Digital Networks and the Geoweb

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Abstract

The geoweb is usually conceptualized as a blending of GIS (or broadly: geospatial data and techniques) with Web 2.0 (an umbrella term encompassing online interconnected software patterns and social practices of sharing and creating of data). In addition, many geographers who have undertaken geoweb research, either exploring ways to harness user-generated data or to structure their own participatory projects, have drawn primarily from the literature of Public Participation GIS (PPGIS). However, the definition of the geoweb remains amorphous and the intersection of geodata and social software bears further examination. In this presentation I offer a literature review of geographers' engagements with Web 2.0 discourses both inside and outside academic scholarship. I outline the major themes of this engagement and identify elements of overlap and difference, proposing potential avenues for further geoweb research.

Background and Relevance

The geoweb exists somewhere in the intersection of several rapidly moving processes congruent with the development of new mapping and communication technologies: the increasing spatialization of information online, the emergence of relatively free and user-friendly web mapping software, the growing availability of mobile computing platforms and sensors (such as smartphones), and a paradigmatic shift toward collaborative creation and distribution of spatial data on the internet. Yet, in the years since “map hacks” and “mashups” first entered geography's vocabulary (Crampton and Krygier 2005) heralding the start of what would become an influx of geoweb mapping tools and map-making populations, geographers have still not agreed on a consistent name for these phenomena (Crampton 2009; Elwood 2009). The emergence of “neogeography” (Turner 2006) shares many features with the geoweb, and has amplified this state of confusion about how to understand the operations and implications of geoweb practices within the discipline of geography (Rana and Joliveau 2009).

Some geographers have suggested that the multivocal and mutable traits of the geoweb make it an extension or successor to the field of Public Participation GIS (Miller 2006; Rouse et al. 2007; Flanagin and Metzger 2008; Tulloch 2008). Another thread of research uses the concept of Volunteered Geographic Information (VGI) (Goodchild 2007) as an analytic to understand user-generated online geodata, frequently from the perspective of research on Spatial Data Infrastructures. Out of all the numerous terms and concepts for aspects of these emerging phenomena, VGI and the geoweb appear to be the two terms that have received the widest adoption within the discipline.

Geographers have also turned outside the discipline to technology and media discourses surrounding Web 2.0 (O'Reilly 2005) in attempts to understand the dynamics of user activity on the geoweb. Like the geoweb, Web 2.0 is a problematic signifier (Beer and Burrows 2007), and has been critiqued as a meaningless corporate branding strategy (Bassett 2008; Scholz 2008). While other terms have been suggested, such as the Social Web, by Scholz (2008), or Social Software, preferred by Shirky (2008), Web 2.0 is the most commonly used name. Monmonier (2007), however, observes that the "Web" itself may cease to be a meaningful term—at least for understanding the breadth of digitally networked geospatial information—as telecommunication increasingly incorporates mobile platforms and further permeates the environment in the form of embedded computing. From this perspective, the constellation of practices and technologies usually called the geoweb bears further analysis in light of research on cybercartography and ubiquitous computing.

There is more at stake here than arguments over terminology. Through a more systematic study of overlaps and differences between the geoweb and similar fields, I hope to make observations that not only help situate the geoweb as an object of study, but also suggest new avenues of research and identify gaps in current scholarship.

Methods and Data

This presentation looks at the relationship between the geoweb (as formulated by scholars working in the field of Geography) and the concept of Web 2.0 through a series of discursive engagements. As Geographers have turned to Web 2.0 literatures to explore individual participants' experiences on the geoweb, certain recurrent questions form three broad categories: 1) the study and classification of geoweb users 2) the examination of collaboration and participation on the geoweb and 3) the exploration of crowdsourcing and collective intelligence. These three themes represent an upscaling of the analysis, from the level of the individual user, to groups of individuals, to and then, at the third level, the dynamics of larger "crowds" of people. Each level is also mediated in different ways by the machine intelligence of the online environment and of "smart" everyday objects in the physical realm.

For each of these categories, I approach the literature through a series of questions: How have the theories and analyses of Geographers and Web 2.0 commentators been informed by the social and technical affordances of their respective digital environments? What are the challenges in translating theories and frameworks developed in one context to another? In particular, how might the peculiar qualities of the geospatial digital environment cause aspects of Web 2.0 theories to amplify, mutate, or break down?

Results and Conclusions

For each of the three themes described above (classification of users, collaboration, and collective intelligence) I focus on one observation from Web 2.0 research that has yet to be applied to the geoweb. Drawing on these expanded connections between the two fields, I argue that the geoweb is not simply a combination of geospatial information and

digital communications networks, but that it is the interface between spatial and *social* networks online. Instead of crowds (Surowiecki 2005; Brabham 2008) composed of individual user/mappers generating apparently autonomous information, most geoweb spaces include groups of users that are interconnected to various degrees and via a variety of mediating digital artifacts and communications channels. Thus, user-generated geodata frequently bears marks revealing the social contexts of its origin, an observation that suggests new opportunities for academic research as well as new privacy concerns that must be understood and addressed.

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