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Published in:
Digital Futures and the City of Today

Publication date:
2016

Document Version
Accepted author manuscript

[Link to publication in Discovery Research Portal](#)

Citation for published version (APA):
Wilson, S., & Gomez Flores, L. (2016). Identity management, premediation and the city. In G. A. Caldwell, C. H. Smith, & E. M. Clift (Eds.), *Digital Futures and the City of Today: New Technologies and Physical Spaces*. [Chapter Five] (Mediated Cities). Intellect.

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IDENTITY MANAGEMENT, PREMEDIATION AND THE CITY

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INTRODUCTION

We are now experiencing an era of “persistent identity” (Poole 2010) where our identity is constantly ‘on’. Routinely and smoothly almost all our movements are monitored while we interact with CCTV cameras, withdraw money from ATM machines, swipe identity cards for entering buildings, and buy goods and services using credit/debit cards. Within a highly digitalized society our identity is key to giving us access to a growing range of services and benefits; therefore increasing the need to ‘manage’ our identity.

Identity Management (IM) is a term recently coined (since approximately 2004), and yet it is slowly permeating our daily lived experience. Post 9/11, governments and corporations are placing a greater emphasis on security in an attempt to prevent more terrorist attacks of every kind. This, plus the fact that now more than ever we conduct a large part of our everyday interactions remotely, online via computer or a mobile device, has forced the development of various forms of IM solutions.

The nature of cities is constantly changing and being contested in a continuous, never ending process of mediation from different disciplinary points of view. In this chapter we analyze the interactions between individuals and their identities in the city from an angle of premediation, where possible future experiences are first encountered through popular media; affecting our relationships with the urban environment.

IDENTITY MANAGEMENT

As part of the research (IMprints 2014) we searched and analyzed different scenarios of identity management and these show *three forms of human interaction* that need identification or authentication (figure 1):

- Between individuals (blue circle)
- Between individuals and organisations (grey circle)
- And to give individuals access to their possessions (objects) and or/spaces (pink circle).

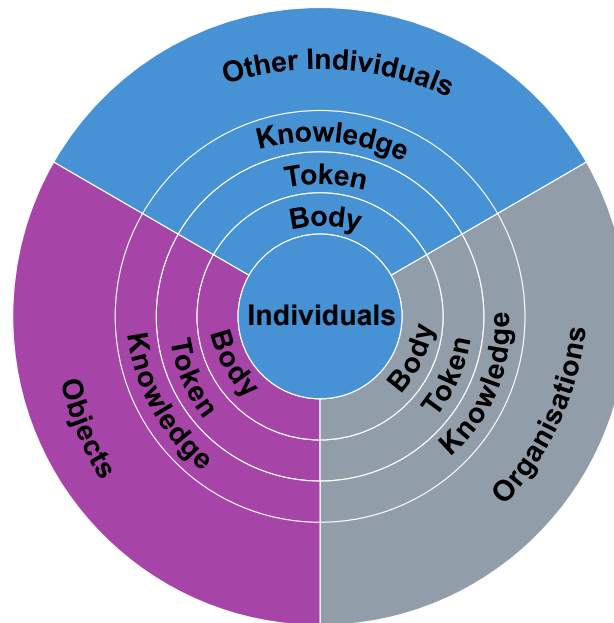


Figure 1. Forms of Identity Management

In addition, these scenarios present *three different instruments* to introduce ourselves (identify) and prove who we are (authenticate):

- Based on knowledge or memory (e.g. pin-codes, passwords).
- Based on tokens (e.g. passports, customer cards, smart phones).
- Based on body features (e.g. biometrics, implants).

The combination of interactions and instruments constitutes a *'field' of representation and mediation*. All the scenarios have positive-optimistic and negative-pessimistic varieties.

The research finds that passwords and pin-codes as a method of authentication is usually considered neither very convenient, nor very safe, it is sometimes expected that it will merge with other authenticators, and disappear in the long run. We will therefore focus this chapter on the use of tokens and body-based biometrics.

