

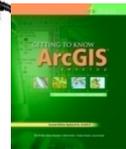


THE UNIVERSITY OF TEXAS AT DALLAS

school of
economic, political and
policy sciences

strong minds, global impact

existing and Potential ethics controversies involving geospatial technologies



"Can you help me with my ethics homework, or would that be missing the point?"

Daniel A. Griffith

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SOME HISTORICAL CONTEXT

- During the second half of the 1900s, geographers addressed a wide range of research issues, from house types, locational inventories, and the spatial mean—pioneered by John Frasier Hart, and now a staple of US Census Bureau decennial publications—to sophisticated mathematical analyses, but **few with many ethical concerns**.
 - The most common type of ethical controversy for the discipline concerned whether or not geographers should **work for government agencies such as the US CIA**, although the discipline was recovering from serious ethical setbacks in the first part of the century stemming from **Hitler's use of geopolitics**, and relationships between racism and **environmental determinism**.
- Location, location, location!!!**
- This situation began to change with, e.g., Symanski's 1974 article entitled "Prostitution in Nevada," which includes a **photograph showing the license plate numbers of automobiles parked outside of a brothel**
 - And England's reservation, expressed during a 1990s Syracuse U. colloquium presentation, concerning whether or not to **published maps from her research about the Toronto gay community** because gays could be put at risk by having their locations revealed to "gay bashers."

motivation

1. NRC. 2007. *Putting People on the Map: Protecting Confidentiality with Linked Social-Spatial Data*. National Academies Press.
2. Griffith, D. 2008. Ethical considerations in geographic research: What especially graduate students need to know, *Ethics, Place, and Environment*, 11: 237-253.
3. 2009 AAG Ethics *ad hoc* Committee

<http://www.aag.org/Info/ethics.htm>

4. Resnik, D., D. Patrone, and S. Peddada. 2010. Research misconduct policies of social science journals and impact factor, *Accountability in Research*, 17: 79-84.



Principles of ethical research:

a yardstick for addressing geographic research ethics

1) *respect for persons*: an individual (**and perhaps the community in which s/he belongs, which may exercise collective rules by which researchers and subjects are obligated to abide**) enters voluntarily into geospatial research as a subject of study or research participant, with adequate information and informed consent, with a guarantee of confidentiality, which can be waived only by that individual, sometimes through her/his representative, and with an understanding of subsequent data ownership and analysis via geospatial technologies;

2)justice: all members of society should have an opportunity to **receive the benefits** of geospatial research as well as to **bear its burdens**; and,

3)beneficence: a research project and the geospatial technology affiliated with it should **minimize harm** to the extent possible, and involve efforts to ensure an individual's well being; the project should strive for a maximization of benefits and a reduction of any risk that might occur from the use of any geospatial technology.

Case I

In 2008, Jared Diamond published "**Vengeance is ours**" in *The New Yorker* magazine, a story about a 3-year clan war in Papua New Guinean begun by Daniel Wemp to avenge the death of his uncle, during which 29 people died.

In April, 2009, Wemp and the alleged target of his vengeance, Mandingo, sued Diamond and the parent company of *The New Yorker* in the Supreme Court of the State of New York for allegedly **defaming them**.

Wemp and Mandingo claim that

- they were **not told** about the writing of an article before being interviewed, and
- that Wemp's life **now is in danger** from those who want to avenge Mandingo's alleged injuries.

Relevant ethical issues

respect for persons (i.e., informed consent)

beneficence

NOTE: Diamond admitted to backdating some notes

Case II

Through 2007, Dr. Phil Jones, director of the U. of East Anglia's Climatic Research Unit (CRU), declined multiple requests for details about the **location of 84 Chinese meteorological monitoring stations** used in a study published in *Nature* upon which the UN Intergovernmental Panel on Climate Change based many decisions, arguing that furnishing these data would be "unduly burdensome." The paper states that **"there were 'few if any changes' [in the] locations"** of these weather stations.

Convincing **evidence** exists indicating that over a 30-year period, 51 of the meteorological stations experienced relocation, while the locations of only 25 stations remained fixed, with the mobility status of the remaining 8 stations being unknown.

Location matters!!!

