

# Technologies of Presence and Accountability

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## ABSTRACT

Mobile technologies are increasingly mundane, but they also function as lenses through which another mundane aspect of everyday life comes into view – the organization of space. One of my longer-term projects at the moment concerns the relationships between spatiality, technology, information, and practice. Much discussion of mobile technologies focuses on the ways in which everyday space can be made available as a site of consumption and social engagement. In this paper, I discuss a recent study of a quite different application of mobile technology, and discuss some of the implications for mobile technologies and questions of presence and accountability.

## Keywords

Mobility, spatiality, surveillance, privacy, GPS.

## 1. INTRODUCTION

A couple of years ago, I was teaching an advanced undergraduate class in user interface design. The class is built around team projects that are normally connected by some theme. In this particular year, I had equipped each project group with a GPS unit and asked them to build projects that were connected in some way with mobility, spatiality, and locative media. A range of systems emerged, including games, guides, and location-based music players.

In the closing weeks of the academic quarter, I would see various groups moving around the campus staring at their laptops as they debugged their applications. What was first remarkably was the deftness with which they avoided the various hazards that one might encounter when moving around outdoors looking intently at a computer; though absorbed by the computer-based application, they generally managed to avoid walking into other people, tripping on uneven surfaces, or veering into the undergrowth. However, a second set of bodily orientations became evident which I found even more interesting. As people would start and stop, turn and retrace their steps, and move closer to or further away from things, the obstacles and objects making up the space that they were navigating were often plain for all to see. On other occasions, though, these movements were unaccountable to an observer, as if the world was populated with invisible barriers and paths that the students were navigating.

Although invisible, the barriers and paths that shaped these movements were quite physical. What people were responding to were the infrastructures on which their applications depended. The effective function of GPS requires a reasonable portion of the sky to be visible to the receiver. Similarly, the effective use of wireless internet required that the laptops stay within range of signals “leaking” out of nearby buildings. The interaction of these two infrastructural requirements – close enough to buildings to get WiFi access but far enough away to be visible to

GPS satellites – created a complex topography that, over time, became quite familiar to the students testing their applications. The space through which they moved, when understood as a field for action and interaction, was structured for them by the intersection of the infrastructures deployed there.

This experience (amongst others) prompted an ongoing investigation into the role of mobile and ubiquitous technologies as sites at which we re-encounter everyday space and as elements of the practices through which collective spatialities are produced and enacted. These are the issues at work when WiFi hot spots allow downtown cafes to be re-appropriated as sites of online “working,” or when one’s availability to others is dependent upon one’s position within a network of mobile phone towers, or when the density of those infrastructures reinforces existing inequalities of access to information resources, or when transformations in technology availability cause social and cultural practices associated with domestic life or religious observance begin to be renegotiated with respect to those associated with working life or entertainment.

One recent study has been concerned with accountabilities of presence, by looking at a population with a very particular set of concerns with both presence and technology – paroled sex offenders tracked with GPS systems. We chose this group not because they are representative, but because the particular social contexts of their technology use highlights the importance of technology as a means by which mundane phenomena as time, space, and the body take on meaning – our particular focus here.

## 2. STUDY CONTEXT

Our data is drawn on a series of focus groups conducted with participants in two trial programs conducted in California, in which participants were tagged with GPS units as a condition of their parole. These units report their locations to parole officers, and in particular, monitor the parolees for violations of a series of spatial interdictions. Most commonly, they are disallowed from coming within around 2000 ft of public parks, playgrounds, swimming pools, libraries, and similar facilities; violation of these interdictions constitutes a parole violation, and may cause the parolee to be re-incarcerated.

In the early 1990’s, US federal legislative initiatives, most prominently the Jacob Wetterling Act and Megan’s Law, required mandatory registration with law enforcement authorities for all repeat sex offenders after their release from prison. Megan’s Law amended the Wetterling Act and mandated further requirements for states to establish community notification systems for all registered sex offenders.

