Passeggiata Nuova: Social Travel in the Era of the Smartphone

October 10, 2011

Working Paper

Andrew Mondschein
Rudin Center for Transportation Policy and Management
NYU Robert F. Wagner School of Public Service
295 Lafayette Street
New York NY 10012
andrew.mondschein@nyu.edu

ABSTRACT

Italians have engaged in the tradition of the "passeggiata" for centuries. In villages and neighborhoods, residents come out each evening to stroll. On these strolls, they see and are seen, and they exchange pleasantries, gossip, and news. Today, however, a new, decentralized kind of passeggiata may be arising, thanks to high levels of mobility and the unprecedented availability of location-based information through mobile devices and other information technologies (IT). As social networking accelerates, and individuals share ever more information with their community, the inclusion of location in that mix will facilitate a decentralized passeggiata where community members continually meet up across the city to reinforce the ties initially made through social networking. This travel will take advantage of the relatively high levels of mobility, whether by car or transit, available to many city dwellers. This research reviews the literature of several disciplines into order to understand information technologies' potential effect on travel behavior. The review suggests that such technologies may encourage an increase in social travel, or at least a change in social travel patterns. A 2007 Chicago-area travel survey is used to test the hypothesis that availability of information technologies would result in an increase in non-work, social trips to places beyond what would normally be considered an individual's "home range." Results, while preliminary, do indicate a positive relationship between a particular type of information technology, the cellphone, and social travel across longer distances, and to neighborhoods on the edge of urban core. Further, the use of cellphones appears to have a particular effect on the location of walk trips, facilitating pedestrian social and recreational activities a long way from home. The influence of social networking platforms and location information on activity and travel behavior represents a further evolution in the structure of cities and their role in people's lives, facilitating ever more complex and flexible patterns of activity through the urban milieu. Expanded social travel presents planners with opportunities to energize less-known and potentially neglected parts of a region, as well as the challenges of sustainably providing access between all parts of that region.

1. INTRODUCTION

Italians have engaged in the tradition of the "passeggiata" for centuries. In villages and neighborhoods, residents come out each evening to stroll. On these strolls, they see and are seen, and they exchange pleasantries, gossip, and news. During the passeggiata, social ties are reinforced and the link between place and community is deepened. In Italy, the passeggiata is, by definition, accomplished on foot and is carried out in a central location such as the village square. Similar traditions of social travel exist throughout the world, including the United States. However, the integrality of the passeggiata to the life of an Italian community is exceptional. In part, what makes the passeggiata work is the relatively small scale of Italian villages and neighborhoods. An entire community can be seen and heard during a night's walk. In today's American cities, travel is accomplished primarily by car and social ties are relatively scattered across the region. Teens may cruise and neighbors may chat across the fence, but a true citywide passeggiata would be an impossibility. Today, however, a new, decentralized kind of passeggiata may be arising, thanks to high levels of mobility and the unprecedented availability of location-based information through mobile devices and other information technologies (IT).

The integration of location information into social networking platforms like Facebook means that communities, defined in the myriad ways possible in contemporary society, can share life's minutiae and the locations of those minutiae across long distances relatively instantaneously. Individuals can "check in," announcing their presence at and preference for a given place. Other community members can seek out the same places, or establish new nodes in the community. These functions, as they become widespread, have the potential to reshape and increase social travel across cities. Gaspar and Glaeser (1996) argue that information technologies are not substitutes for face-to-face interactions, but complements. As social networking accelerates, and individuals share ever more information with their community, the inclusion of location in that mix will facilitate a decentralized passeggiata where community members continually meet up across the city to reinforce the ties initially made through social networking. This travel will take advantage of the relatively high levels of mobility, whether by car or transit, available to many city dwellers.

This research reviews the literature of several disciplines into order to understand information technologies' potential effect on travel behavior. The review suggests that such technologies may encourage an increase in social travel, or at least a change in social travel patterns. Following this conceptual review, the 2007 Chicago-area Metropolitan Travel Survey is used to test the hypothesis that availability of information technologies would result in an increase in non-work, social trips to places beyond what would normally be considered an individual's "home range." Results, while preliminary, do indicate a positive relationship between a particular type of information technology, the cellphone, and social travel across longer distances and in "under-the-radar" neighborhoods outside the urban core. Further, the use of cellphones appears to have a particular effect on the location of walk trips, facilitating pedestrian social and recreational activities a long way from home.

The influence of social networking platforms and location information on activity and travel behavior represents a further evolution in the structure of cities and their role in people's lives, facilitating ever more complex and flexible patterns of activity through the urban milieu. The passeggiata can now occur anywhere across the urban region. Expanded social travel presents planners with opportunities to energize less-known and potentially neglected parts of a region, as well as the challenges of sustainably providing access between all parts of that region.

2. CONCEPTUAL REVIEW

The literature on social activity and travel patterns spans numerous fields, including transportation and urban planning, sociology and psychology, urban economics, and leisure studies. Relatively little research has directly touched upon how information technologies may influence social and recreational travel, but a conceptual understanding of IT's influence can be established from these diverse literatures.

2.1 The Passeggiata

The passeggiata is a venerable tradition of Italian cities and towns (Del Negro 2004). This ritual urban stroll, which occurs nightly in many towns, is an opportunity for residents to interact both verbally and visually. The truism that the social life of Italians goes on in public is borne out in the case of the passeggiata. The passeggiata is where Italians reinforce ties at the personal and broader social scales. Del Negro emphasizes the physicality of the passeggiata, and that the need to see and be seen is an essential part of the ritual. While the ritual may be most distinct and fully realized in Italy, the importance of place to socialization is not limited to the passeggiata. Sociologists and others have noted the role of urban spaces and neighborhoods in social ties worldwide, as well as the possibility that lifestyles in large urban regions may not be conducive to reinforcing localized social ties (Gans 1965; Guest and Wierzbicki 1999; Putnam 2000). This debate is not the focus of the research here, but it is worth noting that passeggiata-like behaviors occur in both urban and suburban settings in the United States. Examples include urban dwellers meeting on the stoops of their apartment buildings and suburbanites strolling and shopping at the mall or cruising down the main street.

