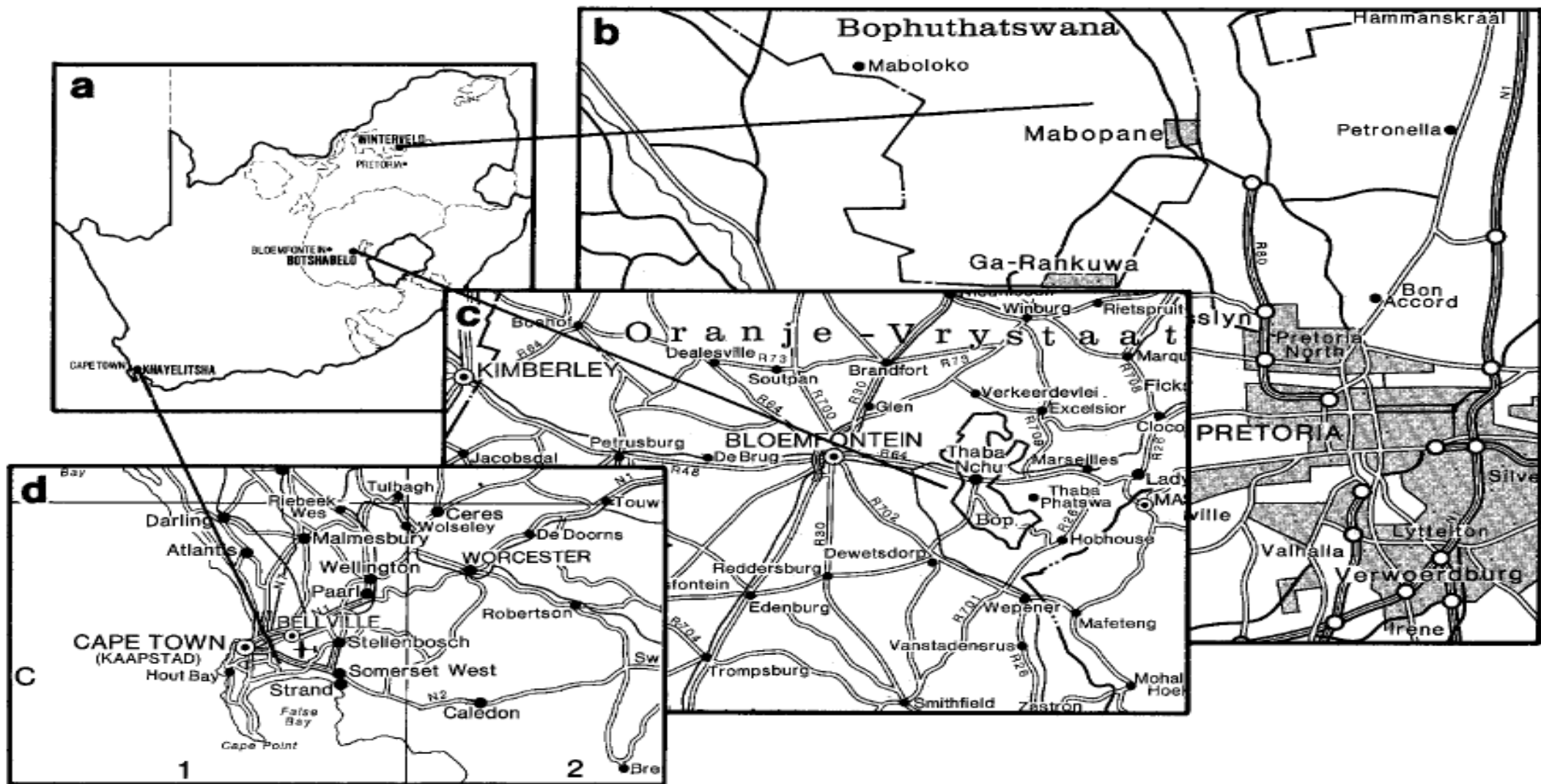- e.g., South African Apartheid-era maps that do not depict black townships

Fig. 1: Invisible towns. Stickler, 1990.