SMART TOKEN SCENARIOS

The use of RFID (Radio Frequency Identification) and microelectronics such as Arduino enables the creation of a variety of smart tokens, for example the London Underground Oyster Card that enables its users to travel around the London Transport System relatively easily. RFID is now being used in other token systems such as smart bracelets for use in Festivals (BBC 2012). Already used in Europe, designers say the wristbands wipe out ticket fraud and touting, and can be loaded with cash to pay for goods on site. This has parallels with the use of 'smart watches' for example "Rumba Time" (Price 2011) which lets you carry medical and payment information on your wrist. Clothing too is expected to increasingly be utilized for health and leisure information and by and other types of organizations. SmartLife (2014) for example has developed an advanced wearable computing technology that interfaces seamlessly with the body to provide remote, real-time, always-on access to body data (via smart pants). The company's patented 'SoftSensor' smart fabric incorporates ultra-thin dry sensors that deliver highly accurate information on a broad range of vital signs and body movements. These data may then be transmitted via connected devices to enable innumerable Cloud-based hyper-personalised services in markets such as healthcare, sports, hazardous environments and military. Supermarket Walmart (Murph 2010) have placed RFID in individual garments to help apparel managers know when certain sizes and colours are depleted and need to be restocked. In Korea, commuters can now shop at virtual supermarkets by mobile scanning murals of groceries plastered

across metro platforms using QR (Quick Response) codes (YouTube 2011). The groceries are then delivered to the commuters' homes shortly after they return. Thousands of students in Brazil are now required to wear a shirt that text messages their parents when they do not show up for class (Nguyen 2012). The t-shirts work similarly to the tracking devices sometimes used to locate lost pets. A chip that is built into the clothing provides data to a central computer programmed to send updates to parents about their child's whereabouts via text messaging. Whenever the child enters the school, it instantly sends confirmation of the arrival, if they do not show up within twenty minutes after classes start, parents will receive an alert that says: *"Your child has still not arrived at school."*

Interestingly some individuals are starting to hack these RFID chips for their own purposes, for example in London the Urban Wizzard (Whitby 2012) has hacked the chip from his Oyster Card placing it at the end of his magic wand – wowing spectators with his supposed magic and *wizzardry*. These chips have also been hacked into rings although London Transport who owns the oyster cards has fined those caught as the cards are London Transport Property!

RFID chips when implanted within the body can also carry financial information or provide access to spaces, for example within nightclubs and bars as well as providing access to cars, homes or workspaces (RFID Journal 2005). We do not however have to be chipped or carry a mobile device in order for our bodies to be recognised within the city.

BODY-BASED BIOMETRICS

Within the research an increasingly common situation is people gaining access to urban spaces, government or corporate services through authenticating body-based biometric features (fingerprints, palm, iris, face, voice, gait, odour, etc.). Driven by a strong and growing industry, the use of biometrics in urban settings is rapidly expanding; ever more bodily features are being used for authentication, for instance body odour, buttock prints, but more significantly DNA.

Fingerprints are now commonly used in many schools and colleges to pay for lunch or sign in for classes (YouTube 2008). Japanese company OMRON (OMRON 2012) has now developed hand gesture recognition that recognises a person's gesture in conjunction with face recognition technologies. Iris recognition alongside other biometrics such as fingerprinting is now commonplace in airports and at borders around the world. Tools such as face recognition are now in the US workplace, for example Garden Fresh Restaurant Corp (Ganeva 2011), which runs franchises of the buffet restaurants Souplantation and Sweet Tomatoes, announced it had installed this technology at 122 locations across fifteen states in 2011. Cognitive biometrics explores studying how different individuals might be identified by their brains' reactions to various images, such as one's mother (Freeman 2012). Gunshot recognition (Safety Dynamics 2014) is another recent development where a shot is fired in a metropolitan area, within one second of the shooter pulling the trigger, microphones pick it up, a camera zooms in and authorities instantly have some idea who and what they are dealing with. "So in most cases, the shooter hasn't even begun to drop their arm yet and we're already looking at the scene," said Wayne Lundeberg, Chief Operating Officer of Safety Dynamics: a Tucson-based company with gunshot detection technology in the US and Mexico.

