

It's not easy seeing green: imaging urban parks within neighborhoods

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ABSTRACT

Green space is an undeniably important component of urban life. Maintaining it requires cooperation between multiple stakeholder groups. ParkScan is an information system aimed at helping local residents inform city agencies and neighborhood groups about problems with neighborhood parks. Using ParkScan as a case study, this paper explores urban engagement with green space through playful and accessible visualization methods.

Author Keywords

Cities, parks, visualization

ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

In September 2006, the San Francisco art collective REbar protested the devotion of more urban public space to parking lots than to park by launching PARK(ing), a temporary park project [7]. The artists install a moveable park-in-a-parking-space: grassy sod, a bench, and a tree for a few hours – or until the parking meter runs out.

PARK(ing) testifies to the appeal of painting cities green, even if only temporarily. It also suggests the diversity of urban green space – from large areas such as New York's Central Park, to community gardens on street corners, to tiny "mini-parks" of under an acre. And third, it points to the pressures facing urban green spaces. Despite their value to city life, ever larger and denser cities are losing their parks and gardens to redevelopment [5].

In recent years, studies have linked green space to a host of social goods, including better perceived physical health [5]



Two visitors to a temporary mini-park in a parking space created by the Bay Area art collective REbar [REbar]

and increased neighborhood social activity [13]. Urban green space provides opportunities for neighbors to cooperatively nurture a community resource. For example, in an observational study of 59 outdoor spaces in a housing development, Sullivan et al found that the presence of trees and grass was linked not just more activity in outdoor spaces, but also to increasing social interaction between neighbors [13]. Meanwhile, a survey of Chicago neighborhoods, which found that high levels of collective efficacy – the “linkage of mutual trust and the willingness to intervene for the common good” – correlates to lower crime [8]. As one of the study's authors has pointed out elsewhere [11], parks promote collective efficacy through community activities.

Yet green space – especially parks – can inspire anxieties. Public fears about empty or abandoned-looking green spaces have even changed park design principles [6]. If cities are to reap the benefits as well as the troubles of green space, keeping it well maintained and well used is essential. Instead of providing solitude in nature, the value of green space may lie in creating crowds.

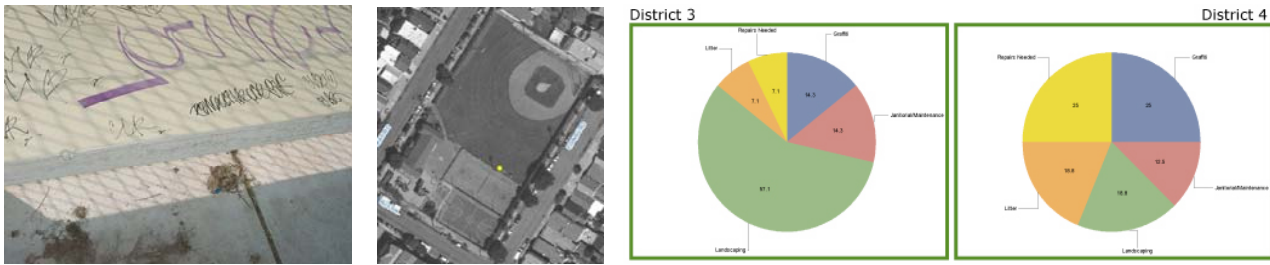


Figure 2: (a) Graffiti photographed at Excelsior Playground and posted to ParkScan¹. (b) Aerial photograph of Excelsior Playground. Yellow dot marks graffiti location. (c) Quarterly accounting of “issues of concern” identified by participants in ParkScan’s citizen monitoring service [ParkScan Q2].

This paper uses an expert analysis of a mobile and web-based park volunteer system to introduce a set of design research questions for HCI in urban parks and gardens.

PRESERVING THE COMMONS

Maintaining urban greenery requires cooperation among numerous stakeholders, from parks and recreation to animal control to the police department to community groups. This effort is often inharmonious, as one detailed German study of the quarrels about green space, children, noise, and pets [2]. Indeed, every time we refer to the “tragedy of the commons” [3] we invoke Hardin’s classic example of self-interest diluting collective benefit.

Like other American cities, San Francisco has fallen behind on monitoring the state of its “commons,” much less preserving them. Reporting on San Francisco’s 2006 survey revealed that the previous inventory had been six years earlier [4]. The 2006 results were disappointing: almost half the parks surveyed received below average to failing maintenance grades [4]. Some San Francisco park non-profits have suggested that most would have failed if the volunteer surveyors checked safety code violations as well as maintenance issues [4]. Clearly, San Francisco parks need all the help they can get.

PARKSCAN AND NEIGHBORHOOD REPRESENTATION

Faced with decreasing park maintenance funding, in 2003 San Francisco’s Neighborhood Park Council adopted ParkScan, a computer- and PDA-based application. It functions much like a software bug tracking system – for parks. Volunteers document maintenance issues with comments and photographs, pinpointing trouble spots on aerial photographs (Figure 1a, b). ParkScan then forwards the “bug report” to appropriate city agencies and community groups. The observations – and any resulting – are viewable on the website.

Each quarter, ParkScan visually summarizes months of park complaints across San Francisco into downloadable PDFs illustrated with pie charts (Figure 1c). The reports’ intended

audiences are district residents and San Francisco neighborhood officials [Website]. Each pie chart represents the proportions of reported violations of official standards (e.g. “Litter,” “Graffiti,” “Landscaping”) (see [9]).

