MEDIA FIELDS
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GIS
Making Location Valuable

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"The Location of Anything is Becoming Everything."
– *Geospatial Revolution: Importance of Geography*,
Penn State Public Broadcasting

Pike Research released a report in 2012 indicating that spending on the services, software and tools of geographic information systems (GIS) will steadily increase over the next five years, reaching potentially 3.7 billion dollars in 2017. This expenditure legitimizes the declaration made by Dr. Stephen McElroy, GIS program chair at American Sentinel University, that "2012 is the year of GIS." McElroy's comment that "the desire to know where everything is located fuels a trend in location-based services" not only validates the degree program's relevance, but highlights the social situation where "the average person is becoming increasingly impacted by the *power* of GIS."[1] While institutions and government agencies are further utilizing the context-dependent, decision-making capabilities of GIS technology, the impact for the average person comes from a surge of publicly accessible and interactive cartography. Location-based services that constitute everyday

mapping practices include mobile mapping applications, geographical positioning systems (GPS), geospatial visualization on news websites, and mapped connections on social media. These constitute an "undisciplined" cartography, where people are no longer passive users but active consumers, producers, and distributers of geospatial information.[2] As Penn State mapping scientist David DiBiase states in the following brief educational video highlighting the power of geography: "For those outside, who may not even be aware that there is a field called geospatial, it has made geography ordinary, which is the most *revolutionary* thing of all."

GIS's revolutionary power is changing how we encounter, imagine, and relate to geography in our everyday lives, but what exactly is a GIS? While traditional instrumental and practitioner-preferred views of GIS relate to software products, associated hardware, and data, when defined conceptually GIS encompasses any computerized system of a broad range of information that becomes geographic by its association with a set of geographic locations. This includes commercial geodemographic systems, land information systems, geographic positioning systems, and automated mapping and facilities management systems.[3] Thus GIS is truly everywhere and, like other information technologies, it is optimistically positioned to act as a functional tool or "technological fix" to better understand and manage the world around us.

Most notably, practitioners, geographers, and commercial suppliers praise GIS as a technical means to increase "geo-literacy," a new term for a long-standing idea of accessing interactions, interconnections, and implications by utilizing geographic reasoning to make far-reaching decisions about health, community, and the environment.[4] Those advocating GIS-based geo-literacy are widespread, from Google Corporation, National Geographic, to Esri (Environmental Systems Research Institute), the world's largest GIS software and development company. Esri views geospatial thinking as essential not only for the functioning of institutions and government agencies, but for

youth growing up in an increasingly geo-referenced world. According to ’s Esri's president, Jack Dangermond:

Geography is our platform for understanding the world. GIS is making geography come alive. GIS condenses down all of our data, our information, our knowledge, and our science into a kind of language that we can easily understand: maps. Maps help us integrate and apply our knowledge. Maps also tell stories—stories about almost everything in our world. We need to harness the power of maps to design the future and create better outcomes.[5]

The growing techno-optimism and notions of empowerment surrounding GIS, however, obscure the technology’s politics. As printed maps before, digital maps of the modern era continue to create realities as much as they represent them with the new technological functions only further extending mapmaking possibilities. Location is being revalued as geo-spatial information, but what new knowledge is being mapped, and who is at the helm of its navigation?

Political and cultural geographers have challenged conceptions of GIS as a neutral, value-free tool, but these critiques are not mainstream and tend to reinstate the notion of digital maps as new active means of promoting social change.[6] Undoubtedly, the shift from a model in which national governments were lead actors in producing spatial data sets to a more multivocal one has made GIS a powerful information technology enabling citizen involvement in decision-making that shapes their communities. Citizens, states, and private entities can utilize the data processing and visualization tools of GIS to help communicate, for example, the spatial consequences of proposed projects of land use and natural resources in order to evaluate alternatives and create new, original solutions.[7]

However, the majority of the on-demand maps or “McMaps” that the everyday person engages with hail from private-sector publishers such as Yahoo and Google, and a few monopoly database suppliers, whose focus is on

attracting advertising revenue rather than on achieving mapping quality.[8] These software companies, geodemographic marketing firms, and data vendors are not only maneuvering the political economies of GIS, they are also commercializing data that was once controlled by elite groups and restricted for security reasons. Before we extol GIS as a revolution or a "democratization of maps" that celebrates open participation in geodata production and distribution, [9] it is necessary to consider geospatial information's value as a commodity.

The commodification of geospatial information can be situated alongside the migration of entertainment and educational programs to new media industry models. Media conglomerates' desire to exploit "synergies" across different divisions, as well as to satiate consumer preference for media content in more on-demand forms, has led to the centrality of strategies involving interactivity, participation, and cocreation.[10] Internet-based interactions endeavor to garner audience feedback, anticipate and cater to audience desires, and facilitate and develop engagement through social networks. Social media in particular is becoming increasingly location-based, and I argue this localizing component fuels what P. David Marshall calls a "user-subjectivity." Whereas broadcast media produced an "audience-subjectivity" collectively organized and sold as a coherent commodity, new media hails individuals to see themselves as producing their own cultural activity: a "user-subjectivity" to personalize and create one's own social connection.[11]

Take for example the Google corporation's widely popular mapping services. Google Maps, the world's most used mapping website since April 2009, transformed what types of online mapping and data tools were available free to end users.[12] While similar to other online mapping sites like Yahoo Maps and MapQuest, the open source application programming interface can be differentiated by user-friendly technical innovations such as the Telcontar platform, with a "drag-to-scroll" map feature, shadowed push pins, cleaner images, and hybrid views that combine both satellite and aerial imagery. Similarly easy to use, Google Earth provides a free to browse virtual globe of

patchworked satellite and aerial images. Users are encouraged to “fly” around and explore the planet, engage in virtual tourism and place-based voyeurism, browse and upload personal images, participate in geocaching or wayfinding activities, or creatively make their own map mashups.[13] Both services are powerful tools for communicating knowledge about the Earth's surface and are arguably connecting people visually to actual places in powerful ways. Furthermore, by hailing the individual to be the producer of his or her own cultural activity—to personalize their own location-based story and social connection and to locate themselves within both digital and actual social space—they provide the ultimate in "user-subjectivity."

