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An Analysis of Building Habitat with Networked Tools

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ABSTRACT

Interactive network technologies are taking our attention away from our habitat and distributing it worldwide. Can outward-pointing tools be turned back to focus on local needs? We examine social networking tools and location sensitive media for their potential to connect people to their environment in different ways, putting the tools' use in context through an analysis of socially-motivated design practice. We explore two case studies of designing and conclude with a description of how we can support the embedding of social practices, and thus people, in their habitat through design interventions.

Categories and Subject Descriptors

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

General Terms

Design, Human Factors.

Keywords

Locale, meaning, social networking tools, location sensitive media, social practices.

INTRODUCTION

“First Life questions? We’ve got answers... What’s this body thing, and what do I do with the dangly bits? Why can’t I build a dirigible with my mind? Penguins, spoons and you - what’s life like among the flightless?” (<http://www.getafirstlife.com/>)

Developments in digital technology are altering how we allocate our attention, transforming our opportunities to make connections and changing our relationship with locale. In this paper, we use our analysis of two kinds of digital tool and the new social practices enabled by them to examine this changing relationship and explore how information infrastructures can be mobilized to serve a collective social agenda. In doing so, we seek to identify design tactics to increase participation and investment in habitat. By ‘habitat’, we mean locale, but also our way of being in it. In particular, we argue that since digital media take attention out of the immediate world, they can reduce the significance of immediate habitat to dwellers, leaving it potentially impoverished in meaning and vulnerable to social and environmental neglect. We ask what role there is for design and designers to do ‘habitat building’ with the same tools; to focus attention, meaning and care on our shared physical spaces in contrast to the new virtual spaces of digital tools and networks. In examining the interplay of technology and the social practices that determine its use, we argue not so much for an embedding of tools, but a (re)embedding of social practices and, thus, of people, through thoughtful deployment.

1 Approach

This is primarily a discussion paper, motivated by a desire to understand human-computer interaction in its widest form as a social phenomenon. We draw on the experience of designer-facilitators and researchers who are working together to ask how design interventions can support the use of ICT in enabling social change. We began this research collaboration under the aegis of the Practical Design for Social Action project (PRaDSA, <http://www.technologyandsocialaction.org/>), in which we examined social practices with interactive tools and design practices within and outside the PRaDSA group [18]. Our analysis takes the form of examining accounts, both those generated specifically for the project as part of interview and observation [18] and those already documented as part of the media use we have been studying, and gathered while reviewing wider practices with ICT. Processes of data collection and review are noted briefly as they occur. We do not give comprehensive details of the design studies we are analysing as examples of practice. For more details of these, see [22], [27].

In considering the relationship between technology and locale and advocating an interventionist stance, we identify with what Harrison et al [12] call the third paradigm in HCI: perspectives whose central metaphor is interaction as phenomenologically situated. These approaches treat interaction as “a form of meaning making in which the artifact and its context are mutually defining and subject to multiple interpretations”. Further, “meaning making is entailed both by the analytic frame employed by designers and analysts, as well as by the users and other stakeholders in the situation of use” [12]. We suggest that meaning-making is central to the processes analyzed here. In looking at designing, we explore how designers can knowingly employ the way dwellers invest meaning in their environment to exploit the media properties of interactive technology.

OUT OF HABITAT

Much interest in technology has been to challenge the limits of space and time. Transport networks overcame distance by moving us faster and have permanently altered dwelling and working arrangements by enabling commuting and the easy separation of the extended family. In characterizing the new challenge, we might say that trains and cars took our *bodies* away from our living spaces and that ICT is now taking away our *minds*, by removing our attention. To do so is to reveal the current changes as

potentially profound but paradigmatically different from those that went before.

Telephone networks, especially when linked with networked media and digital tools, can be seen to affect our habitat by bringing close to hand what is remote-in-location but with-us-in-our-thoughts, and allowing distant people and events to share our living space. They can also be viewed as removing our attention from that which is round us and taking it out of our living space to these distant realms [17]. We can point to many examples of this removal in our everyday lives, for in industrialized countries, we now live in media-saturated environments. Outside, beyond the signage, most publicly placed information takes the form of billboards and information screens demanding attention to remote ideas and activities. In the home, our surroundings are full of devices for thinking of other spaces. Collections of postcards, worldwide memorabilia, family photos... all take us out of the here-and-now into ideas of travel, recollections, association with absent friends and kin. TV throws us into the outside world and other people's lives. Even the commonality of watching the same content at the same time is giving way to fragmented distributed consumption.

