Life at the Local Scale

An alternative perspective on the urban

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Abstract. The study of cities has risen to the top of research agendas in the last decade, raising the question of how to study something as vast and eclectic as cities. This paper proposes a return to a focus on the local as an appropriate scale to investigate the needs and requirements of the livable city. A critical design approach is described, together with two design fictions that speculate on the relationship of the local to the city and how this could be mediated through data. The paper concludes by claiming that the local can reveal many of the subtleties and nuances associated with urban living and at the wider level can provide indicators to why this style of living is increasingly desirable to a growing urban community.

Keywords: urban, local, critical design, interaction

I. INTRODUCTION

Research into cites continues to raise particular issues for technologists and researchers, in particular, the question of what is an appropriate level of granularity for the investigation of urban life. On the one hand, commercial initiatives in the context of the smart city have adopted a systemic approach to the city and have focused on the improvement of efficiency and productivity. These large urban development projects address infrastructure issues such as transport, pollution, sustainability and security; they reflect 'big thinking' at an urban level.

This paper presents an alternative stance, inspired by interaction design, based on the adoption of a grassroots view of how cities develop. By taking this approach, it is contended that it enables researchers to re-think what intelligent connected communities of the future might look like. The work reported here draws on the experience of the UrbanIxD project that was funded under the European Commission Future and Emerging Technologies (FET) Open programme. The 2 year project was tasked with building a research network around the domain of data-rich urban environments focusing on human activities, experiences and behaviours.

By considering cities at the human scale, the project reaffirmed that contemporary urban life consists of a wide range of behaviours and experiences all of which will have to be addressed by technological advances. It is argued that, to achieve this and to complement the systemic approach, a focus on interactions at a local level is required.

In the drive towards the smart city, in all its guises, local neighbourhoods and communities should not be ignored. Ultimately it is these, as has always been the case, which will stitch together to form the patchwork that is the city now and in the future.

Cities have always been the location for social, economic and technical change. They concentrate people, power and wealth; they are the engines of a nation. Today the situation is further amplified by the rising numbers of people whose major lived experience is urban, and also by the rapid technologisation of everyday urban life. These trends have dominated the view of cities over the last decade and as a result we now experience public and private spaces that are filling up with smaller and smarter technologies. Software, as much as architects and planners, is organising and managing urban life. This raises questions about what this will mean for us as citizens, employees, consumers and, most importantly, social beings.

II. EXPERIENCING THE CITY

Urban environments are rapidly becoming augmented with a myriad of novel networked technologies. Sensors are embedded in the fabric of the city and citizens carry with them ever more sophisticated communication devices. The interface between people and the city is a complex design space. People carry a range of mobile devices that enable access to multiple, geo-located applications. Data can be consumed at will and on the move. This relationship with data is made more complex with the increasing number of monitoring devices that allow the tracking and quantification of any number of activities, from steps taken to calories consumed. People now have the capacity to create and publish data as well as to consume it.

As the technological capabilities of people increases, so do those of cities. Initially this was characterized in the provision of the networks necessary to support the connected citizen. What we are witnessing now are cities that are taking a more active role in the gathering

of data. This process is manifest in a transformation that is taking place in how our cities work. Cities are being laced with sensors, which in turn create new interaction possibilities by imbuing physical space with real-time behavioural data [1]. A digital landscape overlays our physical world and is expanding to offer ever-richer experiences. In the cities of the future, computing isn't just with us; it surrounds us, and it uses the context of our environment to empower us in more natural, yet powerful ways [2].

The vision of Ubicomp is currently being manifest in Pervasive Computing, and the Internet of Things, but rather than casting the human at the centre of this vision, as proscribed by [3], today's citizens appear to be engaged either as consumers or nodes in the vast network that comprises the city. What is clear is that the urban fabric itself is becoming increasingly reflexive and responsive, and this in turn has numerous implications for the design and experience of cities.