Currently, several states are also beginning to enact more punitive legislative initiatives such as the Jessica Lunsford Act. This Act was passed by the Florida legislature in 2005 and established an electronic monitoring program within the state’s Department of Corrections, set a 25-year mandatory minimum

sentencing for convicted sex offenders, added lifetime electronic monitoring of all convicted sex offenders, and created a new felony offense for those tampering with electronic monitoring equipment. Several states have adopted similar regulations, known commonly as “Jessica’s Law.” In California, the Sexual Predator Punishment and Control Act of 2006 (California Jessica’s Law) enforces mass electronic monitoring of all convicted sex offenders, including juveniles, for life. It expands the definition of aggravated sexual assault of a child, prohibits probation in lieu of prison for all sex offenses, eliminates early release from jail for maintaining good behavior, provides longer penalties, expands a list of crimes that qualify for life sentences in prison, and extends parole. Most notably, here, this law promotes strict residency restrictions for all sex offenders upon release of incarceration, limits the location of where previously convicted sex offenders may live, and electronically monitors all sex offenders for life.

### 3. THEMES

A much fuller account of our study is presented elsewhere (Troshynsky et al., 2007) but here I discuss just a couple of themes that emerged from this data – the structuring of space, the various issues of protection at work, and the disciplining of the body associated with these technologies.

#### 3.1 Structuring Space

Clearly, the use of GPS tracking technologies are intended to maintain a series of spatial prohibitions for this population, to limit their mobility and enforce a series of proscriptions that are part of the conditions of their parole. We entered into the study not least to understand how people might deal with the practical problems associated with these prohibitions, since mapping tools and related technologies do not provide people with easy ways to ask for a route from A to B that does not come within 2,000ft of a school, park, playground, library, or swimming pool. We might naturally think that the Internet is a source of information that one might need in order to do this, although parole conditions may prohibit this. Even if accessing the Internet is an option, the discrepancies associated with data retrieved from various sources are problematic. Kevin described a situation that occurred due to discrepancy between tools, “...One day I went riding my motorcycle. That weekend my PO came over and asked where I was. I told him that I took a ride to Jamul. Now Jamul is only 23 miles away from where I live but my PO said that MapQuest says it’s 32. My bike said 23, map quest says 32. So, the extrapolation of that data almost got me into trouble.” Kevin also told us another story about a friend of his who was walking a block and a half away from a school zone and, “The MapQuest says he was within the prohibited boundaries and he got a violation even though he wasn’t” (Kevin, 1 year & 6 months). Local travel plans are difficult to make and to execute, and for many, the safest solution is simply to stay home.

A variety of spatial logics emerge that govern movement and presence. It is important to note, though, that since the spatial prohibitions are monitored technologically, it is also a technologically mediated understanding of space that is particularly in question for these participants. They are aware that the MapQuest data is the ultimate arbiter of their adherence to parole conditions. In a dispute between MapQuest’s view and the evidence of the odometer, it is MapQuest that will win. It is clear that one’s violation of spatial prohibitions is a site both of learning and of negotiation. After all, given the complexity of

the technology and the infrastructure, and of the parole conditions, it is unsurprising that learning to live under the conditions is a matter of trial-and-error, one where specific infractions become the points at which one learns how to move (and how not to). In this regime, it is the representation of the space provided to the technological system that matters, because, however accurate it may or may not be, it is the system against which measurements are made.