Digital technology supports this journey out of our physical location and the people immediately around us by helping us make connections that globalize our experience. Like transport, media show us different contexts, but, in addition, they embed us in them even when physically remote from them. Phones allow us to be present in, but indifferent to, complex physical locations while occupying remote 'activity spaces' with friends and strangers [17]. Stone uses the description 'continuous partial attention' [24] to describe the prevalent atmosphere in offices, where phones, laptops, PDAs and other devices take our focus away from colleagues, even in meetings. A wave of multi-user networked games has overcome criticism that digital game-playing is asocial, but the distributed nature of play makes for widely-flung friendships and less spatially connected peers. Internet teleworking puts the person back in the house, but the brain at the disposal of remote interests, while phenomena such as crowdsourcing point to new distributed organizations [14]. It is now plausible to propose the primary analytic unit of life be considered bits, not atoms, as virtual worlds and globalizing means of transaction, like PayPal, gain purchase on economic practices and provide value in new arenas [26]. All these new forms of engagement – and removal – are born of providing digital networks.

HABITAT AND MEANING-MAKING

The trend under discussion in this paper is taking people's attention out of their habitat. But this is not inevitable and, in this paper, we wish to take a critical view of relations between people, technology and the places we live. This is neither to advocate or denigrate particular technologies, nor to separate the worlds of intellect and flesh, but to look at interactive tools as providing a conduit out of the local situation and thus providing an alternative site for meaning-making, in competition for our attentional resources. Digital technologies, as media [16], [20], connect us to concerns outside our immediate environment; digital networks exemplify this. Viewing them as outward-pointing media allows us to explore trends in social practice involving space and networks and reflect on the potential impact of design and how these tools can meet a social agenda. We argue that considering people's relation to locale is crucial in at least two ways: in terms of meeting environmental challenges; and in acknowledging who might be ignored as new divisions in society between people with digital vision/access/skills and those without create new inequalities ([7],[30]). At worst, those who live most closely with locale, such as those without jobs or an engagement with media, could be left in emotional ghost-towns if others find all their life-enhancing pursuits outside their physical environment. It is unlikely that locale will ever become, Matrix-style, merely the meaningless Euclidian space we occupy. But meanwhile we ask: why wait to find out?

1 MAKING PLACE

Attention is a limited commodity. To explore the processes of 'habitat-building', we operationalize it here as cultural and social investment. We take an active reading of cultural investment: such that sites of meaning are both idiosyncratic and shared, with long-term and deeply invested meanings - such as those that give a group of people a sense of belonging to a 'place' ([28], [11]) - and glancing interpretations that attach meaning for the individual and in the moment. To give an example of the former: during Manteo's regeneration, Hester [13] worked with local residents to identify and preserve valued lifestyles and places critical to the North Carolina town's dwellers. "Because these places embodied the existing social life, habits, rituals and institutions as well as the collective memory of life, they were singularly useful in describing the essence of Manteo's life." [13]. This is cultural investment as the embodiment of custom in locale. But locale-based social capital, and, with it, cohesion, is understood to be diminishing [23], deplored as the death of community spirit [15]. Indeed our choice of the term 'locale-based social capital' over the more obvious 'community' reflects change relevant to our discussion:

1) Global trends in economic migrancy have created many areas where it is more apt to talk of 'communities' forming an ecology of co-existing cultures within a locale, recognizing different landmarks and touching each other but rarely. With infrastructure, especially in urban areas, provided by third parties who are communally paid to handle environmental health; water; refuse, policing; etc., households do not have an immediate relationship with survival or with their neighbours.

2) 'Community' has become associated with interests rather than locale. Despite the persistence of ideas such as community-building, the term has also experienced disembodiment. Increasingly community refers to people distributed over space. eBay's new "Neighborhoods" initiative epitomizes the shift from definition in spatial terms to the gathering of likeminded souls

(<http://neighborhoods.ebay.com/>): each neighbourhood is located round a buying theme such as antiques or dogs.

3) ‘Community’ has become the (somewhat pious) touchstone of politicians, who perhaps correctly assume there would be safer streets and less vandalism - and happier voters - if people felt more interest in their locale and in touch with those sharing it, but who, in assuming so, have conflated means and end.

