Case study: Tracking Mobile Phones in Mobility Research

In an article published in the scientific journal *Nature* a team of researchers affiliated with a U.S. university observed that the daily movements of human beings follow “simple reproducible patterns” that can be simulated with a “single spatial probability distribution” (Gonzáles et al 2008, p. 779). Their findings are potentially significant to scientists concerned with spread of infectious diseases, traffic forecasting, emergency response, and other diffusion processes related to human mobility.

The authors base their conclusions on the movements of mobile phone users whom the authors tracked using records provided by an unidentified private telecommunications company. One set of records included the locations of the nearest cell phone tower to every call made by a sample of 100,000 mobile phone users over a six-month period. A second data set included the locations of 206 GPS-enabled mobile phones recorded every two hours for one week. Although the phone users were not informed that their locations were being tracked, the telecommunications company did disguise their records so that individuals could not be identified. Both data sets were acquired in an unidentified European country prior to the European Union’s adoption of General Data Protection Regulation. In the U.S., cell phone location tracking laws vary by State.

Controversy ensued when *Nature* readers and news organizations learned that mobile phone users were tracked without their knowledge, and that they were not informed that their location data was provided to the researchers. Authors argued that informed consent was unnecessary, since the Institutional Review Board at the U.S. Office of Naval Research (the agency that sponsored the research) determined that the study did not involve human subjects.

In response to the controversy the researchers’ university has assembled a panel to advise its own IRB about the ethical implications of location-based research. You have been asked to participate in the panel as a subject matter expert on geospatial technologies. Should the researchers in this study have been required to acquire informed consent? Under what conditions do you recommend that the IRB insist that human subjects’ locational privacy be protected?

References

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Resources for educators

Suggested discussion points, relevant GISCI Rules of Conduct, and further resources related to this case study are available on request. Send request to David DiBiase (dibiase@psu.edu) along with contact information (including your position and affiliation) and a brief description of how you plan to use the case.

Suggested citation: David DiBiase, Francis Harvey and Dawn Wright (2009) Case Study: Tracking Mobile Phones in Mobility Research. GIS Professional Ethics Project http://gisethics.org

Reviewers: Michael Davis (Center for the Study of Ethics in the Professions, Illinois Institute of Technology), Chuck Huff (Department of Psychology, St. Olaf College), and Matthew Keefer (Division of Educational Psychology, University of Missouri-St. Louis).

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