(ii) Using socially contested categories and language in representation

- terminology
- classification systems
- segmentations of areas
- e.g., (not) depicting Palestine as a state

(iii) Using stereotypes in depicting persons, groups, events, locations, etc.

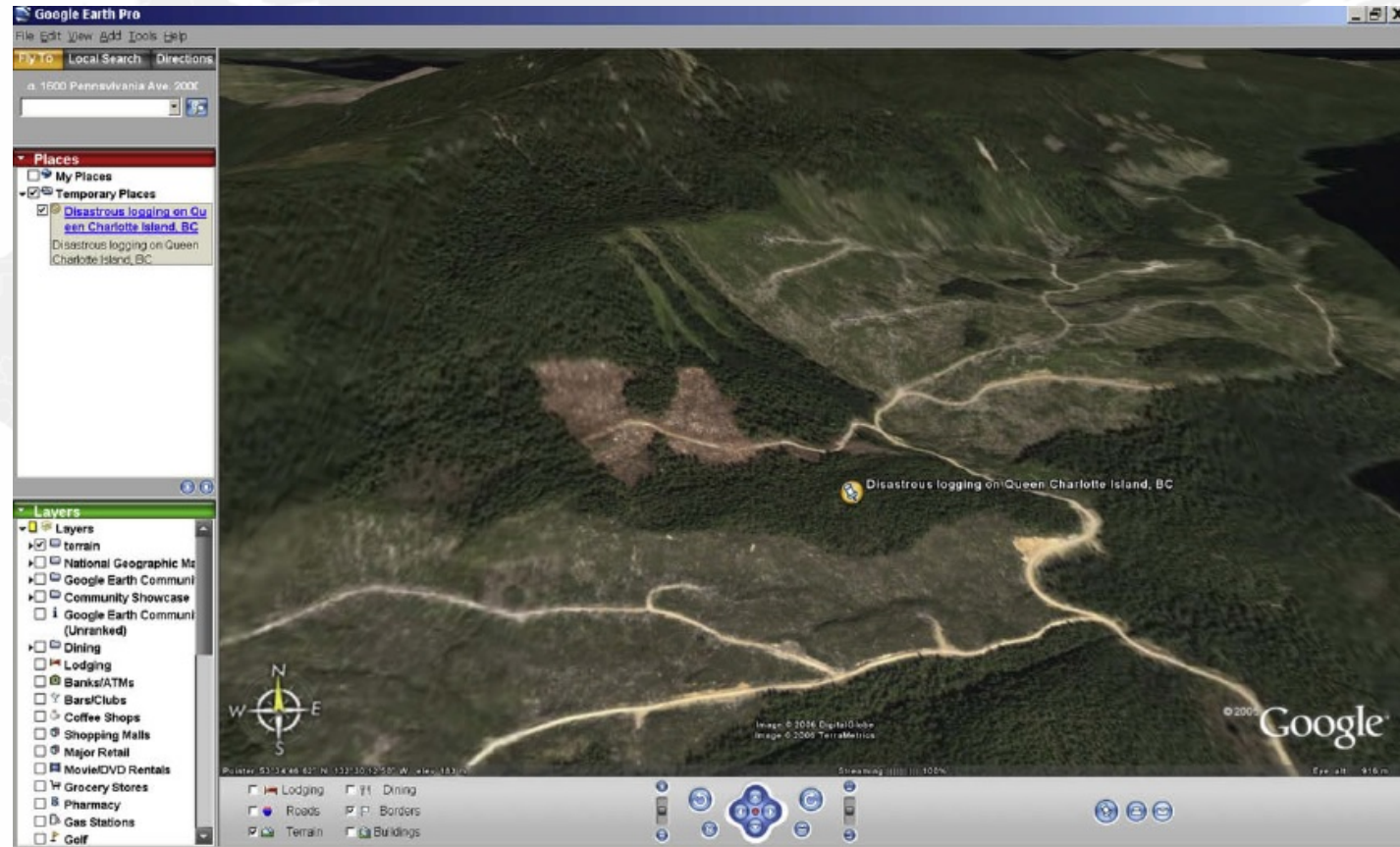- e.g., using a racist cartographic symbol for an Indian reservation