A focus on cohesion and investment, rather than ‘community’ *per se* allows us to look unsentimentally at how environmental and quality of life issues can be managed best, maintaining the richness of lived experience in all the worlds we choose to occupy. Further, we recognize that places may be actual or virtual (ie represented by bits), local or remote, but make the distinction that ‘habitat’, as we use it here, is an instance of place that is actual and local to our bodies. And we regard investing to make ‘habitat’ as a bottom-up activity, in that, although environments can be planned by anyone, it is through everyday encounter and interaction that these spaces and their contents acquire meaning.

We can now examine Web 2.0 and location sensitive media (LSM) as network tools that deal with social and/or spatial aspects of people’s experience. Both hold clues for what we are calling ‘habitat-building’ activities and what locale-focused design practice might look like. We will ask of each: how might gaze be turned to locale and media made to embed attention creatively in local issues rather than distracting from them?

BUILDING SOCIAL TIES 2.0

Despite its globalizing tendencies, the Web has always hosted locale-focused sites with a social agenda. UpMyStreet (<http://www.upmystreet.com/>) even used to have a postcode-related chat facility but this has lost ground to information on schools, crime, etc. If Web 1.0 was informational, Web 2.0 is defined by user-generated content and specifically features ‘social networking’, but ushers in an even less situated set of relations than the early Web. Facebook (FB), Bebo, Orkut, QQ, MySpace... all let us capture strong and weak ties [9] across the world indiscriminately as friends. Anyone anywhere can be part of the ambient clutter of online ‘status updates’ in perpetuity.

eBay’s transactional nature sets it apart from the social sites, though, as mentioned, it too is looking to cultivate camaraderie online. eBay is, in theory at least, a world-wide market: about as dis-located as postage will allow. If we look briefly at how eBay is also dis-locating, it will provide an example of how locally-embedded social practices can be altered by new opportunities. Much that was formerly given to local charity shops is now sold online on eBay. The auction site introduced a charity function to compensate (which perhaps overlooks the opportunistic nature of much dumping of recyclable goods at charity shops). But the charity shops that serve location-based charities - like hospices - and rely on local volunteers to sell and local buyers for revenue, are starting to give way to eBay postings in competition for attention with better known and conspicuous (global) charities. Place is no more relevant on eBay than it is in direct mailings. Thus, ‘giving’ becomes less embedded even though location-based charities still only benefit their locale.

So, networking tools by their nature demand attention out of the immediate, but remain agnostic about where the subsequent concern of the people using them is focused: seen as pointing in any direction, but always outwards.

The next sections focus on practical examples of use – first an emergent case of political action, then analysis of a designer who uses Web 2.0 technologies specifically to support the activities and cohesion of a series of villages in north England.

1 London’s mayoral election on Facebook

As part of studying Web 2.0 as a social organization tool (<http://hs.technologyandsocialaction.org/hotseat-4>), we took a moment in the life of a major city when political activity might be predicted: the controversial election of a new mayor. We examined social networking activities around the election to explore ways that it was made local and political by its users. Although we looked at several tools, we focus on Facebook (FB), which is the tool of choice in London [3] (<http://blog.facebook.com/blog.php?post=5883272130>).

Boris Johnson took power as London’s mayor in May 2008 after fierce competition with the incumbent. He immediately introduced a ban on drinking or carrying opened alcoholic drinks on the subway/Tube system, to come into action within weeks. Johnson was not a popular choice of mayor in inner London boroughs, but won support through the suburbs. During the campaign, more than 500 FB groups were formed urging people to vote for or against him, drawing on everything from his record as a politician, to his profile as a celebrity, to his bouffant hair. For example, FB groups “Boris Johnson is going to wreck London, and we’re going to say ‘I told you so’”; “Boris Doesn’t Represent My London” and “Let’s Get Boris Johnson to No. 1 in the Charts” had over a thousand members.

After his election, there were bursts of organization such as the “Autonomous Zone of NoBoris”, a FB group for adjoined

boroughs in inner London where Johnson lost the popular vote. This concept then briefly entered the discourse of militant Londoners as a way of showing solidarity against Johnson's more right-wing views, though the FB group only ever had about 300 members. In particular, feeling ran high about the alcohol ban. Although most Londoners are in favour of it (which is presumably why it was Johnson's first move on entering office), FB was the hub of resistance to it. It was used to collect and mobilize support for a Circle Line Tube party the night before the ban. ('Circle Line parties' are opportunistic gatherings in a single carriage of a pre-agreed train on the line that runs in a circle underground through inner London.)