ParkScan facilitates park maintenance in different timeframes and across audiences. Its publicly accessible archive of individual complaints serves as an immediate clearinghouse for repairs and compliments. The periodic reports, however, illustrate trends over time, providing evidence for policy. Based on volunteer opinion, ParkScan appears to be successful. One volunteer writes:

“I have been using this service to report issues in my park for the past three years and it works great. ...[I]magine if all of city government operated this way? Wow they would all actually have to be accountable!”²

Seeing through standards

ParkScan exists to improve park conditions by *making them visible* to the general public – or at least that section of the public with access to the Internet. Through snapshots, aerial photographs, and pie charts, it bridges multiple social worlds. ParkScan links individual park visitors, community groups, city agencies, and city administrative officials through common communicative ground: the official park maintenance standards. These standards translate individual observations into summary reports by providing a common language in which to name spaces and describe problems. They regulate reporting and thus action.

In the realm of standards, “granularity is political.” [12] Illustrated with snapshots (Figure 2), the standards include only conditions that can be easily photographed. Like the standards, ParkScan, reports only tangible aspects of park maintenance in its summaries. Yet volunteers’ observations frequently describe social interactions, such as conflicts between dog owners and other visitors, between community groups and unionized park employees, and between desired repairs and lack of funds. They even compliment park staff. But because they do not correlate to the maintenance

¹ <http://www.parkscan.org/observation.aspx?oid=7825>

² <http://www.yelp.com/biz/il8HfCYBpL8agdhT-ewcXQ>

standards, these issues do not appear in the database-driven pie charts. And the pie charts are the only synthesis of city-wide park conditions to be found on ParkScan's website.

In his now-classic *Visual Display of Quantitative Information* Edward Tufte addresses the use of pie charts – and his opinion is not good. “The only worse design than a pie chart,” he writes, “is several of them, for then the viewer is asked to compare quantities in spatial disarray both within and between pies” [14]. That is, a lack of visual predictability is cognitively frustrating. Whether or not the categories organizing the pie charts adequately address park sociality, it seems clear that they may not be the best way to understand city-wide conditions from a communication design perspective.

Let's discuss

The San Francisco Park Maintenance Standards underpin how ParkScan, city agencies, and city officials discuss and image urban green space. As ParkScan shows us, standards (and their reflection in database architectures) facilitate representing some park conditions, while excluding others that may be of importance. If we are trying to bring crowds to parks, should park maintenance applications derive new park standards from community representations? Should they avoid representing parks through standards altogether?

Social geographies and spatial disarray

Tufte's comment on the visual clarity of pie charts suggests a more theoretical reading of “spatial disarray” in visualizing urban green space. Parks, as we saw earlier, are integral to cities: the social life of a park and its surrounding neighborhood are entwined. “Spatial disarray” echoes an underlying lack of social clarity. ParkScan's visual techniques isolate parks from surrounding neighborhoods.

This disconnect is most visible – or rather, cropped out – in the aerial photographs, which exclude areas around parks (Figure 1b). Neighborhood differences are deeply implicated in the success of ParkScan – but are never visualized on the ParkScan website. For example, manually reviewing ParkScan's archive of observations shows differing levels of participation not represented on quarterly reports. As of January 2007, most of the 200 sites on ParkScan had not been visited for a year or more. Only a few had monthly observations.

Pie charts visualizing *proportions* of reported issues mask differences in *levels* of participation across parks and neighborhoods. As well, ParkScan's website has no map of the parks it monitors or comparative park conditions around San Francisco. Instead, the quarterly report – aimed at citywide officials³ – groups individual parks (and their neighborhoods) into administrative districts represented by pie charts (Figure 1c). Without maps, spatial trends across

the city – information that might help community groups coordinate activities – becomes harder to extract.

Dematerializing green space

From onsite photography to pie chart, ParkScan's imaging of the city becomes increasingly generalized and abstracted. The urban green space imagined is progressively removed of visual ambiguity and interpretive nuance as the contingencies of individual volunteers and their neighborhoods are to pie pieces.

Let's discuss

In turning individual snapshots into aggregate pie charts we see the distancing of imaging from physical space. We also see the collapsing of differences between parks and between communities into standardized representations. What is the role of spatiality and geography in creating comparative representations? Can we add nuance, richness, and depth to analytic urban images while maintaining clarity and simplicity?

CONCLUSION: IS THE GRASS GREENER?

Historian George Scheper dryly mocks an American tendency to see certain parks – especially Central Park –

“as a kind of paradigm of Nature in itself...as though Nature commonly ran to a nicely balanced composition of greensward, picturesque and umbrageous groves of tree, and strategically placed sheets of tranquil, reflecting water.” [10]

As Scheper reminds us, even “natural” urban landscapes are engineered. As programmed spaces, they demand constant upkeep. The phrase “urban green space” may suggest that parks and gardens are a kind of monoculture – or even one large distributed environment scattered between great tracts of asphalt and concrete. But there are many kinds of green space, many kinds of neighborhoods, and many kinds of maintenance. Social activity in parks may be one good way to improve, at a local level, the quality of life in big cities. But to draw crowds, it may be important to image – and imagine – urban green space by paying attention to local variations and to the microcosms of urban interactions.

This paper in no way represents a full accounting of the role ParkScan plays in San Francisco urban green space and community volunteerism. It has instead attempted to critically discuss how three techniques urban green space visualization represent a crucial part of city life. As such, it points us not toward conclusion but towards further discussion.

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³ <http://www.parkscan.org>

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