What we do see at work is a different scale emerging by which spaces are understood as safe or dangerous to traverse. While the local exclusions around schools, etc might be thought of as providing a fine-grained spatial logic, in practical terms it is easier to think of spaces on a much larger scale as being places where one might run into trouble and places where one might not. Our participants were hyper aware of the location of schools, malls, and other areas where children frequent. One participant illustrated to us, “Before, I could have gone to a school, I don’t do it now. That’s the only thing that has changed. I’m so aware of where these things; like schools and parks, are now. Why just today I was driving and probably went past 20 high schools and now I realize “wait a second” [pause] I think it just makes you aware” (Tony, 10 months). Subsequently, towns or regions with small child populations and an absence of schools are those that can be navigated with less fear of accidentally violating a spatial prohibition. In fact, the participants in our focus groups were familiar with the places where infractions were less likely and space less circumscribed. They would talk about these places as safe sites for weekend visits, or even as potential places to live should the legal monitoring regime become more stringent (and it subsequently has become much more stringent due mainly to Jessica’s Law).

#### 3.2 Protection

Protection is, clearly, a central concern in a technology that is used in order to maintain surveillance and control over high risk sex offenders released from the correctional system. The motivation for the development of the technology is very much that it can help to protect a vulnerable public, and protecting the public is clearly also the basis of the prohibitions that apply to these offenders in terms of where they may go and where they may live. However, this concern – protection of the public – lives alongside two other protective issues in our data – protection of the parolee and protection of the technology.

It should be noted, though, that participants are somewhat cynical about protection of the public as a motive for the particular conditions under which they live. Eric stated, “I wear this thing [points down to his GPS unit on his ankle] because I have to wear it. It has nothing to do with the public...” Continuing on, Eric gave details, “...I mean, all of this is about 90 percent political... See, this thing is sold to the public as a keeps kid’s safe crutch but it’s not going to do anything unless a police monitors your every step” (Eric, 1 year & 1 month). Our participants noted that such protection as is afforded results not so much from the fact that their presence in inappropriate places will be noted by authorities, but perhaps more that the device itself acts as a continual reminder of actions that they do not want to repeat. Bob described his feelings about his unit as a daily reminder. “Can I just say that to me it’s a reminder, a daily reminder of how I wrecked a lot of lives... See, it’s a protection for me and I like it. It’s also a deterrent for me. It’s a daily reminder of what it was like in prison and I don’t want to go

back. I like it. It's a pain in the butt but I like it" (Bob, 2 years & 10 months). The technology is less effective as a defense against criminal activity, in part because the vast majority of sex offenses are committed inside the home and inside the family (as they are well aware), in part because they are largely situational rather than predatory offenders, and also because, if they were inclined to re-offend, vulnerable populations remains entirely available to them – for instance, at supermarkets. One participant noted, "If you still want to molest, you can go to Ralph's or Wal-Mart [US chain stores]" (Tom, 7 months). Quickly following this statement, Tony, another participant acknowledged "Some even take them [the GPS units] off and get lost. They [the California Department of Corrections and Rehabilitation] need to worry about those people" (Tony, 10 months).

Technology is not only a means of surveillance but is also a defense against accusations of wrong-doing. Discussing some of the positive aspects associated with their GPS unit, one participant stated, "It's a good thing. It proves where I was. It aint to protect the public. It's political. It's actually protecting us" (Mike, 1 year). Another participant agreed and explained, "I travel a lot through southern California and this keeps me safe. It tracks me wherever I go. I like it. It's helped me and it's protected me. It's not going to stop me from re-offending. Like, it's not going to stop me from drinking, but it does protect me" (Tony, 10 months). Sex offenders are continuously under suspicion of involvement in other offences. The ability to direct police to their Parole Officer, who has access to the log of information that can exonerate them, is for many a source of protection and defense against what they see as likely hassles and police attention. and the technology can bear witness to their locations. Kevin, a parolee on the GPS unit for a year and a half held, "There are good points. I'm protected and my PO [Parole Officer] knows where I am" (Kevin, 1 year & 6 months). Eric also acknowledged the function of the GPS unit to act as a personal alibi. "It keeps me safe. If anything happens, I can always tell 'em, check the thing. I wasn't there" (Eric, 1 year & 1 month).

