Big Social Media, Civic Operations, and Urban Planning Research: New Paths Toward Understanding Human Dynamics in our Mobile Age

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This short paper outlines how the confluence of useful and ubiquitous mobile devices (smartphones) linking to "Big Social Media" not only improve "civic operations" (including person-to-person exchanges necessary for people to function and thrive in cities), but also our ability to research human behavior in urban environments.

Introduction

According to Taylor, *Urban Planning* is "a technical and political process concerned with the control of the use of land and design of the urban environment, including transportation networks, to guide and ensure the orderly development of settlements and communities."[1]

Historically, one of the main forces behind urban settlement has been the utility people gain from exchanges over knowledge, goods, services the arts, etc. In the 1960s, with the rise of a hyper-networked society in view, some thought that the importance of city centers and quality urban places may fall by the wayside. Webber's 1964 paper "*Urban Place and the Non-Place Urban Realm*" introduced the idea of 'community without propinquity' suggesting that strong city-center metropolises would disperse toward suburban clusters of settlements determined primarily by social links and economic networks in a 'Non-Place Urban Realm'. While there are findings on both sides, the rise of the network society seems to have meant anything but the death knell of city centers and/or quality urban places (Florida, 2002; 2012). In fact, the emergence of GPS-enabled mobile devices (smartphones) combined with social networking software capabilities appear to dramatically improve human exchanges, enhance people's "civic operation" capacity within concentrated urban environments.

Improving Civic Operations

While some have seen a hyper-networked society as undercutting our basic needs for urban agglomeration (contributing to forces of suburban sprawl), the emergence of software solutions ("apps") that lead to higher levels of civic operation performance, appear to be able to actually reverse this trend by making city centers more appealing. To illustrate how this may be occurring, consider some of the following factors often cited for making downtowns unattractive to commuters: 1) dissatisfaction with transit in part because of perceived unreliability, 2) lack of easy-to-find, inexpensive parking, and 3) traffic congestion.

In response, we have seen the rise of mobile "apps" that: 1) tell us when a bus will arrive at our stop, and when we can expect to arrive at our destination (as well as "apps" that enable car-sharing and/or dynamic ride-sharing in case we unexpectedly need a car during our day); 2) geo-locate parking spaces (while also telling the cost of that space); and finally, 3) apps that tell us the best routes to avoid congestion, if we can.

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[1] Taylor, Nigel (2007). *Urban Planning Theory since 1945*, London, Sage.

An Emerging Urban Planning Research Agenda from Big Social Media

An attendant benefit to researchers is that these devices both capture and then convey spatially related commentary and/or activity, improving our ability to answer research questions important to those planning for our cities. The following are a few illustrative examples of how big social media can improve our understanding of human settlement patterns and behaviors.

1. **Travel Choices and Preferences:** Transportation planners have done a decent job of analyzing auto vs. transit journey-to-work choices. But we do not nearly have as good a grasp on people's tastes and preferences towards making such decisions related to other modes (walking, bicycling and/or transit), let alone decisions related to non-work trips. Geo-located big social media can help inform our understanding by providing dynamic, real-time information on these travel experiences.
2. **Valuing Urban Places:** Big questions remain as to the value of different types of urban places (as discussed above). Big social media could give us greater insight to see how people evaluate and appreciate different urban environments.

One caveat is to be watchful for the self-selection bias in the sample of users "producing" these data. For example, let's assume 20 to 30 year-olds are the predominate "producers" of geo-located Twitter comments of people saying they are "enjoying" some part of an urban metropolis. Researching the location of such activity, nevertheless, is still useful as these are often young urban pioneers who often identify places that may later prove attractive to other groups ("empty nesters", DINKs, etc.). Along these lines, we can identify areas in different cities where young urban pioneers are spending time (saying they are "enjoying" an urban place), and then model how these areas may perform in longitudinal hedonic price models.

More Improvements to Civic Operations

In addition to the existing uses of social networking mobile technologies mentioned above, the following are some additional areas where cities could improve civic operations:

1. **Early revelation of problems,** such as areas of crime (vandalism), noise pollution, or even simply the location of potholes.
2. **Understanding the efficacy new policies and programs:** For example, New York City could garner dynamic feedback about their new bike-share program through low-cost, but real-time monitoring of Twitter-feeds.
3. **Dynamic feedback and greater facilitation of public involvement in plan formation:** Capturing public input in the creation of plans can be greatly improved through the use of mobile devices and social media.
4. **Crowd-sourcing GIS inventories of public facilities and the urban cityscape.**
5. **Responding to natural disasters and/or acts of terrorism:** Considering the potential for massive and long-term communication outages in the event of a natural disasters and/or acts of terrorism (such as a major earthquake in California), it seems sensible to consider harnessing knowledge from mobile social media. Could

responses to Hurricane Sandy been helped by monitoring Twitter and/or Facebook posts?

One caveat in all these cases is to discern ways people may try to "game" the system (this may require programming algorithms probably need to be employed).

Conclusion

In closing, cities have, and likely always will be reinforced by our motivations for socially networked exchanges. The ever-accelerating presence and use of dynamic mobile devices, both consuming and producing big social media data, are not only facilitating higher levels of civic operation performance, but also providing opportunities to answer many important urban planning research questions.

How we transform these data into useful knowledge is one key challenge before us, likely requiring frameworks that balance the competing methodological objectives of simplifying for *manageability* while maintaining richness of the data enough to *meaningful* guide policy *(M&M Principle—Appleyard 2010).* Key questions revolve around how we harness these data and technologies going forward for both the resilient and livable operation of our cities, as well as how we use these data to research and understand human settlement and behavior. The future appears to be now.

References

Taylor, Nigel (2007). Urban Planning Theory since 1945, London, Sage.

Florida, Richard L. The Rise of the Creative Class: Revisited. Basic Books, 2012.

Florida, Richard L. The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life. Basic Books, 2002.

Appleyard, B. (2011) "New Methods to Measure Urban Environments for Consumer Behavior Research| Individual Access Corridor Analysis of Environmentally Sustainable Travel to Rapid Transit." UNIVERSITY OF CALIFORNIA, BERKELEY, http://gradworks.umi.com/34/44/3444652.html.