2.2 Theories of Social Travel

While subordinate to more extensive research on commuting, transportation researchers have also sought to understand the motivations and patterns of social activity and travel (Wheeler and Stutz 1971; Axhausen 2005; Carrasco, Hogan et al. 2008). Several points developed in the literature are critical for understanding social and recreational travel. All things being equal, social activities cluster most densely around the home and then disperse from them. However, people engage in social activities with other members of their social network, so the geography of social activities and trips is highly correlated with a person's social network, as well as his socio-economic status. Fundamentally, the social network serves to generate social activity and travel, and a less robust social network will generate fewer trips.

In general, research on social travel is unspecific with regard to mode. Trips are derived from the demand for social and recreational activities, and mode choice stands outside of the generation of the social trip in itself. However, some research does emphasize that particular modes may possess characteristics that increase their utility for social travel. Notably, walking (and possibly cycling) is, in itself, a social activity. The passeggiata is an example of the distinctly social nature of walking amongst neighbors and other members of one's social network (Del Negro 2004). Generally, however, walking – with its slow pace, more direct sensory connection to one's surroundings, and being fully "on display" to others in a way that the car does not allow, have the potential to increase the utility of walking for social and recreational activities, beyond its utility in getting to a particular destination (Csikszentmihalyi 2000; du Toit, Cerin et al. 2007; Bean, Kearns et al. 2008). In addition, the growing literature on public health and travel behavior highlights, if indirectly, the potential attractiveness of modes like walking and bicycling due to their health benefits (Handy, Boarnet et al. 2002; Ogilvie, Egan et al. 2004).

Walking is a preferred mode for exercise and recreation, both activities with clear social components.

While more focused on the less frequent trips of long-distance travel than the shorter, regular trips of everyday life, tourism research also contributes insights into the nature of social travel. In particular, this literature emphasizes the psychological aspects of social travel (Chon 1989). Social travel is likely to be particularly susceptible to psychological factors in travel such as perceived comfort and safety, as well as the emotional appeal of a given destination or activity. Further, tourism is now viewed as a paradigm for understanding how individuals interact with much of the contemporary city, beyond the confines of home and work (Urry 1992). In the case of social travel, this highlights individuals' possible desire to "consume" particular experiences throughout the city as a means of recreation (Schroeder 2002).

The urban economic literature also illuminates the motivations that may drive social travel. Glaeser et al. suggest that contemporary cities are "centers of consumption," and high densities of amenities lead to faster growth rates (2001). Further, density is correlated with consumer amenities (Glaeser and Gottlieb 2006). Thus, dense, high-amenity cities may be more likely to elicit consumption of those amenities, through social and recreational activity and travel. Economic geographers have reinforced the value of face-to-face contacts in economic activity, particularly in sectors where innovation is a priority (Storper and Venables 2004; McCann 2007). As the literature makes clear, face-to-face contacts are more than just a means of conducting meetings and entering into contracts, as important as those acts may be. Face-to-face contact also enables participants to assess competitors, display one's strengths, and reinforce network ties. As discussed above, such imperatives hold even more strongly for social interactions, where "to see and be seen" is an essential component of human behavior (Csikszentmihalyi 2000).

2.3 The Role of Information Technologies in Social Travel

Transportation research on the impact of information technologies on travel behavior generally seeks to determine whether information technologies replace trips, increase travel, or have little impact (Salomon 1985; Golob and Regan 2001; Janelle 2004). In principle, at least, IT in the form of telecommuting was considered to at least have the potential to reduce work trips (Nilles 1988). However, subsequent research has found that telecommuting, despite its increasing adoption by workers, had relatively little effect on overall traffic patterns (Mokhtarian 1998). Furthermore, rather than have no impact, some urban researchers have suggested that increasing use of IT may actually increase the demand for travel. In this view, IT is not a substitute for travel but a complement to it, increasing total interactions and thus the need or desire for face-to-face meetings (Gaspar and Glaeser 1998). While the literature has focused on telecommuting, some applicability to social travel can also be anticipated. Like telecommuting, online recreational activities such as gaming, online social networks such as Facebook, and instant communication modes such as texting and Twitter could be construed as replacements for face-to-face social interaction. However, all of these activities could, like IT for work, instead be complements to real-world social activities completed in person, increasing the demand for social and recreational travel.

Beyond the discussion of whether IT increases or decreases the amount of social travel is an examination of whether the nature of such travel is changing, whether or not the actual number of trips changes. One of the most important insights along these lines is that IT can lead to changes in the timing and location of activities (Kwan 2002). Kwan's review of the literature

of IT and everyday activity patterns underscores the expectation that IT increasing flexibility with regard to location and timing of activities. Some activities that used to occur one place may take place elsewhere. For example, shopping on the internet is correlated with decreased shopping in traditional retail stores (Nie and Erbring 2000). More broadly, however, the debate on whether IT relaxes people's space-time constraints enough to significantly shift travel patterns, either at the individual or aggregate level, continues.

Another approach to understanding the potential impact of information technologies on travel is to examine the role of information in travel behavior. Research on cognitive mapping and wayfinding has reinforced the importance of having accurate spatial information to access destinations in a complex built environment such as a contemporary large city (Golledge and Stimson 1997; Mondschein, Blumenberg et al. 2010). Traditionally, such information was gleaned through the experience of travel and secondarily through social networks. IT provides a new source for information both about potential destinations and the routes to reach them. Technologies like GPS navigation, internet mapping, and recommendation services such as Yelp may allow individuals to go beyond the information constraints of their cognitive maps and circumvent the spatial constraints of previous experience and existing social networks (Vautin and Walker 2011). Relief of these constraints could increase the distances that individuals travel, as these IT services provide choices and routes assembled from the entire city, rather than just an individual's localized cognitive map. This may be particularly true for social and recreational activities, which are inherently more flexible than work or household-serving trips.

