Future Directions in Spatial Demography

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My interests in spatial demography stem from: 1) my own research on contextual effects; and 2) my role as Director of the University of Chicago’s Population Research Center (PRC). I detail these below, with specific emphasis on a proposal to track activity space and network interaction in older adults.

Over the last several years my research has examined the relationship between features of neighborhood social context and individual health. I, with colleagues, developed a series of papers that demonstrate the unique effects of neighborhood social capital on physical functioning, self-rated health, asthma and other breathing disorders, and mortality during the 1995 Chicago heat wave (Browning & Cagney, 2002; Wen, Browning, & Cagney, 2003; Cagney & Browning, 2004; Cagney, Browning, & Wen, 2005; Browning, Wallace, Feinberg, & Cagney, 2006; Cagney, Browning, & Wallace, 2007). I also have argued that neighborhood age structure should be incorporated into neighborhood research on health (Cagney, 2006). These analyses move beyond extant research by testing theoretically motivated hypotheses regarding neighborhood-level social capital and other social processes that may influence health. For instance, we find that neighborhoods with high collective efficacy have a lower prevalence of asthma (Cagney & Browning, 2004). Neighborhood-level trust and solidarity may depress asthma rates through improving the ability to garner health-relevant resources, eliminate environmental hazards, or encourage dissemination of health-enhancing information. This research draws on and extends a theoretical model that links neighborhood structural disadvantage (e.g., poverty, affluence and residential instability) with lower levels of trust and cohesion among local residents and a diminished capacity to mobilize on behalf of collective goals. Developed in part during the 1940s by the University of Chicago’s Shaw and McKay, with contemporary elaborations by Wilson (1987) and Sampson et al. (1997), my work has focused on an adaptation to this model and brought it to older adult health.

One important critique of the above described research is its reliance on administrative and related data sources to characterize the communities in which respondents live. In new research—that would benefit from others working in spatial demography—we build upon the theory but focus on activity space and on changes in health over time. This work examines older adults’ health trajectories in real time, as changes unfold. Researchers often assume that older adults’ circumference of turf constricts as they age but the actuality of increased time spent in the home or neighborhood is relatively unknown. Thus, we not only concentrate on reports of network, household, and neighborhood factors but also on the unique role of GPS-tracked activity space. Tracking older adults’ movements—in, out, and across their communities—will
provide insight into their span of engagement, the contexts most relevant for their health and well-being, and their access to social and community resources. These dynamic data, coupled with frequent assessments of health, combine to form an unprecedented data opportunity that will allow for an understanding of social context effects across time. We focus on the social and physical environments of Chicago, drawing on the rich history of urban social studies in this context.

With multiple assessments embedded in three waves of data collection we will:

1. **Describe the activity space that older adults, 55 and over, inhabit.**
   a. To what extent do older adults move beyond the space of the household, and within and outside the neighborhood, as they engage in routine activities?
   b. When older adults do leave their homes, what do they do? Are older adults anchored within or drawn from their households or neighborhoods for different reasons, or to accomplish different goals (e.g., social engagement vs. medical care)?
   c. What are the differences across older adult subpopulations (e.g., social, economic, geographic, race/ethnic) in the geographic spread and resources available within their routine activity space?

2. **Examine how social networks, households, and neighborhoods relate to activity space.**
   a. What is the geographic proximity of social network members to the respondent’s household and neighborhood, and how connected are network members to household members and neighbors?
   b. How might this vary by older adult subpopulations (e.g., social, economic, geographic, race/ethnic)?
   c. How do network composition and household and neighborhood contexts influence the range of activity space?

3. **Explore the extent to which activity space, and the network, household, and neighborhood contexts related to it, affect short-term and prodromal changes in health including:**
   a. Self-reported assessments of physical, biological, and psychological health and well-being.
   b. Biomeasures of health status and functioning, with a focus on measures of disease risk (e.g., CRP, immune function) and indicators of disease management (e.g., hemoglobin, blood pressure).
   c. Mild and/or transient health problems, including mild illness, fatigue, pain/stiffness, changes in mobility, respiratory difficulties (in other words, the “daily hassles” of health problems).

Observing older adults’ movements—in, out, and across their communities—will provide insight into their span of engagement, the contexts most relevant for their health and well-being, and their access to social and community resources.

This research is just one example of work that can be supported through our GIS core in Chicago’s PRC. Our central goal as a Center is to focus our efforts on the study of urban context with perspectives from sociology, economics, and medicine. The University of Chicago has a rich history in the study of urban space and the PRC hopes to contribute to this tradition through the support of new theory and methods aimed at urban social and spatial processes. As Director I would like to identify new approaches and interact with other scholars nationally who are
developing demographic methods that related to space. I then can bring this information home and it can inform my own perspectives on how best to: 1) mentor junior faculty with interests in spatial demography; and 2) appropriately seed research projects through our pilot programs.