Understanding 'there' on a human scale.

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ABSTRACT

This position paper outlines a number of lessons learnt in studies surrounding location-based services, with methods ranging from the collection of personal hand-drawn maps, photos and stories, and workshops, to web-scale analysis of millions of local data points. These all emphasize the importance of focusing on the 'human scale' when designing for new local experiences and using local data.

Author Keywords

Location-based services, mobile, urban, maps, geo

INTRODUCTION

Location-based services have gained a huge amount of attention, and location and 'place' are hardly new research topics in HCI. However, we still operate in relative isolation from the fields that have long-standing traditions in understanding people's relationships to the built environment. Below a number of challenges are outlined, ranging from implementation of the concept of 'location', usage of location-based services and the creation of local (mobile) experiences, using the web-scale data that they generate, to people's ties to their local surroundings, where shared efforts would be much welcome.

THE WORLD ISN'T A COLLECTION OF POINTS

Cities are not simply collections of destinations. Cities have character, and there's 'life between buildings' (Gehl, 2010). The pleasure of visiting a city does not lie in just visiting the venues within it, it is the experience of traversing its streets, experiencing its potentially unique atmosphere. The potential of cities lies in their human meetings, not in their physical buildings (Glaeser, 2011). However, it appears that many of us in HCI and developers of location-based systems focus on getting to end-points, venues, rather than the experience of 'being there' and the journey along the way. While this often is a rather practical decision, it does seem an opportunity is being lost. As stated by Doersch et al, (2012): "'the look and feel' of a city does not depend on a few famous landmarks, but on a set of stylistic elements, the visual minutiae of daily urban life". And this does not even address yet the experience of actually *being in* a city, rather than just *seeing* its parts.

Location is not just 'a data point'.

Even from an implementation perspective, it is not a trivial question what 'location' is. For mobile services there is the question of whether location matters in whatever it is that a user wants to accomplish. When a 'local intent' is established, location can be sourced in a variety of ways. Users can 'check-in' at semantically named venues, or explicitly indicate 'where' they are looking for. Location can be implicitly inferred from e.g. user search input, from existing user profiles and cookies. Location can be gathered from user devices, gained from GPS, cell and wifi networks. Local circumstances, as well as user behaviors specific to a locale can play a role. Location cannot be considered separately from the dimension of time, even in just a practical sense of its last update. Additional issues arise when processing geotagged content (Rost et al., 2012), or when aiming to connect data with physical 'things' to facilitate interactions with the physical environment. A one-size-fits-all location model doesn't exist - and these practical notes do not even begin to touch the discussions on the core of space and place in the CHI community that many of us are familiar with, let alone the emotional and social experience in place.

Being able to surface local content is not necessarily addressing the experience in place. One particularly interesting example are location-based recommendations, now standard practice across many platforms; mobile ads, foursquare, Yelp, etc. Interestingly, research on people's experience of local recommendations in situ is still lacking. At a recent workshop at RecSys (Cramer et al., 2012), we found that even local recommendation researchers, encountered new issues when using recommendations to 'walk around and go places' in social, outdoors contexts.

HUMAN-SCALE LARGE DATA

Web-scale data streams which include location offer a wealth of opportunities in analyzing human behavior, local differences and trends ranging from characterizing neighborhoods based on user-generated venues within them (Cranshaw et al., 2012), to using social media and transit data to infer deprivation (Smith, 2011; Quercia et al., 2011). We do need to be well aware that both sensor and user-generated data do not necessarily mirror all human activity. One of the insights from work analyzing location-sharing data, specifically working with foursquare check-ins (Rost et al., 2013), was that rather than asking whether data is 'representative' of local activity, we should first understand what the data represents itself, and the communicative patterns that it is the result of. Users for example have a variety of motivations to share or *not* share their location; and turns location from a 'property' that users have into a social performance that affects which data points are

present, and which are not (Cramer et al., 2011). This makes it absolutely crucial to have human-scale qualitative studies inform large-scale data analysis.

GETTING AT THE PERSONAL & SMALL
To get more insight in people's views of their cities, and the potential influence of technology usage, we performed adaptation of the 1970s Mental Maps study by Milgram. 87 participants drew us a map of Chicago, and answered questions about the city's neighborhoods (Bentley et al., 2012); a follow up in Stockholm, Sweden, involved 80 participants. Interestingly, outdoors spaces and arts were most represented categories, different from the focus of most location-based services. We found that individual differences were bigger than tech influence. Participants also reported not knowing most of their city 'well', in Chicago for example participants reported only knowing 2.1 neighborhoods listed by name, landmarks from 5.3 neighborhoods on average (out of 95). A general opportunity for discovery close to home is available, and many participants shared stories and characterizations of places, neighborhoods that are currently not represented in location-based services, but it can be challenging to get at the essence of the elements included.

Small Spaces
To further get at the places that people we conducted an online survey in spring 2012 to investigate small spaces in cities that evoke particular emotions. Among other questions, we asked participants (avg age 31, mostly EU & US) to describe places that made them happy/sad/surprised them/etc. 63 participants provided us with information on places that made them happy (see fig 2 for example uploaded pictures). Striking was not only that the 'happy places' were mostly outdoors (54/60) as opposed to sad places being a more mixed set, but the combination of seemingly opposed characteristics: "[...] everybody takes a break there: hip-hop kids, young parents, elderly ladies with their shopping. What makes it special is that it is like an oasis in the middle of this huge Allee. It is calm, friendly and populated at the same time." (right, fig 2). Many of these were also about memories, and history that could not be captured by simply analyzing the characteristics of the location of its own. Input from architecture, urban design,

Fig. 1 Example uploaded photos 'happy places'

social geography etc. is crucial in going further than just these first steps. Urban designers such as Jan Gehl (2010) offer a wealth of criteria for designing 'good public spaces'; how these can be 'translated' for our purposes is challenging. We need to further develop the ways to get at these essential characteristics, while combining them with larger-scale projects.

IN CLOSING
There is enormous potential in analyzing large-scale data streams, in building local apps and physical experiences, in responsive architecture, and data-informed urban design. We however need to attend better to the aspects that really matter on a human scale, and for this, our disciplines need to familiarize ourselves with each others' methods - and this includes not being afraid of being chastised by researchers in other fields with longstanding traditions in areas we are just discovering.

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Fig. 1 Stockholm participant drawing (ingen aning=no idea, kalt=cold, coolt=cool, mysig =cozy etc.)