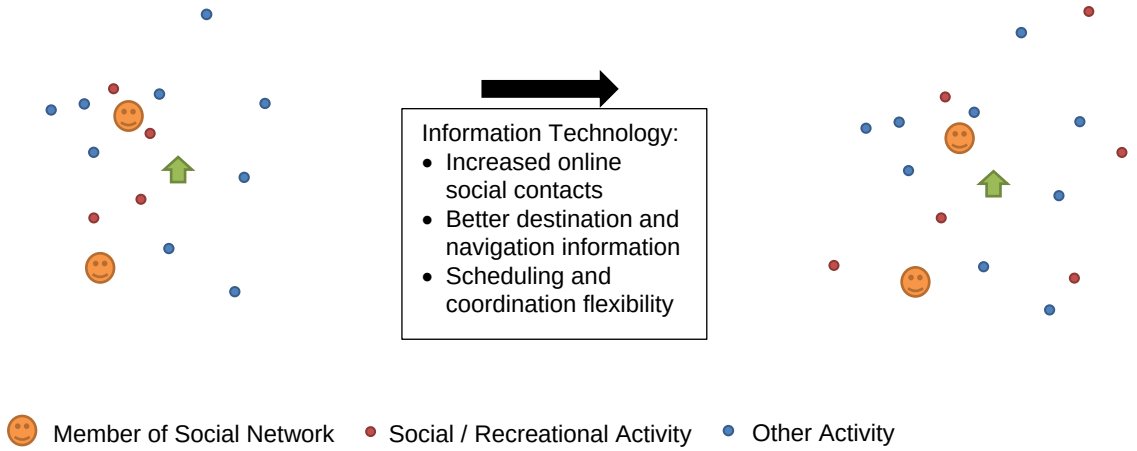
2.4 Conceptual Framework: The Peripatetic Passeggiata

For most, work and work-related travel is tied to the workplace. Household-serving travel, whether errands, shopping, or pickup and dropoff, is tied to the home. Social and recreational travel, however, is a choice activity, and potentially less constrained by location. If one is to detect an impact of information technologies on travel patterns, they are most likely to be manifest in social and recreational activity before activities of other purposes. The literature suggests that this impact may appear either as an increase in total social activities or as an increase in the lengths to which individuals will go to engage in social activities. First, increased social contacts via IT may increase the utility of face-to-face social activities. Second, information technologies reduce time-space constraints, enhance coordination among individuals, and increase knowledge of opportunities and the means to reach them across the entire city. These effects could facilitate social activities occurring further away from home than they would otherwise. Figure 1 illustrates the conceptual model, with its expected increase in social and recreational activities and trips and in their distance from home.

Importantly, however, the physical, embodied nature of social activity should still apply. Social activities are "in person" activities. They are tied to the social network, and are more reliant upon physical and emotional cues that require embodied presence. Therefore, despite the increasing distance at which social and recreational trips may occur, walking will remain an important component of the social and recreational travel experience. This could manifest as an increase in the number of park-and-walk trips, or – where feasible – the use of transit to transition to a walking trip. The new passeggiata is one that occurs at distance from home, but still retains the experiential essence of the traditional passeggiata: something done on foot and in the presence of others. This framework can be understood as a conceptual hypothesis about social travel in contemporary cities: Adoption of information technologies by individuals and households will result in activities taking place at greater distance from a person's residential

location. However, walking will remain an important component of social travel, even at distances that require a prior auto or transit trip.

Figure 1. Model of Urban IT's effect on Social and Recreational Activity and Travel



3. DATA AND METHODS

So far, few activity and travel surveys with spatial data also collect detailed information on the use of information technologies. Further, the full effects of information technologies are likely not yet fully realized, as new services and devices continue to become available and gradually spread through the population. However, a 2007 travel survey conducted in the Chicago region does include limited data on the use of information technologies, and was conducted recently enough to potentially reflect some of the trends expected to be occurring now. Empirical constructs of social travel and information technology can be defined using the Chicago travel survey.

3.1 2007 Chicago Regional Household Travel Inventory

The Chicago Metropolitan Agency for Planning, the Illinois Department of Transportation, the Northwestern Indiana Regional Planning Commission, and the Indiana Department of Transportation sponsored the development of the Chicago Regional Household Travel Inventory (NuStats 2008). The inventory includes travel data for one or two days for 14,390 household in the Chicago region. The travel data has been geocoded at the census tract level for all trips undertaken on the survey days. Distances are measured from the centroid of each census tract. Travel mode and trip purpose, among other trip characteristics, are included for each trip. In addition to travel data, the inventory includes demographic data for the survey respondents, including key variables such as income, education, age, gender, race/ethnicity, and employment status, as well as cell phone usage. For the purposes of this analysis, the sample was restricted to individuals over 18.

3.2 Defining the Passeggiata: Social and Recreational Activity and Travel

The passeggiata is operationalized as the set of social and recreational activities as recorded in the trip purpose variable in the travel survey. In the survey, these trips are categorized as: recreation/entertainment, visit friends/relatives, and civic/religious activities. In

addition to these categories, which are defined as "social/recreational" for the purposes of this analysis, the "eat meal outside of home" trip purpose is also used as a secondary category of potentially social/recreational activity. Mode used to arrive or participate in the activity is also recorded. In this analysis, the ultimate mode utilized for the activity is the relevant one, so for a trip that involves, for example, a car trip to a neighborhood for a subsequent walk trip to a movie, the walk mode would be associated with the activity.

3.3 Defining Information Technologies

As with most regional travel surveys, the Chicago travel inventory includes only limited data on household or personal use of information technologies. The inventory includes household data on the number of home phone lines, cellphones, and dedicated fax lines. Of these variables, the cellphone count is the most relevant. This survey was taken in 2007 and 2008, when smartphones were just beginning to enter into mainstream use. (The first iPhone was released in June 2007.) At the time of this survey, smartphones with robust information and navigation functions were roughly 10% of all cellphones, though as of Summer 2011, they now account for 40% of all cellphones (Nielsen 2011). Nevertheless, more than home phone or fax lines, high levels of cellphone use should be associated with the social behavioral changes predicted in this analysis. Cellphones are an essential tool in the relaxation of space-time constraints, allowing more ability to coordinate activities, social or otherwise, on the fly. Because cellphone use is only one element of the full complement of IT services and devices that could impact social travel, any changes in behavior associated with cellphone use have the potential, in later studies, to be magnified when a more full accounting of IT usage is available.