Perhaps the most persistent question of protection, though, concerns the protection that must be afforded to the GPS unit itself. These devices are fragile, but damage to the unit constitutes a technical parole violation. Participants in the State pilot program noted that the strap which holds the device to their ankle (which is itself wired so as to detect tampering) is easily broken. Bob explained, "When they first came out they were not that good... See, there was a malfunction with the straps and we all had to get them replaced. But, I still have the original. I haven't had a problem with mine. It's still the original" (Bob, 2 years & 10 months). Shortly after Bob spoke, Mike acknowledged, "The only thing they've done for me is change the strap. Otherwise it's [the GPS unit] the same" (Mike, 1 year & 1 month). When we asked how many GPS units our participants have been through, Steven said, "Two units with two straps" while Kevin noted, "Two units with four straps" (Steven, 7 months; Kevin, 1 year & 6 months). These quotes demonstrate the inconsistency related to the durability of the units themselves as well as the straps.

Through our conversations with these participants, we discovered that the device itself must be cushioned from impact, which can come from banging an ankle into a table-leg or from on-the-job dangers at, say, construction sites. Eric narrated a

story discussing how he worked with sheet metal every day and how his leg would get stuck a few times at work and the strap would just "...break off. I've been through six in a year. I just got a pair of boots and its better now" (Eric, 1 year & 1 month). Regardless of the danger that protecting the device may impair its operation, we also discovered that participants often times wear their device under several pairs of socks and/or medical bandages to help keep it protected. Another frequent problem included water exposure resulting in damage. To prevent the device from being underwater, participants discussed with us how they are unable to swim or take a bath. Kevin stated, "We got the whole what you can and can't do talk. You can't charge it, bang it, can't mask it, can't submerge it in water. I can't go swimming! I can't go water skiing. So, water sports are out. You try reintegrating into society with a ball and chain behind you. I'm talking the metaphorical and literal ball and chain. You can't get back into society normally with this [pointing down to his ankle]. I can't wear anything over my ankles..."(Kevin, 1 year & 6 months). Tony also discussed the issue of water damage and being unable to charge your unit, "...You're giving out violations because they can't charge them [the GPS units because of logistical problems such as being at work]. You can't charge them; six months. Another guy went swimming in the ocean and he went back for another six months" (Tony, 10 months). The issue of being able to swim and take a bath was brought up numerous times throughout both focus groups. When asked, "How do you think your life will be different if and when your GPS unit is removed?" one participant eagerly supposed, "I could take a bath instead of a shower. Everyone thinks it's a woman's thing but, hey, I like baths. You get to sit back and just relax. Yeah, that'll be nice" (Bob, 2 years & 10 months). Given these pragmatic, day-to-day concerns, the device itself features as a focus of protection as much if not more so than protection of the public or the parolee.

### 3.3 Disciplining the Body

It is often the case in mobile and location-based applications that we elide the distinction between person and device. We talk of tracking Emily, Charlotte, or Paul, but not of tracking Emily's cell phone, Charlotte's laptop, or Paul's PDA, even though that would be a more accurate account. In the case we are looking at, this distinction is sufficiently important that devices are essentially permanently affixed to the body. The final set of issues we want to draw attention to here is the way in which the coupling of the tracking technology to the body becomes relevant as a concern for the participants in our study.

As we have noted, the device is both fragile and visible to others, and both of these properties have significant bodily consequences. Participants are aware of the ways in which they must hold themselves and comport themselves in order to mitigate the dangers associated with both of these properties. The tracking device's fragility means that it must be protected from accidental damage, which in turn means that one must be careful not to bang it against a table leg, wall, or other object. In turn, this has consequences for daily bodily comportment; sitting and walking, and other mundane actions must be conducted with sensitivity towards the potential dangers they pose to the technology itself. Similarly, the body is comported so as to minimize the risk of disclosure associated with making the device too visible. This affects posture (crossing ones ankles so as to hide the device, for example) as well as clothing choices. One participant noted, "This summer I had to wear wind pants. I