III. URBAN INTERACTION DESIGN

Urban Interaction Design is an emerging field that has developed in response to the changes that are taking place in cities. Its focus is at the point of contact between people and cities. This is a design space in which interaction plays a key role in both mediating how we derive meaning from the multiple, heterogeneous data sources that characterise the hybrid city but also how these meanings inform subsequent decisions.

At its core Urban Interaction Design is concerned about people at a human scale, their activities, experiences and behaviours in data-rich urban environments. This focus complements the approach to cities expressed by the growing interest in tactical urbanism [4]. These authors describe tactical urbanism as having a focus at the local level. While taking inspiration from urban planning and architecture, tactical urbanism shares many of the humanistic aspirations of urban interaction design and both approaches strive towards the creation of more livable cities. Indeed, Lydon & Garcia go as far as to say that extra small (XS) is the missing size from Koolhaas's S, M, L, XL nomenclature from the book of the same title [5]. This book documented a series of real and imagined projects from Koolhaas's OMA studio, it emphasized the issue of architectural scale and its relationship with the city. In one essay, entitled 'The Generic City', Koolhaas declares that the city and the street are things of the past, that 'the city is no longer'. Such a claim was prompted in the main by what was considered to be the urban stereotypes that cities had become. The result was the commodification of cities and the building of a series of indistinguishable cityscapes. This position underpins Koolhaas's subsequent view that architecture should be about more than 'making buildings' and that it should aspire to a contribution at the socio-cultural level.

This view complements the grander scale aspirations of many cities, where L might equate to shopping malls and XL to infrastructure projects at a city wide scale.

Tactical urbanism conceives of projects at the XS scale and proposes that these offer the opportunity not only to envision a different future, but to experience it too. This position echoes the stance of seminal researchers [6 & 7] who worked in the 1960s and 70s and whose focus was at the level of the local in their attempt to better understand the human needs of the livable city. Key to the success of both tactical urbanism and urban interaction design, with its more explicit technological perspective, is the incorporation of criticality, and through this to raise questions about what our shared urban futures might be like.

IV. CRITICAL DESIGN AND DESIGN FICTIONS

Design practice is conventionally grounded in reality and in the possible. Critical design exploits these pragmatic limitations to question our assumptions and preconceptions about the roles that products and services play in everyday life. The creation of fictionalised designs is a strategy for exploring the space that lies tantalisingly beyond the current and the now. By situating design prototypes at the edges of our knowledge, it is possible to create 'design fictions' [8]. These potential objects and services have been described as 'diagetic prototypes' [9]. Just as props are used to support narrative in cinema, these prototypes are intended to suspend disbelief. The role of design fictions is to activate the imagination rather than to specify technology or make particular claims about the future. By extrapolating current weak signals into the future, design fictions confront us with the now as well as the possible by tracing out the often conflicting trajectories ahead. The key attribute of design fiction is its ability to start conversations around this tension between present and future(s) [10]. The fictions create stories that unpack and humanise the future, enabling us to focus on the minutiae of behaviour and the subsequent questions and discourses that are raised through the exposure of our needs, desires, habits, rituals, values and priorities. With this explicit emphasis on the future, both critical design and design fictions offer a natural fit for considering future visions of the networked hybrid city.

It is this method that both tactical urbanism and urban interaction design seek to exploit through the presentation of future scenarios whether in the form of small scale installations or as design fictions, they utilize design practice to create provocations that act as catalysts for debate. These challenge us to ask questions and to consider the world that these designs might inhabit [11]. The subsequent debate can help to achieve technological futures that reflect what [12] characterize as the complex, troubled people that we are, rather than the easily satisfied consumers and uses that we are supposed to be.