This is also the area where the strongest public and political concerns for the future have been expressed, especially with respect to a potential loss of privacy, issues surrounding data protection and the export of these technologies to oppressive regimes. It is within the area of art practices that we find most discussion about these issues and their increasing leakage into other areas of public life. CV Dazzle (Harvey 2014) by New York-based artist Adam Harvey, for example, is a camouflage created from computer vision algorithms, through a clever use of makeup and hair styling, avoiding the legal issues associated with the wearing of masks (figure 2). The name originates from a type of camouflage used during World War I. This approach has not yet featured in an act of public resistance however; culture and fashion magazines (e.g. DIS, a fashion art and commerce publication) have used it in their styling. In an interview for theartblog, Adam Harvey describes CV Dazzle as *"...the ticket into the invisible class – men, women and children deleting themselves from the digital eye."* (Armpriester 2011)



Figure 2. CVDazzle by Adam Harvey

Similarly the FAGFACE mask by American Artist Zach Blas (Blas 2014) part of his Facial Weaponization Suite, develops: forms of collective and artistic protest against biometric facial recognition – and the inequalities these technologies propagate – by making masks in community-based workshops that are used for public intervention. The mask is a response to scientific studies that link determining sexual orientation through rapid facial recognition. This mask is generated from the biometric facial data of many queer men’s faces, resulting in a mutated, alien facial mask that cannot be read or parsed by biometric facial recognition technologies.

In a video-interview with the authors last year Blas highlights how some of these forms of IM are being used unauthorized and without an individual’s knowledge – for example, in 2001, the Tampa Bay Police used face recognition technologies to search for criminals and terrorists during the Superbowl, resulting in several arrests (but no charges). Blas also highlights the dangers of these technologies and databases being used for other purposes, such as to identify homosexual men purely from their faces.

This opposition has also been expressed in the sousveillance movement. Steve Mann (2004) established a differentiation between ‘Surveillance’ and ‘Sousveillance’. ‘Surveillance’ is French for “to watch from above”. It typically describes situations where person(s) of higher authority (e.g. governments, institutions, police, etc.) watch over citizens, suspects, or shoppers. Foucault (1977) described it as the higher authority as to be “Godlike” rather than down at the same level as the individual party or parties under surveillance. Mann describes it as the capture of multimedia content (audio, video, or the like), by a higher entity that is not an equal of, or a party to, the activity being recorded. The author has suggested “sousveillance” as French for “to watch from below”; the term refers both to hierarchical sousveillance, e.g. citizens photographing police, shoppers photographing shopkeepers, and taxi-cab passengers photographing cab drivers, as well as personal sousveillance (bringing cameras from the lampposts and ceilings, down to eye-level, for human-centered recording of personal experience). Sousveillance has two main aspects: hierarchy reversal and human-centeredness that often interchange, e.g. the driver of a cab one day, may be a passenger in someone else’s cab the next day. For example artist Wafaa Bilal (Hicks 2012) has implanted a camera in the back of his head to ‘watch-the-watchers’, exploring sousveillance as a way to balance the sense of power and control.

Other developments include wearable cameras like the one used for the SixthSense (See figure 3) developed by Pranav Mistry (2012). SixthSense is a gestural interface device comprising a neck-worn pendant that contains both a data projector and camera; it also combines the cameras with illumination systems for interactive photographic art, and also includes gesture recognition (e.g. finger-tracking using coloured tape on the fingers). All this technology combined gives the wearer a sense of control and interaction that goes beyond sousveillance – although sousveillance is an always-present option. It gives the user the opportunity to navigate the city creating his/her own experiences with the urban

environment and its inhabitants (see figure 4). It has the possibility to wirelessly connect to the Internet of Things (IoT) smoothly weaving connections between the wearer and other people and/or objects by retrieving available online information such as personal data and product characteristics (see figure 5).