don't exercise anymore. I used to run half-marathons and I just can't run anymore. I wish they could make something so I could just put it around my waist and not around the ankle" (Steven, 7 months). Tom wished to "Exercise more...Now, I can just golf. It'll be nice to wear shorts and play some tennis. Daily life wouldn't change" (Tom, 7 months). Not being able to wear comfortable clothes was something that many participants drew attention to, something that is particularly problematic in Southern California, the site of the pilot trial, especially when working outside or exercising. One participant exclaimed, "I can't work out effectively, can't wear shorts. I have to wear sweat pants all the time and that's dangerous during the summer time. It's just too hot!" (Kevin, 1 year & 6 months). Even in sleep, these questions of the way in which the technology is coupled to the body are relevant; to turn over in the night might be to endanger the device and run the risk of a parole violation and so, again, accommodation needs to be made.

We had anticipated that the ways in which the body is deployed in space would be a consideration here in the larger sense, simply the question of where one is and where one moves. Less well examined is the way in which specific forms of technology use might focus our attention on the relationship between the body and technology, not simply in ways considered by the Wearable Computing community (although clearly those are in scope here), but in terms of a broader notion whereby technology is part of a complex arrangement that includes technology, the body, and the myriad forms of society including the state. Within this complex arrangement, the body is disciplined.

#### 4. CONCLUSIONS

There could scarcely be a more mundane aspect of everyday life than its spatial character. Indeed, the very pervasiveness of spatiality as a feature of everyday life inclines us towards thinking of spatiality as an essential property of the world, drawing our attention away from the ways in which it is socially and culturally produced and technologically mediated (Dourish, 2006).

We are interested in turning attention to these aspects of everyday spatiality because of the considerable amount of attention being paid to mobile technologies at the moment. One might argue that, in its radical reconsideration of both the forms and the sites of computational encounters, ubiquitous computing is, fundamentally, spatial computing; and yet, contemporary discourse around ubiquitous computing within the HCI literature pays remarkably little attention to the forms of spatial understandings at work in the social sciences.

Various issues emerge from the brief summary of themes presented above, but there are two that are especially of interest here, because they both address broader questions of the mundane nature of mobile technology.

The first concerns the issues of both disciplining the body and protecting the technology, although for my purposes here I'll frame them as another form of mobility.

While the GPS units are clearly mobile in the large sense – their function after all is to track people around the world – they are absolutely not mobile in the small sense. They cannot be

removed, repositioned, or reconfigured. They are firmly attached, and must remain so. Their very immobility with respect to the body of the parolee is, itself, a source of continual trouble – in their interactions with others and in their use of the technology itself (e.g. charging the device, bathing, etc). What this points to is the importance and potential consequence of the relationship between mobile technologies and the bodies with which they are associated. I am reminded of a SkyMall catalog I read years ago, advertising a head-mounted reading lamp with the slogan, "And you won't even look stupid!" Mobile technologies designed to be worn, attached, carried, shown, hidden, and so on, all depend upon particular configurations of bodies, technologies, and practice in ways that are rarely acknowledged by their designers. Fashion considerations aside, the fact that these are technologies of the body, and the implications that come with that, are significant ones.

The second consideration to which I want to draw attention here is the question of accountabilities of presence. Much discussion around mobile and ubiquitous computing focuses on privacy concerns, often reductively characterized in terms of cost/benefit trade-offs in the economic exchange of information and services. When we focus instead on the ways in which mundane spatialities are enacted in patterns of movement and migration, the picture becomes considerably more complicated (and considerably more interesting). Presence and movement in space, the ways in which one oriented towards particular spaces as safe or dangerous, welcoming or excluding, significant or insignificant, and the ways in which this is done, the times at which it is done, the people to whom it is demonstrated, etc, reflect a range of accountabilities that are part and parcel of forms of social participation (Massey, 1993; Munn, 1996).

Mobile technologies may be mundane; but there is a good deal more about their mundane nature to examine.

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