V. THE URBANIXD PROJECT

As part of the UrbanIxD FET Open project (2013-14) a series of design fictions were developed to explore and describe possible scenarios for future urban living. At a wider level, the project was tasked with building a research community around the emergent topic of urban interaction design. The design fictions played a pivotal

role in engaging the wider community and cutting across the various disciplines that could contribute to shaping this emergent field. The resulting discussions focused on how we might experience urban living and what it might be like in the near-future. To further disseminate the work of the project a research manifesto was produced [13]. This document contains a statement of beliefs about the field of urban interaction design. It sets out a research programme, identifies the key themes that emerged from the UrbanIxD project and suggests methods by which these could be explored as a contribution to the making of livable cities. One of these themes was the idea of Negotiation of Space.

VI. NEGOTIATION OF SPACE

A recurring question that emerged from the UrbanIxD project was how interactive technology might be used to maximize the use of space within urban areas for positive outcomes that enhance the experience of city living. The question has particular resonance with the scale and granularity at which city life is experienced. Indeed, the sheer scale and magnitude of cities, let alone the predictions for the next generation of mega-cities, raises significant challenges for the methods researchers could adopt to enable their study. It is too easy to become stalled by the sheer magnitude of the subject of study.

What this paper proposes is that inspiration can be taken from the concept of extra small (XS), as described by those working in tactical urbanism, and that the human scale of study could usefully be at the level of the local. Cities are, after all, comprised of a series of smaller parts, be these communities, quarters, zones or neighbourhoods. The important question is how these elements are composed in order to fit within the urban plan for the city. This can be seen as a balance between, what will be referred to here as the zoned city and the fractal city.

The zoned city is based on the plan that different areas of a city serve distinct purposes. At a large scale this could be the demarcation between living and working zones. Typically, this consists of purpose built zones usually located at the edges of the city where people travel to and from work by car or public transport. At a smaller scale, the zoned city could be manifest in a concentration of a particular type of shop or service, for example the location of vehicle showrooms on a main arterial road leading into and out of a city. At the other end of the continuum lies the fractal city that can be characterized as a self sustaining unit. Rather than specialization, these areas provide access to the vast majority of services and supplies that people need on a daily basis. They are, in effect, cities within cities. The creation of a local community centred around the provision of housing, shops and services has the potential to create the texture and variety that is so essential to the support of a thriving local community. It is contended that a key aspect of the livable city is that it should consist of a patchwork of these self sustaining, both in a social and economic sense, neighbourhoods. But also that these neighbourhoods have access to a city-wide infrastructure of public transport, healthcare and education. It is contended that the local neighbourhood is a microcosm of the larger city and, as such, can be a viable 'unit of study' from the perspective of urban interaction design.

While exploring the theme of the negotiation of space several of the design fictions that were created during the UrbanIxD project, articulated a vision of how the data collected at the city level could impact at the local level. The fictions extrapolated the idea and speculated on how such data could be transformed (or hacked) to affect a more positive quality of life for citizens. A second design fiction explored the idea of how citizens make choices about how to use and share space at the local level in order to achieve longer term social and economic benefits for the community. Both these design fictions will be described in more detail in the remainder of the paper.

VII. MoMi – MINISTRY OF MISINFORMATION

This piece speculates on a future where a fictional city is experiencing a dramatic influx of people. Associated with those people comes an increase in data, both in the form of personal and collective histories but also new data that is created by the city. The design fiction raises the question of what might happen if people became discontented with this future, one where data has become inextricably enmeshed with the realities, desires and decisions of those living in the physical world. How might such an increase in data change how we relate to the city and who might be using this data to influence our decisions? MoMi is a design fiction that questions the concept of the datafied human and explores one possible scenario in response to this possibility. This design fiction speculates on the growth of the Ministry of Misinformation (MoMi). It conceives this as an emergent, populist digital DIY movement with the purpose of distorting reality by 'glitching' urban data. In this vision of the future people are adopting MoMi tactics, both benevolent and sometimes mischievous, to create acts of misinformation to influence their world by adding surprise and serendipity. Examples of this style of activism could include the manipulation of tourist recommendation data to ensure that all local shops and restaurants benefited from tourism.