Fig. 3: Google Earth Image of logging operations on Queen Charlotte Islands, BC, labeled as ''disastrous logging''. Sheppard, 2009.

Fig. 2: Map in an US-schoolbook, leading to its recall. MSNBC, 2016.

(iv) Selectively suggesting or denying potential consequences of actions and events

- e.g., denying a correlation between human activity and global warming in a simulation of climate change

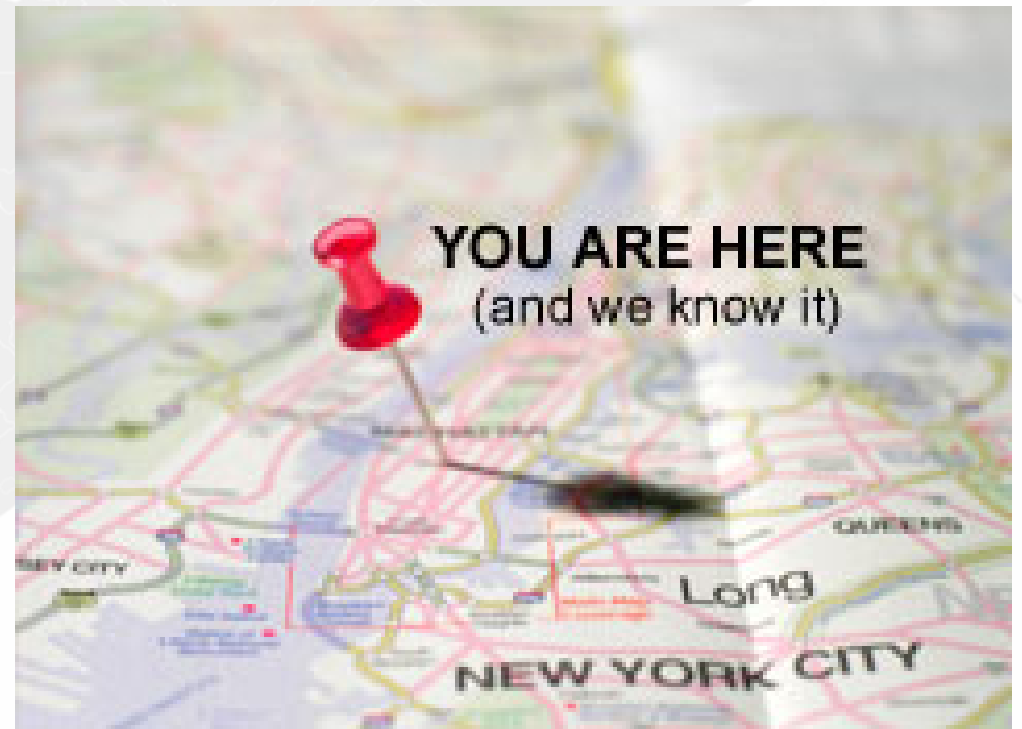(v) Making the representation more useful for certain user groups than for others