"So Boris has been elected, and he's banning drinking on the underground. Fair enough you might think. ... But we're not giving in so easily! No, no Monsieur. We're organising one last party, one high-glamour, weird-ass shindig on the circle line to royally give the finger to Big Brother and this culture of legislation and regulations. ... There could be 15 of us, there could be 150. Such is the power of facebook! ...Are you in? ...Stay for hours or for a few stops, it doesn't matter, and who knows where we'll end up finishing the night!" (London Underground's Last Ever Party!, Facebook, May 2008)

Several FB events pages like the one above emerged to mobilize the city, with membership exceeding 15,000 between them and it was pointed out – on the event pages themselves – that if everyone were to attend it would require more than the single carriage being advocated by the organizers. In fact, on the night, many thousands of revellers gathered, several trains were occupied, six stations closed due to overcrowding, platforms and trains were covered in broken glass, the police attended and there were 17 arrests for assault and disorderly behaviour. The British media covered the story extensively (eg <http://news.bbc.co.uk/1/hi/england/london/7429638.stm>), prominently attributing it to the FB groups that genuinely did seem to be the means of rallying this groundswell (eg <http://www.guardian.co.uk/society/2008/may/16/circle.line.cocktail.party>).

We can observe that this campaigning activity on FB is a social use independent of the intentions of FB's developers. To run events and make them publically available and to reveal which friends have signed up for events (such that others can follow their lead) are both FB functions, but baiting Boris Johnson is not. It is a function of the user-generated nature of the content.

Another feature of interest is how the social and the political have melded into defence of a way of life, rather than a more classical act of sabotage or militancy. The protest is a publicly enacted ritual in the spirit of flash mobs, flash freezes and flash pillow fights (all seemingly pointless activities facilitated by social networking tools, mobile phones, etc.) rather than the sit-ins and occupations of earlier days; with the ugliness of the outcome sharing more with other contexts of uncontrolled drinking, such as sporting celebrations, than either flash mobs or rallies. However, it is apparent that the activity is one-off (in the nature of an obituary), short-lived and based only loosely in a locale. In fact, the Tube would be classified in anthropology as an example of a non-place [1], rather than a place that people invest with meaning. While the parties challenged this bland reading of the London Underground, they did not change social practices or serve to embed new meanings in an enduring shared environment or 'habitat'.

2 Architecture in Second Life

Another appropriation of Web 2.0 technology to focus on habitat is the growing practice of making online visualizations of (as yet) unconstructed real-world buildings in Second Life. (An extensive overview of the practice can be found at: <http://digitalurban.blogspot.com/search/label/Second%20Life>.) Second Life (SL) is a 3D virtual world or game where users can socialize, connect and create, making "an alternate existence, built by its residents that strives to be better than the physical world" (Rosedale in [19]). In other words, it gives disembodied life a new home. So, perhaps it is even subversive that people are constructing SL buildings for the physical world among buildings that construct the virtual world. Again, the tool is being used for non-anticipated purposes, in particular pointing out from the virtual to use its functionality in the 'real world'.

The ease and reach of the tool (especially if the mock-ups are imported into YouTube) makes for improved information sharing and consultation. However, most practices associated with this appropriation are not so different from those employed with more traditional architectural software and for similar ends. The use in these cases is largely top-down, from architects and planners with little interest in encouraging people to invest their own meaning in the designs. Without relating the models to the social practices in which they would become embedded if built, people's engagement stays transient.

Online building, real capital

So how might such tools be connected directly back to located social practices? Thompson, a community media coordinator, works with villages in north east England. He assembles Web 2.0 tools to give people access to design choices for locally initiated projects and now draws on eight years of collaboration with villagers. The description below is based on observation, project outputs and Thompson's accounts (in quotes) of how he uses Second Life. See also [27].

Skinningrove Village sits on the Cleveland Way, which sees thousands of visitors each year as a site of beauty. Despite this bucolic environment, the residents of Skinningrove were hit hard by the collapse of the UK steel industry. Thompson's post was funded to bring IT skills to Tees Valley ex-steelworking villages, and many and diverse locals are now used to building or contributing to websites and telling stories online. (See the digital village at www.skinningrove.tv/digitalvillage.html.) At the same time, in 2000, a Hemispherium was created to show the virtual environments built when the university's VR department worked with the Tees Valley villages to develop a 3D model vision for their future regeneration and development. (www.youtube.com/watch?v=chMIk-Lmus8.) Now some locals are working to make the village itself a tourist attraction,

emphasizing local features with historical significance, such as The Tom Leonard Mining Museum and another monument to the formerly industrial community – the Skinningrove Jetty.