In its role as an activist organisation MoMi was also presented as a source of information about how to disrupt the datified city. One example was how to make a DIY device to trick car-parking sensors into reporting that a space was occupied when in fact it was free. The effect of this intervention would be to free the streets from cars and traffic and thereby enable impromptu activities to take place on the streets of the neighbourhood (Figures 1-4). The work questions the impact of global data and how activists might effect change at the micro level.

VIII. CUBA – CO-ORDINATION OF URBAN BUSY AREAS

This work was developed from observations of how citizens make use of city spaces. In particular, how local people explicitly share urban space with tourists. In one

Fig. 1. MoMi Activists describing how to create a DIY device to confuse sensors.

Fig. 2. Deploying the DIY devices on to car parking sensors.

Fig. 3. City dashboards display false data indicating occupied parking spaces that are in reality vacant.

Fig. 4. MoMi Activists re-appropriate the streets.

case, members of the local population were observed to use a secondary less shaded square at midday so as to free a more popular square for the use of tourists. Further discussions revealed the understanding of local people of the economic benefits brought by tourism to the community and also that they were willing to forgo
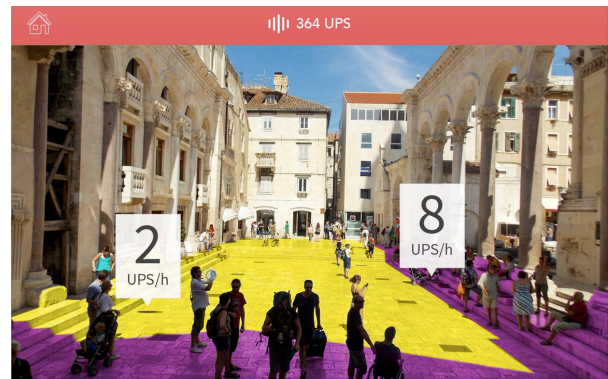

Fig. 5. The fictional cost associated with the use of urban space.

certain usage of public spaces at peak times in order enhance the tourist experience of the city.

Taking this observation as its inspiration, the work explored mechanisms for the optimization of public space through the analysis of data. It speculated about a fictitious future where, in order to deal with the increased level of tourism so vital to a local economy, citizens are required to balance their usage of certain areas of the historical centre according to specific regulations that are managed by the CUBA system. As part of the work a CUBA app was developed that was based around a personalized credit system where local people could be rewarded for a reduced use of city locations at peak tourist times (Figure 5). Underpinning the work were the concepts of the monetisation of short-term space usage and how this could be made to benefit a local community. This piece was in direct contrast to many current systems that were viewed as syphoning money out of local communities, rather than contributing to the overall wellbeing of the local setting.

IX.   CONCLUSIONS

This paper argues that it is essential to study cities at a human scale, as it is at the level of the local community that our needs, desires, habits, rituals, values and priorities will begin to be revealed. The community or neighbourhood is presented as a viable unit of study as it is contended that it exhibits highly individualistic behavior as well as canonical patterns that can usefully be transposed to other areas of the city. The phrase Fractal City was adopted to describe the characteristic of the local and how it represents a microcosm of the city.

By way of explanation of the approach the paper describes two urban speculations conducted at the local level that explored the relationship of the local to the city and how this could be mediated through data. MoMi – Ministry of Misinformation, speculated a future where community activists could gain access to city data and alter it for the social and economic benefit of the local area. While the CUBA app presented a future where local citizens could receive benefits for giving up the use of popular urban locations during the peak of the tourist season. Thereby raising the question of what we would be willing to forgo for the good of the community.

The systemic analysis of the city should not be ignored and the argument presented here is not a suggestion for the replication of services across the city. Rather it is a reminder that the local can reveal many of the subtleties and nuances associated with urban living and at the wider level can provide indicators to why this style of living is increasingly desirable to a growing urban community.

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