This **evidence** is bolstered by 49 of the stations lacking a history of their locations, as well as other details. These monitoring bases include 40 of 42 rural stations. Of the rest, relocation of 18 of the stations may well have invalidated their data.

Further problems were identified in 2010: of the Australian stations, 7 had been discarded and another 112 had not been fully included in annual temperature differences calculations;

and, of the US stations, 121 **did not have unique identifier codes**, resulting in data for these stations either being assigned to the wrong location or overwritten.

Relevant ethical issues

justice

beneficence

Case III

In 2005, Dr. Jerome Dobson launched the México Indígena project to Oaxaca, Mexico, the American Geographical Society's (AGS) initial "Bowman Expedition," an initiative to organize international teams of geographers to research potentially important place-based issues.

Participatory research mapping is the primary method for obtaining and understanding geographic data, which then are merged in a geographic information system to produce maps and to analyze trends.

Aldo Gonzalez, representing the Union of Organizations of the Sierra Juárez of Oaxaca NGO, eventually condemned this kind of project, completely distancing his NGO from the work.

He urged indigenous peoples in Mexico as well as in communities elsewhere not to participate in these types of research projects because they

- usurp traditional knowledge **without prior consent**
- furnish critical knowledge that could be **used by governments to suppress indigenous peoples.**

The two controversial ethical issues he raises:

- **neglecting to disclose** funding sources (i.e., the Foreign Military Studies Office of the US Army); and,
- **failure to inform participants** about the potential risks or unintended consequences associated with the study.

Relevant ethical issues

respect for persons: who should speak for the people when giving informed consent (especially for communities in which legal/political representation is unknown); and,

beneficence: intellectual property ownership (e.g., maps and GIS databases) & who should determine political risks faced by indigenous communities and individuals within them.

Case IV

In 2009, Gillespie and Agnew, with others, published “**Finding Osama bin Laden**” after employing geographic conceptualizations coupled with a suite of geospatial technologies to identify the most probably current-at-that-time location of bin Laden.

Haider criticizes: if this is taken seriously by NATO forces lacking ground intelligence in the tribal areas and unable to tell friend from foe, the Shiites of Parachinar may experience **bombs dropped** from American drones, while they fight for their survival against the Taleban on the ground

NOTE: This situation is reminiscent of a **spatially interpolated radon map** published in the Syracuse newspaper in 1990 that negatively impacted upon house values of untested properties for which values were interpolated.

Relevant ethical issue

beneficence

CASE STUDY IMPLICATIONS

1. geographic researchers need to very **carefully verify facts**, and should recognize that back-dating their field notes is a very poor research practice. In addition, interviewees sometimes remember what interviewers want them to remember (**false recovered memory?**).
2. **location matters**, and space-time data series are meaningless if their locational and temporal tags are corrupted or missing.

3. respect for persons should be interpreted

more generally as respect for both individuals and communities to which they belong that may exercise collective rules by which they are to abide. When conflicts occur amongst the actors within this setting, ethical guidelines are needed that outline how to negotiate a satisfactory agreement.

4. a maximization of benefits and a reduction of risk often involve confidentiality, which frequently includes the **locational tags** attached to individuals.

CONCLUDING COMMENTS

geospatial technologies introduce special (additional) ethical consideration challenges:

1) Movement tracking of an individual via a GPS in a mobile phone or in a vehicle;

2) Monitoring locations (e.g., *presence detection, proximity detection, situated voting, and implicit interactions*) of an individual via bluetooth sensors that detect bluetooth-enabled devices (e.g., mobile phones, computers): obtain an ID (which is arbitrary), a spatial position and a timestamp;

3) Identifying place with high-resolution remotely sensed data—see Case IV;

- 4) Identifying place with **address matching**;
- 5) **Public web cams**;
- 6) Site selection via GIS spatial analysis: **proprietary and possibly encrypted georeferenced data**; and,
- 7) Combinations of GIS and web technologies for **search purposes**.

These challenges can interface with the increasing problem of **cyberbullying**, which is becoming a general societal problem.

The geography ethics police!



Darth Tater

Darth Tater and his gang!



Steeler Tater

Questions?



Nittany Lion Tater



Penguin Tater