Interested in providing a ‘virtual reality tour’ of these features, local activist Barry asked Thompson to support them in doing so. “I explained Community Walk software [a Web 2.0 tool using Google Maps API] and how we would go about creating the virtual tour. Barry mentioned the jetty and once again referred to ‘Virtual Reality’ (VR). It was then that I realized he was referring to the now defunct university Hemispherium. In explaining to him that we no longer had it, I realized there was a technology available with which we could build a VR jetty. I logged on with my laptop and showed them SL virtual world and we quickly threw together a rough but passable jetty. And so a new idea was born. We decided to make a promo video to promote the concept and we recorded a voice-over there and then: *‘So here we’re building the new jetty. Only a few years ago this could only be done by highly skilled technicians using millions of pounds worth of equipment. Now we can build it for ourselves.’* Next, I created an avatar that closely resembled Barry and shot a scene in SL to promote the project. To play Barry, I asked a friend online at the time in Canada.” (Promo on YouTube: <http://www.youtube.com/watch?v=rcZA-zC8eyg>.)

The project grew from there. Skinningrove no longer has a school and children attend nearby Whitecliffe Primary and then Freebrough College. Thompson and the activists invited Freebrough students to build the virtual jetty and Whitecliffe children to produce the virtual tour and record the audio for each hotspot made. Students built a jetty replica in Teen Second Life over a couple of days, visiting the real jetty and taking pictures for reference and to use as textures for the virtual jetty.

Then the core team arranged a presentation at the local BBC station. “The children were delighted to see animations produced by the adults. The adults were in turn amazed when the children produced the 134-year-old log book from the long-closed Skinningrove school and read extracts from it. The adult Skinnigrovers told of a boat they had rescued from down the coast where it was due to be disposed of: they had brought it back and refurbished it. Remarkably, the boat ended up across the street from the house where the old fisherman’s daughter lives and two grandchildren were there at the BBC presentation to hear the story of their grandfather’s boat. ...This was a spine tingling moment for me and it inspired me to write a song.”

The jetty ‘opened’ in November 2008, with proceedings projected onto a large screen so that even children too small for Teen SL could watch. The Whitecliffe children had learnt the song written about the boat on the seafront to sing at the event. The local MP agreed to preside over proceedings in the form of a look-alike avatar. A local newspaper reporter went ‘inworld’ to report on the jetty launch (ie a real reporter for a real paper but present in SL at the virtual event). Now the jetty is open to the public and SL boat trips can take place. Unlike the real jetty, the virtual one - and therefore the proposed refurbished one - has steps down to a landing spot close to the beach for boats.

“The current jetty project using SL allows people to participate in ways they couldn’t before, even if the Hemispherium were not defunct. I know the power of events and social interaction mixed with creativity, emotion and artistry. I know doing things in this fashion will leave an impact. It is hoped that all of this will sufficiently raise the profile of this project and afford the regeneration of the Skinningrove Jetty in the real world.”

1 Analysis

Thompson’s work with the villagers and schools is pragmatic and bottom-up. Ideas and means of executing them come from all over, appear during discussion and get woven together in a brokering of people and resources that seems particular to designing for social change [18], as shown above. Thompson neither initiated nor implemented any of the jetty project himself. Having built templates and other supportive materials, Thompson moves responsibility for design into other hands, improving the chances of shared meanings to emerge. He points out that in 2000-2001 the only way for the villagers to make a VR visualization was using expensive tools that needed lab technicians to run them and that they would have had no interface with them. SL’s engine has changed all that.

The focus of the media in use is turned upon local activities. SL is appropriated to replace a lost resource (the Hemispherium), meaning the jetty can be built by whole groups of people who finally see it assembled and active on a big screen among their neighbours. Thompson expediently involves an online friend in Canada to perform Barry’s avatar, in that blend of near/remote that characterizes the new tools. Similarly, the national BBC resources are exploited as a means of channelling a sense of agency in the locals. This is made the opportunity for residents to share stories and identify what they consider to be matters of importance and thus invest new meaning in their surroundings. It is led by activists for whom the environment is already a powerful concern, but it fuels others, including local young people, to engage locally.

Thompson recognizes that to embed the activities into a real change in social practices, there will have to be a whole series of face-to-face events, some shared discoveries, a feeling of achievement and a sense of momentum – and he manages these as part of a long-term strategy of working with the residents to become active together and make the changes they would like to see. By this means, Second Life, among other 2.0 tools, is made to point into a local network of people and serve their needs in a sustained way. If we contrast this with other uses, we see how what is emergent in the FB example – a mobilization without leadership that creates attention but no enduring change – can be handled as an episode in a more sustained approach by someone acting as a catalyst and a shaper.