In order to make use of the household cellphone count in the travel inventory, I have constructed a cellphone usage intensity variable that is the ratio of number of cellphones in the household to total number of household members. This ordinal variable takes the following values:

- 0 to <0.5 (less than half a cellphone per person)
- 0.5 to <1 (from half to just less than one cellphone per person)
- 1 (one cellphone per person)
- >1 (more than one cellphone per person)

Table 1. Socio-Economics of Cellphone User Groups (Adults > 17)

	Cell Phones per Household Member			
	0 to <0.5	***0.5 to <1***	***One***	***> 1***
Median Income	$35-49k	$75-99k	$75-99k	>$100k
Median Education	College, No Degree	College, Assoc.	College, Bach.	College, Bach.
Non-Lat. White	43%	58%	68%	56%
Mean Age	47	43	51	50
Mean Trips	3.96	4.42	4.43	4.63
% Employed	64%	66%	73%	75%
% Driv. License	74%	88%	94%	88%
% Car to Work	71%	80%	77%	80%
N (Persons)	4,191	6,777	10,535	1,496
Weighted Total	1,807,596	2,298,025	2,719,466	416,294

Table 1 illustrates the socio-economic and demographic differences between the cellphone groups. Note that this table excludes respondents below 18 years old. A strong

relationship is evident between socio-economic status and cellphone ownership. Household income rises with cellphone ownership, as does educational attainment. Groups with greater cellphone ownership also tend to be more white and non-Latino. Cellphones are also positively correlated with number of trips, being employed, and having a driver's license, though the relationship between driving to work and cellphone ownership is not as evident.

3.4 Limiting the Sample

Because cellphone usage is highly correlated with socio-economic status, it is necessary to control for socio-economic status when seeking to understand the relationship between cellphones and travel. For the proceeding exploratory analysis, the sample will be limited to individuals of high socio-economic status, specifically employed adults with a household income greater than $75,000 per year. Even with this subset, the sample size remains very large, with N=9,138 persons.

4. ANALYSIS

The 2007 Chicago travel inventory is used to explore the outlines of the "new passeggiata" framework. The analysis seeks to understand whether travel for social and recreational purposes does indeed increase in frequency or distance from home for those with higher rates of cellphone adoption, and whether walking retains an important role in social and recreational travel, even at long distances from home.

4.1 Activity Participation Rates by Groups of Cellphone Users

Table 2 highlights the rates of all activity participation (and tripmaking) for the survey day, as well as work, social and recreational activities, meals eaten out, and routine shopping. Among this high income subpopulation, differences in cellphone usage are not significantly associated with varying activity rates for any of the trip purposes examined. Focusing on specifically social and recreational activities, it appears that the number of social and recreational activities actually goes down as cellphone ownership increases. However, a Kruskal-Wallis equality-of-populations rank test does not show a significant difference between mean social activity rates for different levels of cellphone ownership. Regardless, these results are not supportive of one part of the conceptual model, that increased IT usage is associated with higher numbers of social and recreational activities.

Table 2. Tripmaking Rates by Activity Type (Adults with Hhld. Income > $75k)

	Cellphones per Household Member			
Trip Purpose	**0 to <0.5**	**0.5 to <1**	**One**	**> 1**
All Activities	4.74	4.55	4.48	4.71
Social and Recreational	0.43	0.41	0.37	0.35
Meals Out	0.30	0.26	0.30	0.33
Work	0.74	0.75	0.79	0.77
Shopping	0.38	0.39	0.41	0.38

4.2 Social and Recreational Activity Distance from Home by Groups of Cellphone Users

The distance which individuals will travel to complete an activity exhibits a stronger relationship with cellphone usage. Figure 2 shows how the average distances that individuals travel to engage in activities varies both by type of activity and the cellphone ownership ratio. In this first chart, which includes all modes, the average distance from home, in meters, is shown