Figure 3. Pranav Mistry wearing the SixthSense device

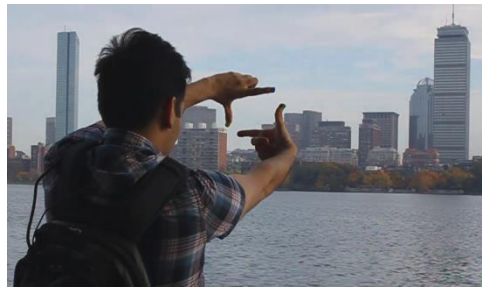


Figure 4. Pranav Mistry and SixthSense device interacting with the city



Figure 5. Pranav Mistry and SixthSense device interacting with other people through IoT

PREMEDIATION

In the aftermath of 9/11, Grusin observed a new media pattern emerging in the US and then expanding worldwide. He called it “premediation” and explained that it: “works to prevent citizens of the global media sphere from experiencing again the kind of systematic or traumatic shock produced by the events of 9/11 by perpetuating an almost constant, low level of fear or anxiety about another terrorist attack” (Grusin 2010: 2). Premediation is also described as the way in which multiple futures are being brought to life in the present. Many of the scenarios discussed above are also being premediated within film and television. The most obvious example being the film *Minority Report* with Tom Cruise that provides examples of iris recognition to target personalized advertising whilst shopping etc. Research partners Turner, van Zoonen and Harvey (2013) highlight how film and television are key contributors to this process of premediation where the scenarios they present do not prescribe certain meanings around IM, but create and delineate a so-called ‘imaginative horizon’. News, popular culture and social media are no longer concerned with a representation of recent or live events, but are obsessing instead about what might happen next, including future identity management scenarios in the city.

We can see for example where ID tokens are premediated in the first Bourne film of the series, where Jason Bourne has a stash of fake ID (its location revealed in the first place by an implant in his hip), while in *RED* another (former) Central Intelligence Agency operative takes a sledgehammer to the foundations of his house, unearthing a box filled with cash and IDs. In terms of biometrics *Gattaca*, for example, demonstrates how blood tests are not only used to determine a person’s identity in cases where it is the only (or only certain) way, but to permit access to buildings on a daily basis; in this society citizens are effectively graded from conception according to their genetic make-up. This premediation of IM practices and technologies associated within the city has an impact on our experience of the city and the ways in which it is mediated regardless of whether these practices and technologies exist in any given reality or not.

MASS MEDIA, USER-GENERATED CONTENT AND (PRE) MEDIATION

It is important to make a distinction between what is Mass Media (MM) and what is User-generated Content (UGC), while they both usually go together they are not interchangeable. According to Wimmer & Dominick (2013) Mass Media is defined as “...any communication channel used to simultaneously reach a large number of people, including radio, TV, Newspapers, magazines, billboards, films, recordings, books, the internet, and smart media such as smart phones, smart TVs and tablets.” On the other hand, Kaplan and Haenlein (2010) describe UGC as the sum of all ways in which people make use of Social Media. Some of the most famous Social Media platforms are Facebook, Flickr, YouTube, MySpace, Twitter, etc. The term, which achieved broad popularity in

2005, is usually applied to describe the various forms of media content that are publicly available and created by end-users. According to the Organisation for Economic Co-operation and Development (OECD 2007), UGC needs to fulfill three basic requirements in order to be considered as such: first, it needs to be published either on a publicly accessible website or on a social networking site accessible to a selected group of people; second, it needs to show a certain amount of creative effort; and finally, it needs to have been created outside of professional routines and practices. The first condition excludes content exchanged in e-mails or instant messages; the second, mere replications of already existing content (e.g., posting a copy of an existing newspaper article on a personal blog without any modifications or commenting); and the third, all content that has been created with a commercial market context in mind.