LOCATION-SENSITIVE MEDIA

A form of networked tool which would seem to challenge our assertion that media generically remove attention from the environment is mobile location-sensitive media (LSM). Informed by GPS co-ordinates, these tools can be made relevant to the context in which they are being used because they 'know' where their users are. This technology is designed to respond to features in the environment. So, how far can it be designed to support sustained social activity? [6] report that community-based uses have been embryonic. Their review of LSM urban projects suggests a lack of extended studies and a "demo approach", which they characterize as "touch-and-run".

The single most prevalent form of LSM in use is the satellite navigation system, which, as a way-finding device, needs do no more than marry up person and location. Users are made aware of their whereabouts, but make no social investment in them and the meaning attached is minimal. Sat-nav regards the terrain as a Euclidian space rather than a series of habitats invested with particular meaning. It is aimed at those unfamiliar with their surroundings, rather than familiar strangers [21].

Some games also make use of GPS and introduce a social function to engagement with local environments (eg IPerG: <http://www.pervasive-gaming.org/>). Playing these games may build up layers of significance in the environment through the performance of particular feats and sometimes through quirks in the technology, for instance where GPS signals fail and so provide 'safe houses' for the hunted to hide or predators to pounce from [6]. IPerG defines alternate reality games as those that "take the substance of everyday life and weave it into narratives that layer additional meaning, depth, and interaction upon the real world". In the *Rider Spoke* game, participants tell their own stories. "You are given a question about your life and invited to look for a hiding place to record your answer." Then the goal is to find where other people's stories are located and listen to them in situ. (http://iper.g.sics.se/iper_g_games14.php)

While games may build an emotional relationship with the environment, this is a side-product of the interaction, not a primary goal. Game activities are not, on the whole, about forming sustained relations with place, but regard the site of play opportunistically for the variety it offers players. The use of GPS is to relate bodies to spaces, and this is conducted for social ends, but the social life may be independent of the locale.

Locale is key in another group of tools, designed to retrieve embedded historic information. Sharing some features with games, in that they augment participants' reality by providing virtual components, they tell located stories. Riot! 1831 [8], the world's first GPS 'radio play', created a sense of walking through the riot for visitors to Bristol's Queen Square. During a short trial, response from participants suggested the work had more resonance for and mattered most to people from Bristol [2]. But, typically, more emphasis goes on providing contextual information or pervasive experience (eg Chawton House [10]), than building social connections between groups of interest. Other work has looked at helping those who share interests find each other, mostly in the context of tourism or museum visits. This last use is closest to building connections in the locale, but might be more aptly considered as building connections *on* locale, since everyone visiting will be engaged only transitorily with the environment and its meanings (eg [4], [29]).

Local explorations with LSM

So, LSM can work to support social connections and develop meaning in a place. The Southville Mediascapes project took on the challenge of combining the social and the local to see how GPS media might become integrated into locale-based social practices [22]. The following description is drawn from an account of Miskelly's practice, given as part of PRaDSA's interviews with 'design for social action' practitioners [18], augmenting and updating previously published accounts of this work [eg 22] and focussing on technique.

Southville, unlike Thompson's skills development and regeneration work above, was a research project. Specifically, the goals were to:

- Support local communication and representation;

- Contribute to local understandings and local participation in civic life;

- Consider how this emergent technology related to existing community media practice.

Riot and Southville are sister projects using the same Mobile Bristol prototype software. They hold in common the idea of placing people as being part of a digital landscape in which digital content and applications overlay the physical landscape of the environment. This digital layer may be described as containing 'mediascapes' in which media files are played on the user devices, according to their location in the physical environment. Unlike Riot and Chawton House, where authoring was given over to professionals, was finite and completed before others used the media, the Southville set-up involved enabling potential authors (ie anyone based at the venue - Bristol's Southville Centre) to attach image and sound files to locations, and then supported the activities that evolved.

Work began with the CLASS (Continued Learning at Southville School) group whose members are mostly women over 60 involved in a range of arts and local history projects, but less interested by using technology than some of the younger groups based at the centre. As part of the project, the group explored the area by walking or using maps, identifying, recording, and locating descriptions, reminiscences, commentary and poetry about Southville's past and present. From each method of generating place-related material, different content - and different issues for locating that content - surfaced. The process also revealed contrasting perspectives on the value of "official"/public and "unofficial"/personal (hi)stories among participants and facilitators.