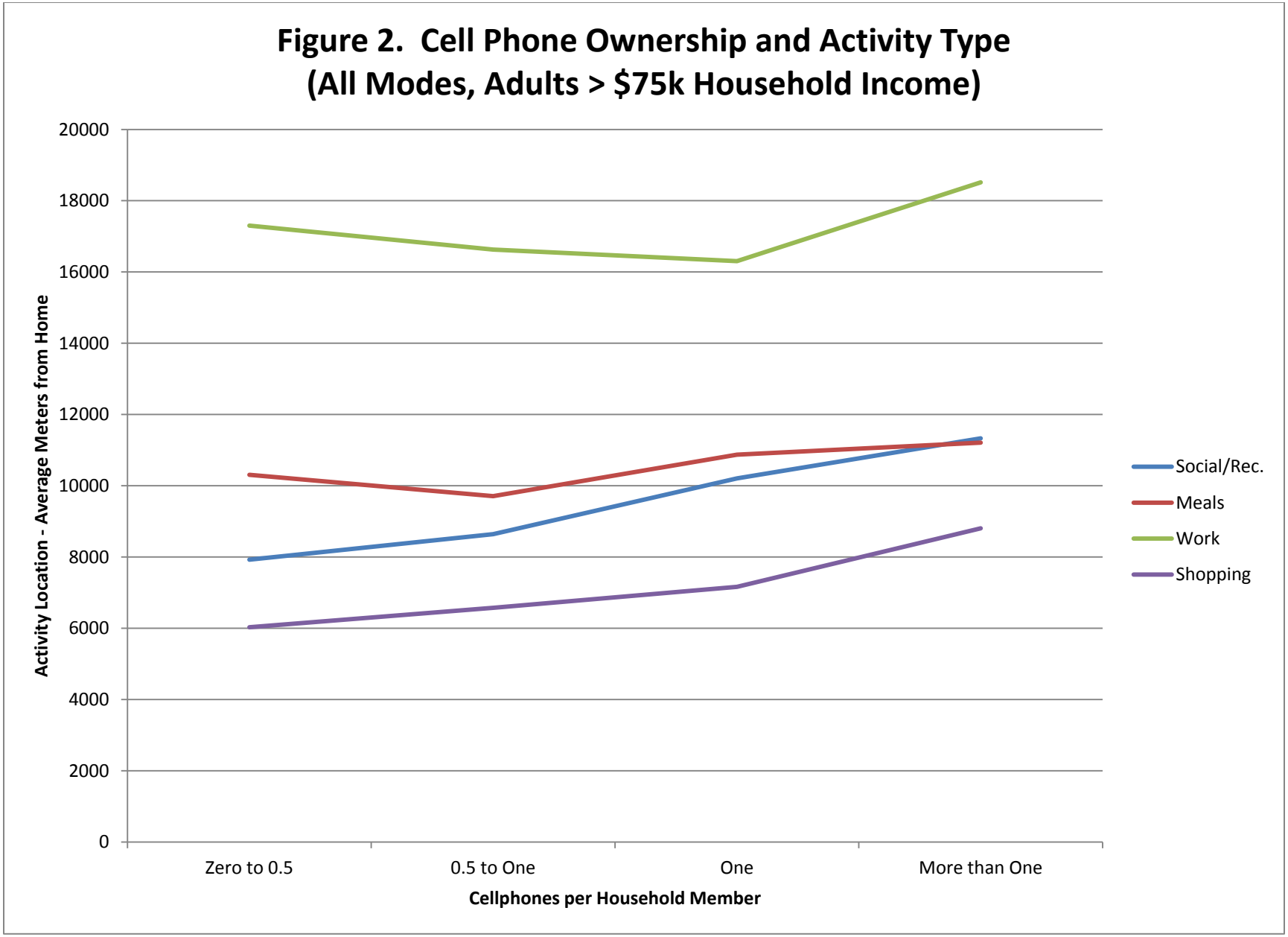


Figure 2. Cell Phone Ownership and Activity Type
(All Modes, Adults > $75k Household Income)
Activity Location - Average Meters from Home
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Zero to 0.5
0.5 to One
One
More than One
Cellphones per Household Member
Social/Rec.
Meals
Work
Shopping

for several different activity purposes. From one end of the cellphone ownership spectrum to the other, social and recreational trips, as well as shopping trips, show a consistent increase. Trips for meals are relatively flat, and the trend with work trips is indeterminate, first decreasing and then rising.

4.3 Social and Recreational Activity and Walking

Though the difference in distance from home across cellphone groups for social and recreational trips is statistically significant at the 0.05 level (treating cellphone ownership as a categorical variable in ANOVA), it is not as strong as that observed for social and recreational trips that involve walking. Figure 3 shows the distance from home for the same activity types, but only when they are accessed by walking. Note that this could mean that the activity is reached as a part of a trip chain made up of multiple modes, such as where the first mode is driving or transit, but the ultimate mode is walking. For these walking trips, the increase in average distance from home as cellphone ownership increases is substantial. For households with zero to 0.5 cellphones per person, social activities accessed by walking occur – perhaps not surprisingly – very close to home. For those with one cellphone per household member, the distance from home for social trips made on foot has more than tripled to 7km. For households that report more than one cell per person, that number doubles again to 14km.

Other types of activities do not appear to have the same relationship with cellphone ownership and walking. Shopping trips made on foot remain relatively close to home regardless of cellphone ownership. Meals eaten out, while often taken far from home (and possibly associated with work), do not change significantly in relative location from home due to cellphone use. The nature of the relationship between distance from home and work trips on foot is indeterminate.

4.4 Activity Locations among High Cellphone Ownership Groups

While the distance from home to activity location is one way to measure differences among different groups of cellphone users, the spatial distribution of activities throughout a metropolitan area is another means for understanding differences in activity patterns between "high" cellphone users and others. Figures 4 and 5 illustrate the distributions of social and recreational activities by people in households with one or more cellphone per person. These maps show the *relative density* of social activities of high cellphone users compared to the general populace. In other words, if a given location has a value of 50%, then fifty percent of all the social trips at that location were made by high cellphone users. The greater the relative density value, the more dominated that area is by high cellphone users. Variations in the density measure across the Chicago metropolitan area tell us if certain places are relatively more likely to be visited by people with good access to cellphones than the rest of the population. The density maps were estimated using the kernel density function in the ArcGIS Spatial Analyst.

Figure 4 illustrates the relative density of social and recreational trips taken by people with one or more cellphones per household for *all modes*. The center of Chicago, the Loop, is at the confluence of the Chicago Transit Authority (CTA) rail network, shown on the map. The area with the greatest relative concentration of trips associated with high cellphone ownership is centered on the Loop, but extends to the south and west, as well as to the north to a lesser extent, along the lakefront. From the Loop and north along the lakefront are Chicago's entertainment and recreational destinations, and if individuals with access to cellphones are taking more advantage of these areas than others, perhaps it's not surprising to see the higher relative density

