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Position paper for Specialist Meeting on Volunteered Geographic Information

My interest in this specialist meeting stems from the significance of volunteered geographic information practices for the questions that have driven my research over the past decade. My work has focused on articulating the interdependencies between spatial analysis technologies, GIS-based knowledge construction, and the relationships between citizens, government, and institutions of civil society. Specifically, I have studied the rising use of GIS and digital spatial data by non profit, grassroots, and community-based organizations, to understand their accessibility, sustainability and appropriateness for these groups, and their implications for citizen participation in planning and policy making.

The rapid emergence of web-based services supporting the collection, dissemination, and cartographic representation of spatial information from members of the public constitutes a major new development in this arena, one that I am keen to pursue in future research. Ten years ago, GIS adoption and use by institutions of civil society was a central development affecting the societal role and impacts of geographic information. Today, these volunteered geographic information (VGI) services are a similarly significant development altering how spatial data are produced and shared, as well as the relationship between public, private and non profit actors in these processes. My contributions to discussions at the specialist meeting would be informed by my research on citizens and civic organizations as stakeholders in spatial data and technology development, and also by some of the unanswered questions that I am taking forward into my future work.

I am presently completing an NSF-Career grant project investigating how community organizations use GIS and spatial data to influence processes of urban neighborhood redevelopment, with an eye toward understanding what sort of spatial knowledge these groups produce, and how they use this knowledge to influence their material and social environments. Working with two community development organizations in a disadvantaged neighborhood in Chicago, Illinois, I have helped the participants learn to use spatial data and GIS, worked with them to develop a diverse spatial data library to support their activities, and tracked their GIS applications and continuing data development since 2003. This project has generated a range of findings for GIScience, urban geography, and participatory research methodologies, and my attached vita identifies the outlets for some of these findings. But most important for an emerging research agenda on VGI are the issues that remain unresolved from this project: Persistent problems with public spatial data resources and unanswered calls to expand the role of citizens and community organizations as data contributors.

Questions about the accessibility, quality, and appropriateness of public spatial data resources for community-based GIS users have long been part of GIS and Society research. In spite of ten or more years of public participation GIS efforts to address limitations in this arena, my Chicago research suggests that relatively little has changed. Civic organizations still have great difficulty gaining access to spatial data produced by all level of government. The highly localized nature of their work makes errors and omissions in these data especially problematic for them. Differences between their knowledge systems and those of local government institutions can render public data confusing, incompatible with their existing information resources, or at worst, useless. My research suggests that local citizens and government officials alike recognize these problems, and I have uncovered calls from both for developing ways that local citizens and civic organizations might

contribute information to public databases, to fill gaps, correct errors, or add new forms of information. This vision remains wholly unrealized in Chicago, as it does in most other US cities.

These calls for citizens and civic organizations to play an expanded role in spatial data development speak to precisely the same question that seems to motivate the upcoming specialist meeting: How might we systematize technological and socio-political practices for developing volunteered geographic information, so that we can tap the tremendous potential of this burgeoning resource to improve public domain spatial data? As the position statement for the specialist meeting suggests, there are a plethora of technological, procedural and political questions that remain to be answered. In addition to those issues already raised in the position statement, I would be keen to discuss how some of the following challenges might be incorporated in a VGI research agenda. The diverse knowledge systems of participating citizens and civic organizations would seem likely to create tremendous schematic, semantic, and ontological heterogeneity in geospatial data developed from volunteered information, presenting a huge data handling and integration problem. Variations in existing data sharing arrangements and local political cultures are likely to make the openness of both government and citizens to participate in systematic VGI initiatives highly variable from place to place, and would also seem likely to impact which information is shared, which is withheld, and why. Inviting information contributions from citizens also opens questions about balancing the capacity of VGI services to handle and include diverse spatial knowledge against the practical necessity of requiring some sort of standardization in order to facilitate data storage and sharing, and procedures for validation to eliminate contributed information that is simply incorrect.

I would argue that these and other challenges highlight the necessity of building a research agenda that engages VGI as a simultaneously technological and socio-political phenomenon, and the need to draw broadly from the full diversity of intellectual resources in GIScience. GIS and Society research theorizing how and why the relationships between 'local knowledge' and 'expert knowledge' are often highly politicized has the potential to help us understand conditions that motivate and impede citizens' motivation to contribute information. Cognition research on everyday expressions of spatial knowledge and ordinary human spatial reasoning would seem useful for understanding the variability of volunteered spatial information, perhaps with implications for ways of validating this information. And the large body of GIScience research that theorizes metadata, spatial data infrastructures, and data standards as socio-technological phenomena has much to contribute to research on VGI.

At the moment, the most highly profiled VGI services discussed in recent journal articles and conference presentations have been those that function more as an adjunct to 'official' public domain data resources – such as the much-discussed Google mash-ups that emerged after Hurricane Katrina provide information to emergency responders about rescue needs and to victims about services and infrastructure. What I find particularly exciting about the vision for this specialist meeting is its imagination of VGI as a phenomenon that might, with careful research and practice, become a more systematically available resource that can strengthen public domain spatial data for public, private, academic, and nongovernmental actors, as well as for ordinary citizens. Of course, VGI services like those developed after Hurricane Katrina will continue to be very important, but I am interested in this emerging VGI research agenda precisely because of its efforts to build conceptual and empirical knowledge about how to tap the potential of this resource in a way that is technologically robust and durable, but also equitable, accessible and useful for diverse stakeholders.