Over several months, focus narrowed upon telling and locating stories of the group's childhood experiences around Bristol during the Second World War. Emerging from the group, this theme coincided with the 60th anniversary of the end of European fighting. In 2005, their "Wartime Childhoods" mediascape was launched at a public event. It included a range of personal experiences, some of which had never been shared, even within the group. Some stories about bombing raids were located in places which, as a result of these wartime events, had changed completely. Hearing these stories in situ was a powerful experience - as explained by one walker/listener: "It was fantastic standing behind the general hospital up there and they were talking about the wedding and the school being bombed ...and then over there you can see the new houses they built and they're talking about the people who died in those houses ...they were saying the names of the people who died and their ages 'n stuff and it really makes it, like, strike home."

Gradually, ownership of the kit and the knowledge to use it passed to CLASS and other users of the venue. CLASS members held an editorial /directorial role which involved preparing content, establishing how it would be located in the environment and defining the nature of audience experience. The process of transition was structured to allow time for reflection, editing and reviewing and slowly shaping mediascapes, giving participants confidence in recounting their own experiences in their own words. This supplemented the more basic training in how to use the tools themselves and gave value to learning the technology.

After the project funding ended, research team members continued to involve themselves informally in developments as volunteers, though direction at all levels has stayed with the local groups. Since 2005, new work has been undertaken both by CLASS, on the history of mining in the area, and the Green Spaces group, who are using it to their own ends in documenting Bristol's open space. Meanwhile, a local school has been making use of the wartime materials in its curriculum.

1 Analysis

Although Southville Mediascapes was a research-driven pilot and targeted people who would be unfamiliar with the technology, it was one that deliberately avoided parachuting in with the tools and expecting usage to develop. The research explored what was needed to embed the tools and make them useful, specifically in serving local participation and cohesion. It was not initiated within the locale (though one of the lead researchers was a local resident) but it was a project explicitly exploring the use of LSM to support communication and self-representation for neighbourhood groups, and it won the commitment of these pilot groups and is still running.

The mediascapes and other uses of the LSM place authors and listeners within a space which implicitly or explicitly links them together through landscape, their understandings and experience of the place, and their interpretations of the content of the fragments assembled in it. An understanding of why the environment is the way it is deepens connections with place, or even creates a sense of place for the first time.

What differentiates the output of this exploratory work from the other LSM projects mentioned above is partly the duration of engagement and partly that, in creating these new perspectives, local people are both the producers and the consumers. Reflecting these different goals, the duration of the intervention and the research that accompanied it was of a different order of magnitude from most experiments with location-based LSM: to be measured in months not days.

The effect of giving production to the users is also highly significant. If the sense of changing land use evoked by listening to the stories in the landscape potentially leads to thoughts about how the place could be different again, it also leads to thoughts about telling those stories and how the kit could be used to create them. Investigations lead to understandings which lead to further enquiry, in a form of active learning. The voices of the storytellers are not the honeyed tones of professionals, but local accents speaking about things that matter to them, inspiring others to consider their habitat more closely. The rich dynamic nature of the material produced undermines assumptions of a commonly held view even as it supports the construction of shared meanings. And in offering multiple interpretations of the same place, it demonstrates contrasting experiences, competing interests and overlapping affiliations, while giving permission to all comers to form their own interpretation.

In fact, some use has been closer to embedded note-taking shared within a group: the blurring of producer with audience showing how highly contextualized use can become [25]. The success of the project, in a sense, hides the originality of the technology from view and makes LSM just another mode of production and dissemination providing new opportunities for self and collective definition. There follow from this issues about participation, production, dissemination and access which cannot be considered here. But, as in Thompson's work, making culturally sensitive interventions that resulted in transferring ownership to motivated local people was key to turning the media to focus on habitat.

DISCUSSION: A ROLE FOR DESIGN

Both reported projects (Skinningrove and Southville) are instances of media production which appropriated and developed emerging network technology. In both cases, local vision met design facilitation and spread the resulting activities wide into the neighbourhood in such a way as to embed the media use in existing social practices and allow local concerns to progress. Where Skinningrove has a particular goal, the use in Southville is more diverse, but in each case, others sharing the locale were made aware of matters that local people wanted attention paid to. In this way, local investment, in terms of both social and cultural meaning, rose as a result of appropriating the tools and giving shape to the processes they support. This contrasts with other political uses of social networking tools - such as the Facebook party to protest at the alcohol ban, which lacked shape and leadership - and of location-sensitive tools - such as the games and historical experiences - which reference locale, but not local

people.