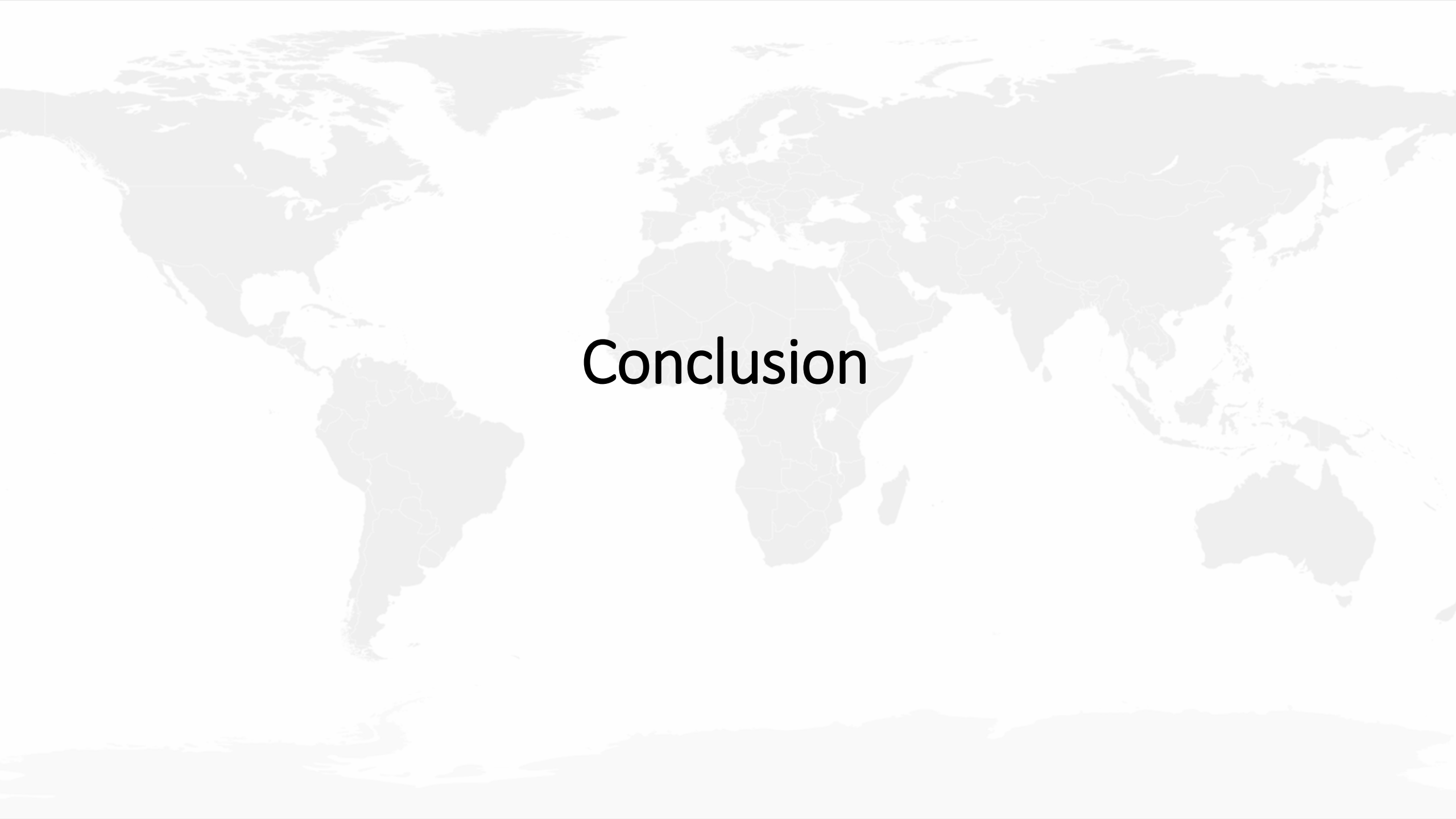- e.g., a travel map that depicts roads for automobiles but not bike paths
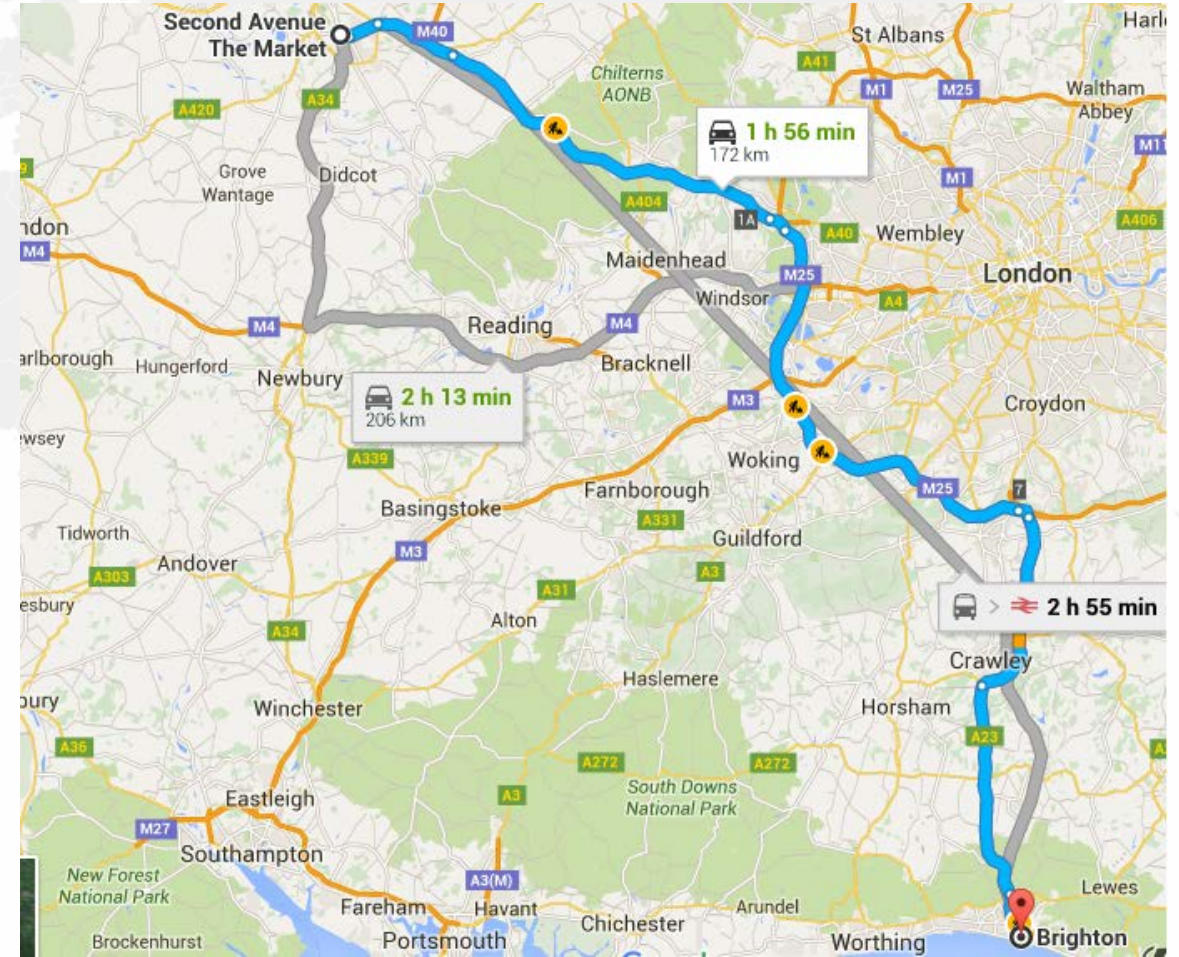
III. Whether or not to depict something: sensitive data, geoprivacy and censorship

Three issues:

- *Location privacy:* respecting people's right to prevent other parties from learning their current or past location. (How far does it go? Also extends to the home?)

- *Rights of private organizations* to have their facilities and activities not represented

- *Rights of governments* to hide or censor information for national security purposes

Conclusion