Chapter 115
Neogeography

Judith Gelernter
Carnegie Mellon University, USA

ABSTRACT

Neogeography refers to geography in the Web 2.0 style. The practice of neogeography shares the characteristics of other social interactive technologies as it represents a collaborative effort by the general public rather than professionals. Volunteer-supplied geographic tags may assume informational value beyond entertainment. Their potential is tempered by problems stemming from its novelty. For instance, neogeography-related websites provide different ways for people to contribute tags, photographs, locations, and commentary. More serious concerns are whether data and commentary are accurate and whether photographs can be an invasion of privacy. Assuming we come to terms with these concerns and there is a future for neogeography, the next generation of applications might change in appearance, mode of access, and the sorts of layered geographical information that might be added above a map.

INTRODUCTION AND BACKGROUND

Neogeography refers to geography in the new, Web 2.0 style—a collaborative technology from the public rather than from those in the profession. The practice of neogeography[1] shares the characteristics of other social interactive web technologies: a group of *people* (many unknown to one another) who *volunteer* to contribute *data* about a *topic*—in this case, mapping. The phenomenon could be studied from many angles: namely, the identity of the active creators of the data, their "free time", the nature of their data, and the identity of passive users of that data.

Neogeography might be considered a subset of *cybercartography* or interactive, web-based spatially referenced data. Interest in geographical or geospatial websites as distinct from the page websites has lead to the term *Geospatial Web* or the *GeoWeb* (Sharl & Tochtermann, 2007). Any sort of data that conveys place can qualify as geographical data, including for example, zip codes, area codes, images of a place, census data or place names. A variety of technologies are used to integrate and display geospatial information. The Open Geospatial Consortium is a group of

DOI: 10.4018/978-1-4666-2038-4.ch115

several hundred countries, universities and government agencies working to create and advocate standard geospatial techniques and formats. One such format is the XML format for geographic data known as GML (Geography Markup Language). The hope is that, by supporting certain technologies and formats over others, these will become the most widespread, and so more systems can interoperate. The use of open source software also encourages interoperability.

The "real" geographic techniques referred to in the quote come from Geographic Information Systems (GIS). The difference is that GIS provides a framework to capture and store data located by latitude and longitude coordinates, whereas in neogeography, the coordinate grid of the base is secondary to the annotations above. Some academics call participant mapping projects *GIS/2* (Miller, 2006, p. 191). Others see an overlap between traditional geospatial and neogeography in terms of the raster or vector basemaps, geocoding, GeoRSS and KML file formats and visualization (Satyaprakash, 2008).

A basemap may follow a raster or vector model. Raster models show the earth's surface continuously as in an aerial photograph, satellite image, or elevation surface. Vector models represent the surface of the earth by means of discrete points, lines and polygons, and are useful for storing data that have discrete boundaries, such as streets and country borders. Raster models in 3D show the earth's surface in relief, and vector models in 3D show a bird's eye view. Hybrid models of either dimension show both a continuous surface and overlay lines.

Geography has been opened to the *neo*, new geographer, that is, the non-expert, with the falling prices of instruments that measure latitude and longitude automatically and with the creation of easy-to-use, freely-accessible map applications. Mapping applications allow geo-coded data to be uploaded and positioned above a map, and pre-existing websites, such as Flickr for photographs that have added location-sensitive functionality to open geography to the enthusiast. Google Earth is one such application. Their chief technologist reported that, as of October 2007, the basic free version of Google Earth has been downloaded over 250 million times (GeoWeb, 2007, p. 16).

A Global Positioning System (GPS) device lets the user determine location, which can then be uploaded to a neogeography application. The GPS device triangulates measurements from several earth-orbiting satellites to record a location that is generally precise to within about 15 meters, barring weather and other conditions that hinder signal transmission. Those whose mobile phones conform to the Global System for Mobile Communications (GSM) standard can pick up location WiFi. Those who own a GSM cell phone may use GSM localization that measures the relative strength of signals from the broadcast points. Some digital cameras also are equipped to record location, which is then encoded in the photographs. Unless the camera is close to the object of the image, however, the coordinates of the image only approximate the coordinates of the camera, making the image coordinates imprecise. Location coordinates automatically assigned to pictures makes it easy to add those pictures to maps.

NEOGEOGRAPHY TECHNOLOGIES

Different neogeography technologies allow people to contribute variously. There are companies that specialize in basemaps; others, such as Google and Microsoft, have ventured into the market and financed their own large-scale topological photographing efforts. Smaller companies specialize in the neogeography application only, asking for the addition of locations, photographs, sound or video over their basemap. Complex data analyses, once the domain of GIS experts, now are performed also by plotting events such as criminal disturbances over maps. "What if" visualizations for urban planning, for example, have been uploaded for general comment in what