One fundamental aspect of the featured designers' practice concerns how they view strangers. Most LSM work addresses people as strangers to the locale. By contrast, the designers we describe above focus upon people in the locale being strangers to one another: either literally, or in terms of what they know of each other and how the social ties between them might be strengthened. This is not the same as the construction of social relations as presented by the new networking tools. The design of these offers everyone everywhere as a potential friend or business acquaintance (either known, linked or not yet met) and overlays all strangers to us with a new – disembodied and dislocated – dimension for connection. An emphasis on locale-based social capital is beyond the remit of this layer of designing. It lives beyond interface functionality with its long term view of impact. The practice situates design processes in a physical space alongside design outcomes, accountable to those for whom the space is significant and thus able to help define that significance. This is a far cry from emphasising the technical interface (though clearly usable and useful tools are as important as ever). Indeed, the technical aspects of tool design are partly obscured by the interventions of the designer, so as to give people access to the choices that the networks represent. In both projects described above local people gained technical skills and access to networked tools that were previously unknown to them. In both cases, the people involved came from groups statistically marginalized by digital technology: manual workers and older women (see, for instance, the Oxford Internet Survey at <http://www.oii.ox.ac.uk/microsites/oxis/>). The designer was thus the interface to new forms of media and the design processes needed to use them; only mediating less as others became proficient.

This difference in conception of the designer's role is reflected in the associated design processes. For instance, designers cannot know best, but must act collaboratively; helping to explore local priorities and offering shape to them, rather than dictating content. They must unpick implicit values and use them as a starting point, rather than importing their own. Successful tactics involve working slowly, listening broadly and building solidly, using participatory techniques, and weaving in relevant features of the wider world (funding, anniversaries, media opportunities) that can generate events around which to focus activity. These tactics are not unique to turning attention to habitat, but they form an effective means of doing so. The role for designers is facilitative and mediating; a long way from the artistry of designing the tools that are being applied.

Nonetheless, there are design skills to working this way. Designers can knowingly employ the way that dwellers invest meaning in their environment to exploit the media properties of interactive technology. The first analysis section above focusses on how embedding the technology into events of value to the local residents is managed. Motivated residents used the tools and gatherings to offer a particular and positive sense of their habitat to others visiting it and in the process brought a more coherent sense of habitat and of socially binding issues to those dwelling there. The second analysis above focussed more on the play of meanings that using these kinds of technology can create and how this aspect works to make spaces – both literally and figuratively – in which multiple layers of interest and connection can find common ground. Combining these insights we can look at how social processes and meanings evolve, co-evolve and can be given a space to evolve. Making a means for this interplay to take place is a key part of the function of the designer/facilitator. This of course differs from the role of the conventional interface innovator and augments it.

But these designers are not building new 'community' either – and not deciding what people's relationships will be. They are providing for the shifting and glancing associations of people and meaning that make an experience rich for participants. We asked what role there is for design and designers to do 'habitat building'; to focus attention, meaning and care on our shared physical spaces. We have used meaning and cohesion (both as a precursor to and as an outcome of shared meanings) as a way of framing and explaining these interventions. But this is not to suggest that significance is being fixed by them, as it may be in deciding the function of an interactive button, or, conversely, that they or others engaged in enriching habitat are actively pursuing some abstract interpretative study. Instead, they are practically engaged in exploring reasons for people to care more about their environment and embedding these reasons in social practices that revolve around the new tools.

We end by suggesting that, for the most part, user-generated content will be necessary but not sufficient in tools that offer good opportunities for designers to work in this way. Web 2.0 will combine with LSM and enable locale-focused socializing that enhances the connections being made through interactive technology across the world. But there remains an important role, however informal, for designers as activists (as leaders and/or critical friends) and as facilitators (giving process and shape to initiatives) as well as tool innovators. This is no surprise, since technology alone never changed anything.

CONCLUSION

What this paper has sought to demonstrate is how the relationship of people to their habitat has been changed by new social practices and how the same tools that enabled these new social practices to evolve can also be used to reinforce social practices of a compensatory kind. We have looked at two examples of design intervention that stressed this use. Clearly, one can use media to point people's focus towards the locality and to do so for political and social ends. Social practices take sustained work to embed, but they are what form habitat out of locale and what will conserve or squander the meaning in it. We offer this analysis to support the handling of the significant infrastructural issues that are – and will remain - necessary to address inclusivity and environmental concerns and preserve rich experiences in all the worlds we occupy.

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