The 21st century has seen a shift in power regarding information and what people believe, how they believe it and from whom they decide to believe it. Social Media and UGC have empowered citizens thanks to allowing them through digital technologies to receive, post and comment on almost everything. In 2012 using Hurricane Sandy as an example of a current event, Grusin (2012) blogged about the premediation occurring through news, Social Media and UGC outside the realm of mass media such as movies, books, TV shows, etc. and the impact it had, "...socially networked media like Twitter, Facebook, YouTube, blogs, Tumblr, Instagram, and others all participate in the remediation and premediation of news across the globally networked world." His blog included notes on how this premediation of Sandy leapt beyond the virtual reports of news into the real world affecting people and their interaction with the cities touched by Sandy, "...a full 24 hours before Sandy's expected landfall, subways and roads were closed; flights were cancelled; schools were cancelled; government offices were closed; people were evacuated; power may be shut off in anticipation of Sandy's disrupting it." Grusin finishes concluding that news, Social Media and user-generated content work together to premeditate a specific event "premediation works to prepare people affectively for what might be coming... Premediation helps to bring Sandy into being not to prevent it."

Beyond natural catastrophes and current news people seem to be empowered by Social Media and UGC while engaged in their own premediation on a daily basis while navigating the cities where they live. Social Media platforms like Waze for example use passive and active UGC to premeditate navigation routes presenting different alternatives to other drivers to avoid traffic or to 'shave' minutes using alternative roads. "Waze is all about contributing to the 'common good' out there on the road." Waze connects drivers to one another creating local driving communities that work together to improve the quality of everyone's daily driving. The Waze website explains how the platform works: "After typing in their destination address, users just drive with the app open on their phone to passively contribute traffic and other road data, but they can also take a more active role by sharing road reports on accidents, police traps, or any other hazards along the way, helping to give other users in the area a 'heads-up' about what's to come."

Foursquare is another Social Media platform where UGC tell other citizens where to find the best places in the city to eat, to drink and to go clubbing, etc. Users can grade the different services they use and post comments on them, they also can receive suggestions of more places to explore within the city based on their previous posts and the zones within the city they frequent as the application enables the use of the GPS included in mobile phones.

Apple is already planning to launch their Proactive application that will work on iPhones and other mobile devices linking together several social network platforms such as Foursquare, Yelp and Nokia's HERE, plus an Augmented Reality application to help users navigate the city in a more personal, customized way. Proactive will compete with interactive Google maps providing people with live news for public transportation services and a Points of Interest (POI) system. Apple has developed a pair of new features around the POI system: an augmented reality view for local listings, as well as a feature dubbed "Browse Around Me." The augmented reality feature allows users to hold up their iPhone in the Maps application, and point her camera toward a particular business or an area. Pointed towards a cafe, for example, the screen could show a virtual view of menu items or daily specials. If the user points her phone toward a street, a virtual outline of local businesses, restaurants, shopping stores, or coffee shops could appear. As a separate feature, the Browse Around Me button

could simply show points of interest on an overhead map that are more tailored to previous searches and user preferences.

Through the use of Social Media and UGC people are premediating the city for themselves and their fellow citizens, presenting them with different alternatives and scenarios while using mobile technologies.

CONCLUSIONS

Bauman (2006) coins the concept of 'liquidity' in different social and political contexts and Lyon (2010) applies it to "the reduction of the body to data". According to this theory, human bodies are continually being reduced to digital information, this allows data to constantly flow from a governmental context such as CCTV cameras operated by the police, to commercial environments such as airport checkpoints, to private surveillance like nanny cams.

Within the scenarios described here we can see a growing emphasis on body-based biometrics such as face recognition, finger-printing and DNA where the understanding of identity is fixed to one data subject and considered therefore static as they can create a one-to-one correspondence "... restricting people to one record or records to one person" (Wayman 2008). This also signifies a significant shift in our understanding of the nature of identity from 'what we are' to 'who we are' where previously our identities were expressed through what we wear, our tastes in music etc. This is also a normalization of administrative techniques that were once reserved for criminals and is largely being introduced without public discourse or consultation either by large corporations for example Google Glass or Governmental initiatives such as use of face recognition at public events. Recently the authors were associated with hacking the Human Computer Interaction conference in Toronto creating the 'quantified toilet' a fake sensor installed in the Toronto Convention Center and other civic venues that would automatically analyze "deposits" in the toilets to detect a person's gender, drug and alcohol levels, pregnancy status, sexually-transmitted-infection status, and... smell (Golbeck 2014). The intervention was designed to engender thought and discussion regarding the issues of surveillance, data, and privacy. The twitter response highlighted how there was a lack of mechanisms to raise any opposition to these types of initiatives. Identity management practices and technologies have then placed the city in a panoptic effect scenario run not just by the government and the authorities but also by commercial brands.