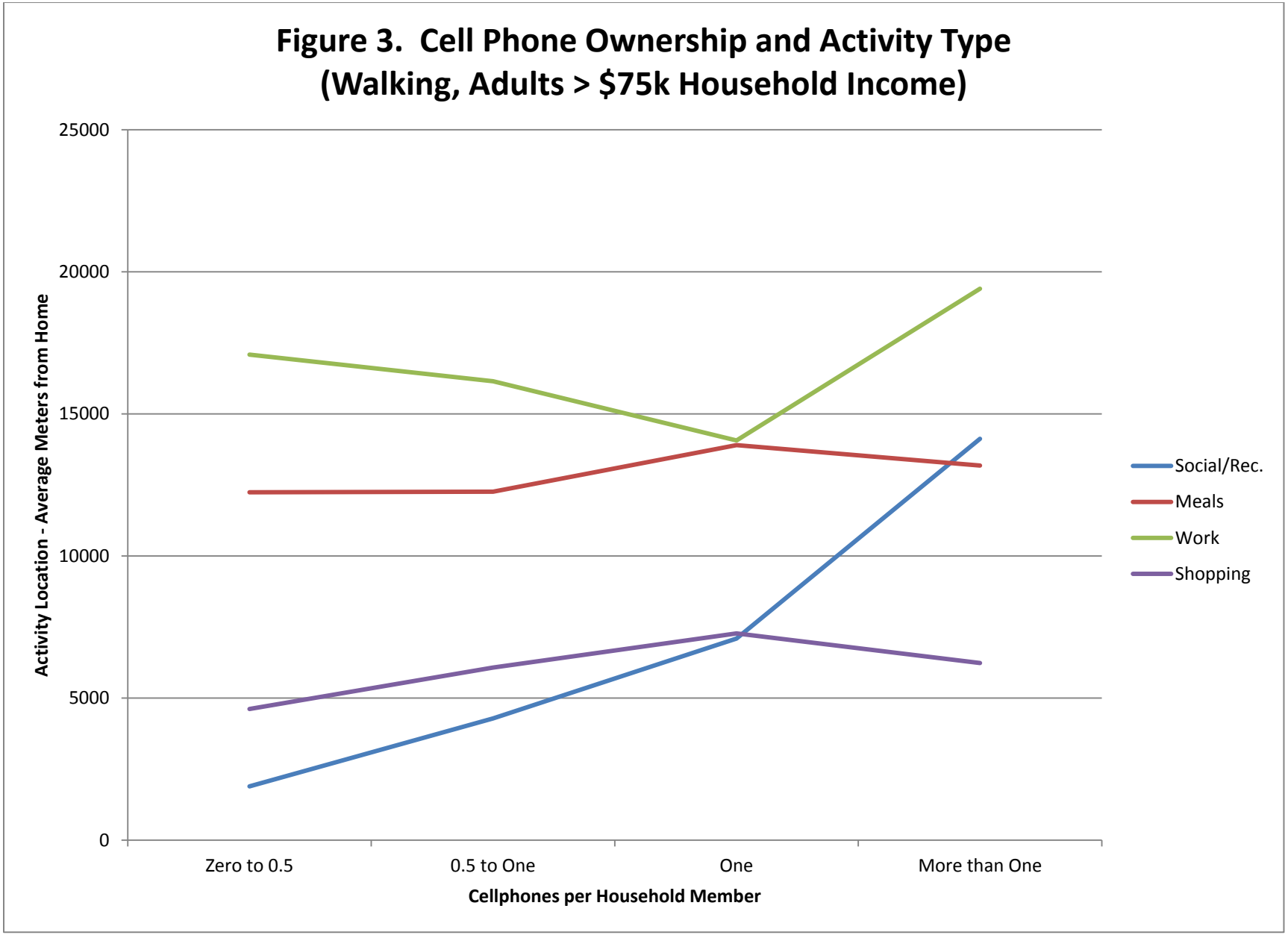


Figure 3. Cell Phone Ownership and Activity Type
(Walking, Adults > $75k Household Income)
25000
20000
15000
10000
5000
0
Activity Location - Average Meters from Home
Zero to 0.5
0.5 to One
One
More than One
Cellphones per Household Member
Social/Rec.
Meals
Work
Shopping

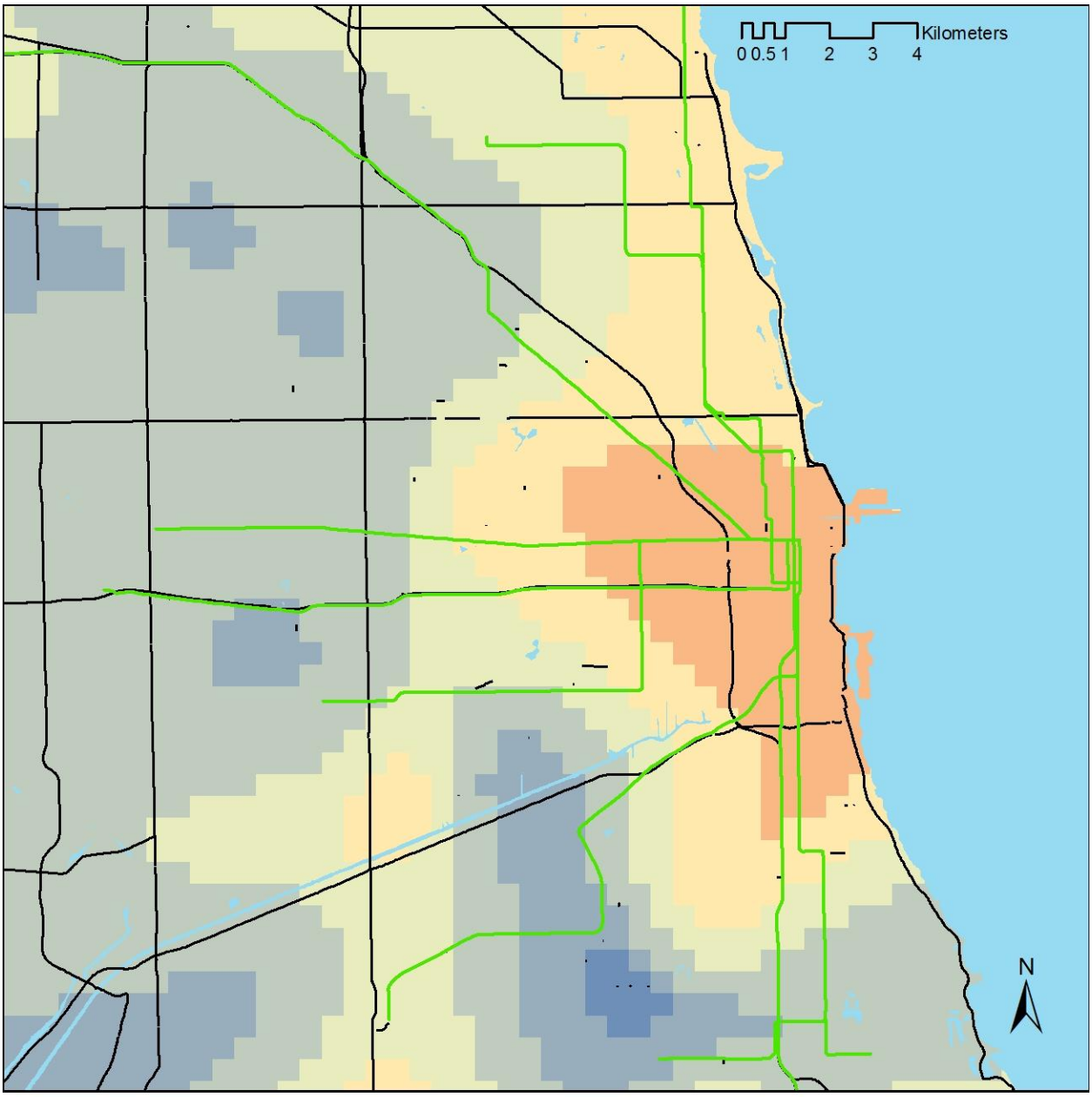


Figure 4.
Relative Density of Social Activities
High Cellphone Ownership
(1 or more) over All