Encouraged involvement and investment of users with on-demand maps embodies the concept of "interactivity," the marketing keyword for new information communication technologies relaying the double meaning of customization and a democratic promise to offer one’s voice, or in this case one’s geospatial information, to the system. While there is nothing new about using the promise of democracy to sell products, it is the resort to the conveniences of customization as an alibi for increasingly comprehensive, hyperlocal forms of advertising and consumer monitoring that raises concern.[14] While Google promotes itself as a facilitator and organizer of information for the entire world, its search engine and mapping services are also a means for companies to market via advertisements streamed to the user's interface. They do so without full disclosure of how code produces and filters information for corporate benefit, while data miners collect, aggregate and sort users’ geo-located information for alternative managerial purposes that span from commerce to homeland security.[15]

Current calls for geo-literacy rationally rework the initial optimism that virtual globes would harbor the “Second Age of Geographic Discovery,”[16] or usher in “a new scopic regime of transparency" to “picture the world differently, as transparent and clear.”[17] As before, however, it forecloses an equally pressing need for a critical media literacy that acknowledges larger political and economic dynamics that orchestrate the media-communications

landscape. Here the deployment of new media industry models infused with location-based services is truly making the location of anything everything. GIS technology is empowering users with information, convenience, customization, and pleasure, but real power is not necessarily in the user. Instead, it is in the commodification of the user's geospatial information.

Notes

1 American Sentinel University, "$3.7 Billion Reasons Why GIS Technology is The Future: The Market for GIS Professionals at Any Level Has Never Been Better," http://www.americansentinel.edu/about-american-sentinel-university/newsroom/3-7-billion-reasons-why-gis-technology-is-the-future.

2 Jeremy W. Crampton and John Krygier, "An Introduction to Critical Cartography," *ACME: An International E-Journal for Critical Geographies,* 4.1 (2006): 11–33.

3 Michael R. Curry, "Digital People, Digital Places: Rethinking Privacy in a World of Geographical Information," *Ethics & Behavior* 7.3 (1997): 254.

4 National Geographic, "Geo-Literacy," http://www.education.nationalgeographic.com/education/geoliteracy/.

5 Esri, "Geography as a Platform," August 10, 2012, http://blogs.esri.com/esri/esri-insider/2012/08/10/geography-as-a-platform/.

6 Jeremy W. Crampton and John Krygier, "An Introduction to Critical Cartography," *ACME: An International E-Journal for Critical Geographies,* 4.1 (2006): 17; Chris Perkins and Martin Dodge, "Satellite Imagery and the Spectacle of Secret Spaces," *Geoforum* 40.4 (2009): 7; Jeremy W. Crampton, *Mapping: A Critical Introduction to Cartography and GIS* (Malden, MA: Wiley-Blackwell, 2010), 6.

7 Piotr Jankowski, "Towards Participatory Geographic Information Systems for Community-based Environmental Decision Making," *Journal of Environmental Management,* 90.6 (2009): 1967.

8 Martin Dodge and Chris Perkins, "Reclaiming the Map: British Geography and Ambivalent Cartographic Practice," *Environment and Planning A*, 40.6: 1271–1276.

9 Jason Farmon, "Mapping the Digital Empire: Google Earth and the Process of Postmodern Cartography," *New Media & Society,* 12 (2010): 871.

10 Joshua Green and Henry Jenkins, "The Moral Economy of Web 2.0: Audience Research and Convergence Culture," in *Media Industries: History, Theory, and Method*, ed. J. Holt and A. Perren, (Malden, MA: Wiley-Blackwell, 2009), 215.

11 P. David Marshall, "New Media as Transformed Media Industry," in *Media Industries: History, Theory, and Method*, ed. J. Holt and A. Perren, (Malden, MA: Wiley-Blackwell, 2009), 81–89.

12 Loren Baker, "Google Maps More Popular than MapQuest," April 16, 2009, http://www.searchenginejournal.com/google-maps-more-popular-than-mapquest/9885/.

13 According to the *Encyclopedia of GIS*, ed. S. Shekhar and H. Xiong (New York: Springer Publishing, 2008), 408, a mashup is "an online application or website that seamlessly combines content from several sources. GIS mashups typically combine spatial data and maps from several web sources to produce composite thematic maps." Also see Lisa Parks, "Digging into Google Earth: An Analysis of 'Crisis in Darfur'," *Geoforum*, 40.4 (2009): 536.

14 Andrejevic, Mark. *iSpy: Surveillance and Power in the Interactive Era* (Lawrence: The University Press of Kansas, 2007), 27.

15 Robert Hassan, *The Information Society: Cyber Dreams and Digital Nightmares* (Malden, MA: Polity Press, 2008), 194.

16 Michael Goodchild, "Rediscovering the World through GIS: Prospects for a Second Age of Geographic Discovery," (Proceedings at GISPlaNET 98, Lisbon, 1998).

17 John Pickles, *A History of Spaces: Cartographic Reason, Mapping and the Geo-Coded World* (New York: Routledge, 2004), 162.

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