Medical Geography and Quantification: Observations from the Boston AAG Meeting

I write as a geographer based at a state health department who recently attended several full days of medical geography-related sessions at the 2008 AAG Annual Meeting in Boston.

The overall number of these sessions seems to be on the increase, a positive trend reflecting the strong demand for geographical insights into public health issues. As I took in the papers, posters, and interactive short papers, most of which were presented by graduate students, two themes emerged that seem deserving of comment.

First, the use of sophisticated free or low-cost spatial analytic software developed by academic researchers has rapidly become the norm. Most prevalent was GeoDa, which offers an array of functions for exploratory spatial data analysis, measurement of autocorrelation, and spatial regression (Anselin et al. 2006). Multiple presenters also made use of SaTScan, for the detection of spatiotemporal clustering (Block 2007), and GWR, for the analysis and visualization of spatial non-stationarity (Fotheringham et al. 2002). Several presenters also displayed their own customized geographic tools in the form of Google Maps and Google Earth "mashups," drawing on vast amounts of freely available data, imagery and functionality (Wood et al. 2007).

This trend is empowering for researchers, but can come at the cost of common-sense understanding of the cultural landscape. When neighborhoods are reduced to contiguity matrices and shaded polygons, and an entire research project can be conducted without ever leaving one's desk, basic insights can be lost. Thus, for example, the toniest suburbs of Chicago and London get flagged as having the poorest access to health care since they are the farthest removed from large hospitals – something that is true only if access is simplistically defined as travel time by car. Most often the problem is not faulty interpretation, but that useful insights end up lost in the statistical clutter. This is hardly a new criticism, having been levied at traditional GIS and the quantitative revolution before that, but one that remains relevant as quantification continues to become easier, faster, and cheaper.

Second, the United States-focused presentations, regardless of the analytic methods chosen and how adroitly they were employed, tended to highlight similar poor, inner-city, minority neighborhoods. This was true whether the topic was tuberculosis, HIV/AIDS, STDs, many cancers, asthma, cardiovascular disease, diabetes, lead poisoning, obesity, mental illness, or even urban tree density. The typical conclusion was that more public health resources should be directed into these neighborhoods to enhance education, awareness, screening, and testing for the particular disease or condition in question. It is hard to find too much fault with this conclusion, but it supports a reductionist, ailment-specific approach to health that is often ineffective in practice. When a population is at increased risk for nearly everything, does it really matter which specific public health messages are featured in storefront windows?

Of course, geographers are hardly the only group guilty of this kind of reasoning, as it is how much of the public health and medical infrastructure is organized (Syme 1998). And while broader questions of class, race and ethnicity may be difficult to engage (let alone resolve) in a short presentation format, I did feel that many presentations would have benefited greatly if the authors had spent some time talking with public health professionals such as nurses, epidemiologists, or social workers to help provide focus and context. Admittedly, this is difficult, and it can be challenging for a student to get the ear of a professional. But surely no more so than working out the nuances of flexibly-shaped space-time scan statistics.

My argument really comes down to this: in medical geography, we need to get outside and look around more often, and we need to spend more time and effort talking to people outside of our normal environments. Useful knowledge cannot be purely the product of statistical model output; it also depends on observation, anecdote, and lived experience. These are classic points, but ones that bear repeating. ■

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References

Anselin L, Syabri I, Kho Y. GeoDa: An Introduction to Spatial Data Analysis. Geographical Analysis 2006; 38(1): 5-22.

Block R. Scanning for Clusters in Space and Time: A Tutorial Review of SaTScan. Social Science Computer Review 2007; 25(2): 272-278.

Fotheringham AS, Brundson C, Charlton ME. Geographically Weighted Regression: The Analysis of Spatially Varying Relationships. 2002. Chichester: Wiley.

Syme SL. Social and Economic Disparities in Health: Thoughts about Intervention. Milbank Quarterly 1998; 76(3): 493-505.

Wood J, Dykes J, Slingsby A, Clarke K. Interactive Visual Exploration of a Large Spatio-Temporal Dataset: Reflections on a Geovisualization Mashup. IEEE Transactions on Visualization and Computer Graphics 2007; 13(6): 1176-1183.

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