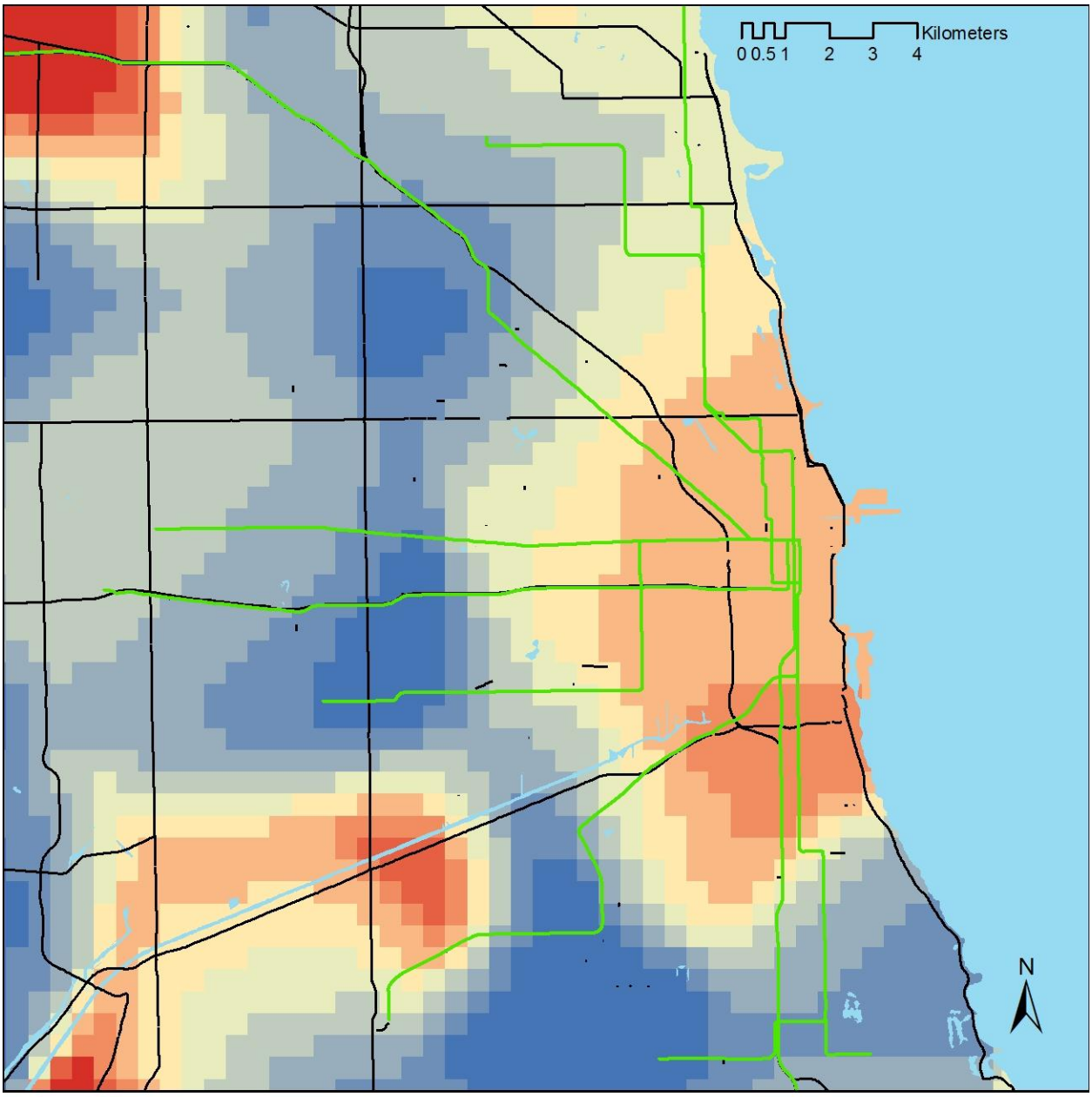


Figure 5.
Relative Density of Social Activities By Walking, High Cellphone Ownership (1 or more) over All

along the northern lakefront and in the Loop itself. However, the highest relative densities actually extend to the west and south of the Loop. These areas are not traditionally major entertainment destinations. However, they are in the path of major urban change. These traditionally working class, ethnic, or industrial neighborhoods are now major sites of gentrification, or local socio-demographic change, in Chicago. To engage in social and recreational activities in these areas may require extra assistance of the type provided by cellphones, in order to successfully select, coordinate, and find a particular activity.

Figure 5 shows the same type of relative density measure. In this case, however, only social and recreational activities reached by *walking* are counted. In general, the pattern is similar, though the differences tend to be starker. High relative densities of social walk trips are particularly concentrated in the area to the south of the Loop. The walk trips map also shows very high concentrations in two other locations, to the northwest and southwest. Those locations are right by Chicago's two airports, O'Hare and Midway. Speculatively, perhaps these clusters are indicators of highly mobile travelers with cellphones engaging in ancillary social activities in and around the airport. Regardless, it does appear that particular areas of the city are more heavily patronized, for social purposes, by those with high cellphone ownership. These areas include the urban core, but also extend into its fringes where rapid change is occurring.

5. CONCLUSIONS

Does the analysis reveal a relationship among urban information technologies, social and recreational activity, and walking that fits the concept of the new passeggiata? The analysis was exploratory and descriptive, obviating any definitive assessments. As discussed above, the cellphone ownership measure is only a partial proxy for the wide range of urban IT services devices. Cellphones do increase individuals' ability to coordinate and flexibly plan trips, but – unless they are smartphones – do not provide the types of location-based services and augmented decisionmaking that are a critical part of the conceptual framework. Further, the travel survey could not provide significant detail about the nature of the social and recreational activities collected.

However, despite the limited power of the cellphone ownership measure to capture the full range of technologies and services that are becoming available, some intriguing results were observed. A significant increase in activity distance from home was observed, associated with cellphone ownership, for social and recreational trips, and especially walking trips. In addition, the spatial analysis shows that cellphone ownership is more prevalent among those engaging in social activities along the fringes of Chicago's core, in places that colloquially could be called "gentrifying neighborhoods." Again in the spatial analysis, the contrasts were starker when just considering social walk trips.

5.1 Directions for Future Research

Future research will build on the concept and preliminary findings from this paper, but use more powerful methods and data to test the new passeggiata concept's validity. Methodologically, a quasi-experimental design may be most appropriate for this research, testing differences between subjects before and after, or with and without, access to a range of urban IT. In addition, because the fundamental nature of social travel is still poorly understood, qualitative methods such as interviews and focus groups, in addition to quantitative travel surveys, would help refine the framework for how IT shapes people's activity and travel choices. In addition to

better data with regards to IT adoption by research subjects, better data on subjects' social networks would help explain how and where groups choose to meet.

