Title
Spatial behaviors of individuals in cities: Case studies in data tracking and scaling

Permalink
https://escholarship.org/uc/item/8g16p94w

ISBN
9781450342049

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Publication Date
2016-05-24

DOI
10.1145/2962735.2962755

Peer reviewed
Spatial Behaviors of Individuals in Cities: Case Studies in Data Tracking Analysis across Scales

This study in New York City is a first step in mapping consumer food shopping pathways linked to larger municipal waste and food supply data. Four researchers mapped their weekly food shopping paths by journaling and Instagram. This was cross-referenced with food store size, package type, households and waste produced in New York City’s waste and recycling regions. Each walker had a unique system for navigating their own city, buying food by choice (opportunistically) or as a destination. Correlations among packaging, food type and waste produced were graphed by weight, comparing compostable organic waste to recyclables and waste.

We hypothesized that bicycle commuters have the flexibility to see parts of the city not accessible to mass transit commuters on metro and bus. We used ArcGIS to visualize the reported GPS locations by participants and observed if we could tell different changes in speed and associate probably transit method per commuter. We have thus far used off-the-shelf apps and softwares intended for diverse research or walk to understand the interplay of urban space and individual actions. We have developed a series of studies that operate at both urban and human scales to understand the interplay of urban space and individual preference as a maplike phenomenon. We hope ultimately to contribute qualitative and quantitative insights into human choice and its urban spatial and resource impacts.

This research of changes in personal technology and human behavior has created new opportunities to understand cities by mapping the large-scale movements of goods and people through the use of GPS and GIS. For example, more recently mapping use of these technologies at the large scale, we have chosen to look more carefully at individuals in cities. Our research has produced broad-scale extended studies from which more general urban behavioral and spatial patterns begin to emerge. We present here two cases that use foot as a proxy resource relative to behavior. Our data collection methodology includes both digital and traditional techniques, and our analytical methodology, still in formation, draws upon visualization, interpretive and quantitative observations.

Cities comprise the designed flows of streets, infrastructure, and buildings overlaid with the incidental circulation of human spatial behavior. The ubiquity of personal computing devices and GIS-enabled apps offers an expanded opportunity to understand human spatial behavior in an urban context. The outcomes can be applied to a variety of agendas, such as increasing efficiency for better understanding individual action. We have developed a series of studies that operate at both urban and human scales to understand the interplay of urban space and individual preference as a maplike phenomenon. We hope ultimately to contribute qualitative and quantitative insights into human choice and its urban spatial and resource impacts.

Food Shopping Patterns and Associated Waste: New York City

‘Eating on the Run’ and Non-food Waste: Providence, RI

This study considered work-life balance while deploying more extensive GIS data tracking tools combined with Instagram. GIS-based Projectory used were MyTracks and Custom-All. All subjects were architecture students who worked 10-18 hours a day in their studio. Their choices around the management of time, finance and social activity result in specific food packaging and associated waste. The subject images of the food waste and waste produced suggests eating at work resulted in non-compostable, non-food waste, while allowing greater time, social interaction and mobility for mass produced, less non-retrievable waste.

Bespoke Tracking and Travel: Copenhagen

This case studied applied more tailored studies of data collection and representations to quantify the way spatial characteristics of a space or place will affect how people behave. Thirteen volunteers in Copenhagen, Denmark, used bespoke platforms. Likewise, to record position, movement and speed, as well as quality (e.g. urban activities, data capture and user prompts such as the arrival at a pre-defined location or a certain time of day) indoor position data was collected using an adapted version of IndoorAtlas. Two weeks of collected data were compared with large amounts of municipal and open source data. This mixed mixed two weeks of collected data geographic data about the city in green spaces, built streets, average pedestrian courses, as well as patterns of human movement. Workshop participants and field data in study city-one route or another was linked to urban features that could influence choices, including traffic and green space. Another group studied data collection during 10 of error.

Keywords: Mapping, Data Tracking, Spatiotemporal, GIS, GPS, Apps