Through 'sousveillance' we can also observe what Mann et al (2006) called a 'reverse panopticon' where the observed become the observers and the observed once again - depending on the roles they are playing at the time, in an infinite, never-ending cycle. Within this panopticon, premediation works both socially and politically. One of the effects associated with premediation appears to be a limiting of the power of urban citizens to move to action. Grusin (2010: 42-43, 71-72) suggests that the media participates as agents of what Foucault defined as 'governmentality' that is governance not limited to state politics alone. It is only through some art practices and 'sousveillance' that we can observe an attempt to raise awareness of the negative consequences of these developments such as loss of privacy/anonymity and what might constitute objections to these technologies and practices within the city. Despite this there are no signs of resistance from citizens to the increased level of identity management or its shifting nature within our cities. So even the increase in user-generated content - appears to conform to Grusin's notion of premediation in which he likens the phenomena to a video game where although there are an infinite number of future possibilities available, only some are supported and encouraged, "...although within these premediated moves there are an infinite number of different possibilities available, only some of those possibilities are encouraged by the protocols and reward systems built into the game" (Grusin 2010: 46).

The nature of identity however, through social networking or in the use of wearable technologies and tokens such as garments and watches, can be perceived as more fluid and dynamic through personal expression where unique and individual tokens can be embedded or customized through technologies such as RFID. Identity within the urban landscape of the city is therefore moving towards a more fixed interpretation.

Our identities and their subsequent management are therefore incessantly changing according to the context and the technologies mediating them, from a social context like Facebook, to a commercial one via RFID; to official interactions like face recognition and CCTV endlessly identifying who we are.

Within the urban landscape these different IM practices and technologies create different 'atmospheres' that have 'emotional impact' in humans. The term atmosphere is embedded in our daily experiences; it induces "for example, moods, emotions, feelings, thoughts, judgments, perceptions, sensations, and all manner of social relations and associated practices." (Ellis 2013) According to Koskela (2000) "... surveilled space alters human experience" - emotions are often denoted as representing a particular type of physiological and cognitive state that is felt consciously and named; for example, anger, disgust, fear, joy, sadness, and surprise. Being observed has widely been theorized to induce emotions or "cultures of emotion" for example, producing cultures of anxiety, fear (Minton 2009) and suspicion (Chan 2008). For example, video surveillance through CCTV cameras is seen as producing "emotional space" and, a "paradoxical space" (Rose 1993). Koskela (2000) describes video surveillance/biometric forms of IM, as evoking both positive and negative emotions simultaneously, "to the extent that one may feel both threat and security." Koskela uses the example of a CCTV camera in the subway, late at night, and how a female can feel at the same time a borderline emotion of security and threat; because although she knows she is being observed, she does not know by whom.

This shift in emphasis in the nature of identity and this apparent paradox of where the nature of our identity is both fixed and fluid - constantly changing depending on context and the different technologies employed contribute to the almost constant low level of fear and anxiety associated with IM within the city associated with Grusin's (2010: 2) notion of premediation. Consequently, the negative features associated with Grusin's premediation such as low-level anxiety and general acceptance of future practices and technologies are being experienced within the city. We are now living in environments where we move within a never-ending cycle between premediated scenarios where the media constantly delivers the future to us through films, books, videos, IoT, etc. and creates a constant level of low-stress situations (tension) that we have learned to smoothly accept within our daily lives. Through the lens of identity management then we can observe that the city is increasingly 'premediated'!

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