5.2 Planning and Policy Implications

The new passeggiata represents the possibility of fundamental change in how people make use of cities, and therefore how we, as planners, might facilitate their ability to meet their needs and wants. The new passeggiata does not represent the death of space, so much as the birth of urban "hyperspace." Social or recreational activities, with the assistance of IT, can happen anywhere in the city, rather than in well-known or prescribed places or neighborhoods. Exploration becomes easier, and less risky. A potential positive outcome, therefore, is increased economic activity in traditionally neglected or "under-the-radar" neighborhoods. Planners will need to consider how much they want to accommodate the new passeggiata through investments that enhance pedestrian amenities not just in central places, but throughout a city or region. Of course, even if people ultimately walk once they are at particular neighborhood destination, the increased driving or transit use to get to these relatively distant places could increase burdens on the transportation system, in addition to potential increased environmental costs.

ACKNOWLEDGEMENTS

I would like to thank the Rudin Center for Transportation Policy and Management at the NYU Wagner School of Public Service for its generous support while undertaking this research.

REFERENCES

Axhausen, K. W. (2005). Social Networks and Travel: Some Hypotheses. Social Dimensions of Sustainable Transport: Transatlantic Perspectives. K. Donaghy, S. Poppelreuter and G. Rudinger. London, Ashgate Publishing**:** 90-108.

Bean, C. E., R. Kearns, et al. (2008). "Exploring Social Mobilities: Narratives of Walking and Driving in Auckland, New Zealand." Urban Studies **45**(13): 2829-2848.

Carrasco, J. A., B. Hogan, et al. (2008). "Collecting social network data to study social activity-travel behavior: an egocentric approach." Environment and Planning B: Planning and Design **35**(6): 961-980.

Chon, K.-S. (1989). "Understanding Recreational Travelers' Motivation, Attitude, and Satisfaction." Tourism Review **44**(1): 3-7.

Csikszentmihalyi, M. (2000). "The Costs and Benefits of Consuming." Journal of Consumer Research **27**(2): 267-272.

Del Negro, G. P. (2004). The Passeggiata and Popular Culture in an Italian Town. Montreal, Canada, McGill-Queen's University Press.

du Toit, L., E. Cerin, et al. (2007). "Does Walking in the Neighbourhood Enhance Local Sociability?" Urban Studies **44**(9): 1677-1695.

Gans, H. J. (1965). The Levittowners : ways of life and politics in a new suburban community. New York, Institute of Urban Studies, Teachers College, Columbia University.

Gaspar, J. and E. Glaeser (1996). "Information Technology and the Future of Cities." National Bureau of Economic Research Working Paper Series **No. 5562**.

Gaspar, J. and E. L. Glaeser (1998). "Information Technology and the Future of Cities." Journal of Urban Economics **43**(1): 136-156.

Glaeser, E. L. and J. D. Gottlieb (2006). "Urban Resurgence and the Consumer City." Urban Studies **43**(8): 1275-1299.

Glaeser, E. L., J. Kolko, et al. (2001). "Consumer City." Journal of Economic Geography **1**(1): 27-50.

Golledge, R. G. and R. J. Stimson (1997). Spatial Behavior: A Geographic Perspective. New York, The Guilford Press.

Golob, T. F. and A. C. Regan (2001). "Impacts of information technology on personal travel and commercial vehicle operations: research challenges and opportunities." Transportation Research Part C: Emerging Technologies **9**(2): 87-121.

Guest, A. M. and S. K. Wierzbicki (1999). "Social Ties at the Neighborhood Level." Urban Affairs Review **35**(1): 92-111.

Handy, S. L., M. G. Boarnet, et al. (2002). "How the Built Environment Affects Physical Activity: View from Urban Planning." American Journal of Preventative Medicine **23**(2S): 64-73.

Janelle, D. G. (2004). Impact of Information Technologies. The Geography of Urban Transportation, Third Edition. S. Hanson and G. Giuliano. New York, The Guilford Press.

Kwan, M. P. (2002). "Time, information technologies, and the geographies of everyday life." Urban Geography **23**(5): 471-482.

McCann, P. (2007). "Sketching Out A Model of Innovation, Face-to-face Interation and Economic Geography." Spatial Economic Analysis **2**(2): 117-134.

Mokhtarian, P. L. (1998). "A Synthetic Approach to Estimating the Impacts of Telecommuting on Travel." Urban Studies **35**(2): 215-241.

Mondschein, A., E. Blumenberg, et al. (2010). "Accessibility and Cognition: The Effect of Transport Mode on Spatial Knowledge." Urban Studies **47**(4): 845-866.

Nie, N. and L. Erbring (2000). Internet and Society: A Preliminary Report. Palo Alto, CA, Stanford Institute for the Quantitative Study of Society, Stanford University.

Nielsen. (2011). "40 Percent of U.S. Mobile Users Own Smartphones; 40 Percent are Android." Retrieved October 7, 2011, from http://blog.nielsen.com/nielsenwire/online_mobile/40-percent-of-u-s-mobile-users-own-smartphones-40-percent-are-android/.

Nilles, J. M. (1988). "Traffic reduction by telecommuting: A status review and selected bibliography." Transportation Research Part A: General **22**(4): 301-317.

NuStats (2008). Chicago Regional Household Travel Inventory: Data User's Manual. Austin, TX, NuStats.

Ogilvie, D., M. Egan, et al. (2004). "Promoting walking and cycling as an alternative to using cars: systematic review." BMJ **329**(7469): 763.

Putnam, R. D. (2000). Bowling alone : the collapse and revival of American community. New York, Simon & Schuster.

Salomon, I. (1985). "Telecommunications and Travel: Substitution or Modified Mobility?" Journal of Transport Economics and Policy **19**(3): 219-235.

Schroeder, J. E. (2002). Visual consumption. London ; New York, Routledge.

Storper, M. and A. J. Venables (2004). "Buzz: face-to-face contact and the urban economy." Journal of Economic Geography **4**(4): 351-370.

Urry, J. (1992). "The Tourist Gaze "Revisited"." American Behavioral Scientist **36**(2): 172-186.

Vautin, D. A. and J. L. Walker (2011). Transportation Impacts of Information Provision & Data Collection via Smartphones. 2011 Annual Meeting of the Transportation Research Board. Washington, DC.

Wheeler, J. O. and F. P. Stutz (1971). "SPATIAL DIMENSIONS OF URBAN SOCIAL TRAVEL." Annals of the Association of American Geographers **61**(2): 371-386.